

Tramtrac™ II – for the repair of embedded city tramway rails

LIGHT-WEIGHT, COST EFFICIENT, SIMPLE OPERATION



Tramtrac™ II – the flexible alternative to the SAW repair of tramway rails

Light-weight Tramtrac™ equipment can be hand-carried and is easily installed and removed.



The control box features clearly marked symbols for wire feed speed, travel speed and start and stop welding functions, as well as wire inching.



Tramtrac™ II is ESAB's latest welding equipment for the repair of embedded grooved city tram rails. It utilises the FCAW process with self-shielded wires, instead of the conventional SAW process, which provides a number of advantages in terms of ease of use and cost-efficiency.

The FCAW process allows TramTrac™ II to be small and ultra light-weight compared with the heavier SAW solution. It is easily stored and used from a pick-up truck together with a petrol/diesel generator and welding power source.

The tractor can be hand-carried and is easily installed and removed on and off the rail, allowing trams to pass within a controlled safety situation.

The sequential surface welding technique with Tramtrac II eliminates the risk of transversal crack formation, which is another advantage over the SAW technique with higher remaining longitudinal stresses.

The deposition rate is approximately at the same level as with the SAW

process, but the duty cycle increases due to quick installation, no flux handling and reduced slag removal effort.

The Tramtrac™ II is operator friendly with a four-wheel drive carriage that rides the single rail, a wire feeding unit for 1.2 or 1.6 mm Ø wires and adjustable traction wheels to fit most worn flanges and railheads. The control box, on top of the feeder encasement, features clearly marked symbols for wire feed speed, travel speed and start and stop welding functions, as well as wire inching.

The curved slide on which the wel-

ding head is mounted enables easy and exact positioning of the wire extension between 0 to $\pm 65^\circ$ while the horizontal and vertical slides enable positioning in the x- and y-planes.

TramTrac™ II needs a 42V AC control voltage supplied from an Origo™ Mig 410 or 510 step controlled welding rectifier. 10m long control and welding cables, allowing the tractor to travel up to 17 m when the power source is positioned close to the rail.

- light weight
- cost-efficient
- productive
- easily installed and removed
- easy to operate

without disrupting tramway travel.

Cored wires – technical data.

OK Tubrodur 14.71	Classifications & approvals	Typical chemical composition all weld metal (%)						Hardness HB	
		C	Si	Mn	Cr	Ni	Mo	as welded	work hardened
Type Rutile	EN14700 T Fe 10	0.026	0.48	5.12	19.1	8.7		200	400
Polarity DC+									



A stainless rutile 18.8.6Mn, self-shielded cored wire for cladding and joining 13% Mn steels and steels with limited weldability, giving an austenitic work-hardening weld metal. It is also useful for buffer layers prior to hardfacing. Supreme welding characteristics and excellent slag detachability.

OK Tubrodur 15.65	Classifications & approvals	Typical chemical composition all weld metal (%)						Hardness HB	
		C	Si	Mn	Cr	Ni	Mo	as welded	work hardened
Type Rutile	EN14700 T Fe 9	0.03	0.6	13.5	15.5	1.8	0.8	250	450
Polarity DC+									



A stainless rutile self-shielded cored wire depositing a martensitic-austenitic, work hardening deposit, used for the rebuilding of mild, low-alloy and 13%Mn steels. The weld metal combines excellent metal to metal abrasion and impact resistance. Supreme welding characteristics and excellent slag detachability.

Tramtrac™ II – technical data.

Control voltage	36-46 V AC
Power	90 W
Welding speed	30-100 cm/min.
Dimensions (l x w x h)	600 x 300 x 150 mm
Weight without consumables	12 kg

Ordering information:

Tramtrac™ II	0814 721 880
Connection cable 10m	0457 360 884
Support arm	0814 721 220
Origo™ MIG 410	0349 303 563
Origo Mig 510	0349 303 565
Magnetic earth return cable & clamp	0000 500 415
OK Tubrodur 14.71, 1.6mm	1471 167 730
OK Tubrodur 15.65, 1.6mm	1565 167 730



Welding embedded grooved rails in cities implies that preheating the rail cannot be performed. With rail grades ranging from 700 (R220) to 900A (R260) consumables for difficult to weld steels are recommended with a weld deposit that can accommodate high carbon without cracking. ESAB OK Tubrodur 15.65 and OK Tubrodur 14.71 are two wires that have been successfully used by tramway repair contractors for many years. Once the beads have been deposited there is no need to grind to the final profile of the rail.

World leader in welding and cutting technology and systems.



Tramtrac™ II equipped with the support arm (option) provides a dependable solution for the most challenging tram repair applications.

ESAB operates at the forefront of welding and cutting technology. Over one hundred years of continuous improvement in products and processes enables us to meet the challenges of technological advance in every sector in which ESAB operates.

Quality and environment standards

Quality, the environment and safety are three key areas of focus. ESAB is one of few international companies to have achieved the ISO 14001 and OHSAS 18001 standards in Environmental,

Health & Safety Management Systems across all our global manufacturing facilities. At ESAB, quality is an ongoing process that is at the heart of all our production processes and facilities worldwide.

Multinational manufacturing, local representation and an international network of independent distributors brings the benefits of ESAB quality and unrivalled expertise in materials and processes within reach of all our customers, wherever they are located.



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