

ESAB's machine programme:

Resistance Welding

 Welding Automation

AME 2001 Peter Söderberg

Resistance Welding

Rail weld machines



ZFR11 GC

- Can weld rails with cross sections up to 12 000 mm²
- Rail head alignment
- Auto flash trimming
- Welding with DC

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Resistance Welding

Rail



ZFR11 GC

- Machine during flashing operation

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Resistance Welding Rail



ZFR X2000

- High speed rail welding machine
- Welding speed up to 200 km/h



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Resistance Welding Rail



ZFR 10

- Part of a mobile rail welding depot.
- Installed inside a railway wagon.
- AC - machine.



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Resistance Welding Rail



ZFR11 GC

- Rail after weld and trimming operation



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Resistance Welding



Control unit ZVUQ -1

- PC control
- Data acquisition/logger system
- Menu based software
- Easy to create, store, and recall weld schedules

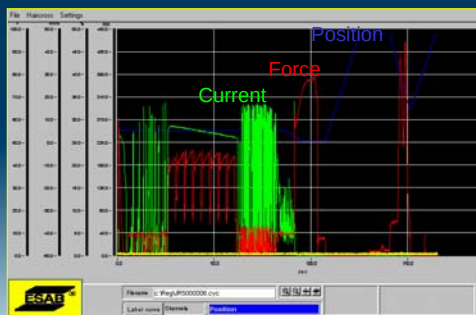


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Resistance Welding

Graf of weld (UIC 50 Rail)



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Resistance Welding

Billet weld machines



ZF 12 AM

- For joining of hot billets before they enter the first rolling stock
- Join billets from 100x100mm to 200x200mm
- DC current



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Resistance Welding

Billet



ZF 12 AM

- Machine during flashing operation
- The average welding cycle is approximately 22-27sec
- Auto flash trimming



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Resistance Welding

Chain making equipments



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Resistance Welding

Chain



ZAC 42M

- Fully automatic system for mining chain
- Resistance heater
- Link bending machine
- Flash butt weld machine
- Flash trimming unit
- Transport system



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Resistance Welding

Chain



ZAC 42M

- Link rod diameter $\varnothing 18 - 42$ mm
- Cycle time $\varnothing 24$ 4.8 links/min



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Resistance Welding

Chain



ZAC 554

- Fully automatic production for round steel chains
 - One man operation system
-
- Resistance heater
 - Link bending machine
 - Flash butt weld machine
 - Flash trimming unit
 - Stud press



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Resistance Welding

Chain



ZAC 554

- Link rod diameter $\varnothing 18 - 34$ mm
- Cycle time $\varnothing 26$ 5.7 links/min



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Resistance Welding Chain



SVU 9883-K

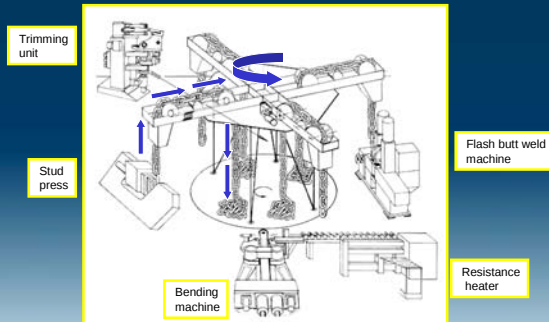
- Used in a carousel applications.
- Clamping force: 60 Ton
- Upsetting force: 50 Ton



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Resistance Welding Carousel



Welding Automation

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Resistance Welding Carousel



Carousel 8-Spec.

- Handling system for endless offshore chains
- Link bar diameter 60 -107 mm



Welding Automation

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Resistance Welding Carousel



ZAC 80 -122

- Handling system for offshore chains
- Link bar diameter 80 - 122 mm



Welding Automation

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Resistance Welding Tube welding machine



SVU 7884 H

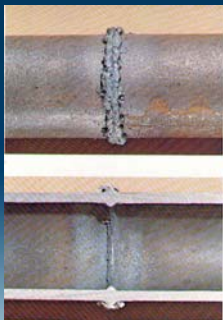
- For boiler and heat exchanger tube elements.
- High productivity
- Max welding area: 2300 mm²



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Resistance Welding Tube



Outside appearance of the welded tube before the weld flash is removed.

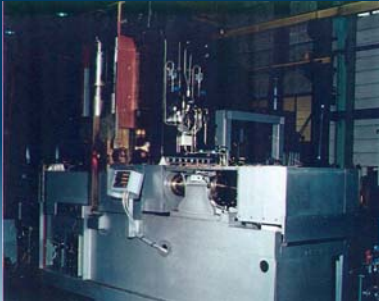
Appearance of the inside.



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Resistance Welding Tube



ZFKA 13 GL

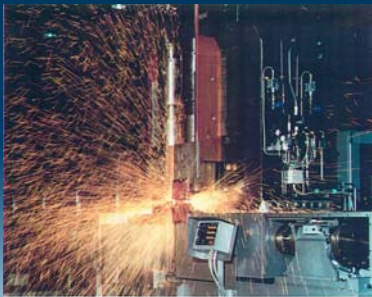
- DC machine
- Tube O.D: $\varnothing 200$ mm
- Wall thickness: 15 mm



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Resistance Welding Tube



ZFKA13 GL

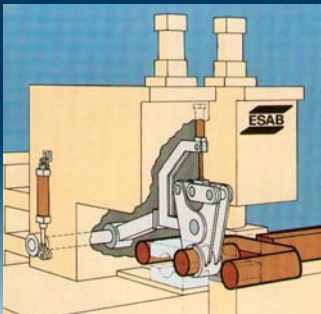
- Machine during flashing operation



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Resistance Welding Anod welding machine



SVU 9883 Spec.

- For repair welding of all types of anodes
 - Can weld round studs up to $\varnothing 140$ mm
-
- Less joint preparation
 - No consumables



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Resistance Welding Grating weld machine



ZRGB 135

- Welding press with the transformers
- Mat feeding device
- Cross wire feeder
- Cutters for surplus ends of the cross wires



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Resistance Welding Grating



Project Welding Machine

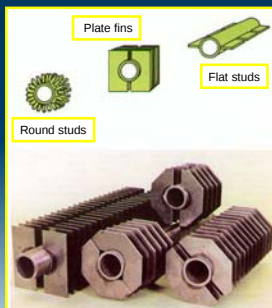
- For welding of end strips, on full grating panel width



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Resistance Welding Machines for extended surfaces



FMA - ESAB



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Resistance Welding



FMA - 01

- Fully automatic round stud and oval fin welding machine, with two electrodes
- Machine beds capable to weld 12 m long tubes
- Pneumatic operated expanders, clamps



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It's from ESAB
