ZECK

Quality and Service
- you can rely on!

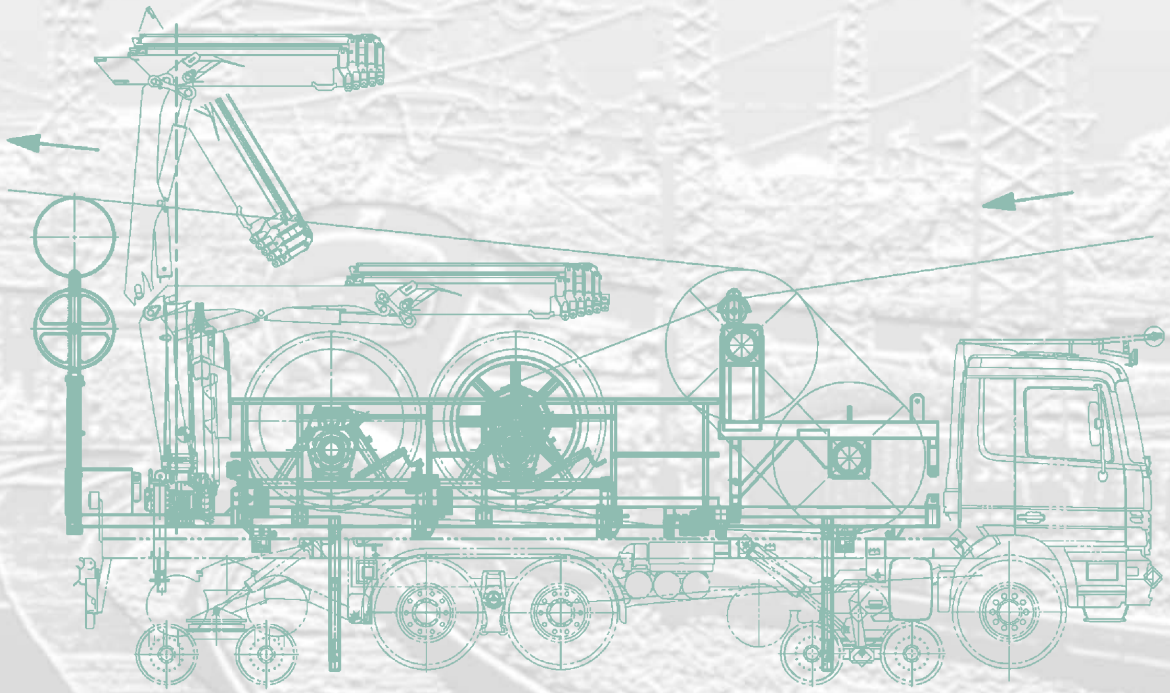
Sprzęt kolejowy

The Company

ZECK GmbH is a German producer of high-class special machines for transmission line construction. **ZECK** machines are top products worldwide - this is the result of a long company tradition starting in 1918. Today about 6.000 **ZECK** machines are in use worldwide.

The ZECK range of products comprises:

- Engineering for special projects / special-purpose machine construction
- Machines and accessories for the construction and maintenance of:
    - Overhead transmission lines
    - Antennas
    - Underground cable systems
    - Railway equipment



Quality and Service – you can rely on!

For many years we have been very successfully developing and producing special-purpose machines for the construction and maintenance of catenaries.
We design machines according to customer requirements. Our modular construction system provides the necessary flexibility.
Our particularly close cooperation with renowned catenary installation companies and contact wire manufacturers helps to continuously improve the units and increase their efficiency.
It also helps to adapt our technology to new requirements.
Together with our cooperation partners we are in a position to offer complete units – including traction unit (rail vehicles, rail-road-trucks), wagon units, loading cranes, working platforms, etc.

Impressive large-scale projects have been built with **ZECK** units worldwide.

Award-Winner

In cooperation with Windhoff AG who manufactured the powered rail vehicles, we developed four catenary installation machines. The contractor was the British consortium OLE & Distribution Alliance who had to renew the contact wire of the **West Coast Main Line** between London and Manchester with our units.

From 2001 the machines worked continuously 6 days a week. Already in June 2002 the first event could be celebrated: **the 500th wire run**. The project which had been planned to take 36 months could be completed after 21 months already.

In appreciation of this outstanding performance, we were awarded the **Quality in Construction Award 2003 for Research & Development** (see insert with article in the trade magazine „Construction News“ of 26/03/2003).

Research & Development (plant and equipment), sponsored by Intermat

The three finalists in this category varied so enormously in the scope and nature of their projects that the judges were almost at a loss to draw any useful comparisons between them

OLE & Distribution Alliance

This was a remarkable project culminating in the production of a combination of highly specialised machines which, while undoubtedly a piece of construction plant, is far removed from what most people would regard as such.

The train is about 200 m long and comprises a number of discrete components, mainly modified off-the-shelf rail equipment, combined to produce a train that completely revolutionises the renewal of overhead rail power cables. The improvements in productivity and operator safety are enormous and the effect this train will have on the West Coast Main Line is likely to be profound.

The Overhead Line Equipment (OLE) and Distribution Alliance is a joint venture comprising Balfour Beatty Rail, WS Atkins Rail, GT Railway Maintenance and Network Rail (formerly Railtrack). Its incentive for developing the new wiring train was the ambitious renewal programme on the West Coast Main Line: 750 wire runs in two years, or 7.8 runs a week. Existing methods – usually involving the manual installion of cable from the roof of a moving train just a couple of metres away from a live track – were not only very dangerous but also painfully slow.

"We scoured the world to find a piece of equipment to do the job, but there was no one piece of kit. In the end we designed our own solution," says Alliance production manager Terry Walsh.

The Alliance contacted specialist manufacturers – principally the German firm Windhoff, which supplied the engines and most of the rolling stock. An 800 m long replica of the West Coast Main Line track was built at Windhoff's factory to test the train during development.

What the judges said:

"In terms of the magnitude of the achievement, this is phenomenal. How come our rail industry has earned itself such a poor reputation when there's stuff like this going on?"

"A superb application of existing technology."

One of the main criteria for the new train was fast travel speed. With rail privatisation, most of the sidings along the route had been sold off to realise their land values – any re-wiring train had to get off the track quickly at the end of its working day to allow scheduled services to occupy the track, and without the sidings, fast travel speed was vital.

Now fully operational, the new train will complete each single wiring run in 3.25 hours. Not bad compared to the previous average time of 16 hours.

Quality and Service - you can rely on!

Function description of a ZECK catenary installation unit:

Controlled catenary installation is done from the beginning with the final tension force. For the contact wire and the suspension wire different installation forces can be pre-set. The proven ZECK electronic control system (option) guarantees that the desired forces are maintained with a high precision during the entire installation process. Simultaneously with the installation of the new catenary one or several old wires can be wound on special dismountable reels. Individually controllable guiding units for contact wire and suspension wire permit safe and efficient work. The optional loading crane can be used to load and unload the drums.

The constant installation force permits to carry out the different steps in the installation of new catenary or replacement of catenary in one process. This makes the entire unit uniquely economic.

ZECK installation units offer:

- MANY YEARS OF EXPERIENCE from large catenary projects all over the world!
- MADE IN GERMANY for design, production and major parts suppliers
- RELIABILITY and EFFICIENCY – technical basis of our catenary installation systems are the ZECK puller-tensioners for transmission line construction. More than 600 machines of this kind are in operation worldwide.
- CONTAINER FRAME SYSTEM – quick setup on various carrier vehicles. The carrier unit can be used for other jobs when catenary installation is finished. In addition the separability of the carrier unit and the installation unit cuts transport costs.
- TECHNICAL FEATURES:
  1) Exact Tension Measuring System (without touching the wire, independent of kind of wire)
  2) „NO-TWIST System“ consists of:
     - Laterally movable drum stands (automatically controlled)
     - Special groove lining
     - Only 3 grooves on bull wheel
     - One turn direction of contact wire
  3) Optional with programmable control system for more precise control of tensioning force
  4) Device for scrapping old wire, including wire guide and dismountable reels
  5) The bull wheel unit can also be used to pull in wire (up to 3,000 daN)
  6) All drum stands can be used individually – without bull wheel system. The powerful hydraulic drum drive permits to install the contact wire/line feeder/return wire directly from the drum.
  7) Self-powered system and therefore independent of carrier unit
  8) Very easy to operate – only one operator can control the machine, the installation process and optionally also the traction vehicle
  9) Easy and less maintenance work
- CERTIFIED FOR „SIEMENS ICE CONTACT WIRE SYSTEM“

References

Zeck machine type: TBF 20-2W

Projects in England, Germany

max. tension/pull force:	500 daN
max. speed:	5 km/h
drum stands:	1 (max. Ø 2.200 mm)
frame concept:	special designed frame

Zeck machine type: 935

Projects in Germany

max. tension/pull force:	500 daN
max. speed:	5 km/h
drum stands:	1 (max. Ø 1.800 mm)
wire guiding concept:	guiding tower
frame concept:	special designed frame
dimension:	3,5 x 2,5 x 2,5 m

Zeck machine type: 248

Projects in Switzerland

max. tension/pull force:	500 daN
max. speed:	5 km/h
drum stands:	1 (max. Ø 2.200 mm)
wire guiding concept:	--
frame concept:	special designed frame
dimension:	3,0 x 2,4 x 1,3 m

Zeck machine type: 242

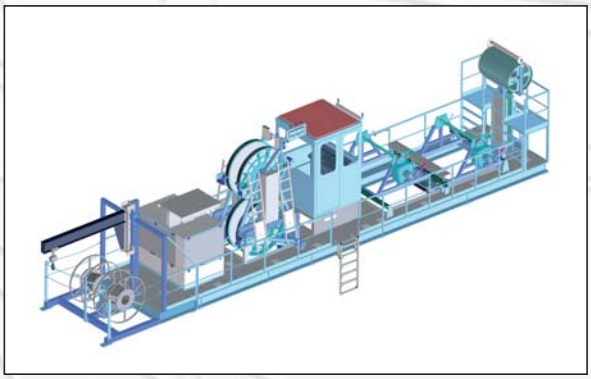
Projects in Germany, Austria, USA

max. tension/pull force:	1.900 daN
max. speed:	6 km/h
drum stands:	1 (max. Ø 2.000 mm)
frame concept:	special designed frame
dimension:	1,6 x 1,9 x 1,2 m

Zeck machine type: 950

Projects in Germany, Austria, CH, LUX, BE

max. tension/pull force:	2x 2.700 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.500 mm
drum stands:	2 (max. Ø 2.000 mm)
wire guiding concept:	guiding tower; hydraulic height adjustable
frame concept:	special designed frame
dimension:	11,5 x 2,5 x 2,7 m



Zeck machine type: 949

Projects in Sweden

max. tension/pull force:	2x 1.800 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.100 mm
drum stands:	2 (max. Ø 1.600 mm)
wire guiding concept:	working platform
frame concept:	20' container frame
dimension:	9,0 x 2,5 x 2,7 m

Zeck machine type: 944

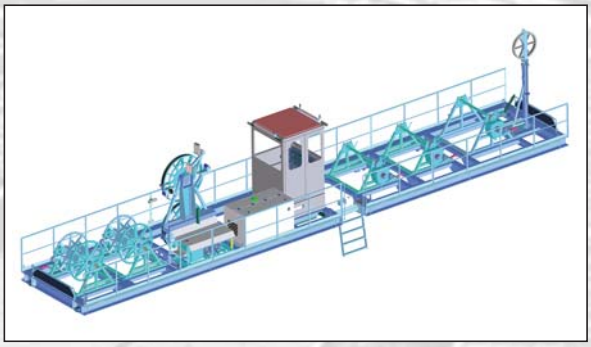
Projects in Germany

max. tension/pull force:	2x 3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.500 mm
drum stands:	4 (max. Ø 2.000 mm)
wire guiding concept:	guiding tower
frame concept:	special designed frame
dimension:	18,4 x 2,5 x 3,5 m

Zeck machine type: 933

Projects in Luxembourg

max. tension/pull force::	1.700 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.500 mm
drum stands:	5 (max. Ø 2.200 mm)
wire guiding concept:	guiding tower
frame concept:	special designed frame
dimension:	18 x 3,1 x 3,5 m



Zeck machine type: 938

Projects in Südafrika

max. tension/pull force:	1.500 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.500 mm
drum stands:	2 (max. Ø 1.800 mm)
wire guiding concept:	guiding tower
frame concept:	special designed frame
dimension:	ca. 6 x 2,5 x 3 m

Zeck machine type: 937

Projects in Spain

max. tension/pull force:	3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.500 mm
drum stands:	4 (max. Ø 2.000 mm)
wire guiding concept:	guiding tower
frame concept:	special designed frame
dimension:	18,1 x 3 x 3,4 m

Zeck machine type: 932

Projects in China

max. tension/pull force:	2 x 3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.500 mm
drum stands:	4 (max. Ø 2.000 mm)
wire guiding concept:	guiding tower
frame concept:	special designed frame
dimension:	15,3 x 3,1 x 3,4 m

Zeck machine type: 931

Projects in Taiwan

max. tension/pull force:	1.500 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.500 mm
drum stands:	2 (max. Ø 1.800 mm)
wire guiding concept:	guiding tower; hydraulic height adjustable
frame concept:	special designed frame
dimension:	12 x 2,5 x 2,7 m

Zeck machine type: 925

Project: ICE München-Nürnberg, Germany

max. tension/pull force:	3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.500 mm
drum standse:	2 (max. Ø 1.800 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	20' container frame
dimension:	9 x 2,5 x 2,7 m

Zeck machine type: 924

Project: ICE Spain

max. tension/pull force:	2 x 3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.100 mm
drum stands:	2x 4 (max. Ø 1.800 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	2x 40' container frame
dimension:	12,5 x 2,5 x 3,1 m (2x)

Zeck machine type: 921-900

Projects in Sweden

max. tension/pull force::	2 x 2.000 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.100 mm
drum stands:	2 (max. Ø 1.800 mm)
wire guiding concept:	crane type with guiding roller units
frame concept:	20' container frame
dimension:	6,3 x 2,5 x 2,7 m

Zeck machine type: 921-500

Projects in Switzerland

max. tension/pull force:	3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.100 mm
drum stands:	2 (max. Ø 2.000 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	20' container frame
dimension:	7 x 2,5 x 2,6 m

References

Zeck machine type: 921

Projects in Germany

max. tension/pull force:	3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.100 mm
drum stands:	2 (max. Ø 2.000 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	20' container frame
dimension:	6,3 x 2,5 x 2,6 m

Zeck machine type: 920

Projects in the Netherlands

max. tension/pull force:	2 x 3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.500 mm
drum stands:	2x 2 (max. Ø 1.800 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	20' container frame
dimension:	7,6 x 2,5 x 2,9 m

Zeck machine type: 915

Project: ICE Köln-Rhein/Main, Germany

max. tension/pull force::	3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.100 mm
drum stands:	2 (max. Ø 1.600 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	20' container frame
dimension:	6,3 x 2,5 x 2,9 m

Zeck machine type: 916

Project: TGV in South Korea

max. tension/pull force:	2 x 3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.100 mm
drum stands:	2x 3 (max. Ø 2.000 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	20' container frame
dimension:	17 x 3 x 2,4 m

Zeck machine type: 914

Projects in England

max. tension/pull force:	2.000 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.100 mm
drum stands:	1 (max. Ø 2.100 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	20' container frame
dimension:	6,0 x 2,5 x 2,5 m

Zeck machine type: 913

Project: TGV (Seoul-Pusan), South Korea

max. tension/pull force:	2 x 3.000 daN
max. speed:	5 km/h
number of bull wheel unit:	2 set / Ø 1.100 mm
drum stands:	2 (max. Ø 2.000 mm)
wire guiding concept:	crane type with 2 guiding roller units
frame concept:	special designed frame
dimension:	9 x 3,1 x 2,2 m

Zeck machine type: 912

Project: West Coast Main Line, England

max. tension/pull force:	1.400 daN
max. speed:	7 km/h
number of bull wheel unit:	--
drum stands:	2x 3 (max. Ø 1.800 mm)
wire guiding concept:	2x guiding tower
frame concept:	2 x 30' container frame
dimension:	19 x 2,8 x 2,9 m

Zeck machine type: 911

Project: West Coast Main Line, England

max. tension/pull force:	2.000 daN
max. speed:	5 km/h
number of bull wheel unit:	1 set / Ø 1.100 mm
drum stands:	4 (max. Ø 2.100 mm)
wire guiding concept:	guiding tower+platform with guiding system
frame concept:	2 x 30' container frame
dimension:	19 x 2,8 x 2,9 m

Zeck machine type: 906

Projects in Taiwan

max. tension/pull force:	2 x 1.400 daN
max. speed:	7 km/h
number of bull wheel unit:	2 set / Ø 1.100 mm
drum stands:	2 (max. Ø 2.000 mm)
wire guiding concept:	crane type with 2 guiding roller units
frame concept:	special designed frame
dimension:	9 x 2,6 x 2,4 m

Zeck machine type: 905

Project: TGV (Seoul-Pusan), South Korea

max. tension/pull force:	2 x 3.000 daN
max. speed:	4 km/h
number of bull wheel unit:	2 set / Ø 1.100 mm
drum stands:	2 (max. Ø 2.000 mm)
wire guiding concept:	crane type with 2 guiding roller units
frame concept:	complete frame is slewable
dimension:	9 x 2,6 x 2,5 m

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