

# Swiss Quality Railway Technology





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**The manufacturer reserves the right  
to make technical alterations at any time.**

# **Faster, heavier, safer**

Ever faster and heavier high speed trains and stricter international safety regulations extend the requirements of the interface between wheel and rail. Nencki has made continual progress in railway technology and is now one of the leading international suppliers regarding technical quality and service. The range comprises technologically innovative solutions both for bogies and long welded rails.

Precisely adjusted, tested bogies guarantee optimum running characteristics. Seamless, smooth rail transitions enhance the safety for passenger and freight traffic and improve travelling comfort thanks to greater smoothness of running and a lower noise level, the considerably longer lifespan also reduces maintenance costs and ensures rapid amortization.

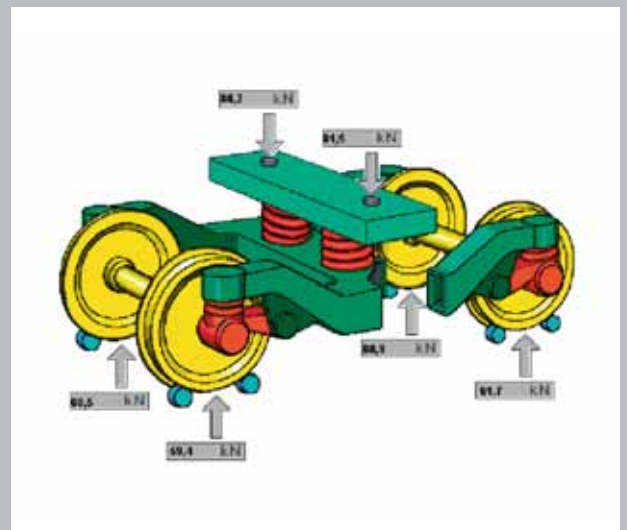


# Testing and maintenance

## Bogie testing and maintenance

### Leading technology by international standards

Nencki, attributable to many years of experience, has acquired great know-how in bogie and spring testing and is familiar with the various requirements and standards of its international customers. Nencki installations are used for efficient and simple operational checks in many maintenance workshops. Thanks to electronic data storage, complete traceability is assured indefinitely. Nencki also intends to play a leading technological role in comprehensive testing and maintenance concepts in the future. The new wheel weighing facility with twisted track is a step towards «conditions based maintenance».





## Bogie test stands

# Modular test stands for individual requirements

Nencki is the world's leading manufacturer of bogie test stands, some of them with complex functions, such as the testing of tilting and wheel steering bogies. Our customers include rolling stock manufacturers, railway maintenance companies and transport enterprises. The range consists of a modular system. A bogie test stand can be equipped to suit individual requirements. The distribution of wheel loads, axle distances, spring deflections etc. is measured and recorded fully automatically on the PC-based control system.

### Worldwide service

Based on its own sales and service engineers and on experienced sales and service partners worldwide, Nencki stands for first rate advice as well as quick and competent support in all stages of a project.



### Technical data

Solutions: from 2 x 150 to 2 x 600 kN  
 Number of axles: 2 or 3  
 Track gauges: fixed or 850–1676 mm



## Spring test presses For tough railway conditions

A well sprung suspension is crucial for the perfect functioning of a bogie. Both axial (vertical) and transverse (lateral) spring stiffness can be determined with the Nencki spring test press NST. The determination of a spring bowing and the corresponding alignment when fitted to the bogie prevent the increase of lateral forces under load. The running performance and derailment factors are thereby considerably improved.

### Long-term service life

The various Nencki spring test presses were not developed for the motor industry but specifically for the requirements of the railway industry and for both maintenance workshops and bogie and spring manufacturers. They are noted for their robustness in use under toughest conditions and their design for prolonged service life. The user can himself devise individual programs on the PC-controlled machine and create individual test programs as well as store results and parameters.



### Technical data

Test loads: versions 100 kN, 200 kN, higher on request  
Types of spring: helical, rubber-metal and leaf springs

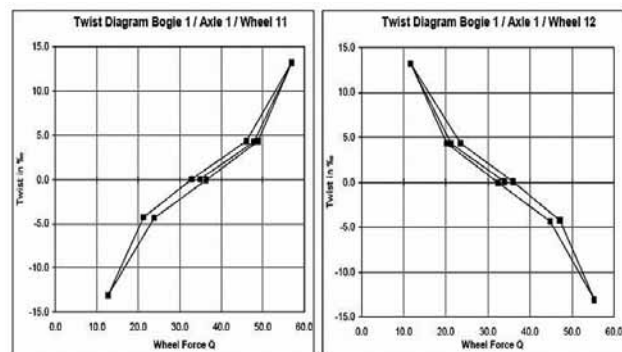


## Wheel weighing facility with twisted track Testing in a half hour

The Nencki wheel weighing facility NWW is the perfect equipment for innovative «conditions based maintenance». Without prior dropping of the bogies, the bogie suspensions of a car can be tested in less than half an hour with a twisting track in the workshop. Depending on the resulting derailment safety, the vehicle is maintained or can continue to remain in operation. This contributes substantially to cost reduction as expensive components are not replaced after a prescribed number of kilometres but only after they are worn out.

### Fully automatic test

The fully automatic, PC controlled test is based on the EN 14363 standard and can be carried out in 15–30 minutes.



### Technical data

Test according to EN 14363  
Duration of test: approx. 15-30 min.

## Bogie presses Simple assembly



Nencki bogie presses allow bogie manufacturers and maintenance workshops uncomplicated assembly and dismantling. As a specialist in technically leading test stands, the company has valuable experience and also makes the highest demands of stability and user-friendliness for bogie presses.

### Adjustable horizontal beam

The bogie press NBP is also available with a height-adjustable horizontal beam. Bogies with great overall heights can be handled. Nencki offers bogie presses for loads of 2 x 150 kN or 2 x 250 kN.

## Mobile assembly press Simple spring assembly



The mobile assembly press NSP M was specially developed for bogie construction and maintenance. With it the primary spring can be efficiently and ergonomically assembled or dismantled.

### Technical data

**Press cylinder**  
Force: 100 kN  
Stroke: 250 mm

**Height adjustment cylinder**  
Force: 100 kN  
Stroke: 300 mm



## Bogie lifting devices Ergonomics in practice



The Nencki lifting device NBL enables safe and ergonomic working on a bogie in the maintenance workshop. It is lowered into the ground and requires only a minimal foundation. After the bogie is rolled on the lifting table at ground level, the bogie or individual wheelset can be raised continuously by hydraulics. Narrow lifting columns and an open platform frame ensure excellent accessibility.

### Technical data

Maximum lifting height 2000 mm  
Fixed gauge, to be specified  
Suitable for two-axle bogies of up to 12 t

## International references

Alstom	New Delhi Metro
BLS Switzerland	Peking Metro
Bombardier	Pesa Poland
CNR China	RCF India
CRH China	RhB Switzerland
CSR China	RNV Mannheim
Deutsche Bahn	SBB Switzerland
Gredelj Zagreb	Siemens
KVG Germany	SNCF
MTR Hong Kong	Stadler Rail
Mumbai Metro	



# Rail processing

## Machines for rail welding plants

### Complete production line with a long life span

Nencki machines for rail processing in stationary welding plants for long welded rails are in operation all over the world. The range includes the machinery and equipment before and after the welding process with a brushing machine, grinding machine, 4-way straightening press and test press for welded joints. Nencki is able to design and supply complete rail welding plants including rail transportation equipment and integration of all involved control systems. Nencki equipment has a long lifespan. In numerous welding plants, over twenty year old machines continue to function reliably and require little maintenance.





## Rail end brushing machines Threefold rust treatment

Rust must be completely removed from rails before welding. Cleaning increases conductivity at the places where welding electrodes are applied. This enables faster and better welding.

### Unique in the world

The Nencki rail end brushing machine NRB is the only equipment which cleans rail ends, rail top and bottom fully automatically with three brushes. The efficient dust exhausting system ensures a dust free working environment. The completely removable machine housing allows high accessibility for maintenance. Thanks to already installed interfaces, the brushing machine can easily be integrated in the safety concept of the adjacent rail transport system.



### Technical data

Suitable for rail profiles up to UIC 68  
Process time: 2–3 min.  
Number of brushes: 3



## Rail grinding machines Smooth rail joints

The Nencki rail grinding machine NRG is used to remove the welding burr and to guarantee a smooth joint of the welded rails. The exact profile of the rail head is reproduced. With dimensions of 4 x 2.5 meters, the NRG is the most compact grinding machine on the market.

### **Semi- or fully automatic**

As an option, the fully automatic grinding mode allows the use of the machine without operator. Thanks to a video camera and a separate control desk, the grinding process can be supervised from another workstation. The integrated laser system allows quick and accurate measuring of the rail head surfaces as a help during the grinding process and as a final quality check. The efficient dust exhausting system ensures a dust free working environment. Thanks to already installed interfaces, the grinding machine can easily be integrated in the safety concept of the adjacent rail transport system.



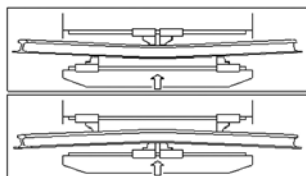
### **Technical data**

Suitable for rail profiles up to UIC 68  
Grinding time up to approx. 240 Sek.



## 4-way rail straightening presses Alignment to the nearest tenth of a millimetre

With the Nencki 4-way straightening press NRS-4 rails in the area of the welded joint can be precisely straightened horizontally and vertically to the nearest tenth of a millimetre. The distance between the press tools is adjustable. Therefore, even small unevenness can be equalized.



### Data storage

Touch screen and joystick secure ergonomic operation of the straightening press. The integrated laser system allows quick and accurate measuring of the rail straightness as a help during the straightening process and as a final quality check. The measuring results can be stored in the data base of the PC-based control system and retrieved at any time. Thanks to already installed interfaces, the straightening press can easily be integrated in the safety concept of the adjacent rail transport system.



### Technical data

Suitable for rail profiles up to UIC 68  
Process time 3–5 minutes



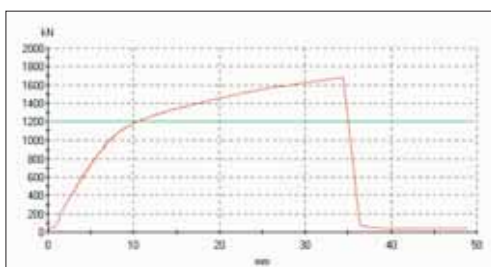
## Test presses for welded joints

### Bending test for welded joints

With the Nencki test press for welded rail joints NRT, the quality of welded rail samples can be determined by destructive testing. A hydraulic cylinder is bending the rail sample until it breaks. The PC-based control system automatically records the force-stroke diagram of the test procedure.

#### Testing piston

Depending on the applied test standards, a piston with one or two load application points is used. The standard press offers a test load of 2000 kN. For high rail profiles or tests with two load application points, a model with 3000 kN load capacity is available.



#### Technical data

Executions 2000 or 3000 kN

Distance between points of support 1000 mm, others on request

## Mobile straightening presses Reliable and stable



With the Nencki mobile rail straightening press, rails and switch blades can be straightened or curved on the railway track or in the workshop.

## International references

Balfour Beatty UK	MOR China
Bhilai India	PKP Poland
Corus Rail UK	QR Queensland Rail Australia
CRCC China	Redalsa Spain
CREC China	SNCF
Deutsche Bahn DB	SNIM Mauritania
Japan Railways	Steel Dynamics USA
Jindal Steel India	Thyssen Krupp
MAV Hungary	Voest Alpine

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