HZM Force-Measuring Device

Measuring Forces on Point-Setting Systems

HANNING & KAHL

HZM Force-Measuring Device

Approval for use awarded by Deutsche Bahn Netz AG

As a compact integration of a force-measuring pin and display device, the newly developed HZM force-measuring device provides everything you need for measuring forces on the point-setting systems.

The handy, ultra-light and versatile measuring device with extensive accessories has been awarded approval for use by Deutsche Bahn Netz AG. In addition, as manufacturer of the HZM force-measuring device, we have been certified Q1 supplier by the Deutsche Bahn. Compact design, simple operation, large memory, high degree of protection, long operating time make the HZM a reliable instrument, especially when in continuous use. The setting force, setting resistance and the holding force can be measured precisely, conveniently and swiftly.

In combination with all different kinds of force-measuring pins, the universal HZM force-measuring enables further versatile force-measuring possibilities not just on the points and point machines.

The HZM force-measuring device for force testing on point machines

Force-measuring pins

The tedious task of calibrating measuring pins before each measurement is now a thing of the past. An EEPROM memory in the connector of the force-measuring pin stores the calibrating values, manufacturer data, and more. The intelligent solution prevents incorrect commissioning of the measuring pin by the operator. Locking the pin ensures measurements can be made safely when trains are crossing points.

We offer force-measuring pins for Deutsche Bahn point machines and other makes of point machines as well as for HANNING & KAHL point machines. We send you the connecting cable, locking plates, locking pin or extractor tools for all force-measuring pins.

Force-measuring pins store the calibrating values and manufacturer data

HZM IIS-coupling module

With the help of the HZM IIS-coupling module, data can be exchanged between the HZM integrated inspection system (IIS) database system used by Deutsche Bahn. The HZM can use the export files from IIS for measurements and it can provide the measuring results in an import file for the IIS.

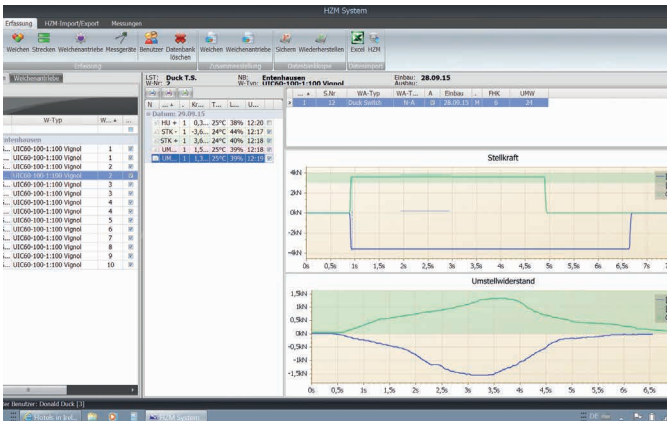
HZM Force-Measuring Device Technical Data
Internal memory 2 GB
Power supply via internal accumulator (standard), Extension with external accumulator module possible
Charging device AC 110-230V 50/60Hz Charging device DC 12-30V /Plug matching the cigarette lighter
Interface USB
Connection of external data memory possible (for example USB stick)
LC-display 64 x 128 pixel
Temperature and humidity measurement
Protection class IP 54

HZM Force-Measuring Device

Q1 supplier by the Deutsche Bahn

HZM System

The Windows-compatible diagnostic software offers an extensive range of helpful and convincing tools. Project-related information on location, manufacturer, type, year of construction, year of installation can be easily managed and stored for further evaluation. Graphic representation of the forces measured, the overlap of the force curves and comparison with the nominal-actual values enable vital and extensive evaluation.



Comprehensive function test for each point machine

Force-measuring devices set

When you choose a HZM set, you receive a transportation case fitted with all the accessories necessary for force measurement for special applications:
- HZM force-measuring device with charging device
- Data memory for evaluation
- PC software
- Force-measuring pin with locking pin
- Locking plate
- USB cable
- Documentation
- Transportation case

Example: HZM force-measuring device set

Accessories

We supply extensive accessories for the HZM force-measuring device:
- External accumulator module
- Printer
- Charging devices for different voltages
- USB cable
- Force-measuring pin for different applications

Transportable printer for print-out of measuring values on site

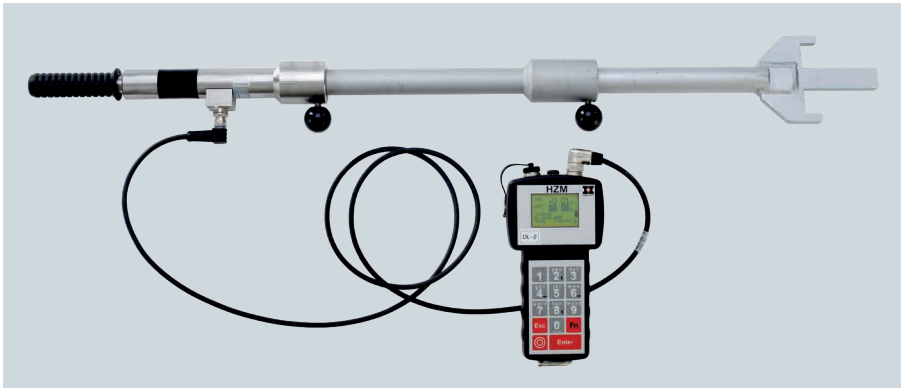
HZM Force-Measuring Device

Options

Measuring setting lever

The measuring setting lever is for measurement of manual setting forces on all HANNING & KAHL point machines. The setting force required for the setting procedure is represented digitally on the HZM force-measuring device. A manual setting force up to 2,000 N can be measured with the measuring setting lever. The three-part measuring setting lever has a total length of 1,000 mm.

A universal attachment ensures compatibility of different lever boxes.



Measuring setting lever with universal attachment

Force-measuring device HZM with measuring setting lever in a robust transportation case

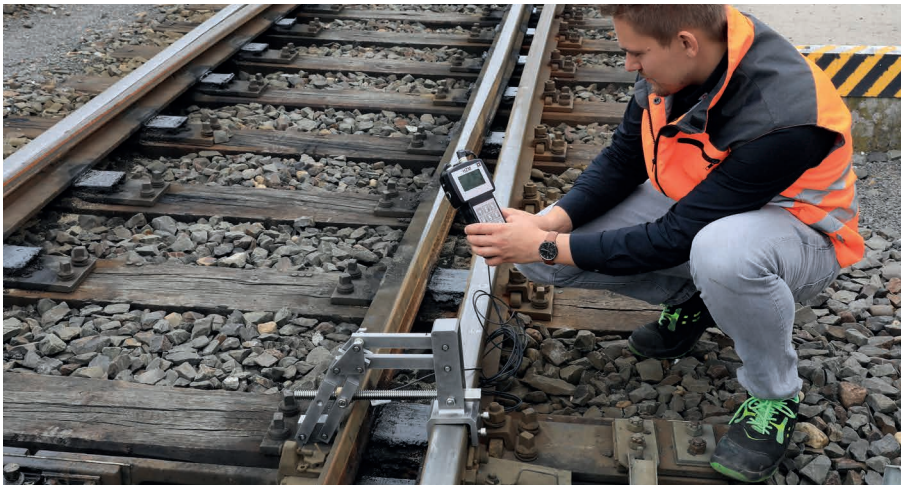
Technical data measuring setting lever	
Length	1,000 mm
Width	105 mm
Height	70 mm
Weight	9.5 kg
Max. force measured	2,000 N
Protection case	IP67

Trailing tool

The real trailing resistance can be measured with the help of the trailing tool, integrating the tongue forces (friction, etc.). The pressure sensor on the pressure piece determines the trailing resistance of the overall system (point + point machine).

If only the holding force of the point machine is to be measured without integration of the tongue forces using a classic measuring pin in the drive rods, the device can be supplied as an option with just a pressure piece and without sensors.

The device is mounted in vertical and in horizontal direction from the upper side of the track and does thus not require any free space on the underside of the track.



Trailing tool for measurement of the holding force

Trailing tool in a robust transportation case

Technical data trailing tool	
Length	350 mm
Width	250 mm
Height	90 mm
Weight	7.5 kg
Max. force	15 kN
Protective case	IP67

HZM Force-Measuring Device

Service

Calibration

At HANNING & KAHL, we calibrate HZM force-measuring devices, force-measuring pins and their measuring chain for our customers. A well-devised calibrating process (in compliance with DIN376) guarantees rapid turnaround with a high quality standard.

The result of the calibration is confirmation that the current measuring precision complies with manufacturer specifications. If the deviations on the tested force-measuring devices or measuring pin are too large, they are newly adjusted. The calibrating results are automatically read into the HZM force-measuring device, and thus the HZM and the measuring pin are immediately ready for operation again. Along with each device, customers receive a factory-issued calibration certificate and the calibrating results are stored in our testing-equipment management system. We also offer this service for the safeTEC force-measuring device supplied by VTEC GmbH.*

All services at a glance:

- Factory calibration by an accredited test facility in compliance with German DAkkS standard
- Factory calibration certificate
- Archiving of calibrating results in testing-equipment management system
- Replacement of accumulators and batteries
- Software update
- Visual check
- Cleaning

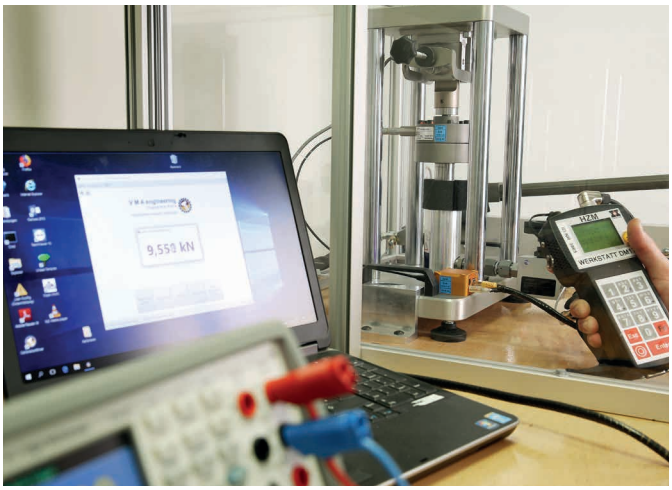
Use our convenient and fast pick-up service. Visit our homepage to arrange our pick-up service for your force-measuring devices and pins which are defective and due for calibration.

Software update

A software update is performed to ensure the availability of all software optimisations of the HZM force-measuring device and the HZM system. The HZM force-measuring device and the corresponding force-measuring pin are required for the purpose.

This software update is performed free of charge on every calibration. The accumulators of the HZM measuring device are also replaced.

**no calibration of safeTEC force-measuring pins used by DB Netz AG*



Calibration process in compliance with DIN376

Compilation of a measuring protocol

Certified measuring technology guarantees a high quality standard

HZM force-measuring device

Service

Training

Every time a new HZM measuring device is purchased, our service includes one-off training at no extra cost. In around three hours, we demonstrate the general functions of the device on site (to customers in Germany). These include measurement on an electric point, loading of the measuring data, correct selection of the measuring values and transfer of measuring data.

Individual training on customer premises

Training workshops

Along with our HZM force-measuring device, we offer you 2-day training workshops on our premises. Visit our Internet website service.hanning-kahl.de for information, dates and registration.

To record the proper status of point machines, force-measuring systems like the HZM are used following commissioning, inspection and repair work. With this measuring technology, values of setting and holding forces like tongue tensions can be recorded and stored on site. These measurements can be evaluated later on the PC with the diagnostic software in a database.

Participants are first given theoretical fundamentals of measuring technology and value recording; the individual components of the measuring system and the handling of the HZM diagnostic software are presented. In the hands-on part, the application of the measuring technology can be practised on different point machine systems. Flat-bottom and grooved-rail devices are available in our training centre for the purpose.

On-site instruction

As the operating software is available in two different versions on the HZM force-measuring device, we offer one training workshop for deployment in mainline (EBO) operations and another for deployment in light rail (BoStrab) applications. While the mainline (EBO) training workshop concentrates on menu guidance and export functions of the database in compliance with Deutsche Bahn standard, BoStrab training focuses on BoStrab specifications.

Pick-up service

We offer you a pick-up service for the calibration of the following measuring devices and pins:
- Calibration of the safeTEC measuring device
- Calibration of the safeTEC measuring pin
- Calibration of the HZM force-measuring device
- Calibration of the HZM measuring pin
- Cable repair incl. calibration of the HZM measuring pin

We calibrate your equipment and return it to customers (in Germany) after ten workdays. Start the pick-up service on our Internet website at: **hzm.hanning-kahl.de.**

Calibration within 10 workdays

HZM force-measuring device

Delivery program and contact

HZM force-measuring device sets	
HZM Set 1	with force-measuring pin 24 mm and 25 mm
HZM Set 2	with force-measuring pin 25 mm
HZM Set 3	with force-measuring pin 24 mm
HZM Set 4	with force-measuring pin 22 mm
HZM Set 5	with measuring-setting lever


HZM force-measuring device and accessories	
Force-measuring device HZM	Universal force-measuring device for all applications
Transportation case	Robuster Transportkoffer, Schutzart IP67
Printer	Bluetooth-compatible printer with belt bag to print the data on site
External accu module	Accumulator module which can hold 6 AA batteries, extension of internal accu.
Charging device AC 230V	Charging device with power pack
Charging device DC 12-30 V	Motor vehicle charging device for cigarette lighter
USB cable	USB cable for connection with the PC and printer
HZM system software	Windows-compatible diagnostic software with numerous tools
Trailing tool	Trailing tool in a robust transportation case, protection IP67
Measuring setting lever	Measuring-setting lever for measurement of manual setting









Force-measuring pin for heavy-rail point machines	
Force-measuring pin 25 mm	for deployment on the drive rod incl. locking plate and locking pin
Force-measuring pin 24 mm	for deployment on the adjusting rod incl. locking plate and locking pin


Force-measuring pin for HANNING & KAHL point machines	
Force-measuring pin 18 mm	for point machines of the 40 and 42 series incl. connecting cable and locking plate
Force-measuring pin 22 mm	for point machines of the 60 and 61 series incl. locking plate and extractor tool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