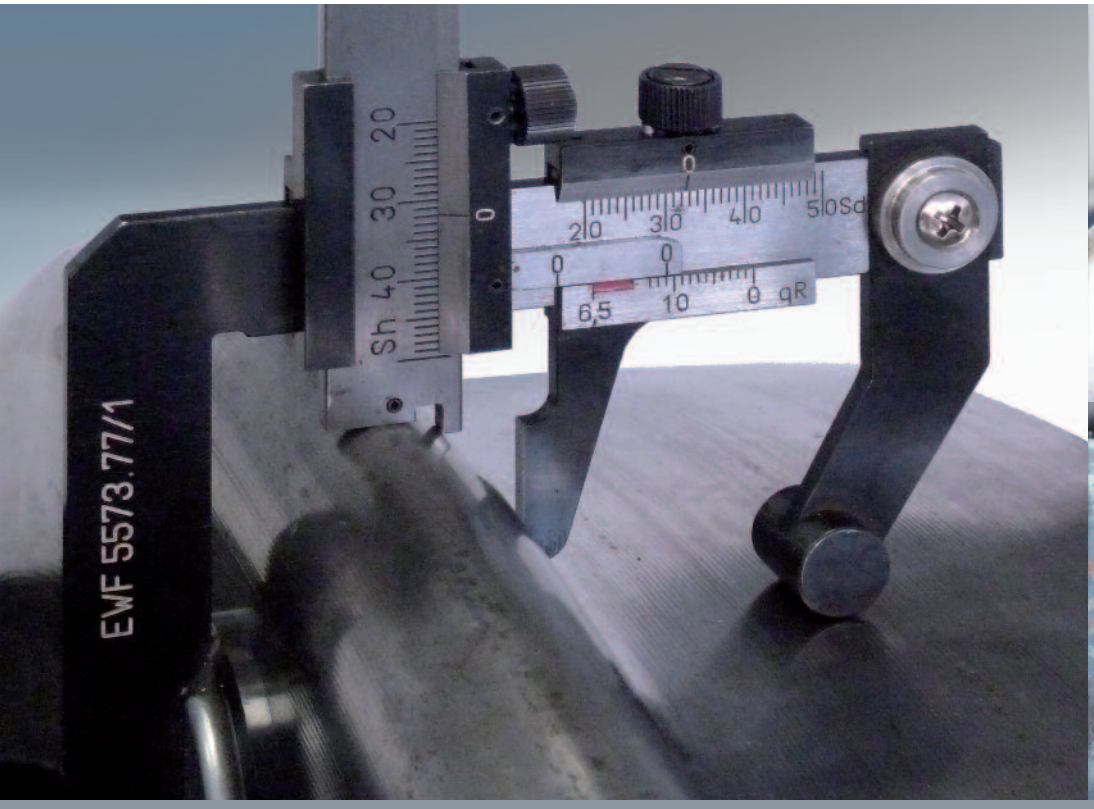


Rail Depot Measuring and Testing Equipment

Quality Assurance of Precision Measuring and Testing Equipment

inspect

measure

calibrate

test

evaluate

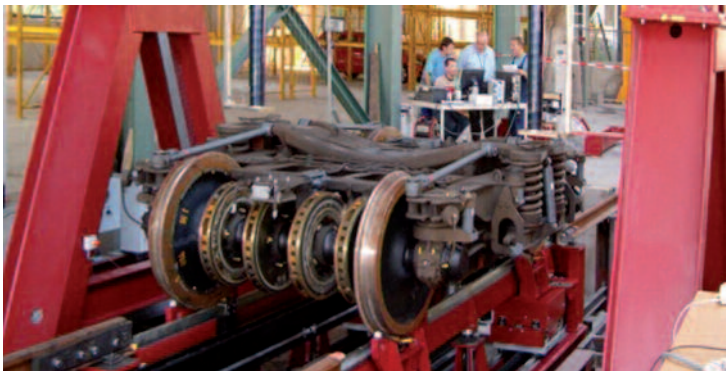
DB Systemtechnik

Robust - precise - depot capable:

Our measuring and testing equipment

DB Systemtechnik

Expertise in
measurement technology



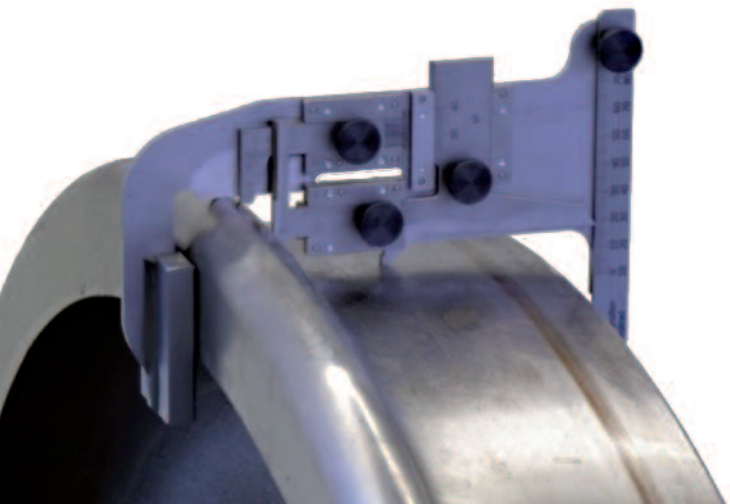
DB Systemtechnik has assumed the task of furnishing rail vehicle and infrastructure manufacturers, operators and maintenance providers with maintenance depot-capable, durable, repairable and precise rail depot measuring and testing equipment.

This is because reliable rail vehicles and infrastructure are elementary prerequisites for achieving a high level of customer satisfaction in public rail passenger transportation and rail-borne freight transport.

To assure permanent availability of the principal components belonging to the rail mode of transport, strict requirements must be fulfilled in the manufacture of new rail vehicles and infrastructure. Furthermore, conformity assessments and maintenance activities are performed on a permanent basis during rail operations.

In most cases, an objective functional test, normally in the form of measurements, can be used to determine or verify whether minimum dimensions in service have been adhered to or whether production or maintenance targets have been met in a particular case.

Benefit, therefore, from the unique expertise invested in rail depot measuring and testing equipment, in engineering and production, assessment, calibration, as well as adjustment, repair and administration of measuring and testing equipment.



EWF

Contents

Rail depot measuring and testing equipment catalogue

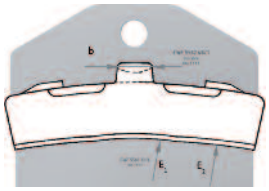
As at September 2016

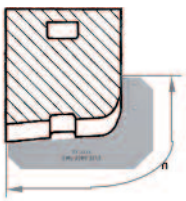
Our rail depot measuring and **testing equipment range**

The rail depot measuring and testing equipment offered ranges from equipment for all standard railway track gauges to trams and secondary lines. The generic term rail depot measuring and testing equipment stands for several kinds of measuring and testing equipment:

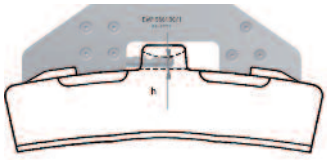
- Measuring equipment
- Testing equipment
- Measuring and testing tools
- Devices

This catalogue provides an overview and contains an excerpt from our product range. Additions are constantly being made to our product range. On the one hand, new rail vehicles are being developed on a permanent basis. In many cases, they call for testing and inspection of specific characteristics, which have to be detected reliably without much effort under depot conditions. On the other hand, the measurement conditions on familiar rail vehicles may change to such an extent that measurements can no longer be conducted meaningfully. In both cases, our engineers will find a solution for your measuring and testing task.

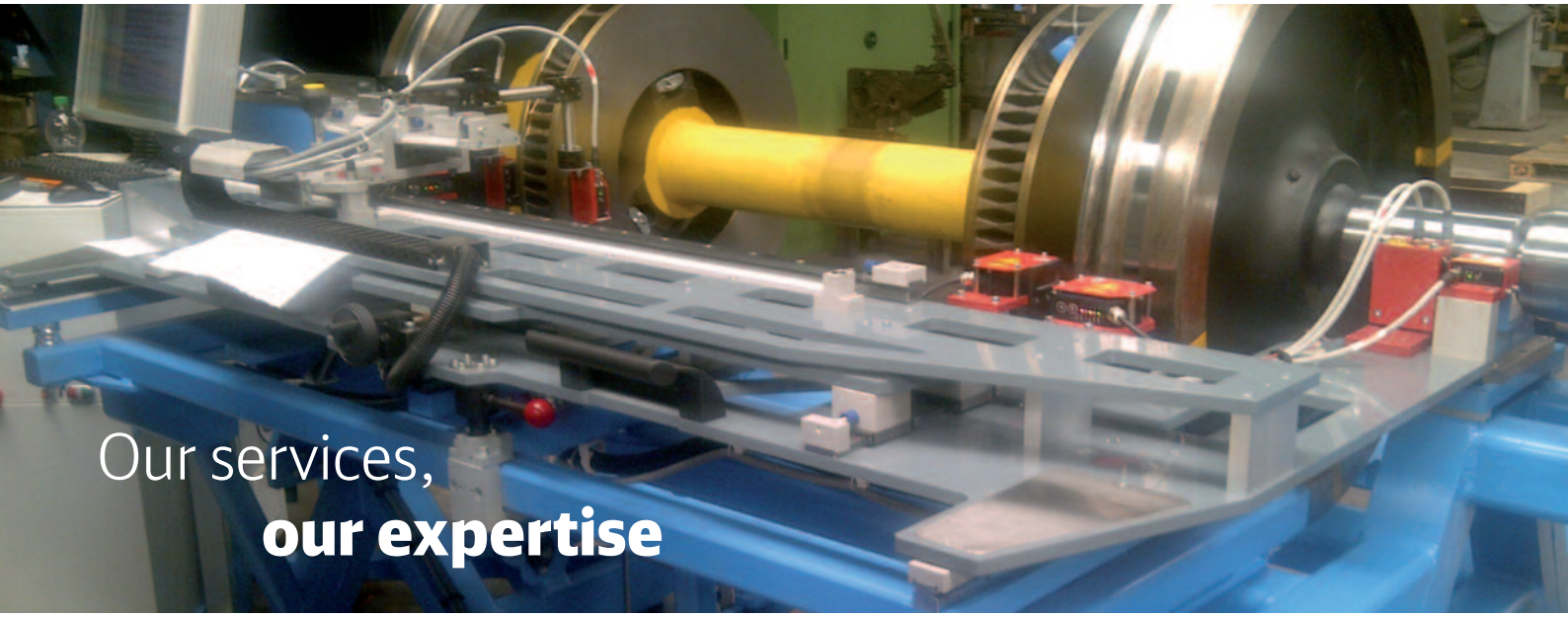




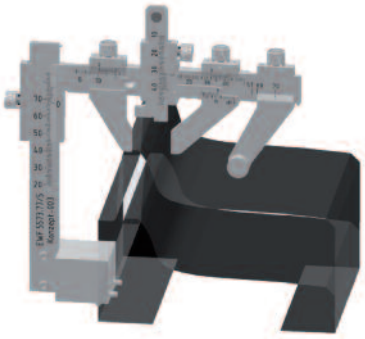
Is an item of rail depot measuring and testing equipment suitable for its intended purpose?
This question must be answered before a new measuring and testing device is procured. Besides considerations regarding clearances on a measured object and handling of measuring equipment, special attention must be paid to the issue of measurement uncertainty under working conditions. This must be known (DIN EN ISO 10012) and be suitably commensurate with the tolerance defined for the characteristic to be tested.



For every item belonging to our rail depot measuring and testing equipment, we can provide realistic details of measurement uncertainty under production conditions, enabling a well-founded decision for or against using a certain item of equipment. If none of our listed products should comply with your requirements, our engineers will be pleased to develop a solution for your specific measuring task.



Our services, **our expertise**



Design and production

Rail depot measuring and testing equipment is characterised by its robust and durable design and ease of handling when it comes to determining typical railway parameters. Thanks to its resilient design, it exhibits only very slight deviations under maintenance depot conditions, and can be deployed under virtually any circumstances. Besides supplying rail depot measuring and testing equipment, we offer:

- Calibration, adjustment and repair of rail depot measuring and testing equipment
- Development and enhancement of measuring equipment and auxiliary devices
- Measurement and auxiliary equipment for railways, trams and secondary lines
- Determining measurement uncertainty for measuring and testing equipment
- Consulting on possible uses and alternatives

Selected areas of application for rail depot measuring and testing equipment:

- Wheelset and bogies
- Buffing and draw gear
- Vehicle body and construction gauge
- Track superstructure with rail

Calibration and testing

(Monitoring measuring and testing equipment in accordance with DIN EN ISO 17025)

Throughout Europe, repair and maintenance depots in the areas of rolling stock, track superstructure as well as control-command and signalling benefit from our measurement and calibration expertise. Renowned device and machine manufacturers regularly trust in us to confirm the quality of their products:

- Calibration service for universally applicable typical railway measuring and testing equipment
- Calibration service for machines, systems and measuring stations
- Development of calibration and test procedures for specific applications
- Adjustment and repair options for measuring and test equipment

To assure the quality of our calibration procedures, the bulk of our laboratories and processes possess DAkkS accreditation.

Procedures for	Test procedures/quantities	Measurement/testing range
Length measurements	▮ Gauge blocks* ▮ One, two and three-coordinate measurement procedures ▮ Laser interferometer and laser tracker ▮ Testing optical devices	0.5 mm – 1,500 mm Up to 30,000 mm Alignment telescopes Levelling instruments Total stations Autocollimators
Pressure measurements *	▮ Fundamental procedure with piston pressure gauge ▮ Indirect gauging method with transmitters and pressure gauges with an elastic measuring element	120 mbar – 1,200 bar 120 mbar – 1,000 bar
Force measurements *	▮ Direct gauging methods with sensors for force (tension and pressure)	50 N – 3,000 kN
Torque measurements *	▮ Direct gauging methods with sensors for torque	10 Nm – 3,000 Nm
Electrical measurements	▮ Voltage* ▮ Amperage* ▮ Resistance* ▮ Frequency * ▮ HF power ▮ Vertical oscilloscope deflection * ▮ Horizontal oscilloscope deflection *	10 mV – 50 kV 100 µA – 300 A 1 m Ω – 1 G Ω 0,1 Hz – 1 GHz 5 mV – 200 V 1 ns – 5s
Other physical quantities	▮ Temperature * ▮ Capacitance ▮ Time interval * ▮ Speed (rpm)	-30 °C – 500 °C 1 pF – 0,1 F 1 ms - 1,000 s
Services at customer's location	▮ One, two and three-dimensional length measurements ▮ Torque, pressure and force measurements ▮ Electrical measurements ▮ Machine and process tests/inspections	

* **With DAkkS accreditation**
For details of the scope, see the appendix to the accreditation certificate D-K-11081-02-00 at www.dakks.de

Inspection, measurement and assessment
(Proof of suitability of measuring and testing equipment and measurement processes)
For defined characteristics and measurement tasks, manufacturer-independent measurement uncertainty statements are determined in accordance with JCGM 100:2008 ("GUM"), among others, for measuring equipment and measurement processes. Taking the requirements into account, measurement processes are assessed on this basis to determine their suitability for the intended purpose:

- Assessments to verify metrological suitability
- Inspection and evaluation of complex measurement processes
- Detecting and evaluating the essential causes of errors of measurement
- Consulting on potential for improving measurement systems and processes
- Training on measurement basics and typical rail test procedures

ilac-MRA DAkkS Deutsche Akkreditierungsstelle D-K-11081-02-00 DNV·GL

Catalogue structure and **important notes**

EWF

General notes

This catalogue serves to enable a clear search for rail depot measuring and testing equipment. Due to the large amount of information, the specifications of individual products are only reproduced to a limited extent in this catalogue. Equally, notes on one-off production or on using measuring and test devices are only assigned to their relevant product groups.

Therefore, please contact our sales department if you wish to obtain more detailed information or advice on specific measurement or testing tasks. Sales staff will assist you with additional details and application notes when it comes to selection and ordering. For specific measurement or testing tasks, our engineering department is at your disposal if you wish to clarify certain product characteristics or discuss an adapted engineering design.

Catalogue structure

Systematic classification	In this catalogue, measuring and test equipment is grouped together in chapters according to the measurement task
Index	An index making it easier to find pertinent measuring or test equipment according to its EWF number can be found at the end of the catalogue
Key word indexs	A key word index at the end of the catalogue will help you to search for certain equipment according to a measurement or testing task or characteristic.

Notes on ordering and contact details

Due to the fact that products are designed with a specific customer or application in mind, the catalogue does not list any detailed prices or ordering information. Therefore, you are kindly asked to contact our sales or development department so we can draw up bids tailored to your needs.

Sales contact:
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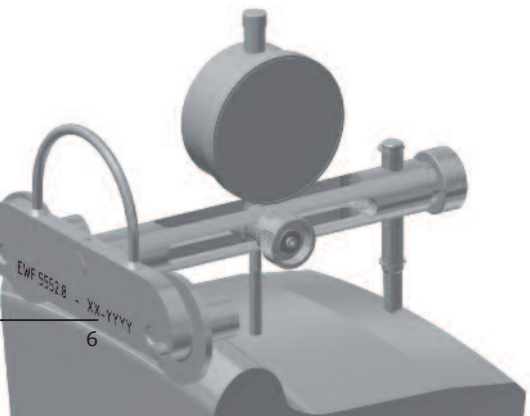
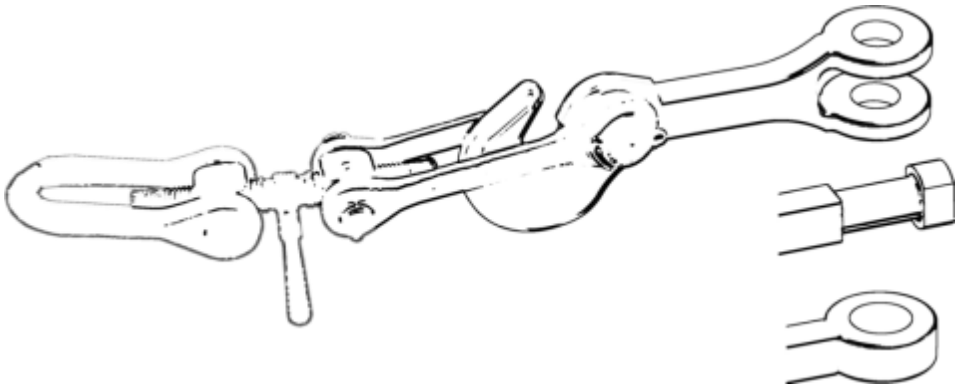


Product overview

EWF 5500.2 Overview of EWF equipment for draw gear parts



Use:

- Testing the minimum dimension in service on parts of the draw gear such as draw-bars, pull rods, pull rod connecting parts, draw-bar guides, looped coupling links, coupling fish plates, coupling nuts, coupling spindles and sleeve shell halves

Inspection characteristics:

- Inspection characteristic of draw-bars, pull rods ans pull rod connecting parts:

Num.	Dim.	Characteristic	EWF
1	s_1	bore hole wall thickness on the draw-bar jaw	5562.15
2	s_2	shaft thickness of the draw-bar	5562.16
3	n	jaw width of the draw-bar	5561.39
4	m	mouth width of the draw-bar	5561.40
5	e	collar distance of the inner jaw wall on the draw-bar	5573.84
6	s_3	clevis bore hole wall thickness on the draw-bar jaw	5562.17
7	d	clevis drill hole on the draw-bar	5561.41
8	c	clevis thickness of the draw-bar	5562.56
9	w	clevis width on draw-bar	5561.42
10	a_1	eye thickness of the draw-bar	5562.57
11	a_2	eye bore hole wall thickness of the draw-bar	5562.58
12	a_3	eye drill hole on the draw-bar	5561.43
13	b	collar width of the draw-bar, the pull rod and the pull rod connecting parts	5562.13
14	d_1	shaft diameter of the pull rod	5562.59
15	d_2	neck diameter of the draw-bar, the pull rod and the pull rod connecting parts	5562.53

- Inspection characteristic of looped coupling links:

Num.	Dim.	Characteristic	EWF
16	b	arc width of the looped coupling link	5561.16
17	d	arc thickness of the looped coupling link	5562.20
18	s	bore hole wall thickness of the looped coupling link	5562.21
19	c	leg diameter of the looped coupling link	5562.60
20	d_1	diameter of the drill hole on the looped coupling link	5561.44

- Inspection characteristic of coupling fish plates:

Num.	Dim.	Characteristic	EWF
21	e	distance of the outer hole walls of the coupling fish plate	5561.10
22	s	bore hole wall thickness of the large coupling fish plate eye	5562.21
23	s_1	bore hole wall thickness of the small coupling fish plate eye	5562.54
24	a	width of the coupling fish plate	5562.61
25	b	thickness of the coupling fish plate	5562.62
26	c	lateral bore hole wall thickness on the large coupling fish plate eye	5562.63
27	d	lateral bore hole wall thickness on the small coupling fish plate eye	5562.64

- Inspection characteristic of draw-bar guides:

Num.	Dim.	Characteristic	EWF
28	h	height of the draw-bar guide	5561.8

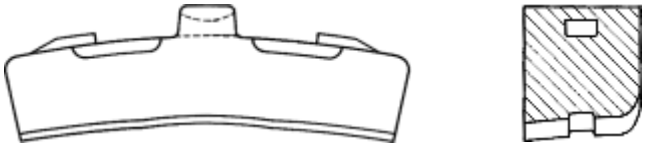
- Inspection characteristic of coupling nuts and coupling spindles:

Num.	Dim.	Characteristic	EWF
29	d	journal diameter of the coupling nut	5562.19
30	d_f R d_f L	thread in the coupling nut (right-hand thread / left-hand thread)	usual in trade
31	d_f R d_f L	thread at the coupling spindle (right-hand thread / left-hand thread)	usual in trade

- Inspection characteristic of sleeve shell halves:

Num.	Dim.	Characteristic	EWF
32	l	collar width of the sleeve shell halves	5561.9
33	s	flange thickness of the sleeve shell halves	5562.55
34	m	back thickness of the sleeve shell halves	5563.44
35	h	depth of the sleeve shell halves	5563.38
36		testing, sorting and pairing sleeve shell halves	5512.5/1 5512.5/2

EWF 5500.5 Overview of EWF equipment for brake shoe inserts



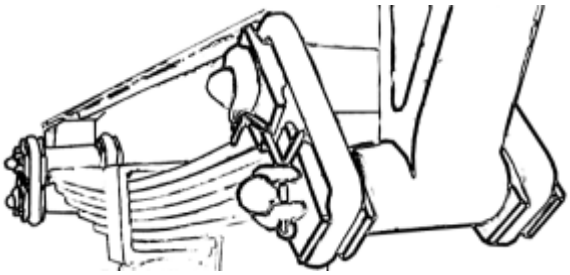
Use:

- Testing of the functionally relevant characteristics of brake shoe inserts

Inspection characteristics:

Num.	Dim.	Characteristic	EWF
1	b	wedge cam width	5562.48
2	h	cotter slot height	5561.30
3	E_1 / E_2	brake surface radii	5566.32
4	n	brake surface inclination	5566.35

EWF 5500.7 Overview of EWF equipment for spring suspension of the cars



Use:

- Testing of the operations-relevant characteristics of the suspension ring suspension and its individual parts

Inspection characteristics:

- Inspection characteristic of spring bolts:

Num.	Dim.	Characteristic	EWF
1	d	shaft diameter of the spring bolt	5562.69

- Inspection characteristic of suspension rings:

Num.	Dim.	Characteristic	EWF
1	l	internal length of the suspension rings	5561.48
2	b	root face diameter of the suspension ring	5562.72

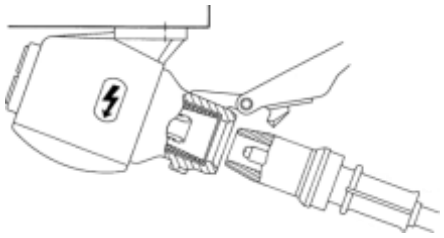
- Inspection characteristic of suspension ring stones:

Num.	Dim.	Characteristic	EWF
1	a	drill hole on the suspension ring stones	5561.49
2	M	drill hole wall thickness on the suspension ring stones	5572.26

- Inspection characteristic of intermediate parts for dual rings:

Num.	Dim.	Characteristic	EWF
1	g	jaw width of the intermediate part for dual rings	5561.50

EWF 5500.10 Overview of EWF equipment for the electrical train heating coupling



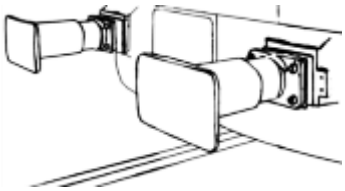
Use:

- Test for ensuring the latching capability of the current-carrying parts of the electrical train heating coupling to guarantee low-resistance current transmission to the extent possible

Inspection characteristics:

Num.	Dim.	Characteristic	EWF
1	d_1	inside diameter of the contact bushing	5561.55
2	d_2	outer diameter of the connector upper part	5562.75
3	d_3	outer diameter of the plug contact	5562.76

EWF 5500.21 Overview of EWF equipment for buffers



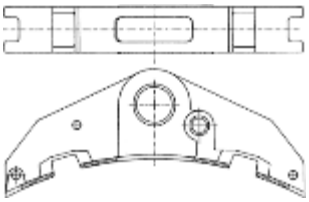
Use:

- Testing of the seating and position of the buffers reciprocally and to the vehicle body and top of rail
- Testing of functionally relevant characteristics of buffers and buffer guides

Inspection characteristics:

Num.	Dim.	Characteristic	EWF
1		buffer centre height above top of rail	5573.2
2		buffer distance	5573.57
3		wear at the buffer head	5552.15
4		buffer centre punch	5568.601 / 5592.14/12
5		inner longitudinal dimension of the self-contained buffers	5573.76

EWF 5500.22 Overview of EWF equipment for brake block shoes



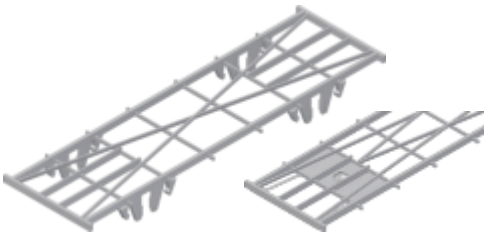
Use:

- Testing of the functionally relevant characteristics of brake block shoes
- Assessment of the requirements-compliant workmanship of the brake block shoes

Inspection characteristics:

Num.	Dim.	Characteristic	EWF
1		bushing diameter	5561.3
2		wall thickness	5562.89
3		width	5562.90
4		socket contour brake block shoe	5563.58

EWF 5573.78 Overview of EWF equipment for underframes



Use:

- Measuring of underframes for assessment purposes in advance of maintenance
- Measuring of components on underframes during maintenance

Inspection characteristics:

Num.	Inspection characteristic / EWF	5561.69	5573.80	5573.78/102	5573.78/130	5573.78/140	5573.78/105	5573.78/106	5573.78/107	5573.78/201	5573.78/220	5573.78/203	5573.78/204	5573.78/205
1	x_1-Dim. – reference distance between centres of the suspension trestle drill holes				X									
2	x_2-Dim. – wheel base distance				X	X								
3	x_3-Dim. – diagonal dimension				X	X								
4	x_5-Dim. – distance between wheelset bracket friction pads on underframes and the centre of the suspension trestle				X		X							
5	x_6-Dim. – distance of the wheelset bracket friction pads								X					
6	y_1-Dim. – lateral distance of the centres of the suspension trestles			X	X									
7	y_2-Dim. – lateral distance between the outer faces of the wheelset bracket friction pads and the reference centre				X			X						
8	y_3-Dim. – lateral position of the suspension trestle drill holes										X			
9	y_9-Dim. – lateral distance between the outer faces of the wheelset bracket friction pads			X										
10	z_2-Dim. – distance of the spring stud centres on the suspension ring stone hanger		X											
11	z_4-Dim. – height position of the suspension trestle drill holes										X			
12	z_8-Dim. – spring-loaded side-bearer clearance	X												
13	z_{13}-Dim. – height of the suspension trestle										X			
14	sufficient alignment of opposed suspension trestle drill holes											X		
15	longitudinal reference centre of the underframe				X		X			X			X	
16	perpendicularity between the buffer beam and the longitudinal reference centre of the underframe				X					X			X	
17	distance of the centre casting centres					X							X	
18	centre distance and height of the spring-loaded side-bearer													X

EWF 5573.79 Overview of EWF equipment for bogies

Use:

- Measuring of bogies for assessment purposes in advance of maintenance
- Measuring of components on bogies during maintenance

Prüfmerkmale:

Num.	Inspection characteristic / EWF	5511.1	5573.80	5573.78/101	5573.78/102	5573.79/130	5573.79/104	5573.78/105	5573.78/106	5573.78/107	5573.79/180	5573.79/190	5573.79/201	5573.78/220	5573.79/203	5573.79/204	5573.78/205	5573.79/206
1	x_1-Dim. – reference distance between centres of the suspension trestle drill holes					X	X					X		X				
2	x_2-Dim. – wheel base distance				X	X						X						
3	x_3-Dim. – diagonal dimension			X		X												
4	x_5-Dim. – distance between wheelset bracket friction pads on underframes and the centre of the suspension trestle					X		X										
5	x_6-Dim. – distance of the wheelset bracket friction pads									X								X
6	X_7-Dim. – distance of the fixed wheelset bracket guides				X						X							
7	y_1-Dim. – lateral distance of the centres of the suspension trestles				X	X	X											
8	y_2-Dim. – lateral distance between the outer faces of the wheelset bracket friction pads and the reference centre					X	X		X									
9	y_5-Dim. – lateral distance between the internal faces of the wheelset bracket guides				X													
10	z_2-Dim. – distance of the spring stud centres on the suspension ring stone hanger		X															
11	twisting of the bogie										X		X					
12	height position of the suspension trestle drill holes													X				
13	lateral position of the suspension trestle drill holes													X				
14	position of the centre casting			X		X					X	X			X	X		
15	planarity of the centre casting	X																
16	centre distance and height of the spring-loaded side-bearer																X	

5 Mechanical measuring equipment (EWF 5571 – EWF 5593)

5.1 Measuring equipment for inner and outer dimensions

EWF 5571.1 Measuring device for the clearance of the inner rim faces

Use:

- Determining the clearance a_1 (A_R) between the inner surfaces of the wheels in a wheelset
- On installed and removed wheelsets
- Outer diameter of flange as a potential surface for locating the measuring device

Design:

Measuring device with analogue display:

- Distance between the measuring plane and the outer diameter of flange 0 to 40 mm
- Measuring range clearance between inner rim faces a_1 (A_R) 1,354 to 1,366 mm

Measuring device with digital display:

- Distance between the measuring plane and the outer diameter of flange 0 to 33 mm
- Measuring range clearance between inner rim faces a_1 (A_R) 1,350 to 1,370 mm
- Transport Open or folding

Cross-reference to other measuring equipment:

- EWF 5573.72/3 Measuring device for the clearance of the inner rim faces, flange gauge and flange thickness

Ordering instructions:

- EWF 5571.1 Measuring device for tyre clearance

  the requested design and the measuring range should be declared additional

EWF 5571.2 Measuring device for tyre drill hole

Use:

- Determining the bore diameter on tyres
- Measurement on four different measuring planes

Design:

- Distance of the measuring planes from the inner rim face 10 to 95 mm
- Nominal diameter of tyre drill hole nom. dim. 700 to 1,600 mm
- Measuring range for diameter measurement (offset depending on the nom. dim.) 30 mm

Ordering instructions:

- EWF 5571.2 Measuring device for tyre drill hole

  the measuring range should be declared additional

EWF 5572.2 Measuring device for tyre and wheel rim thickness

Use:

- Determining the thickness of tyres or wheel rims
- On installed and removed wheelsets
- The measurement basis is the outer rim face

Design:

Measuring device with analogue display:

- Measurement range 20 to 80 mm

Measuring device with digital display:

- Measurement range 0 to 110 mm
- Wheel rim width 135 or 140 mm

Ordering instructions:

- EWF 5572.2 Measuring device for tyre thickness
  the requested design should be declared additional

EWF 5572.3 Measuring device for flange gauge

Use:

- Determining the flange gauge on the wheelset
- On installed and removed wheelsets
- The measurement stops are the inner rim face and the measuring circle plane

Design:

- Distance of the measuring circle plane from the inner rim face 70 mm
- Measurement range 1,390 to 1,430 mm

Cross-reference to other measuring equipment:

- EWF 5573.72/3 Measuring device for the clearance of the inner rim faces, flange gauge and flange thickness

Ordering instructions:

- EWF 5572.3 Measuring device for flange gauge

EWF 5572.4 Measuring device for wheel diameter on removed wheelsets

Use:

- Determining the wheel diameter on removed wheelsets
- Measurement in the measuring circle plane with the inner rim face as the basis for measurement
- Two-point measuring device for determining the distance between two diametrically opposed points

Design:

Distance of the measuring circle plane from the inner rim face		70	mm
Wheel diameter measuring ranges	(ex. with one measuring leg)	630 to 860	mm
		840 to 1,110	mm
	(ex. with two measuring legs)	630 to 900	mm
		750 to 1,250	mm

Ordering instructions:

- EWF 5572.4 Measuring device for wheel diameter

  the requested design and the measuring range should be declared additional

EWF 5572.19 Measuring device for wheel diameter in installed condition (intermittent automatic train running control adjustment)

Use:

- Determining the wheel diameter in installed condition for intermittent automatic train running control adjustment

- Measurement in the measuring circle plane with the wheel flange and the measuring circle plane itself as the basis for the measurement

Design:

Distance of the measuring circle plane from the inner rim face	70	mm
Wheel diameter measuring ranges (example)	680 to 1,260	mm

Ordering instructions:

- EWF 5572.19 Measuring device for wheel diameter

  the requested measuring range should be declared additional

EWF 5572.24 Measuring device for centring the wheels on the axle shaft

Use:

- Determining the distance from the inner rim face to the reference area on the axle shaft
- On removed wheelsets

Design:

Measuring range (depending on version)	at least.	0 to 250	mm
Wheel diameter for mounting the measuring device (example)		850 to 1,000	mm

Ordering instructions:

- EWF 5572.24 Measuring device for centring the wheels on the axle shaft

  the requested seating diameter on the wheel should be declared additional

EWF 5572.26 Measuring device for the drill hole wall thickness on the suspension ring stones

Use:

- Determining the drill hole wall thickness M on the suspension ring stones

Design:

Distance between the measuring plane and the outside of the suspension ring	25	mm
Measurement range	0 to 30	mm

Cross-reference to other measuring equipment:

- EWF 5500.7 Overview of rail depot measuring and testing equipment for spring suspension of the cars

Ordering instructions:

- EWF 5572.26 Measuring device for the drill hole wall thickness of the suspension ring stones

Special designs

The following listing contains general examples for customizable dimensions of the standard measuring devices:

- faces or shapes for measuring, referencing or examining can be customized to special applications
- nominal and limiting dimensions or measuring ranges can be extended, reduced or relocated
- adjustment ranges or collision shapes can be changed or reduced
- scales can be speced with a special resolution or a digital display

5.2 Measuring equipment for miscellaneous or combined dimensions

EWF 5573.2 Measuring device for the buffer centre height above top of rail (buffer position)

Use:

- Determining the buffer position as the height of the buffer centre above the top of rail
- Measurement on the removed buffer on the freight wagon with the buffer plunger as the measurement basis

Design:

- Measuring range buffer centre above top of rail 930 to 1,080 mm

Cross-reference to other measuring equipment:

- EWF 5500.21 Overview of rail depot measuring and testing equipment for buffers

Ordering instructions:

- EWF 5573.2 Measuring device for the buffer centre height above top of rail

EWF 5573.2/2 Measuring device for the measuring mark height above top of rail

Use:

- Checking and transferring measuring marks to the vehicle body
- The measurement basis is the top of rail

Design:

- Measurement range 850 to 1,100 mm

Ordering instructions:

- EWF 5573.2/2 Measuring device for the measuring mark height above top of rail

EWF 5573.34 Measuring device for the wheel rim shell width

Use:

- Determining the wheel rim shell width to determine the position of the snap ring groove
- The measurement basis is the wheel rim outer diameter

Design:

- Measurement range 70 to 110 mm

Ordering instructions:

- EWF 5573.34 Measuring device for the wheel rim shell width

EWF 5573.57 Measuring device for the buffer distance

Use:

- Determining the buffer distance to the longitudinal centre line of the car
- The measurement basis is the outer diameter of the buffer guides and the longitudinal centre line of the car marked on the headstock of the car

Design:

- Measurement range of the buffer distance to the longitudinal centre line of the car 855 to 895 mm

Cross-reference to other measuring equipment:

- EWF 5500.21 Overview of rail depot measuring and testing equipment for buffers

Ordering instructions:

- EWF 5573.57 Measuring device for the buffer distance

EWF 5573.72/3 Measuring device for the clearance of the inner rim faces, flange gauge and flange thickness

Use:

- Determining the functional dimensions clearance of the inner rim faces a_1 (A_R), flange gauge (S_R) and flange thickness e (S_d) on the removed wheelset
- The basis for determining the measured values is the two measuring circle planes and the inner rim faces of the wheelset

Design:

- Distance between the measuring circle planes and the inner rim faces 70 mm
- Distance between the measuring plane for a_1 from the measuring circle planes 10 mm
- Measuring range clearance between inner rim faces a_1 (A_R) 1,350 to 1,370 mm
- Measurement range flange gauge (S_R) 1,390 to 1,450 mm
- Measurement range flange thickness e (S_d) 20 to 38 mm

Cross-reference to other measuring equipment:

- EWF 5571.1 Measuring device for the clearance of the inner rim faces
- EWF 5573.77/1 Measuring device for flange thickness, height of the flange and q_R dimension

Ordering instructions:

- EWF 5573.72/3 Measuring device for the distance of the inner rim faces, flange gauge and flange thickness

EWF 5573.76 Measuring device for the inner longitudinal dimension of the self-contained buffers

Use:

- Determining the buffer and plunger depth on the self-contained buffer

Design:

Width of measurement basis	250	mm
Diameter of guide discs	168	mm
Measurement range	405 to 750	mm

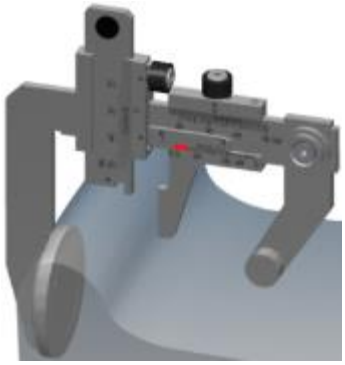
Cross-reference to other measuring equipment:

- EWF 5500.21 Overview of rail depot measuring and testing equipment for buffers

Ordering instructions:

- EWF 5573.76 Measuring device for the inner longitudinal dimension of the self-contained buffers

EWF 5573.77/1 Measuring device for flange thickness, height of the flange and q_R dimension



Use:

- Determining the functional dimensions flange thickness e (S_d), height of the flange h (S_h) and q_R dimension
- Operation on installed and removed monobloc wheels, tyres or wheels with tyres

Design:

Distance of the measuring circle plane from the inner rim face	70	mm
Measurement range flange thickness e (S_d)	20 to 40	mm
Measurement range height of the flange h (S_h)	20 to 40	mm
Measurement range q_R dimension	5 to 13	mm
Minimum dimension for q_R dimension	6.5	mm

Cross-reference to other measuring equipment:

- EWF 5573.77/2 Measuring device for flange thickness, height and q_R dimension with bracket
- EWF 5573.601 Measuring device for the flange thickness, height of the flange, q_R dimension and tyre/wheel rim thickness

Ordering instructions:

- EWF 5573.77/1 Measuring device for flange thickness, height and q_R dimension

  the requested design and the measuring range should be declared additional

EWF 5573.77/2 Measuring device for flange thickness, height and q_R dimension with bracket

Use:

- Determining the functional dimensions flange thickness e (S_d), height of the flange h (S_h) and q_R dimension
- Operation on removed wheelsets or installed on special vehicles

Design:

Distance of the measuring circle plane from the inner rim face	70	mm
Distance between the support and the measuring circle plane	1,500	mm
Flange thickness measurement range e (S_d)	20 to 40	mm
Height of the flange measurement range h (S_h)	20 to 40	mm
q_R dimension measurement range	5 to 13	mm
Minimum dimension for q_R dimension	6.5	mm

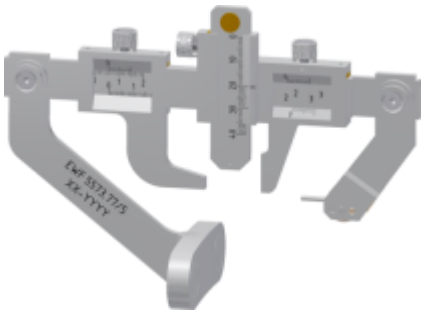
Cross-reference to other measuring equipment:

- EWF 5573.77/1 Measuring device for flange thickness, height of the flange and q_R dimension
- EWF 5573.601 Measuring device for the flange thickness, height of the flange, q_R dimension and tyre/wheel rim thickness

Ordering instructions:

- EWF 5573.77/2 Measuring device for flange thickness, height and q_R dimension with bracket

EWF 5573.77/5 Measuring device for flange thickness, height and position for tram wheels



Use:

- Determining the wheel flange dimensions relevant for tracking on bogie wheels and traction wheels of trams
- Operation on installed and removed monobloc wheels, tyres or wheels with tyres
- Trailing edge measurement on tram wheels

Design:

Distance of the measuring circle plane from the inner rim face	57	mm
Flange thickness and width measurement range	10 to 30	mm
Height of the flange measurement range	10 to 30	mm
Trailing edge inside micrometer measurement range	0 to 20	mm
Measurement height on wheel flange	10 or 14	mm

Ordering instructions:

- EWF 5573.77/5 Measuring device for flange thickness, height and position for tram wheels

EWF 5573.78/101 Measuring compass for longitudinal and diagonal dimensions on underframes and bodies

Use:

- Determining the wheelbase (distance between axles) and diagonal dimensions x_2, x_3 and y_1
- Measurement on underframes and bodies with centring as measurement basis

Design:

- Measurement range 125 to 4,000 mm
- Height difference at the measuring tips 0 to 410 mm
- Accessories "adjustable compass tip"
  - Longitudinal adjustment range ±10 mm
  - Display resolution 1 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes
- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.78/101 Measuring device for the dimensions x_2, x_3 and y_1 on underframes and bogies
- According to drawing 5573.078.101.130
  Adjustable compass tip for measuring compass

EWF 5573.78/102 Measuring device for the lateral distance of the wheelset bracket friction pads (outside and inside) and the reference distance between centres

Use:

- Determining the inner and outer lateral distance of the wheelset bracket friction pads and the reference distance between centres on underframes and bodies

Design:

- Measurement range (inside and outside) 1,750 to 2,350 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes
- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.78/102 Measuring device for the lateral distance of the wheelset bracket friction pads (outside and inside) and the reference distance between centres

EWF 5573.78/105 Measuring angle for the centricity deviation of the wheelset bracket friction pad pairs

Use:

- Determining the position x_5 of the wheelset bracket friction pads on underframes and bogies
- Measurement of other lengths at a perpendicular distance to a reference surface

Design:

Measurement range	70 to 160 mm
Leg lengths	500 / 225 mm

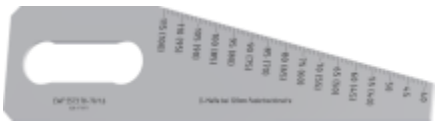
Cross-reference to other measuring equipment:

EWF 5573.78	Overview of rail depot measuring and testing equipment for underframes
EWF 5573.79	Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

EWF 5573.78/105	Measuring angle for the centricity deviation of the wheelset bracket friction pad pairs

EWF 5573.78/106 Measuring wedge for the lateral distance of the wheelset bracket friction pads from the reference centre



Use:

- Determining the lateral distance x_2 between the outer surfaces of the wheelset bracket friction pads and the suspension trestle reference centre on underframes and bogies

Design:

Measurement range (suspension trestle width 90 mm)	40 to 115 mm
Measurement range (suspension trestle width 120 mm)	40 to 100 mm

Cross-reference to other measuring equipment:

EWF 5573.78	Overview of rail depot measuring and testing equipment for underframes
EWF 5573.79	Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

EWF 5573.78/106	Measuring wedge for the lateral distance of the wheelset bracket friction pads from the reference centre

EWF 5573.78/107 Measuring device for the longitudinal distance of the wheelset bracket friction pads

Use:

- Determining the guide limits x_6 of the wheelset bracket friction pads on underframes and bogies

Design:

- Measurement range 150 to 580 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes
- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.78/107 Measuring device for the longitudinal distance of the wheelset bracket friction pads

EWF 5573.78/130 Measuring device for the reference distance between centres of the suspension trestle drill holes

Use:

- Embodiment of the centre between the suspension trestle drill holes (suspension trestle reference centre)
- Determining the distance between centres x_1 of the suspension trestle drill holes to the suspension trestle reference centre
- Basis for a variety of further measurements referring to the suspension trestle reference centre

Design:

- Measurement ranges x_1 540 to 900 mm
  540 to 1,100 mm
- Stud diameter for fastening on the suspension trestle Nom. dim. (size 5) 36 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes

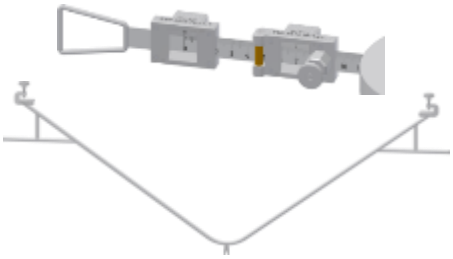
Ordering instructions:

1 set of measuring devices includes 4 pcs. measuring devices and 8 pcs. stud

- EWF 5573.78/130 Measuring device for the reference distance between centres on the suspension trestle drill holes

  the measuring range and the Nom. dim. of the studs should be declared additional

EWF 5573.78/140 Tape measure for two-axle wagon with underframe



Use:

- Determining the wheel base distance (distance between axles) and diagonal dimensions x_2, x_3 and y_1
- Measurement on underframes and bogies with measuring stud as measurement basis
- Measurement of other lengths and measuring studs as measurement basis

Design:

- Measurement range 50 to 10,000 mm
- Measuring tape guide for clamping on the underframe when determining diagonal dimensions

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes

Ordering instructions:

- EWF 5573.78/141 Tape measure for two-axle wagon underframes
- EWF 5573.78/142 Measuring tape guide

EWF 5573.78/201 Scriber for longitudinal centre of car

Use:

- Definition of longitudinal centre of car for major repairs
- Assessment of the buffer beam position with respect to the longitudinal centre of the car
- Transferring lengths and clearances

Design:

- Adjustment range 1,000 to 1,800 mm
- Maximum peak height difference 330 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes

Ordering instructions:

- EWF 5573.78/201 Scriber for longitudinal centre of car

EWF 5573.78/203 Alignment mandrel for suspension trestle drill holes

Use:

- Checking of the diametrically opposed drill holes for sufficient alignment

Design:

- Testable range 1,720 to 2,180 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes

Ordering instructions:

- EWF 5573.78/203 Alignment mandrel for suspension trestle drill holes on the underframes of two-axle wagons

  the Nom. dim. should be declared additional

EWF 5573.78/204 Centring unit for centre casting centre

Use:

- Transferring the centre casting centre from the centre casting to a measuring stud as the basis for measurement
- Centre castings with threaded bolts and centre castings with studs for fastening connecting clamps

Design:

- Centring diameter of the centre casting approx. 150 to 160 mm
- Position of centring diameter below the centre casting plane approx. 20 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes

Ordering instructions:

- EWF 5573.78/204 Centring unit for centre casting centre

EWF 5573.78/205 Measuring device for the distance between centres and the height of the side bearers

Use:

- Determining the distance between centres and the height of the side bearer in relation to the centre casting
- Operation on underframes and bogies
- Determining the side bearer height before locating the vehicle body on the bogie

Design:

- Contact diameter of the centring tips on the centre casting 280 mm
- Contact diameter of the supporting elements for the lower centre casting approx. 300 to 400 mm
- Slot width of the centre casting stud 36 mm
- Measurement range for the side bearer distance between centres 680 to 920 mm
- Measurement range for the side bearer height distance 0 to 120 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes
- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.78/205 Measuring device for the distance between centres and the height of the side bearers

EWF 5573.78/220 Measuring stud for the position of the suspension trestle drill holes

Use:

- Initial measurement of new, and checking of existing suspension trestles for the reciprocal height and stagger using a plumb line and a yardstick

Design:

- Outer measuring stud with groove for inserting the plumb line
- Inner measuring stud with eccentric and markings for determining the position deviation
- Stud diameter for fastening on the suspension trestle Nom. dim. (size 5) 36 mm
- Measurement range of height deviation ±5 mm
- Measurement range lateral position deviation 5 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes
- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.78/221 Measuring stud with groove – for the position of the suspension trestle drill holes
- EWF 5573.78/222 Measuring stud with marks – for the position of the suspension trestle drill holes

  the Nom. dim. should be declared additional

EWF 5573.79/104 Measuring device for the reference distance between centres of the suspension trestle drill holes on bogies with three wheelsets

Use:

- Embodiment of the centre between the suspension trestle and equalising beam drill holes (suspension trestle reference centre)
- Determining the distance between centres x_1 of the suspension trestle drill holes to the suspension trestle reference centre
- Basis for a variety of further measurements referring to the suspension trestle reference centre

Design:

Measurement range x_1		530 to 775	mm
vertical adjustment range		0 to 190	mm
Stud diameter for fastening on the suspension trestle	Nom. dim. (size 5)	36	mm

Cross-reference to other measuring equipment:

- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:
1 set of measuring devices includes 4 pcs. measuring devices and 8 pcs. stud

- EWF 5573.79/104 Measuring device for the reference distance between centres of the suspension trestle drill holes on bogies with three wheelsets
  the measuring range and the Nom. dim. of the studs should be declared additional

EWF 5573.79/130 Measuring device for the reference distance between centres of the suspension trestle drill holes

Use:

- Embodiment of the centre between the suspension trestle drill holes (suspension trestle reference centre)
- Determining the distance between centres x_1 of the suspension trestle drill holes to the suspension trestle reference centre
- Basis for a variety of further measurements referring to the suspension trestle reference centre

Design:

Measurement range x_1		540 to 780	mm
Stud diameter for fastening on the suspension trestle	Nom. dim. (size 5)	36	mm

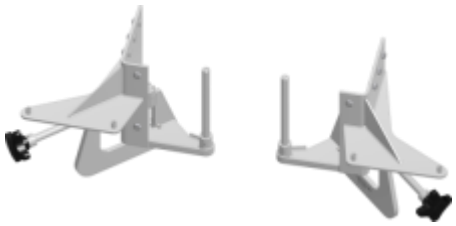
Cross-reference to other measuring equipment:

- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:
1 set of measuring devices includes 4 pcs. measuring devices and 8 pcs. stud

- EWF 5573.79/130 Measuring device reference distance between centres on the suspension trestle drill holes
  the measuring range and the Nom. dim. of the studs should be declared additional

EWF 5573.79/180 Measurement aid for the dimensions x_3 and x_7



Use:

- Displacement of the reference surfaces in the area of the wheelset bearing guide towards the outside of the car to create substitute references
- Basis for many further measurements

Design:

- Clamping and locating on the wheelset bearing guide by means of threaded bolts
- Adjusting the height on the bogie by means of seating pins
- Extension for height fixing in case of self-adjusting load-proportional braking system

111 mm

Cross-reference to other measuring equipment:

- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

1 set of measurement aids includes 1 pc. measurement aid (right-hand version), 1 pc. measurement aid (left-hand version) and 1 pc. extension for self-adjusting load-proportional braking system

- EWF 5573.79/180 Measurement aid for the dimensions x_3 and x_7 on bogies

  the bogie class should be declared additional

EWF 5573.79/190 Measurement aid for determining the reference centre on wheelset mount side bearer pairs

Use:

- Displacement of the reference centre between the wheelset mount side bearer pairs towards the outside of the car to create substitute references
- Basis for many further measurements

Design:

- Clamping and locating on the wheelset bearing guide by means of threaded bolts
- Clamping areas between the wheelset mount side bearers 218 to 308 mm
  485 to 585 mm

Cross-reference to other measuring equipment:

- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

1 set of measurement aids includes 4 pcs. measurement aids

- EWF 5573.79/190 Measurement aid for determining the reference centre on wheelset mount side bearer pairs

  the clamping range should be declared additional

EWF 5573.79/201 Measuring device for measuring the distortion on bogie frames

Use:

- Measuring the distortion on bogie frames without levelling the frame

Design:

- Stud diameter for fastening on the suspension trestle
  Nom. dim. (size 5) 36 mm
- Position of the measuring support below the suspension trestle drill holes approx. 400 mm
- Measurement range ±5 mm/m

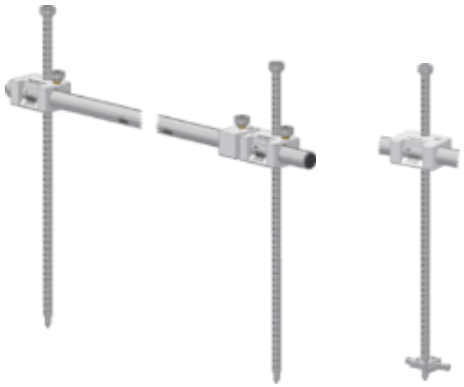
Cross-reference to other measuring equipment:

- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.79/201 Measuring device for the distortion on bogie frames

EWF 5573.79/203 Measuring compass for longitudinal and diagonal dimensions on bogies



Use:

- Determining the distances between two reference points
- Initial measurement of centre castings on bogies with centring as measurement basis

Design:

- Measurement range 125 to 2,000 mm
- Height difference at the measuring tips 0 to 410 mm
- Accessories "adjustable compass tip"
  - Longitudinal adjustment range ±10 mm
  - Display resolution 1 mm

Cross-reference to other measuring equipment:

- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.79/203 Measuring device for the dimensions x_2, x_3 and y_1 on bogies
- According to drawing 5573.078.101.130
  Adjustable compass tip for measuring compass

EWF 5573.79/204 Centring stud for centre casting centre

Use:

- Transferring the centre casting centre from the centre casting to a measuring stud as the basis for measurement
- Centre castings with drill holes

Design:

- Centring diameter of centre casting drill hole Nom. dim. 62 mm

Cross-reference to other measuring equipment:

- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.79/204 Centring stud for centre casting centre

EWF 5573.79/206 Measuring devices for wheelset bearing guides on class 690 bogies

Use:

- Determining the longitudinal distance and the lack of centricity on the wheelset mount side bearers
- Relative measurement between the wheelset mount side bearer and the substitute reference

Design:

- Clamping diameter on guides with load-proportional valve Nom. dim. 40 mm
- Clamping diameter on guides without load-proportional valve Nom. dim. 55 mm
- Diameter of the substitute reference Nom. dim. 25 mm
- Measurement range for distance of the wheelset mount side bearers 120 to 220 mm
- Measurement range for lack of centricity of the wheelset mount side bearers 0 to 50 mm

Cross-reference to other measuring equipment:

- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

1 set of measuring devices includes 1 pc. measuring shaft on guides with load-proportional valve and 1 pc. measuring shaft on guides without load-proportional valve

- EWF 5573.79/2.6 Measuring devices for wheelset guides on class 690 bogies

EWF 5573.80 Measuring device for the spring stud centre distance z_2 on the suspension ring stone hanger

Use:

- Determining the spring stud centre distance z_2 on the suspension ring stone hanger

Design:

- Measurement range z_2 80 to 320 mm

Cross-reference to other measuring equipment:

- EWF 5573.78 Overview of rail depot measuring and testing equipment for underframes
- EWF 5573.79 Overview of rail depot measuring and testing equipment for bogies

Ordering instructions:

- EWF 5573.80 Measuring device for the spring stud centre distance z_2 on the suspension ring stone hanger

EWF 5573.84 Measuring device for the collar distance of the inner jaw wall on the draw-bar

Use:

- Determining the collar distance e of the inner jaw wall on the draw-bar

Design:

- Measurement range collar distance e 450 to 470 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5573.84 Measuring device for the collar distance of the inner jaw wall on the draw-bar

EWF 5573.85 Measurement aid for bearing play in the brake hangers

Use:

- Determining the bearing play in the brake hangers
- Operation in installed condition

Design:

- Adjustment range for the test height above depot floor 500 to 700 mm

Ordering instructions:

- EWF 5573.85 Measuring device for bearing play in the brake hangers

EWF 5573.98 Measuring and sorting device for spring studs, suspension rings and suspension ring stones

Use:

- Measuring and sorting spring studs, suspension rings and suspension ring stones

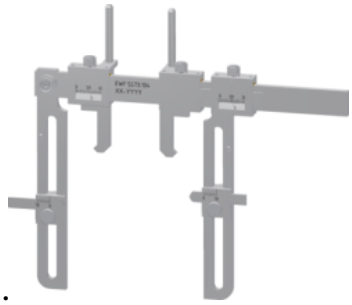
Design:

- Measurement range of the inside length of the suspension rings 188 to 194 mm
- Measurement range of the suspension ring stone wall thickness 5 to 9 mm
- Plug gauge for the drill hole on the suspension ring stone for minimum dimension in service 35.06 mm
- Ring gauge for the diameter of the spring studs for minimum diameter in service 34 and 44,52 mm

Ordering instructions:

- EWF 5573.98 Measuring and sorting device for spring studs, suspension rings and suspension ring stones

EWF 5573.104 Measuring device for the friction ring thickness and the wheel tread wear on the axle-mounted brake discs



Use:

- Determining the friction ring thickness and the wheel tread wear on the axle-mounted brake discs
- On installed and removed brake discs
- The measurement basis is the outer diameter of the axle-mounted brake disc

Design:

- Brake disc thickness 70 to 170 mm
- Friction ring thickness measuring range 10 to 30 mm
- Wheel tread wear measurement length (from the outer diameter of the brake disc) 20 to 115 mm
- Wheel tread wear measuring range 0 to 10 mm

Ordering instructions:

- EWF 5573.104 Measuring device for the friction ring thickness and the wheel tread wear on the axle-mounted brake discs

EWF 5573.105/1 Measuring device for the lateral clearances of the jigger pins on freight wagons

Use:

- Determining the lateral clearances C and d and a_1 and a_2 between the jigger pins on freight wagons
- Calliper operation with depositing edges on the freight wagon floor for safe handling by one operator

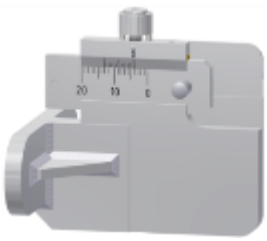
Design:

Measuring range for the lateral clearances C and d	2,300 to 2,340	mm
Measuring range for the lateral clearances a_1 and a_2	2,250 to 2,290	mm

Ordering instructions:

EWF 5573.105/1	Measuring device for the lateral clearances of the jigger pins on freight wagons

EWF 5573.105/2 Measuring device for minimum repair dimensions of the jigger pins on freight wagons



Use:

- Determining the minimum repair dimensions of the jigger pins on freight wagons
- Depth calliper operation for the undercut values a and b on the outside and inside of the wagon

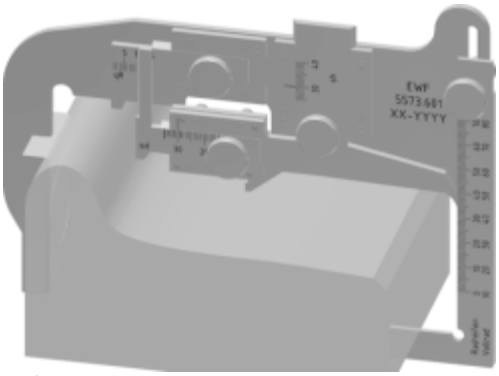
Design:

Measurement range	0 to 11	mm

Ordering instructions:

EWF 5573.105/2	Measuring device for minimum repair dimensions of the jigger pins on freight wagons

EWF 5573.601 Measuring device for the flange thickness, height of the flange, q_R dimension and tyre/wheel rim thickness



Use:

- Determining the functional dimensions flange thickness e (S_d), height of the flange h (S_h), q_R dimension and tyre/wheel rim thickness R_d
- Operation on installed and removed monobloc wheels, tyres or wheels with tyres
- The measurement basis is the outer rim face

Design:

Distance of the measuring circle plane from the inner rim face	70	mm
Flange thickness measurement range e (S_d)	20 to 40	mm
Height of the flange measurement range h (S_h)	20 to 40	mm
q_R dimension measurement range	0 to 13	mm
Wheel rim thickness measurement range (R_d)	20 to 70	mm

Cross-reference to other measuring equipment:

- EWF 5573.77/1 Measuring device for flange thickness, height of the flange and q_R dimension
- EWF 5573.77/2 Measuring device for flange thickness, height and q_R dimension with bracket

Ordering instructions:

- EWF 5573.601 Measuring device for the flange thickness, height, q_R dimension and tyre/wheel rim thickness

  the requested design and the measuring range should be declared additional

Special designs

The following listing contains general examples for customizable dimensions of the standard measuring devices:

- faces or shapes for measuring, referencing or examining can be customized to special applications
- nominal and limiting dimensions or measuring ranges can be extended, reduced or relocated
- adjustment ranges or collision shapes can be changed or reduced
- scales can be speced with a special resolution or a digital display

Note

5.3 Measuring equipment for determining of position

EWF 5574.3 Measuring device for parallelism of the guide journal to the mating surface on the axlebox case

Use:

- Determining the parallelism of the guide journal to outer face of the axlebox case
- Operation on removed axlebox bearing cases

Design:

Reference length for lack of parallelism	180	mm

Ordering instructions:

EWF 5574.3	Measuring device for parallelism of the guide journal to the mating surface on the class 89 axlebox case

EWF 5578.22 Inspection equipment for axle shaft groove

Use:

- Checking the width of the axle shaft groove for minimum dimension in service
- Checking the centre deviation of the axle shaft groove with respect to the mounting diameter of the shaft

Design:

Minimum diameter gauge	Nom. dim.	30 +0.2	mm
Diameter range of the mounting diameter of the shaft		70 to 82	mm
Measurement range for centre deviation		3	mm

Ordering instructions:

EWF 5578.22	Measuring device for axle shaft groove

EWF 5578.37 Measuring device for the attachment height of intermittent automatic train running control (Indusi), continuous automatic train-running control and front-end ground spoiler

Use:

- Determining the attachment height of vehicle magnets for automatic train control and the front-end ground spoiler
- on vehicles with installed magnets and front-end ground spoilers standing on a track with the top of rail as the basis

Design:

- Gauge 1,420 to 1,490 mm
- Measurement range attachment height continuous automatic train-running control and front-end ground spoiler above top of rail (centre of track) 100 to 285 mm
- Measurement range attachment height intermittent automatic train running control/Indusi above top of rail (300 mm outside of the track) 135 to 175 mm

Cross-reference to other measuring equipment:

- EWF 5578.38 Measuring device for the attachment height of intermittent automatic train running control (Indusi)
- EWF 5563.56 Mounting template for Indusi magnet

Ordering instructions:

- EWF 5578.37 Measuring device for the attachment height of intermittent automatic train running control (Indusi), continuous automatic train-running control and front-end ground spoiler

EWF 5578.38 Measuring device for the attachment height of intermittent automatic train running control (Indusi)

Use:

- Determining the attachment height of vehicle magnets for automatic train control
- on vehicles with installed magnets standing on a track with the top of rail as the basis

Design:

- Measurement range attachment height intermittent automatic train running control/Indusi above top of rail (300 mm outside of the track) 135 to 175 mm

Cross-reference to other measuring equipment:

- EWF 5578.37 Measuring device for the attachment height of intermittent automatic train running control (Indusi), continuous automatic train-running control and front-end ground spoiler
- EWF 5563.56 Mounting template for Indusi magnet

Ordering instructions:

- EWF 5578.38 Measuring device for the attachment height of intermittent automatic train running control (Indusi)

EWF 5578.39 Measuring device for the camlock overlap

Use:

- Determining the camlock overlap on the latching lock on freight wagons (distance between the wear plate edge and the centre plane of the camlock shaft)
- The outer diameter of the camlock shaft is the measurement basis

Design:

- Measurement range for camlock overlap -10 to 15 mm

Ordering instructions:

- EWF 5578.39 Measuring device for camlock overlap (Ø55 mm)
- EWF 5578.39/2 Measuring device for camlock overlap – prismatic stop

EWF 5578.40 Measuring device for the past top dead centre position of the latch actuator on the main locking shaft

Use:

- Determining the distance between the connecting shaft centre for the pull rods from the centre plane of the main locking shaft in closed latch position
- The outer diameter of the main locking shaft is the measurement basis

Design:

- Measurement range for past top dead centre position 0 to 40 mm

Ordering instructions:

- EWF 5578.40 Measuring device for the past top dead centre position of the latch actuator on the main locking shaft (Ø90 mm) on the latching lock on freight wagons

Special designs

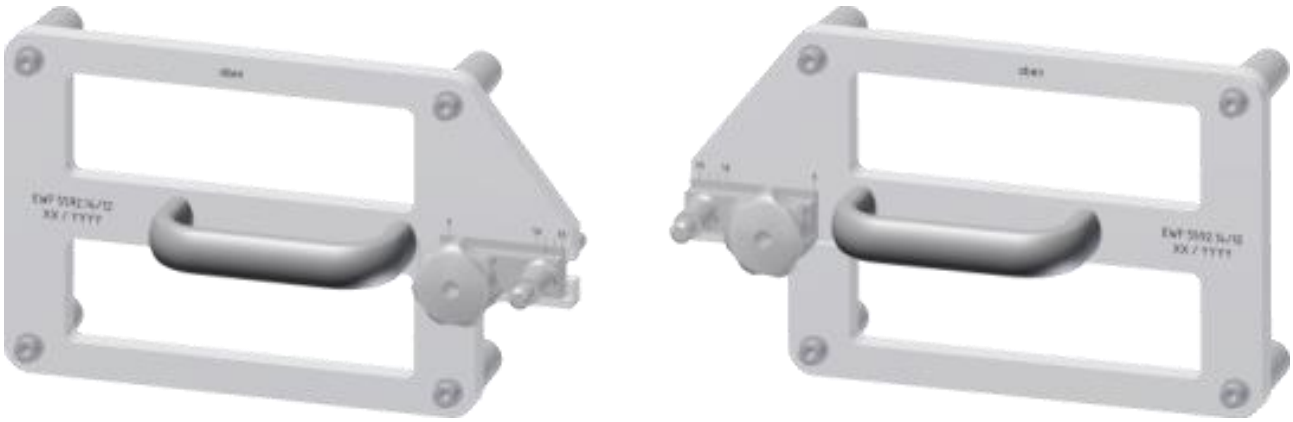
The following listing contains general examples for customizable dimensions of the standard measuring devices:

- faces or shapes for measuring, referencing or examining can be customized to special applications
- nominal and limiting dimensions or measuring ranges can be extended, reduced or relocated
- adjustment ranges or collision shapes can be changed or reduced
- scales can be speced with a special resolution or a digital display

Note

5.4 Other measuring equipment

EWF 5592.14/12 Inspection equipment for buffer centre punch



Use:

- Checking and transferring the buffer centre to the vehicle body
- With the buffer removed
- Fastening bores of buffer as test basis

Design:

- Target dimension gauge — Nom. dim. 7.5 mm below buffer centre (DB)
- Distance of the fastening bores on the buffer — 240 x 165 mm

Cross-reference to other measuring equipment:

- EWF 5500.21 Overview of rail depot measuring and testing equipment for buffers

Ordering instructions:

- EWF 5592.14/12 Gauge for buffer centre punch (DB)

  the requested design and the measuring range should be declared additional

EWF 5592.14/21 & 22 Plumb line anchor point

Use:

- Aux. reference from the outer diameter of the centre casting to the centring axis of the centre casting

Design:

- Centre casting diameter
  Nom. dim.: 287 mm
  330 mm
- Distance between the plumb bob and the centring axis 100 mm

Ordering instructions:

- EWF 5592.14/21 Plumb line anchor point (centring axis diameter 287 mm)
- EWF 5592.14/22 Plumb line anchor point (centring axis diameter 330 mm)

EWF 5686.19/1 Inspection equipment for checking the T and C pressures

Use:

- Simulation of varying live loads at the adjustment valves of the load dependent brake through compressing the adjustment valve
- Operation on passenger cars using a brake test unit
- Two pieces of inspection equipment are required to test a car

Design:

Adjustment range of the adjustment values (for mounting Ø 50 mm)	310 to 450	mm
Scale range	max. 140	mm

Ordering instructions:

- EWF 5686.19/1 Inspection equipment for checking the T and C pressures

Special designs

The following listing contains general examples for customizable dimensions of the standard measuring devices:

- faces or shapes for measuring, referencing or examining can be customized to special applications
- nominal and limiting dimensions or measuring ranges can be extended, reduced or relocated
- scales can be speced with a special resolution or a digital display

Note

6 Measuring aid equipment and devices for dimension embodiment (EWF 5511 – EWF 5555)

EWF 5511.1 Cross ruler for centre casting planarity

Use:

- Testing the planarity of centre castings and other surfaces

Design:

- Planarity normal — Test surface Ø264 to 514 mm

Ordering instructions:

- EWF 5511.1 Cross ruler for centre casting planarity

  the requested diameter of the test surface should be declared additional

EWF 5511.3 Aux. dimension for lateral axle play

Use:

- Aux. reference from the inner rim face for determining the lateral measured values to the vehicle body or the bogie

Design:

- Aux. reference — Nom. dim. 225 mm

Ordering instructions:

- EWF 5511.3 Aux. dimension for lateral axle play

EWF 5512.5 Device for testing, sorting and pairing sleeve shell halves

Use:

- Sorting and pairing the sleeve shell halves by collar width l
- Testing the depth h and the flange thickness s of the sleeve shell halves for minimum dimension

Design:

- No-go gauges for minimum dimension

  Collar width l 84 mm
  Depth h 24 mm
  Flange thickness s 13.5 mm

- Sorting gauges for collar width l

  Nom. dim. 82 to 83.5 mm

Cross-reference to other measuring equipment:

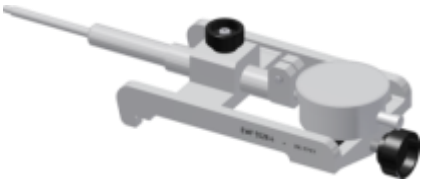
- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5512.5 Sorting device for sleeve shell halves

  the requested sorting gauges should be declared additional

EWF 5528.4 Measuring equipment for wheelset axial play (Minden-Deutz)



Use:

- Determining the axial play on wheelsets installed in bogies
- as an interior measuring device for relative measurement

Design:

Adjustment range of the measuring area	100 - 130	mm
Measuring range for axial play	10	mm

Ordering instructions:

- EWF 5528.4 Measuring equipment for wheelset axial play (Minden-Deutz)

EWF 5551.19 Measuring device for lateral bolster clearance y_4 on passenger cars with bogies (MD 30-44)

Use:

- Determining the lateral bolster clearance on passenger cars with Minden-Deutz bogies

Design:

- Measuring range for lateral bolster clearance 35 to 65 mm

Ordering instructions:

- EWF 5551.19 Measuring device for lateral bolster clearance y_4 on passenger cars with bogies (MD 30 to 44)

EWF 5551.20 Measuring device for lateral bolster clearance y_4 on passenger cars with bogies (MD 522)

Use:

- Determining the lateral bolster clearance on passenger cars with Minden-Deutz bogies

Design:

- Measuring range for lateral bolster clearance
  Scale 20 to 90 mm
  Electronic measuring gauge 40 to 80 mm

Ordering instructions:

- EWF 5551.20/1 Measuring device for lateral bolster clearance y_4 on passenger cars with bogies (MD 522)

  the requested sorting gauges should be declared additional

EWF 5551.21 Measuring device for lateral bolster clearance y_4 on Eurofima passenger cars with bogies (Fiat)

Use:

- Determining the lateral bolster clearance on passenger cars with Fiat bogies

Design:

- Measuring range for lateral bolster clearance 30 to 100 mm

Ordering instructions:

- EWF 5551.21 Measuring device for lateral bolster clearance y_4 on Eurofima passenger cars with bogies (Fiat)

EWF 5551.22 Measuring device with touch roller for lateral bolster clearance y_4 on passenger cars with bogies (MD 30)

Use:

- Determining the lateral bolster clearance on passenger cars with Minden-Deutz bogies

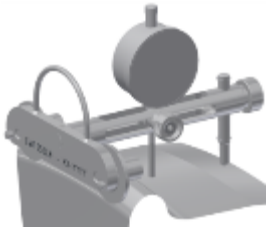
Design:

- Measuring range for lateral bolster clearance 20 to 90 mm

Ordering instructions:

- EWF 5551.22 Measuring device with touch roller for lateral bolster clearance y_4 on passenger cars with bogies (MD 30)

EWF 5552.8 Measuring equipment for flat arrow height



Use:

- Determining the rise of a flat spot on installed and removed wheelsets
- As a depth gauge with the respective wheel profile as the measurement basis

Design:

- Rise measuring area 0 to 10 mm
- Minimal required wheel rid width 125 mm
- Measuring distance from the inner rim face 33 to 97 mm

Ordering instructions:

- EWF 5552.8 Measuring equipment for flat arrow height

EWF 5552.15 Measuring device for buffer head wear

Use:

- Determining the wear at the buffer head

Design:

▮ Measuring area for buffer head wear		0 to 10	mm
▮ Buffer radius	Nom. dim.	flat	
		630 to 2,750	mm

Cross-reference to other measuring equipment:

- EWF 5500.21 Overview of rail depot measuring and testing equipment for buffers

Ordering instructions:

- EWF 5552.15 Measuring device for buffer head wear

  the Nom. dim. (buffer radius) should be declared additional

Special designs

The following listing contains general examples for customizable dimensions of the standard measuring devices:

- faces or shapes for measuring, referencing or examining can be customized to special applications
- nominal and limiting dimensions or measuring ranges can be extended, reduced or relocated
- adjustment ranges or collision shapes can be changed or reduced
- scales can be speced with a special resolution or a digital display

Note

7 Gauges (EWF 5561 – EWF 5568)

7.1 Gauges for inner dimensions

EWF 5561.3 Inspection equipment for the bushing in the brake block shoe

Use:

- Testing the bushing in the brake block shoe for minimum repair diameter

Design:

- No-go gauge for repair limit dimension — Nom. dim. 56 mm; 25.7 and 61.5 mm; 25.7 and 72 mm

Cross-reference to other measuring equipment:

- EWF 5500.22 Overview of rail depot measuring and testing equipment for brake block shoes

Ordering instructions:

- EWF 5561.3 Gauge - NN - bushing in the brake block shoe

  the Nom. dim. (NN) should be declared additional

EWF 5561.8 Inspection equipment for the height of the draw-bar guide

Use:

- Checking the height h of the draw-bar guide for minimum dimension in service

Design:

- No-go gauge for minimum dimension in service — Nom. dim. 67 mm; 65 mm

Cross-reference to other measuring equipment:

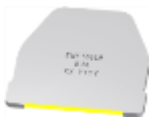
- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5561.8/1 Gauge - NN - for the height of the draw-bar guide

  the Nom. dim. (NN) should be declared additional

EWF 5561.9 Inspection equipment for the collar width of the sleeve shell halves



Use:

- Test of collar width l of the sleeve shell halves for the minimum diameter in service

Design:

- No-go flat gauge for minimum diameter in service — Nom. dim. 84 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5561.9 Gauge - B 84 - for the collar width of the sleeve shell halves

EWF 5561.10 Inspection equipment for the distance of the outer hole walls on the coupler fish plate

Use:

- Testing the distance e of the outer hole walls on the coupler fish plate for minimum dimension in service

Design:

No-go gauge for minimum diameter in service	Nom. dim.	427	mm
Bore diameter of the coupling fish plate	minimal	45	mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5561.10 Gauge - B 427 - for the distance of the outer hole walls on the coupler fish plate

EWF 5561.11 Inspection equipment for spring assembly journal hole diameter on the axlebox case

Use:

- Testing the limiting dimensions of the spring assembly journal hole diameter on axlebox cases

Design:

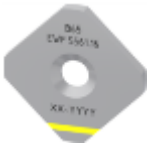
No-go plug gauge for minimum diameter in service	Nom. dim.	71	mm
Plug gauge for minimum working or gauge diameter	Nom. dim.	26	mm
No-go or go gauge for minimum working or gauge diameter	Nom. dim.	70 H11 / H8	mm

Ordering instructions:

- EWF 5561.11 Gauge - NN - for the spring assembly journal hole diameter on axlebox cases

  the requested design and the Nom. dim. (NN) should be declared additional

EWF 5561.16 Testing equipment for the arc width of the looped coupling link



Use:

- Testing the arc width b of the looped coupling link for minimum diameter in service

Design:

No-go flat gauge for minimum dimension in service	Nom. dim.	65	mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5561.16 Gauge - B 65 - for the arc width of the looped coupling link

EWF 5561.30 Inspection equipment for the cotter slot height on the brake shoe insert

Use:

- Checking the height of the cotter slot on the brake shoe insert for minimum dimension h

Design:

▮ No-go gauge for minimum dimension in service	Nom. dim.	14	mm
▮ Brake shoe insert back radius R	Nom. dim.	370 to 1,068	mm

Cross-reference to other measuring equipment:

▮ EWF 5500.5	Overview of rail depot measuring and testing equipment for brake shoe inserts

Ordering instructions:

▮ EWF 5561.30	Gauge for the brake shoe insert cotter slot height
	the requested brake shoe insert back radius R should be declared additional

EWF 5561.39 Inspection equipment for the jaw width of the draw-bar

Use:

- Checking the jaw width n of the draw-bar for minimum dimension in service

Design:

▮ No-go plug gauge for minimum diameter in service	Nom. dim.	60	mm

Cross-reference to other measuring equipment:

▮ EWF 5500.2	Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

▮ EWF 5561.39	Flat gauge - B 60 - for the draw-bar jaw width

EWF 5561.40 Inspection equipment for the jaw width of the draw-bar

Use:

- Checking the jaw width m of the draw-bar for minimum dimension in service

Design:

▮ No-go gauge for minimum diameter in service	Nom. dim.	45	mm
		46,5	mm

Cross-reference to other measuring equipment:

▮ EWF 5500.2	Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

▮ EWF 5561.40	Gauge - NN - for the draw-bar jaw width
	the Nom. dim. (NN) should be declared additional

EWF 5561.41 Inspection equipment for clevis drill hole on the draw-bar

Use:

- Checking the diameter d of the clevis drill hole on the draw-bar for minimum diameter in service

Design:

- No-go gauge for minimum diameter in service — Nom. dim. 63 mm / 58,5 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5561.41 Gauge - NN - for the diameter of the clevis drill hole on the draw-bar
  the Nom. dim. (NN) should be declared additional

EWF 5561.42 Inspection equipment for clevis width on draw-bar

Use:

- Checking the clevis width w of the draw-bar for minimum dimension in service

Design:

- No-go gauge for minimum diameter in service — Nom. dim. 65 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5561.42 Gauge - B 65 - for the draw-bar clevis width

EWF 5561.43 Inspection equipment for the diameter of the eye drill hole on the draw-bar

Use:

- Checking the diameter a_3 of the eye drill hole on the draw-bar for minimum diameter in service

Design:

- No-go gauge for minimum diameter in service — Nom. dim. 82 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5561.43 Gauge - NN - for the diameter of the eye drill hole on the draw-bar
  the Nom. dim. (NN) should be declared additional

EWF 5561.44 Inspection equipment for the diameter of the drill hole on the looped coupling link

Use:

- Checking the diameter d_1 of the drill hole on the looped coupling link for minimum diameter in service

Design:

- No-go gauge for minimum diameter in service — Nom. dim. 47.5 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5561.44 Gauge - B 47.5 - for the diameter of the drill hole on the draw-bar

EWF 5561.48 Inspection equipment for internal length of the suspension rings

Use:

- Checking the internal length L of the suspension ring for repair limit dimension

Design:

- No-go flat gauge for minimum dimension in service — Nom. dim. 142 to 340 mm

Cross-reference to other measuring equipment:

- EWF 5500.7 Overview of rail depot measuring and testing equipment for spring suspension of the cars

Ordering instructions:

- EWF 5561.48 Gauge - NN - for the internal length of the suspension rings

  the Nom. dim. (NN) should be declared additional

EWF 5561.49 Inspection equipment for the drill hole on the suspension ring stones

Use:

- Checking the diameter a of the drill hole on the suspension ring stones

Design:

- No-go plug gauge for minimum diameter in service — Nom. dim. 33 to 37 mm

Cross-reference to other measuring equipment:

- EWF 5500.7 Overview of rail depot measuring and testing equipment for spring suspension of the cars

Ordering instructions:

- EWF 5561.49 Gauge - NN - for the drill hole on the suspension ring stones

  the Nom. dim. (NN) should be declared additional

EWF 5561.50 Inspection equipment for the jaw width of the intermediate part for dual rings

Use:

- Checking the jaw width g on the intermediate part for dual rings

Design:

- No-go plug gauge for minimum diameter in service — Nom. dim. 62 mm / 64 mm

Cross-reference to other measuring equipment:

- EWF 5500.7 Overview of rail depot measuring and testing equipment for spring suspension of the cars

Ordering instructions:

- EWF 5561.50 Gauge - NN - for the jaw width of the intermediate part for dual rings

  the Nom. dim. (NN) should be declared additional

EWF 5561.55 Inspection equipment for contact bush on electrical train heating

Use:

- Checking the inside diameter of the contact bushing on the electrical train heating coupling

Design:

- No-go gauge for minimum diameter in service — Nom. dim. 24.9 mm

Cross-reference to other measuring equipment:

- EWF 5500.10 Overview of rail depot measuring and testing equipment for the electrical train heating coupling

Ordering instructions:

- EWF 5561.55 Inspection equipment for contact bush on electrical train heating

EWF 5561.67 Inspection equipment for the drill holes in the brake rigging of freight wagons

Use:

- Checking the drill holes in the brake rigging of freight wagons

Design:

- No-go flat gauge for minimum diameter in service — Nom. dim. Ø11 to Ø29 mm / Ø31 to Ø61 mm

Ordering instructions:

- EWF 5561.67 Gauge – NN - for the drill holes in the brake rigging of freight wagons

  the Nom. dim. (NN) should be declared additional

EWF 5561.69 Inspection equipment for spring-loaded side-bearer clearance of the bogie

Use:

- Checking the spring-loaded side-bearer clearance by gauging

Design:

- Flat gauge with varying Nom. dim. combinations 2 to 28 mm

Ordering instructions:

- EWF5561.69 Gauge – NN - for spring-loaded side-bearer clearance
  the Nom. dim. (NN) should be declared additional

Special designs

The following listing contains general examples for customizable dimensions of the standard measuring devices:

- nominal and limiting dimensions or measuring ranges can be extended, reduced or relocated

Note

7.2 Gauges for outer dimensions

EWF 5562.12 Inspection equipment for the guide width of the axlebox case

Use:

- Checking the guide width bf of the wheelset box case

Design:

- Snap gauge for working, gauge or minimum dimension in service

Nom. dim. 263 to 274.4 mm

Ordering instructions:

- EWF 5562.12/2 Snap gauge - NN - for the guide width of the axlebox case

  the Nom. dim. (NN) should be declared additional

EWF 5562.13 Inspection equipment for the collar width of the draw-bar, the pull rod and the pull rod intermediate piece

Use:

- Checking the collar width b of the draw-bar, the pull rod and the pull rod intermediate piece for minimum diameter in service

Design:

- Snap gauge for minimum diameter in service Nom. dim. 38 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.13 Snap gauge - B 38 - for the collar width of the draw-bar, the pull rod and the pull rod intermediate piece

EWF 5562.15 Inspection equipment for the bore hole wall thickness on the draw-bar jaw

Use:

- Checking the bore hole wall thickness s_1 on the draw-bar jaw for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service Nom. dim. 27 mm
  25 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.15 Snap gauge - NN - for the draw-bar bore hole wall thickness

  the Nom. dim. (NN) should be declared additional

EWF 5562.16 Inspection equipment for the draw-bar shaft thickness

Use:

- Checking the shaft thickness s_2 of the draw-bar for minimum diameter in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 54 to 56 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.16 Snap gauge - NN - for the draw-bar shaft thickness

  the Nom. dim. (NN) should be declared additional

EWF 5562.17 Inspection equipment for the clevis bore hole wall thickness on the draw-bar jaw

Use:

- Checking the clevis bore hole wall thickness s_3 of the draw-bar for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 39 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.17 Snap gauge - B 39 - for the clevis bore hole wall thickness on the draw-bar

EWF 5562.19 Inspection equipment for the journal diameter of the coupling nut

Use:

- Checking the journal diameter d of the coupling unit for minimum diameter in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 43 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.19 Snap gauge - B 43 - for the journal diameter of the coupling nut

EWF 5562.20 Inspection equipment for the arc thickness of the looped coupling link

Use:

- Checking the arc thickness d of the looped coupling link for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 33 mm / 36.5 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.20 Snap gauge - NN - for the arc thickness of the looped coupling link

  the Nom. dim. (NN) should be declared additional

EWF 5562.21 Inspection equipment for the bore hole wall thickness of the looped coupling link and the large coupling fish plate eye

Use:

- Checking the bore hole wall thickness of the looped coupling link and the large coupling fish plate eye for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 22 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.21 Snap gauge - B 22 - for the bore hole wall thickness of the looped coupling link and the large coupling fish plate eye

EWF 5562.36 Inspection equipment for the journal diameter of the brake triangles

Use:

- Checking the journal diameter of the brake triangles (without the bushing shrunk on) for cars

Design:

- Snap gauge for working, gauge or minimum diameter in service — Nom. dim. 39.25 to 60.4 mm

Ordering instructions:

- EWF 5562.36 Snap gauge - NN - for brake triangle end washer

  the Nom. dim. (NN) should be declared additional

EWF 5562.48 Inspection equipment for the wedge cam width on the brake shoe inserts

Use:

- Checking the wedge cam width b for minimum dimension in service

Design:

- No-go flat gauge for minimum diameter in service — Nom. dim. 40 / 45 mm
- Brake shoe insert radius R (for go-gauge) — Nom. dim. 450 to 718 mm

Cross-reference to other measuring equipment:

- EWF 5500.5 Overview of rail depot measuring and testing equipment for brake shoe inserts

Ordering instructions:

- EWF 5562.48/1.1 Gauge – no-go - for brake shoe insert wedge cam width
- EWF 5562.48 Gauge – go - for brake shoe insert wedge cam width

the Nom. dim. (NN) should be declared additional

EWF 5562.53 Inspection equipment for the collar width of the draw-bar, the pull rod and the pull rod intermediate piece

Use:

- Checking the collar diameter d_2 of the draw-bar, the pull rod and the pull rod intermediate piece for minimum diameter in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 49 to 51.5 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.53 Snap gauge - NN - for the collar diameter of the draw-bar, the pull rod and the pull rod intermediate piece

the Nom. dim. (NN) should be declared additional

EWF 5562.54 Inspection equipment for the bore hole wall thickness on the small coupling fish plate eye

Use:

- Checking the bore hole wall thickness s_1 of the small coupling fish plate eye for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 20 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.54 Snap gauge - B 20 - for the small coupling fish plate eye bore hole wall thickness

EWF 5562.55 Inspection equipment for the flange thickness of the sleeve shell half

Use:

- Checking the flange thickness of the sleeve shell half for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 13.5 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.55 Snap gauge - B 13.5 - for the flange thickness of the sleeve shell half

EWF 5562.56 Inspection equipment for clevis thickness of the draw-bar

Use:

- Checking the clevis thickness c of the draw-bar for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 27 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.56 Snap gauge - B 27 - for the clevis thickness of the draw-bar

EWF 5562.57 Inspection equipment for the eye thickness of the draw-bar

Use:

- Checking eye thickness a_1 of the draw-bar for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 57 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.57 Snap gauge - B 57 - for the eye thickness of the draw-bar

EWF 5562.58 Inspection equipment for the eye bore hole wall thickness of the draw-bar

Use:

- Checking the bore hole wall thickness a_2 of the eye bore hole on the draw-bar for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim.s — 32 mm / 42 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.58 Snap gauge - NN - for the eye bore hole wall thickness of the draw-bar
  the Nom. dim. (NN) should be declared additional

EWF 5562.59 Inspection equipment for the shaft diameter of the pull rod

Use:

- Checking the shaft diameter d_1 of the pull rod for minimum diameter in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim.s — 48 mm / 50.5 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.59 Snap gauge - NN - for the shaft diameter of the pull rod
  the Nom. dim. (NN) should be declared additional

EWF 5562.60 Inspection equipment for the leg diameter of the looped coupling link

Use:

- Checking the leg diameter c of the looped coupling link for minimum diameter in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. — 28 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.60 Snap gauge - B 28 - for the leg diameter of the looped coupling link

EWF 5562.61 Inspection equipment for the coupling fish plate width

Use:

- Checking the width a of the coupling fish plate for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 39.8 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.61 Snap gauge - B 39.8 - for the width of the coupling fish plate

EWF 5562.62 Inspection equipment for the coupling fish plate thickness

Use:

- Checking the thickness b of the coupling fish plate for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 13.8 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.62 Snap gauge - B 13.8 - for the thickness of the coupling fish plate

EWF 5562.63 Inspection equipment for the lateral bore hole wall thickness on the large coupling fish plate eye

Use:

- Checking the lateral bore hole wall thickness c of the large coupling fish plate eye for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 19 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.63 Snap gauge - B 19 - for the large coupling fish plate eye lateral bore hole wall thickness

EWF 5562.64 Inspection equipment for the lateral bore hole wall thickness on the small coupling fish plate eye

Use:

- Checking the lateral bore hole wall thickness d of the small coupling fish plate eye for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 17 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5562.64 Snap gauge - B 17 - for the small coupling fish plate eye lateral bore hole wall thickness

EWF 5562.66 Inspection equipment for the clearance between the guide rails and the contact surface on the axlebox case

Use:

- Checking the clearance between the guide rails and the contact surface on the axlebox case

Design:

- No-go gauge for minimum diameter in service — BA 03, BA 05, BA 06 or BA 88

Ordering instructions:

- EWF 5562.66 Gauges for the clearance between the guide rails and the contact surface on the axlebox case

  the requested design should be declared additional

EWF 5562.69 Inspection equipment for the spring bolt shaft diameter

Use:

- Checking the diameter d of the spring bolt shaft for minimum diameter in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 28 to 43 mm

Cross-reference to other measuring equipment:

- EWF 5500.7 Overview of rail depot measuring and testing equipment for spring suspension of the cars

Ordering instructions:

- EWF 5562.69 Snap gauge - NN - for the shaft diameter of the spring bolt

  the Nom. dim. (NN) should be declared additional

EWF 5562.72 Inspection equipment for the root face diameter of the suspension ring

Use:

- Checking the diameter b of the suspension ring root face

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 23 to 35 mm

Cross-reference to other measuring equipment:

- EWF 5500.7 Overview of rail depot measuring and testing equipment for spring suspension of the cars

Ordering instructions:

- EWF 5562.72 Snap gauge - NN - for the root face diameter of the suspension ring
  the Nom. dim. (NN) should be declared additional

EWF 5562.75 Inspection equipment for the electrical train heating plug-in connector

Use:

- Checking the outer diameter of the connector upper part on the electrical train heating plug-in connector for impermissible deformation

Design:

- No-go annular gauge for minimum diameter in service — Nom. dim. 70 mm

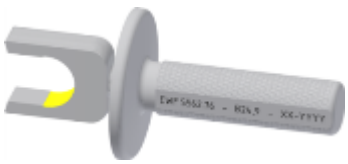
Cross-reference to other measuring equipment:

- EWF 5500.10 Overview of rail depot measuring and testing equipment for the electrical train heating coupling

Ordering instructions:

- EWF 5562.75 Ring gauge – B 70,1 - for the electrical train heating plug-in connector

EWF 5562.76 Inspection equipment for the electrical train heating plug-in connector



Use:

- Checking the outer diameter of the plug contact on the electrical train heater coupling

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 24.9 mm

Cross-reference to other measuring equipment:

- EWF 5500.10 Overview of rail depot measuring and testing equipment for the electrical train heating coupling

Ordering instructions:

- EWF 5562.76 Snap gauge – B 24,9 - for the electrical train heating plug-in connector

EWF 5562.87 Inspection equipment for the studs on the brake rigging of cars

Use:

- Checking the studs on the brake rigging of cars

Design:

- No-go flat gauge for minimum diameter in service — Nom. dim. Ø10 to Ø30 mm; Ø31 to Ø60 mm

Ordering instructions:

- EWF 5562.87 Snap gauge – NN - for studs on the brake rigging of cars
  the Nom. dim. (NN) should be declared additional

EWF 5562.89 Inspection equipment for the wall thickness of the brake block shoes

Use:

- Checking the wall thickness of the brake block shoes

Design:

- No-go gauge for repair limit dimension — Nom. dim. 5 mm

Cross-reference to other measuring equipment:

- EWF 5500.22 Overview of rail depot measuring and testing equipment for brake block shoes

Ordering instructions:

- EWF 5562.89 Snap gauge - B 5 - repair limits (brake shoe wall thickness)

EWF 5562.90 Inspection equipment for the width of the brake block shoes

Use:

- Checking the width of the brake block shoes

Design:

- No-go gauge for repair limit dimension — Nom. dim. 80 mm

Cross-reference to other measuring equipment:

- EWF 5500.22 Overview of rail depot measuring and testing equipment for brake block shoes

Ordering instructions:

- EWF 5562.90 Snap gauge - NN - repair limits (brake block shoe width)
  the Nom. dim. (NN) should be declared additional

Special designs

The following listing contains general examples for customizable dimensions of the standard measuring devices:

- nominal and limiting dimensions or measuring ranges can be extended, reduced or relocated

Note

7.3 Gauges for other dimensions and shapes

EWF 5563.38 Inspection equipment for the depth of the sleeve shell half

Use:

- Checking the depth h of the sleeve shell half for minimum dimension in service

Design:

- Snap gauge for minimum diameter in service — Nom. dim. 25 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5563.38 Snap gauge - B 25 - for the depth of the sleeve shell half

EWF 5563.44 Inspection equipment for the back thickness of the sleeve shell half

Use:

- Checking the back thickness m of the sleeve shell half for minimum dimension in service

Design:

- No-go probe for minimum dimension in service — Nom. dim. 4.5 mm

Cross-reference to other measuring equipment:

- EWF 5500.2 Overview of rail depot measuring and testing equipment for draw gear parts

Ordering instructions:

- EWF 5563.44 Snap gauge - B 4.5 - for the back thickness of the sleeve shell half

EWF 5563.45 Inspection equipment for the rubber thrust springs on the electric locomotive

Use:

- Checking the built-in rubber thrust springs on the electric locomotive for minimum dimension in service or machining limiting dimension

Design:

- Flat limiting dimension gauge — Ident. 230/70 - 150, 230

Ordering instructions:

- EWF 5563.45 Operational limit go gauge - NN - for installed rubber thrust springs on the electric locomotive

  the requested design or the Nom. dim. (NN) should be declared additional

EWF 5563.46 Inspection equipment for the clearance of the guide journal on the cover surface of the axlebox case

Use:

- Checking the clearance between the guide journal on the cover surface of the axlebox case

Design:

- No-go gauge for minimum diameter in service — Nom. dim. 70 mm

Ordering instructions:

- EWF 5563.46 Gauge - B 70 - clearance between the guide journal on the cover surface of the axlebox case BA 89

EWF 5563.47 Inspection equipment for the gearing height of the axlebox case

Use:

- Checking the gearing height on axlebox cases

Design:

- No-go gauge for minimum diameter in service — Nom. dim. 5 mm

Ordering instructions:

- EWF 5563.47 Gauge - B 5 - for gearing height of the axlebox case BA 89

EWF 5563.56 Mounting template for Indusi magnet

Use:

- Checking the mounting height of vehicle magnets for intermittent automatic train running control on the rail vehicle
- Mounting aid for vehicle magnet
- Vehicles with mounted magnets standing on a track with the basic top of rail

Design:

- Nom. dim. gauge 175.2 mm

Cross-reference to other measuring equipment:

- EWF 5578.38 Measuring device for the attachment height of intermittent automatic train running control (Indusi)
- EWF 5578.37 Measuring device for the attachment height of intermittent automatic train running control (Indusi), continuous automatic train-running control and front-end ground spoiler

Ordering instructions:

- EWF 5563.56 Mounting template for Indusi magnet clearance

EWF 5563.57 Inspection equipment for qR dimension

Use:
- Assessment check of the wheel profile for compliance with the limiting dimensions for the q_R dimension
- Preliminary assessment as to whether or not a wheel profile measurement is necessary

Design:
- Substantially simplified test contour — Nom. dim. 6.5 mm
- usable for height of the flange — ≤ 31 mm

Cross-reference to other measuring equipment:
- EWF 5573.77/1 Measuring device for flange thickness, height of the flange and q_R dim.
- EWF 5573.601 Measuring device for the flange thickness, height of the flange, q_R dimension and tyre/wheel rim thickness

Ordering instructions:
- EWF 5563.57 Gauge for q_R dimension

EWF 5563.58 Inspection equipment for brake block shoes

Use:
- Checking the minimum dimension in service at the brake block shoe
- Brake block shoe with brake blocks removed

Design:
- No-go gauge for minimum diameter in service

Cross-reference to other measuring equipment:
- EWF 5500.22 Overview of rail depot measuring and testing equipment for brake block shoes

Ordering instructions:
- EWF 5563.58 No-go gauge for brake block shoes

EWF 5563.59 Inspection equipment for height of the flange

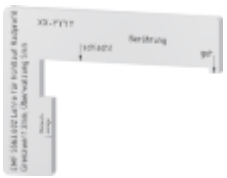
Use:
- Assessment check of wheel profile for maximum height of the flange h (S_h)
- Preliminary assessment as to whether or not a wheel profile measurement is necessary

Design:
- Substantially simplified test contour — Nom. dim. 31 mm

Cross-reference to other measuring equipment:
- EWF 5573.77/1 Measuring device for flange thickness, height of the flange and q_R dim.
- EWF 5573.601 Measuring device for the flange thickness, height of the flange, q_R dimension and tyre/wheel rim thickness

Ordering instructions:
- EWF 5563.59 Gauge for checking the height of the flange (h = 31 mm)

EWF 5563.602 Inspection equipment for wheel tread wear and projection



Use:

- Checking the wheel tread wear and projection on the wheel profile for threshold limit values
- Wheel profile on installed and removed wheelsets

Design:

- Minimum diameter gauge

Wheel tread wear Nom. dim.	2	mm
Projection Nom. dim.	5	mm

Ordering instructions:

- EWF 5563.602 Gauge for tread wear threshold limit value 2 mm and projection threshold limit value 5 mm

EWF 5564.1 Inspection equipment for axle shaft centring drill hole

Use:

- Checking the centring drill holes on axle shafts for threshold limit dimensions

Design:

Minimum diameter gauge	Nom. dim.	30	mm
No-go gauge for minimum diameter in service	Nom. dim.	40	mm

Ordering instructions:

- EWF 5564.1 Gauge – NN - for axle shaft centring drill hole

  the Nom. dim. (NN) should be declared additional

EWF 5566.10 Inspection equipment for wheel profile

Use:

- Checking the wheel profile shape (wheel flange and wheel tread) with the aid of the light gap principle
- Gauging of major deviations with the aid of test pins
- Checking the wheel flange with two pieces of inspection equipment directly connected with a magnet
- Check on the wheelset using two pieces of inspection equipment connected by a ruler

Design:

- Gauge with target profile

Ordering instructions:

- EWF 5566.10 Gauge for tyre profile

  the desired wheel profile must be stated

- According to drawing 5566.010.000.010
  Clamping piston for wheel profile gauge on standard rule

EWF 5566.11 Wheel profile template for copying lathe

Use:

- Use in copying lathes or machine working on similar lines
- Wheel profile normal used as the basis for machining

Design:

- Gauge with target profile

Ordering instructions:

- EWF 5566.11 Wheel profile template for copying lathe

  the desired wheel profile and the fixing shape must be stated

EWF 5566.32 Inspection equipment for brake surface radii

Use:

- Checking the radii E_1 and E_2 on the braking surface of the brake shoe insert

Design:

- Gauge with target radii Nom. dim. 175 to 900 mm

Cross-reference to other measuring equipment:

- EWF 5500.5 Overview of rail depot measuring and testing equipment for brake shoe inserts

Ordering instructions:

- EWF 5566.32 Gauge for brake surface radii

  the requested radii should be declared additional

EWF 5566.35 Inspection equipment for brake surface inclination and shape

Use:

- Checking the inclination and shape n of the brake surface on the brake shoe insert

Design:

- Gauge with target profile

Cross-reference to other measuring equipment:

- EWF 5500.5 Overview of rail depot measuring and testing equipment for brake shoe inserts

Ordering instructions:

- EWF 5566.35 Gauge for brake surface inclination and shape

  the requested inclination and shape should be declared additional

EWF 5566.44 Inspection equipment for compound curves

Use:

- Checking the compound curve shape on axle shafts using the light gap principle
- Gauging of major deviations with the aid of test pins
- Single gauge or as a gauge set in the housing

Design:

- Gauge with target profile

Ordering instructions:

- EWF 5566.44 Working gauge for compound curves

  the desired compound curve profile must be stated (e.g. R75x40/R15x34Ø)

EWF 5566.45 Inspection equipment for felt ring groove

Use:

- Checking the felt ring groove for desired dimensions
- On the removed axlebox case

Design:

- Gauge for desired dimensions

Nom. dim.s 12x12 mm
16x14 mm

Ordering instructions:

- EWF 5566.45 Gauge for felt ring seal 12x12 / 16x14

EWF 5568.601 Inspection equipment for buffer centre punch

Use:

- Checking and transferring the buffer centre to the vehicle body
- With the buffer removed
- Fastening bores of buffer as test basis

Design:

- Target dimension gauge

Nom. dim. symmetrical (DR)
7.5 mm below buffer centre (DB)

- Distance between the fastening bores of the buffer

160 mm

Cross-reference to other measuring equipment:

- EWF 5500.21 Overview of rail depot measuring and testing equipment for buffers

Ordering instructions:

- EWF 5568.601 Gauge for buffer centre punch

  the requested design should be declared additional

Special designs

The following listing contains general examples for customizable dimensions of the standard measuring devices:

- faces or shapes for measuring, referencing or examining can be customized to special applications
- nominal and limiting dimensions or measuring ranges can be extended, reduced or relocated

Note

8 Appendix

8.1 Technical notes

The present catalog doesn't make claims of being complete, but it shows a representative cross section of the available measuring and inspection devices. According to the continuous engineering of measuring tasks and the development of vehicles, infrastructure, directives and manufacturer specifications, the range of rail depot measuring and testing equipment is growing steadily.

Accordingly the most important rail depot measuring and testing equipment is listed. This will be completed by new products, developed on the basis of current requirements.

Therefore the catalog can give a small impression of available rail depot measuring and testing equipment only. It should encourage you asking the DB Systemtechnik for your special requests.

All listed rail depot measuring and testing equipment and its components were developed and manufactured accordingly to German and European standards. It reflects the state of the art and the devices are robust, durable and easy to handle.

8.2 Index of EWF-number

8.3 Keyword index

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