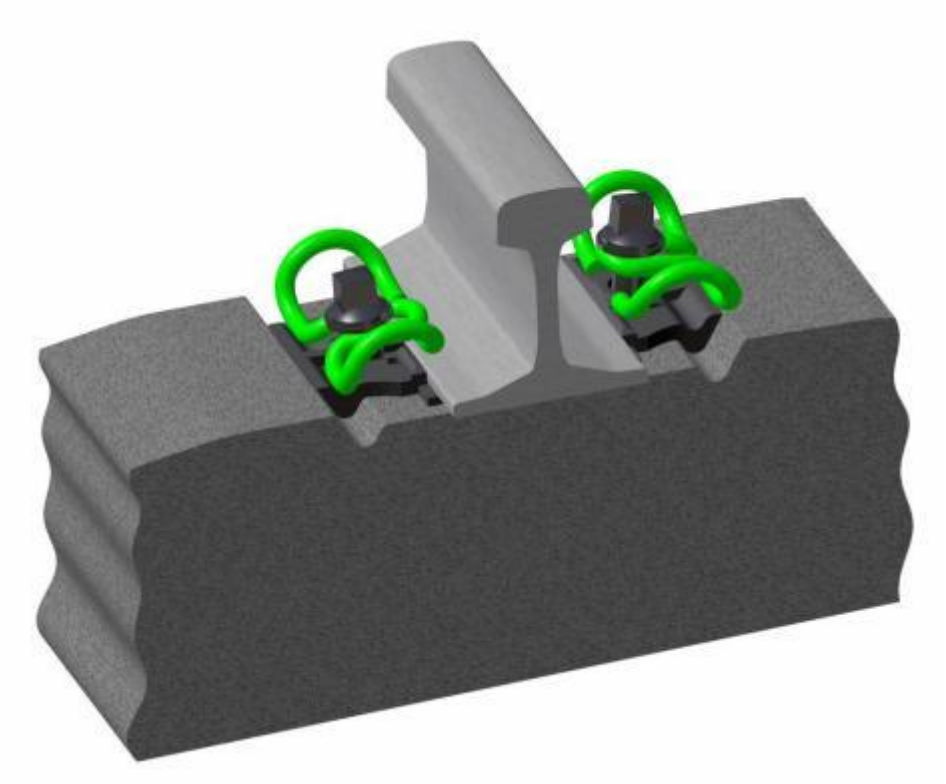
vossloh Fastening Systems

RAIL FASTENING SYSTEM FOR BALLASTED TRACK



Installation, operation and maintenance manual

System W 30 HH

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Contact:
Vossloh Fastening Systems GmbH
P.O. Box 18 60
58778 Werdohl
Germany

Phone +49 (0) 23 92/52-0
Fax +49 (0) 23 92/52-375
info@vfs.vossloh.com
www.vossloh.com
www.vossloh-fastening-systems.com

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Disclaimer:
The information provided in this document contains merely general descriptions or characteristics of performance which in the actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in writing.

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1. General notes

1.1 This manual contains instructions regarding the installation, operation and/or maintenance of the Vossloh rail fastening system W 30 HH (hereinafter "***Product***"). These instructions are an integral part of the delivery of the Product and must be kept in its vicinity for reference at all times. The user of the Product (hereinafter "***User***") agrees and acknowledges that non-compliance with the instructions and recommendations set forth herein will void any warranty or guarantee provided by Vossloh Fastening Systems GmbH (hereinafter "***Vossloh***").

1.2 User will use qualified persons to handle the Product. Such personnel will be specifically trained and must ensure that the installation, operation and/or maintenance of the Product satisfy all requirements of all applicable laws, regulations, guidelines and standards. The Product may be handled only by persons qualified for the work concerned and in accordance with the instructions relating to the work concerned, particularly the safety and warning notes contained in those instructions.

1.3 All persons involved in the installation, operation and/or maintenance of the Product must have read and understood these instructions and must comply with them at all times. Vossloh accepts no responsibility for damage or disruption caused by disregard of these instructions.

1.4 In the interest of technical progress Vossloh reserves the right to make changes to the individual Products and its accessories which Vossloh regards as necessary to preserve their essential characteristics and improve their efficiency and safety.

2. Storage of the Product

2.1 User agrees to follow all required rail and track maintenance to avoid system influence. During storage and construction, User will not expose the components to aggressive fluids and/or chemical agents. User will not expose the Product to open flames, including, but not limited to, heat during track welding.

2.2 The Product must be stored in a dry environment for protect against the influence of weather. The boxes should be free of packing material. The boxes can be stacked on each other not more than 2-fold. Unfavorable storage conditions and improper treatment of the components of the Product will negatively affect their physical properties. Such negative effects may be caused by, among other things, the expose to extreme temperatures, moisture, or solvents.

2.3 When using wooden beams for the storage of stacked sleepers, User will prevent the Product, including, but not limited to, the sleeper screws, from coming into contact with the sleepers above. Beams must have a min. size of 85mm

DO NOT locate the wood dunnage on the rail pad



3. Assembly of dowel during production

3.1. Vossloh recommends using elastic dowel holders only (non-metallic dowel holders).

3.2 User agrees that:

(i) the surface of the dowel holder and the area around the dowel holder must be free of dirt and particles of concrete; and

(ii) the dowel must be screwed onto the dowel holder, not hammered in.

3.3 See Appendix 3 for instruction on how to assemble the dowel holder onto the sleeper production mould.

Subject to technical changes and improvements

4. Installation

The Product consists of the following components per sleeper:

Pos.	Component	Quantity
1	Tension clamp Skl 30	4
2	Angled guide plate Wfp 30 K HH	4
3	Elastic rail pad Zw	2
4	Plastic dowel Sdü	4
5	Sleeper screw Ss with washer Uls	4

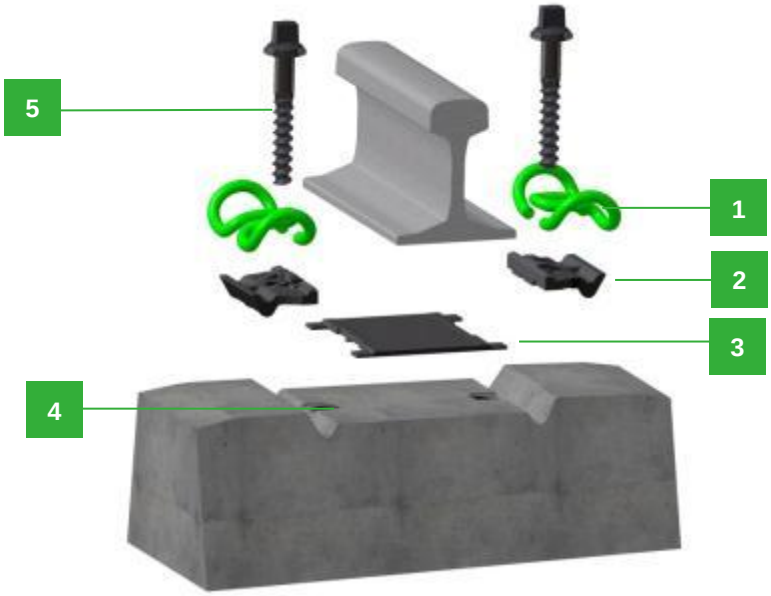
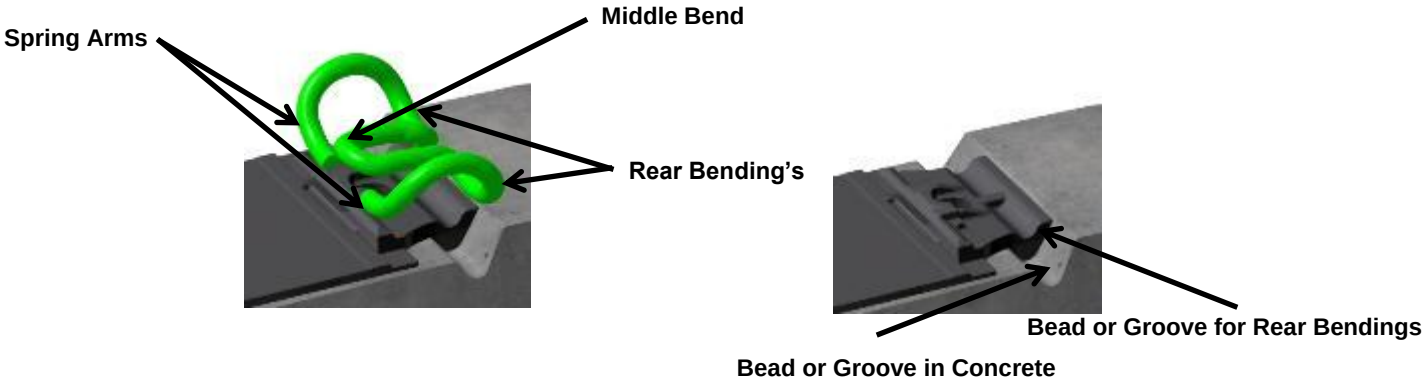


Illustration of Product

4.1 Pre-assembly

All components of the Product can be pre-assembled in the sleeper factory according to the following instructions:

Product – Component Details



For pre-assembly of the Product, Customer agrees to:

a. visually check the support area;



b. If the sleepers are not delivered with the pre-assembled Product, the dowels must be closed with plastic caps.
Remove plastic cap from dowel when in use;



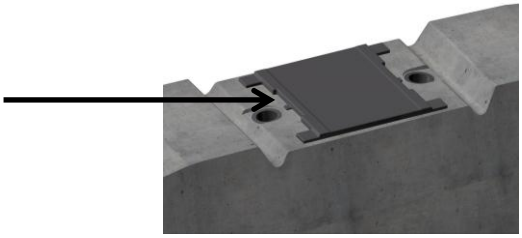
You must make sure that there is no water, dirt and/or any other substance in the dowel.

c. maintain the dowel, rail seat area and area of the bend free from dirt and particles of concrete

d. place the rail pad on the rail seat of the sleeper;

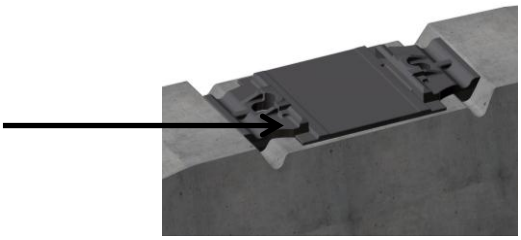
→ The lips of the pad are shown in the lateral sleeper direction

→ The smooth surface of the pad faces up



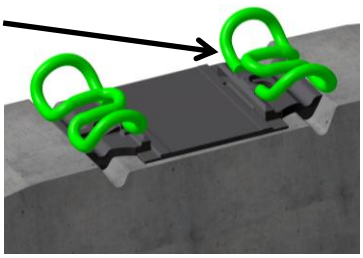
e. place the guide plates in the bead of the sleeper; the noses of the rail pad must be in position with the guide plates;

Ensure that the “teeth” of the guide plate sits on the small lips of the rail pad



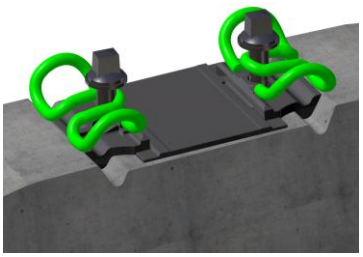
f. place tension clamp onto the angled guide plate in the appropriate pre-assembly position;

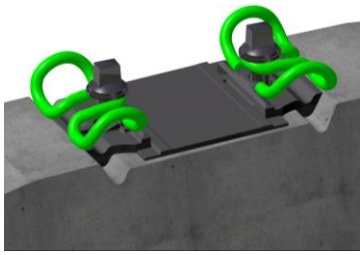
→ Outer spring arms rest on the groves of the guide plates



g. Insert sleeper screws and tighten (clockwise) approx. 50 Nm using only the suitable socket (box spanner) for tightening;

h. We recommend dipping the screw threads into grease (Ferrocoat, Elaskon or similar approved lubricants) before inserting of the sleeper screws;





i. Maintain guide plates in correct position when tightening sleeper screws, keeping the guide plates in contact with the concrete shoulders of the sleeper. The user is informed that the guide plates stay in the correct position when tightening the sleeper screws. The guide plates must stay in contact with the concrete shoulders of the sleeper. This can be helped by placing a steel plate (width according to the width of the rail foot) on top of the rail pad. The steel plate must be removed after the pre-assembly.

j. Create a gauge true rail channel

4.2 Final assembly

For final assembly of the Product, user agrees to:

→ The sleepers come to the site pre-assembled as shown;



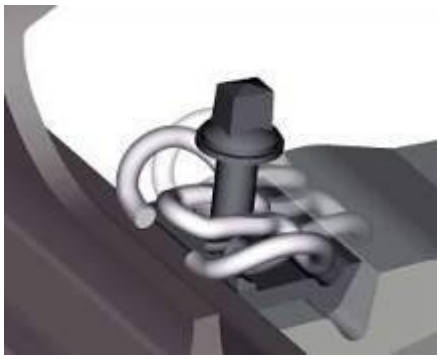
a. Place the rails in correct position on the sleeper seat between the guide plates and on top of the rail pad;

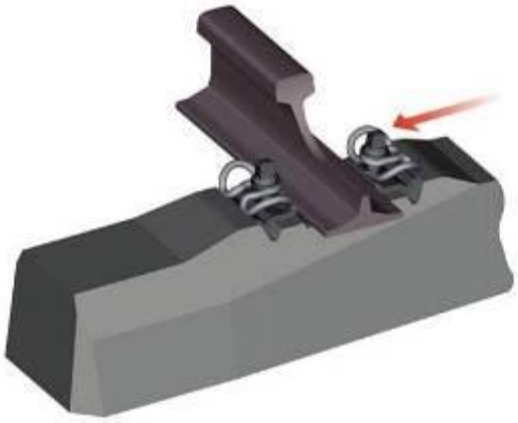


b. Loosen the sleeper screws approximately 2-3 turns in a counter-clockwise direction;



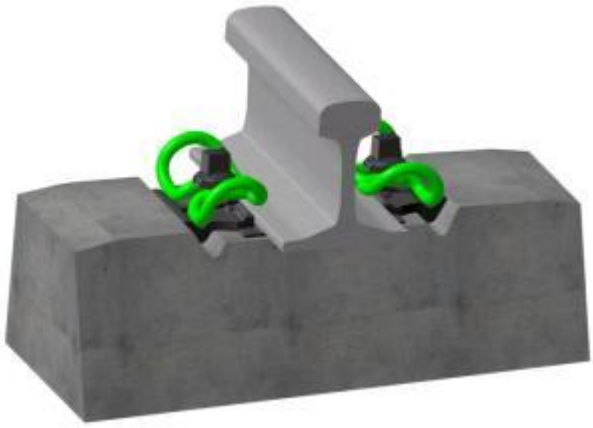
c. Move the tension clamps from the pre-assembly position to the assembly position (with spring arms resting on rail foot);



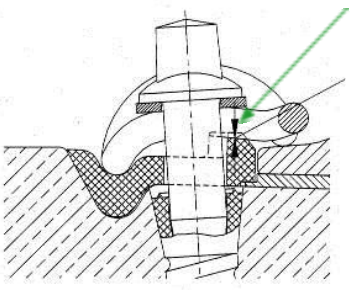


d. Tighten sleeper screws until the middle bend of the tension clamp is in contact with the rib of the angled guide plates (max permissible air gap 0.5mm), generally reached at a torque of approximately 350Nm;





Final positioning of the tension clamps



The tension clamp is correctly fitted when the middle bend of the tension clamp it is in contact with the rib of the angled guide plate through the tightening of the sleeper screw. An air gap of max. 0.5 mm is permitted.

5. Operation

5.1 Gauge regulation

With respect to the operation of the Product client agrees to and understands that (see Appendix 1):

a. Gauge adjustment to a maximum of ±10 mm in steps of 2.5 mm by using angled guide plates with different widths as follows:
   i. Loosen sleeper screws and remove from dowels;
   ii. Avoid dirt, sand or other particles will enter the dowel after screw removal
   iii. Remove tension clamps;
   iv. Take out standard guide plates;
   v. Choose required guide plates according to the necessary gauge regulation;
   vi. Use correct guide plates for gauge and field side;
   vii. Place guide plates for gauge regulation onto sleeper; ensuring angled guide plates are positioned correctly;
   viii. Insert sleeper screws and tighten according to assembly instructions.

5.2 Neutralisation/distressing

There is no need to remove rail fastening components from the sleeper with continuous welded rails (CWR). The sleeper screws have to be loosened, but they do not need to be removed.

User agrees not to expose the Product or any of its components to open flame or extreme heat – for example, during rail welding works. We recommend to cover and protect the fastening system from extreme heat during the de-stressing operation.

6. Maintenance and inspection

Though, the Product itself does not require regular maintenance, it is essential to conduct certain maintenance and inspection measures, as set out in further detail herein, to ensure the compliance of the Product with the technical specifications.

With respect to maintenance and inspection of the Product the User should regularly:

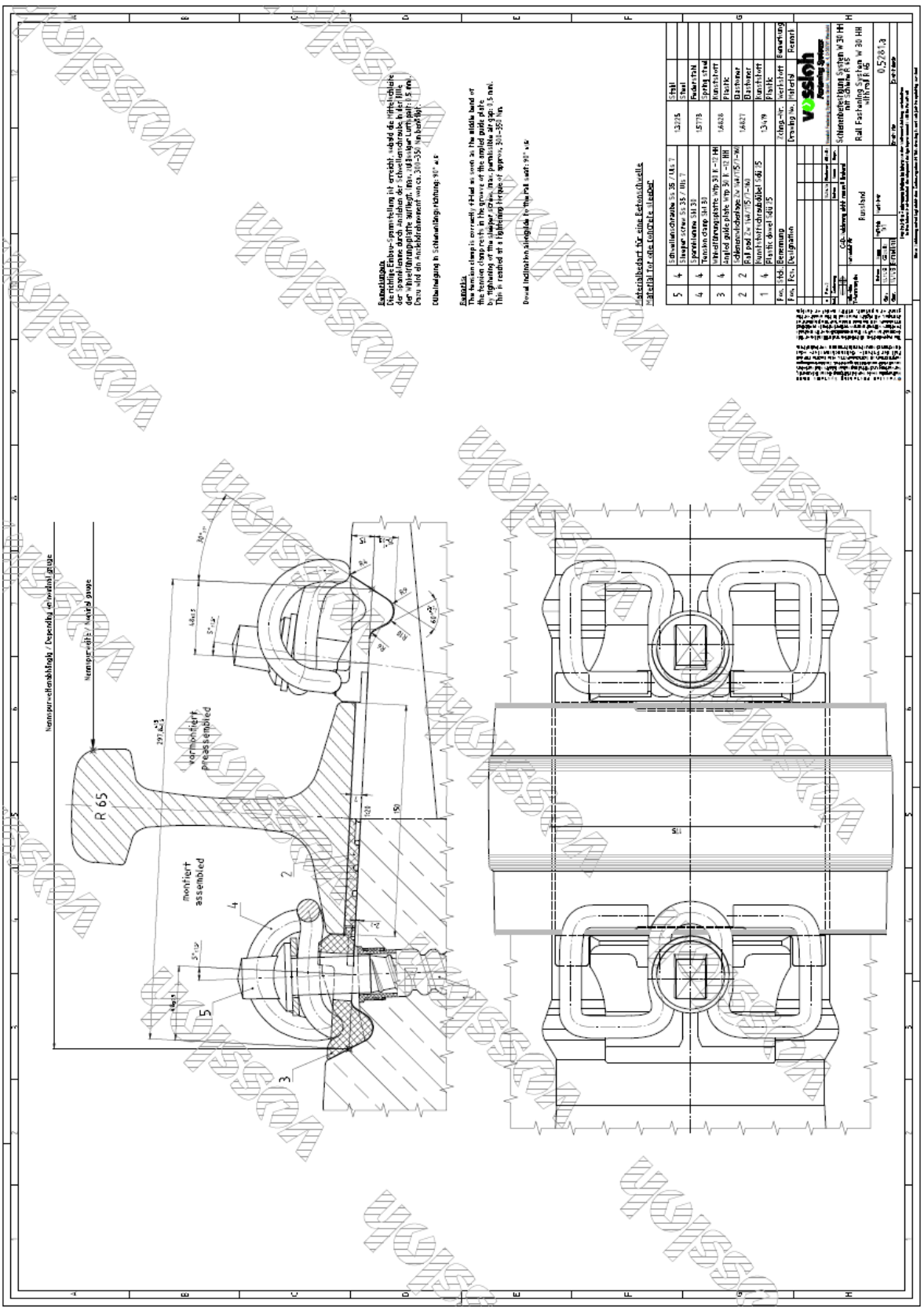
- conduct period inspection of track geometry, including, but not limited to, gauge and height measurements;
- perform visual/video check for damaged or missing components (e.g. through vandalism)

The User must ensure that all rail and track maintenance is performed in accordance with all applicable laws, regulations and standards, including, but not limited to the following requirements:

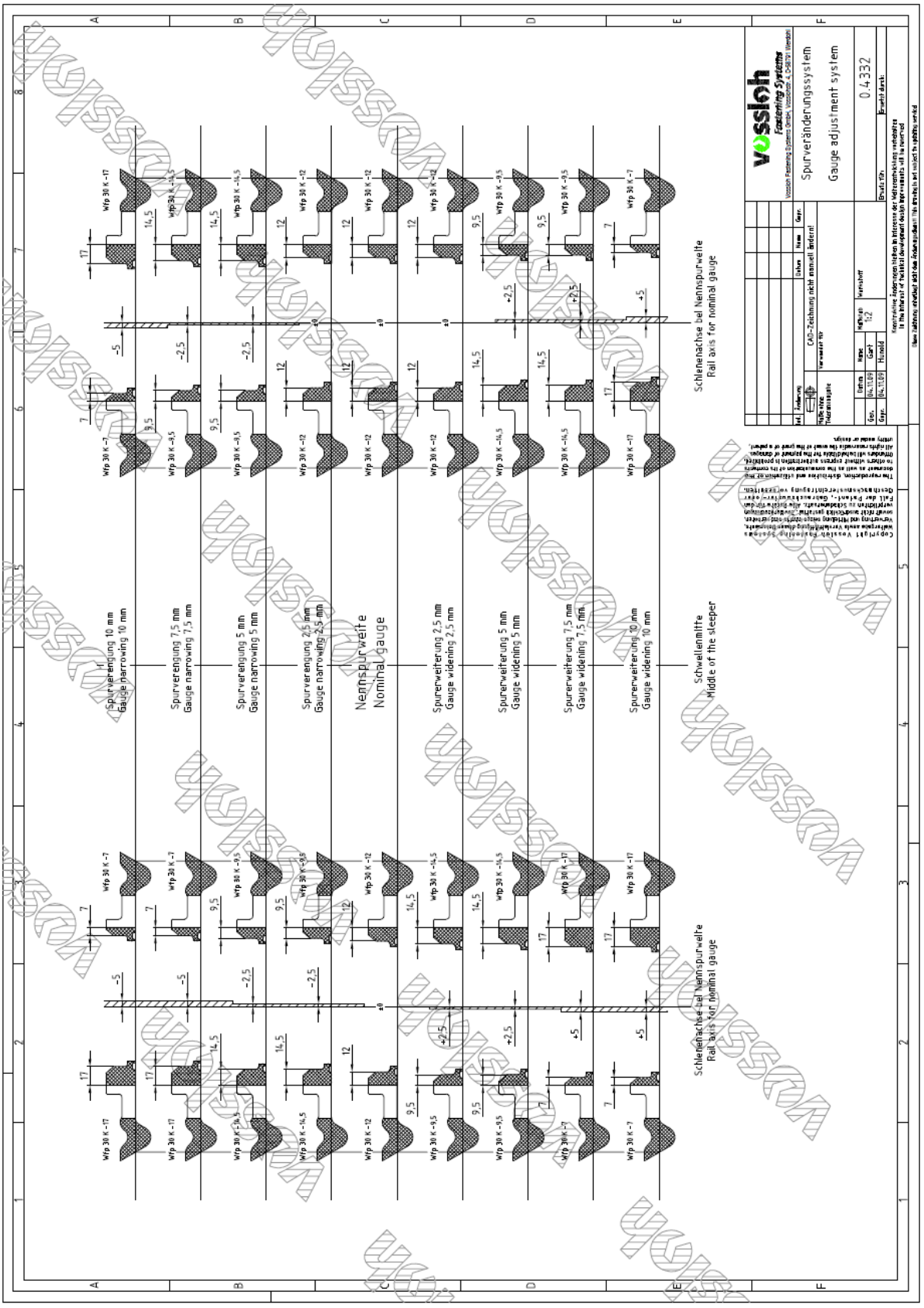
a. Perform regular inspections of the track geometry including but not limited to gauge and height measurements.
b. Regular rail grinding to avoid corrugation;
c. Non-exposure of Product to corrosive or abrasive substances;
d. Maintain the surface of the concrete to be free of cracks and other damage that could alter or affect the component's function.

7. Appendix

Appendix 1: Explanatory illustration of Product
Appendix 2: Exemplary Table of gauge adjustments
Appendix 3: Positioning of the dowel holder

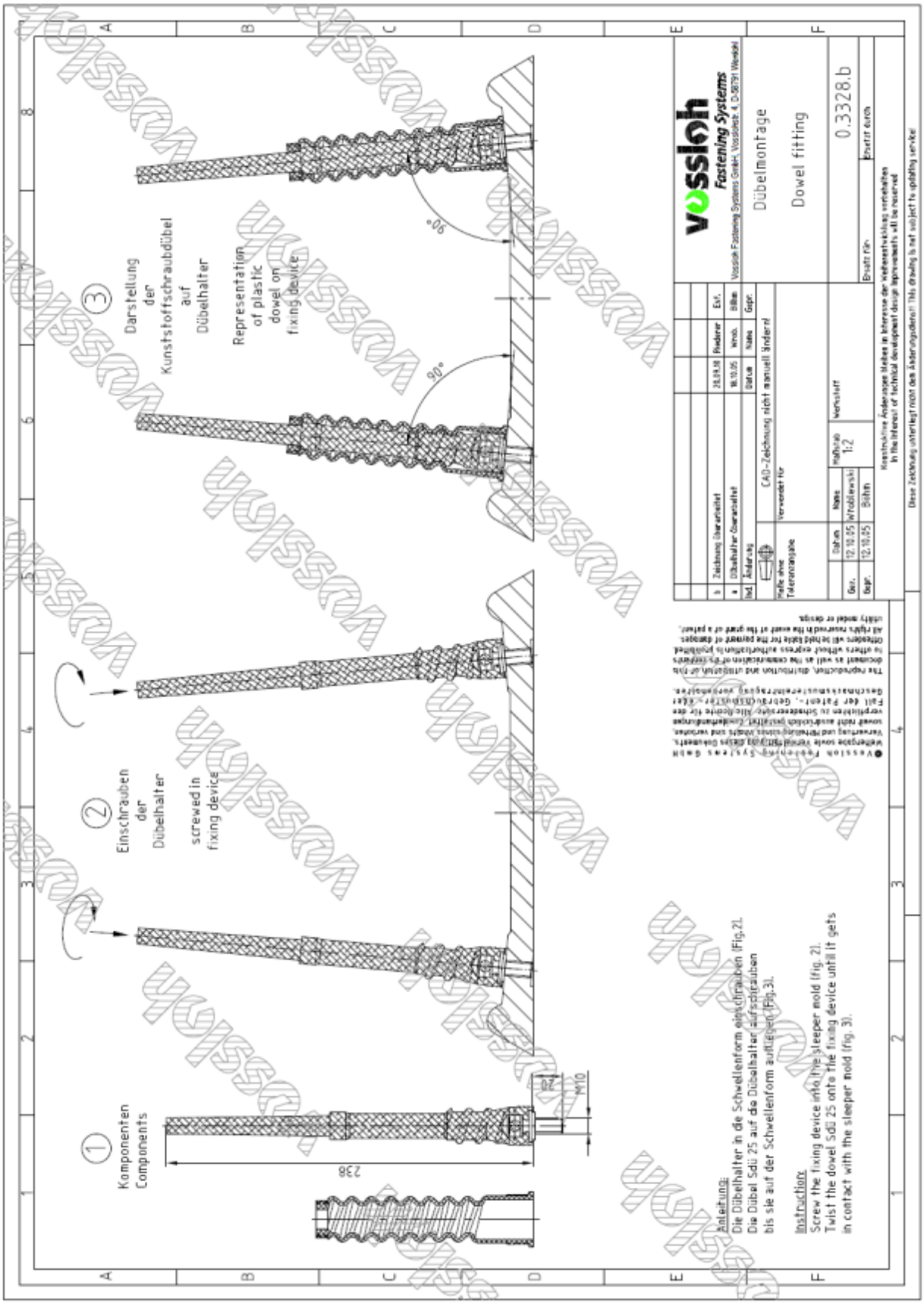


Appendix 1: Explanatory illustration of Product



Appendix 2: Exemplary Table of gauge adjustments

Subject to technical changes and improvements



Appendix 3: Positioning of the dowel holder