

MANUAL



STANDARD DOUBLE SLIDE RAIL SYSTEM **DG-FP**

EURO VERBAU® GmbH

Hocksteiner Weg 30 D-41189 Mönchengladbach
Tel: +49 21 66-3 98 63 60 Fax: +49 21 66-3 98 63 78
Site: www.euroverbau.de Mail: info@euroverbau.de



TRENCH SHORING SYSTEMS FROM SHORING PROFESSIONALS

Trench shoring equipment

Production - Sales - Rental - Service

These instructions for use must be presented to the building site personnel.

Also to be observed are the diagram of stresses on the lower braces and the load-bearing diagram (bracing characteristic) for the relevant type of brace. The brace stresses read from the diagram have to be applied to the appropriate load-bearing diagram to see whether the system is usable in regards of the trench depth and width.

1. General purpose of use

The slide-rail shoring with a max. bending moment of the base rail of up to $M_s = 220 \text{ kNm}$ is perfect for deeper pipe laying jobs, where working with boxes gets more difficult.

2. Specifications

Rail length:	4,50 m / 5,50 m
Weight:	396 kg / 489 kg

3. Safety regulations

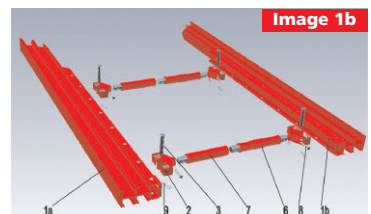
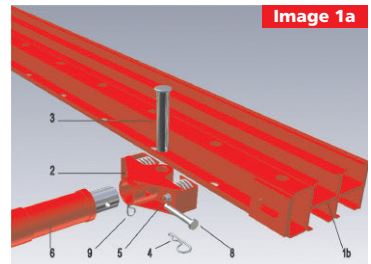
WARNING We refer to the fact that the above shoring system is only for the intended use and may only be assembled, installed, dismantled and unmounted in the sequence listed under points 4 - 7, exclusively with the use of all relevant "original construction elements".
The shoring plates used are slide-rail plates of the KRA/KRI VS 100 type (plate thickness 105 mm) and KRA/KRI VS 120 (plate thickness 125 mm).
If these facts are not obeyed, the manufacturer's liability and warranty are invalid. Observe the load-bearing capacity of the shoring elements.

Note:

All of the requirements of BG-Bau (the professional association) as well as DIN 4124 "Excavations and trenches, embankments, workroom widths, shoring" are applicable. In the event of conditions deviating from the standard conditions, construction site statics must be prepared.

4. Assembly (see Fig. 1a/1b):

- Lay the slide rail (Fig. 1 a) on the ground with its soldiere profile turned to the side.
- Insert the pretensioned spring spindel holders caps (2) into the soldier profile, slide the corresponding bolts (3) $d = 43 \text{ mm}$, $L = 212 \text{ mm}$ into the mounting holes provided in the slide rail and spring spindel holders, and secure them with safety clips (4). Densation the spring spindel holders by loosening the nuts (5).
Note: Two spring spindel holders with a strut (6) and possibly an extensions pipe (7) form one strut unit. Only one extension pipe per spindel unit of max. 2.50 m length may be used. The number of spindel units (2 or 3) on one slide rail is determined by the statics or the construction site conditions.
- Insert an appropriate number of spindels (6) into the spring spindel holders, insert the bolts (8) $d = 20 \text{ mm}$, $L = 140 \text{ mm}$ and secure with safety clips (9). If necessary, i.e. according to the ditch width, one extension pipe (7) may be used for each spindel unit. These are placed on the struts, attached with bolts (8) $d = 20 \text{ mm}$, $L = 140 \text{ mm}$ and secured with safety clips (9).
- Attach the second slide rail (1b) equipped with spring spindel holders onto the mounted spindel/extension pipes and bolt and secure with safety clips as described above.
- Using a spindel key on the spindels, increase the lower distance of the slide rails by 4 - 5 cm (Fig. 1b).



5. Installation

Protect the slide-rail pairs and plates (10, 11) against damage before insertion by the excavator by attaching the rail protectors (12) and plate protectors (13) to them. The shoring unit is pressed in the area of the post. The max. distance per insertion procedure is shown in Fig. 2. For example, a trench width of 300 cm results in a distance of 30 cm. If the distance is greater than that shown in Fig. 2, the components of the shoring unit may become damaged.

- Excavate a ditch approx. 1.50 m to 2.00 m deep, depending on the stability of the ground and with a length equal to the shoring plate length. A shoring plate must be pushed into this ditch and aligned so that it can no longer be tilted.
- Attach the first ready-mounted slide-rail pair with an appropriate lifting device and slide over the guide profile of the shoring plate with the external guide of one slide rail. The load capacity of the vertically hanging individual strand of the pendant must be designed for a payload of at least 2.3 t.
- Insert a second plate (10) into the outer guide of the other slide rail and align it (Fig. 3). To align it, cables may be attached to the eyes of the blade of the shoring plate.
- Stick a second slide-rail unit over the free ends of the already inserted plates using the outer guides.
- Excavation in sections between the plates and press down both the plate and the slide-rail pair by the above-mentioned distance using the excavator scoop. The plates should lead by approx. 20 cm during lowering.
- If the plate head has reached the upper edge of the ditch, then insert a second plate into the inner guide of the slide rails if necessary, as far as the height of the blade of the first plate. Press in the inner plate further, as described in 5.e. If necessary, slide support plates (11) into the inner slide-rail guide and connect them to the lower plate by means of locking pins (14) $d = 43$ mm, $L = 140$ mm and linchpins (15) (Fig. 3).

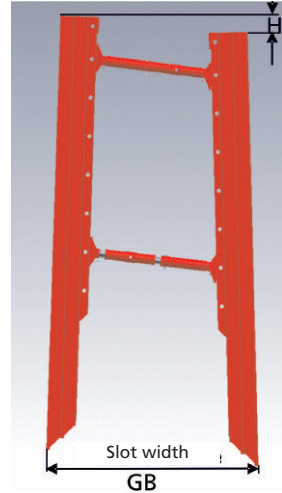


Image 2

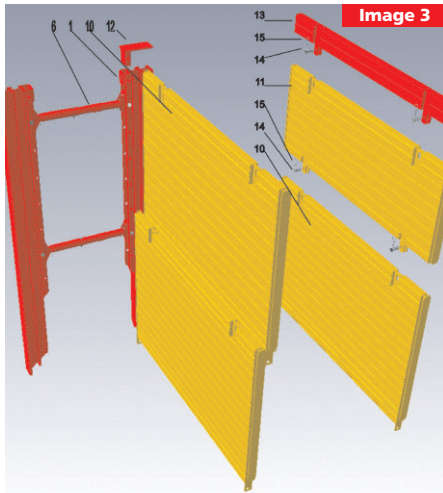
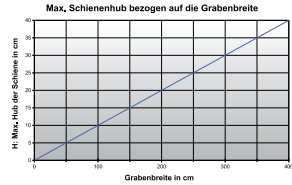


Image 3

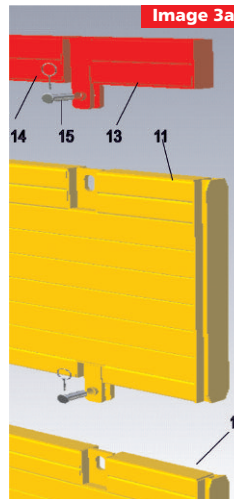


Image 3a

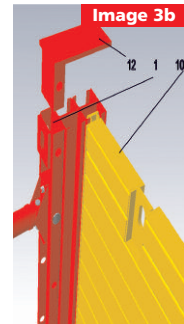


Image 3b
rail protector

Image 3a
Connection between base and top panels as well as panel and protector.

6. Dismantling

- Insert the filler material in layers (observing the compaction level).
- Pull out the plates and slide-rail pairs up to the filled area. In doing so, start from the inner plate. The height of the respective excerpt is according to Fig. 2.
- Compact the filler material.
- Restart at point 6.a, until the shoring is completely pulled out of the earth.

7. Disassembly

Before transporting away the shoring unit, it is disassembled analogously to the assembly but in the reverse sequence. The spring caps must be left in the tensioned state.

8. Maintenance / Service

On each disassembly, the shoring units should be cleaned. The free strut ends must be cleaned and kept in a well-lubricated state. The entire shoring unit must be protected against corrosion caused by handling damage by the use of appropriate protective measures.

9. Transport

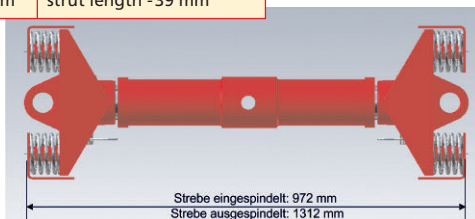
When unloading, you should store the supplied wooden blocks and the rubber plates appropriately. These parts must always be re-used for the return transport. As the shipper, you are co-responsible for the appropriate shipping of the return transport.

10. System diagrams

The below diagrams show the max. permitted strut length in relation to the earth pressure in the most frequently occurring strut positions. If the required shoring width cannot be achieved with the SP SB 98 x 700 strut at a specific earth pressure, then either the stronger shoring strut SP SB 98 x 817 can be used or the struts can be replaced by steel profiles, e.g. I-beams. When replacing the shoring struts with steel profiles, a static verification must be provided in all cases.

If the earth pressure is known, then the permitted strut length in a specific system can be read from the below system diagrams and the shoring width can be determined with the below table.

Shoring plate	Ditch width	Internal plate dimensions
KRA (105) (externally flush)	strut length + 587 mm	strut length + 77 mm
KRI (105) (internally flush)	strut length + 511 mm	strut length + 1 mm
KRA (125) (externally flush)	strut length + 627 mm	strut length + 77 mm
KRI (125) (internally flush)	strut length + 511 mm	strut length - 39 mm



Manufacturer Certification in Compliance with DIN EN 1090-2

