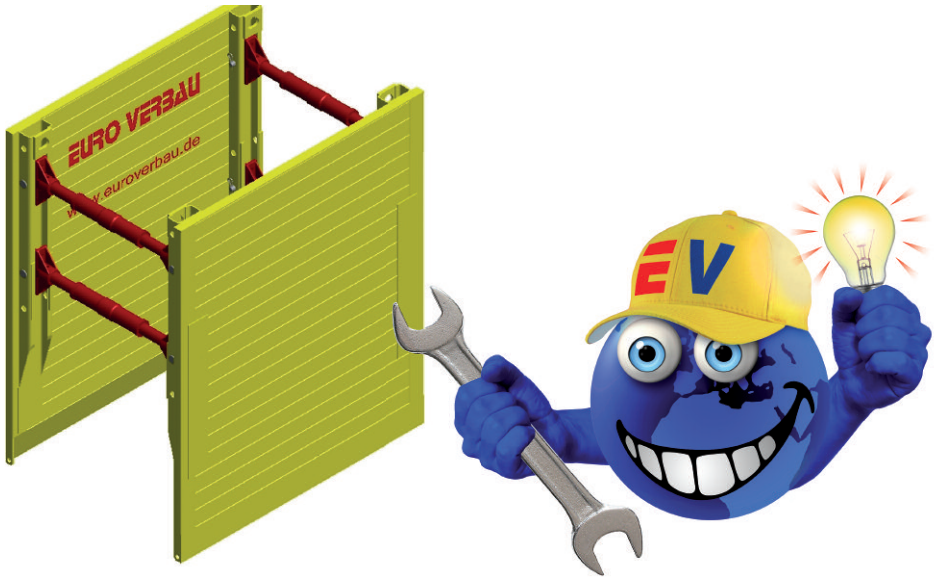


MANUAL



CITY-BOX VB 60

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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.

The diagram relating to the stress on the lower strut must be observed, as well as the load capacity diagram (characteristic stress curve) of the strut type. With the strut stress determined from the stress diagram, it must be checked on the load capacity diagram for the strut whether it is possible to use the required trench width.

1. General purpose of use

Edge-supported shoring box with a plate thickness of 60 mm and a max. panel length of 3.500mm. Optimal stability means it is best suited for installation in the lowering procedure.

2. Specifications

Box length	: 2000/2500/3000/3500 mm
Box height of baseplate	: 2400 mm
Max. pipe culvert height	: 1355 mm
Box height, support plate	: 1300 mm
Spindel type	: SPSB 98x392/550/700/817

3. Safety regulations

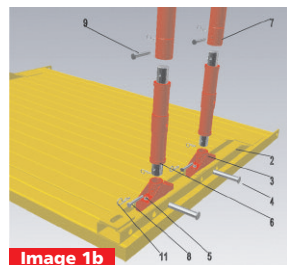
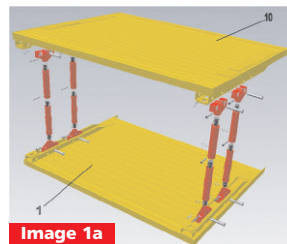
WARNING We refer to the fact that the above shoring system is only for the intended use and may only be mounted, installed, dismantled and unmounted in the sequence listed under points 4 - 7, exclusively with the use of all relevant "original construction elements". Please ensure a steady installation of the box; otherwise, it should be changed if necessary!
If this is not observed, 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 plate (1) with the soldier profiles (2) facing upwards on level ground.
- Insert four pretensioned mushrooms (3) into the Soldier profiles. Insert the corresponding bolts (4) $d=43$ mm, $L=212$ mm into the mounting holes provided on the soldier-profile and secure them with safety clips. Detension the mushrooms by loosening the nuts (5).
Note: Two mushrooms with a spindel (6) and possibly an extension pipe (7) form one spindel unit.
- Insert the spindel (6) into the mushrooms. Insert the bolts (8) $d = 20$ mm, $L = 140$ mm and secure with safety clips.
- If necessary, i.e. according to the trench width, only one extension pipes (7) may be used for each spindel unit. The extension pipe must not be longer than 3.00 m. For static reasons, the spindels are mounted alternately staggered, attached with bolts (9) $d = 20$ mm, $L = 140$ mm and secured with safety clips.
- Attach the second plate (10) equipped with mushrooms onto the mounted spindel/extension pipe and bolt and secure with safety clips as described above.
- Using a spindelkey on the struts, increase the lower distance of the plates by 4 - 5 cm (Fig. 2).



5. Installation

5.1 Installation procedure for solid ground

Pick up the first preassembled shoring box using an appropriate lifting and place it in the previously raised trench section. The weights can be taken from the datasheets, as mentioned above. Then, by turning the shafts with the spindlekey, press the plates against the trench walls.

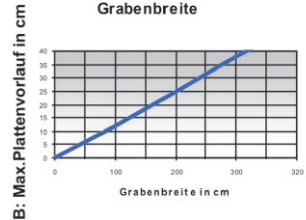
5.2 Lowering procedure for unsolid ground

- Protect the plates of the VB 60 against damage before insertion by the excavator by attaching the protection rails (13) to them. The shoring unit is pressed in the area of the Soldier profile. The max. distance "B" per insertion procedure is shown in Fig. 2. For example, a ditch width "A" of 300 cm results in a distance "B" of 37 cm. If the distance "B" is greater than that shown in Fig. 2, individual components of the shoring unit may become damaged. Pre-excavate the trench to a max. depth of 1.25 m.
- Lift the preassembled shoring unit set to the trench width with an appropriate lifting device and place it in the pre-excavated trench. Refer again to the datasheets to find the weights.
- Excavate approx. 0.50 m alternately and press down the plates by the distance "B" (see Fig. 2).
- If the ditch depth exceeds the box height, then the shoring depth can be increased if necessary with the top boxes. These are connected to the soldier profiles with connectors (14) via bolts (4) $d = 43$ mm and secured with safety clips. Now excavate and press down again, as described in 5.2.c.



Image 2

Max. Plattenvorlauf bezogen auf die Grabenbreite



6. Dismantling

6.1 Dismantling in setting procedures

- Loosen the plates pressed against the trench wall (see 5.1) by turning the spindels away from the trench walls.
- Insert the backfilling material in layers (observing the compaction level).
- Pull the entire shoring unit up to the filled height.
- Compact the backfilling material.
- Restart at point 6.1.b, until the VB 60 is completely pulled out of the earth.

6.2 Dismantling in the lowering procedure

- Insert the backfilling material in layers (observing the compaction level).
- Pull out the VB 60 up to the filled area. The height of the respective individual pass "B" is according to Fig. 2.
- Compact the backfilling material.
- Restart at point 6.2.a, until the VB 60 is completely pulled out of the earth.

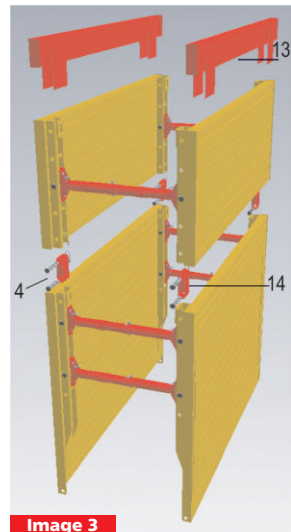


Image 3

7. Disassembly

Before transporting away the VB 60, it is disassembled analogously to the assembly but in the reverse sequence.

8. Maintenance / Service

On each disassembly, the VB 60 should be cleaned. The thread of the spindels should be cleaned and lubricated if necessary. The entire shoring unit must be protected against corrosion caused by handling damage by the use of appropriate protective measures.

9. Transport

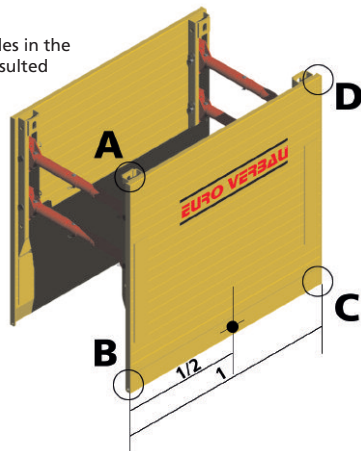
When unloading, you should store the supplied wooden blocks and the rubber plates appropriately. These parts must always be re-used for the return transport. As the shipper, you are co-responsible for the appropriate shipping of the return transport.

10. Lifting and pulling

- Lifting, transporting, pulling or towing are only permitted with an appropriate and approved lifting accessory.
- Use a loading hook with a safety latch.
- Transport as close to the ground as possible.
- Only place on level, solid ground.
- Standing underneath hanging loads is prohibited.
- Standing in the machine area is prohibited.

11. Criteria for removing parts from service and repair instructions

- As a matter of principle, all shoring parts must be checked for functionality before use.
- The criteria for the removal from service of worn or damaged parts include:
 - 1 missing parts, such as nuts, screws, rungs and bolts
 - 2 broken parts, such as shafts, bolts, spreading systems
 - 3 With regard to strongly deformed or twisted parts, or holes in the plate body, for example, the manufacturer should be consulted in case of doubt.
- Defective parts must be replaced or repaired.
- Smaller repairs may be performed by the user, after consultation with the manufacturer.
- Only original manufacturer spare parts may be used.
- There is no warranty for improperly performed repairs or the use of non-original parts.
- The requirements of the Operating Safety Ordinance are applicable.



12. Deflection according to DIN EN 13331-1

The calculated deflection applies to maximum load at the identified point.

Shoring plate	Deflection f [mm]
VB60 2000x2400	20.86
VB60 2500x2400	27.63
VB60 3000x2400	38.34
VB60 3500x2400	52.30