

STANDARD BOX Series 600
TECHNICAL DATA SHEETS

Issue No: 01 Issue date: Aug 2018	Sheet 1 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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TECHNICAL DATA SHEET

STANDARD BOX Series 600



Contents

System drawing	3
Technical parameters	4
Plate thickness 107 mm & 127 mm	4
Spindles	5
Accessories	5
General instructions	
Lifting & transporting	6
Measures to reduce danger	6
Maintenance & repair	6
Assembly instructions	7
Installation instructions	8
Allowed tensile forces	8
Place and adjust method	8
Cut and lower method	9
Installation of the base boxes	9
Use of protection rails	10
Installation of top boxes	10
Installation of further shoring sections	11
Re-installation	11

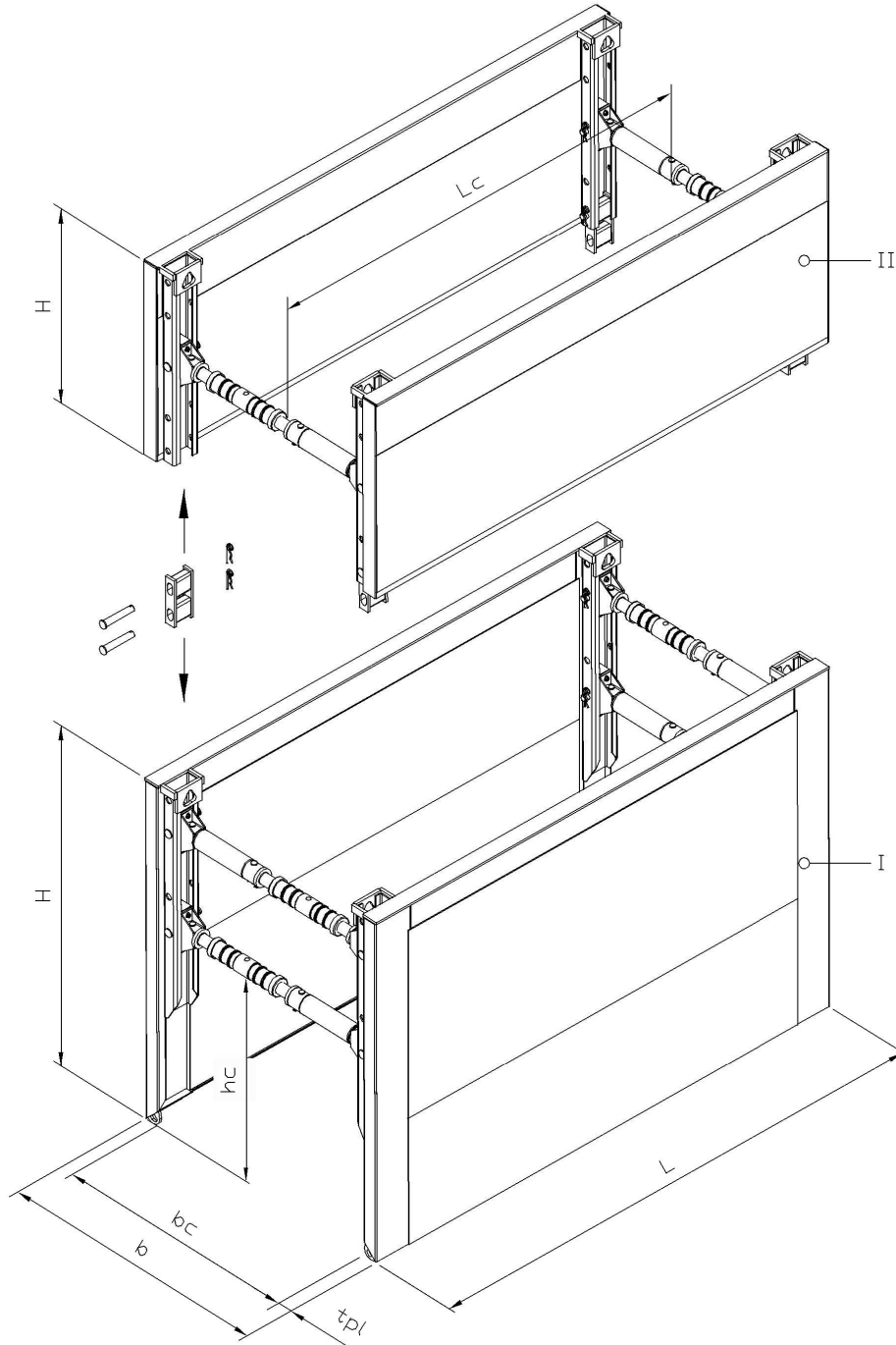
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STANDARD BOX Series 600



System Drawing



- | | | | | | |
|----|--------------|----------|-----------------|-------|--------------------------|
| I | base box | b | trench width | h_c | spindle clearance height |
| II | top box | b_c | working width | L | plate length |
| H | plate height | t_{pl} | plate thickness | L_c | spindle clearance length |

Issue No: 01 Issue date: Aug 2018	Sheet 3 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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TECHNICAL DATA SHEET

STANDARD BOX Series 600



Technical Parameter

Plate thickness = 107 mm Allowed plate moment = 79,1 kNm/m. Allowed side part moment = 78,6kNm

plate length	plate height	clearance length	clearance height	all. earth pressure	weight box
L	H	L _c	h _c	[kN / m ²]	[kg]
[m]	[m]	[m]	[m]		
3,00	2,40	2,60		47,5	1950
	2,60		1,50		2075
	1,40				1205
3,50	2,40	3,10		40,7	2180
	2,60		1,50		2320
	1,40				1350
3,70	2,40	3,30		38,5	2270
	2,60		1,50		2445
	1,40				1410
4,00	2,40	3,60		35,6	2400
	2,60		1,50		2560
	1,40				1495

Plate thickness = 127 mm Allowed plate moment = 100,2 kNm/m Allowed side part moment = 94,2 kNm

plate length	plate height	clearance length	clearance height	all. earth pressure	weight box
L	H	L _c	h _c	[kN / m ²]	[kg]
[m]	[m]	[m]	[m]		
4,50	2,40	4,10		33,7	2910
	2,60		1,50		3090
	1,40				1880
5,00	2,40	4,60		30,3	3160
	2,60		1,50		3360
	1,40				2050
5,50	2,40	5,10		27,6	3415
	2,60		1,50		3635
	1,40				2220
6,00	2,40	5,60		24,5	3670
	2,60		1,50		3910
	1,40				2390

Issue No: 01 Issue date: Aug 2018	Sheet 4 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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TECHNICAL DATA SHEET

STANDARD BOX Series 600



Spindle Allowed moment = 1,7 kNm Allowed tensile force = 218 kN

number of ext. pipes	min working width b_c	type 031/085 blue		type 031/135 yellow		weight total
		max working width b_c	allowed compressive force	max working width b_c	allowed compressive force	
in 0,50 m	[m]	[m]	[kN]	[m]	[kN]	[kg]
0	0,98	1,26	468	1,16	510	65,0
1	1,48	1,76	403	1,66	445	84,8
2	1,98	2,26	348	2,16	394	104,6
3	2,48	2,76	299	2,66	354	124,4
4	2,98	3,26	254	3,16	321	144,2
5	3,48	3,76	210	3,66	292	164,0
6	3,94	4,26	165	4,16	263	183,8

Issue No: 01 Issue date: Aug 2018	Sheet 5 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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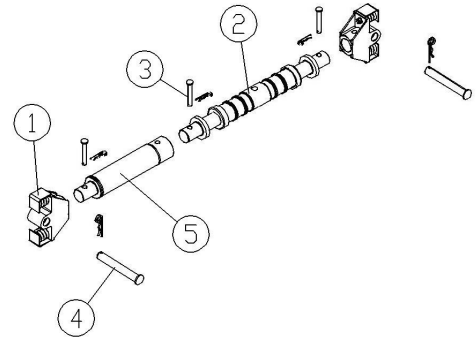
TECHNICAL DATA SHEET

STANDARD BOX Series 600

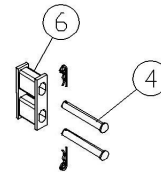


Accessories

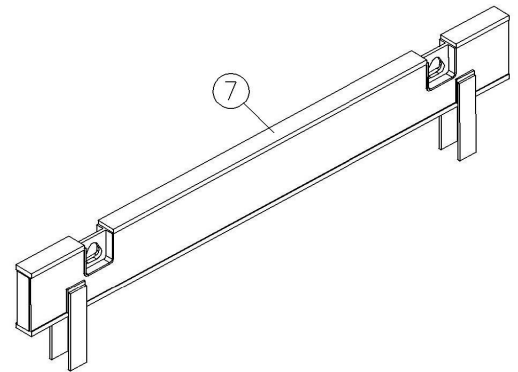
no.	description	use for	dimension [mm]	weight [kg]
1	spring spindle holder	spindle	95/290 * 193	13,1
2	Spindle	plates		40,2
3	pin with clip 4,5	ext. pipe	20 * 147	0,4
4	pin with clip 6,3	spr. spindle holder & connector	40 * 230	2,4
5	ext. Pipe	spindle	121 * 500 121 * L	19,8



6	Connector	top plate	70/150 * 325	7,6
---	-----------	-----------	--------------	-----



7	protection rail	plates t = 107	L = 2730	321
			L = 3300	379
			L = 3510	399
			L = 3800	430
		plates t = 127	L = 4800	646
			L = 5300	703
		L = 5800	760	



Issue No: 01 Issue date: Aug 2018	Sheet 6 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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Transporting and lifting

- The shoring may only be attached at the corresponding eyes and openings and/or lifting accessories. □
- The lifting accessories must be adapted to the weight which must be transported.
- For safety reasons only load hooks with hook safety must be used.
- The allowed tensile forces have to be kept in any case.
- The transporting has to be carried out next to the soil and unneeded pendulum movements have to be avoided.
- It is forbidden to enter the swivel range of the lifting tool and to stay under floating loads.
- Pay attention to overhead lines.
- The machine driver and slinger must have face-to-face interaction.

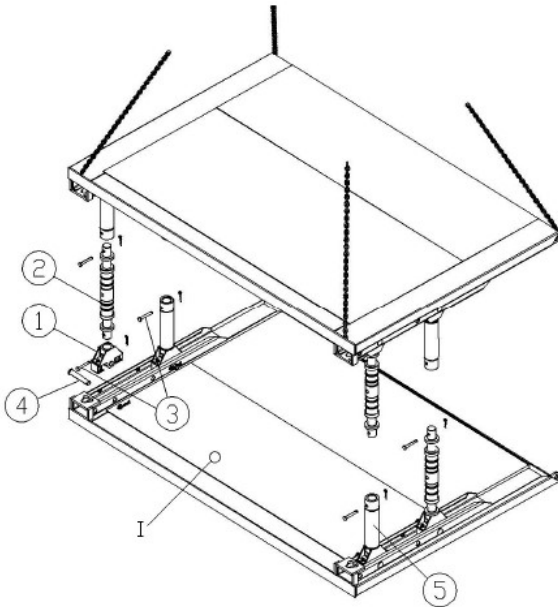
Issue No: 01 Issue date: Aug 2018	Sheet 7 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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TECHNICAL DATA SHEET

STANDARD BOX Series 600



Assembly Instructions



- | | | | | |
|------------|---|---------------------------------|---|---------------------------------|
| base plate | 1 | spring spindle holder | 4 | pin $\varnothing 40 \times 230$ |
| | 2 | casting spindle | 5 | extension pipe |
| | 3 | pin $\varnothing 20 \times 147$ | | |

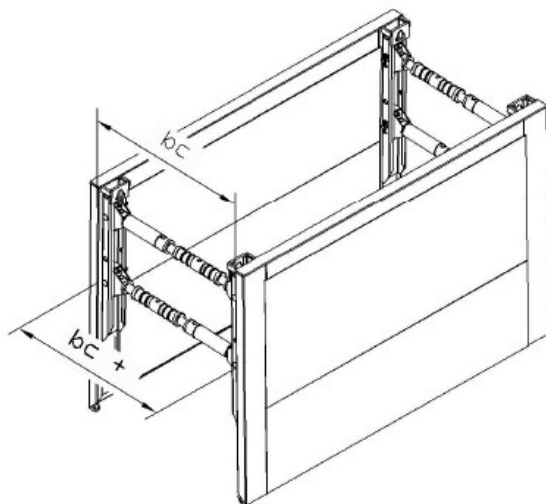
Put the base plates onto a flat and firm underground with the profile to the top.

Afterwards put the spring spindle holders into the profiles, fix with the pins $\varnothing 40 \times 230$ mm and secure by means of the clips.

Put the spindles and extension pipes, respectively staggered, into the spring spindle holders (trench widths up to 2,0 m at one plate – greater widths at two plates) and fix with the pin $\varnothing 20 \times 147$ mm. Secure the pin by means of the clip.

The extending up to the required trench width is effected by means of extension pipes as described above.

After mounting all spindles, one plate is connected to the corresponding lifting/transporting eyes at the top and cutting edge and then put from the top onto the spindle of the plate beneath, pinned and secured.



Now the spindles are extended/spindled out to the required trench width (find adjustment). Thereby it has to be paid attention that the bottom strut is extended by about 3 – 5 cm more than the upper one, in order to achieve the A-position of the shoring plates.

The shoring width must be shorter above and more wide below.

Issue No: 01 Issue date: Aug 2018	Sheet 8 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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Installation Instructions

Allowable tensile forces

At the single attachment points the following tensile forces can be beared:

Per lifting eye at the top of the panel 153 kN

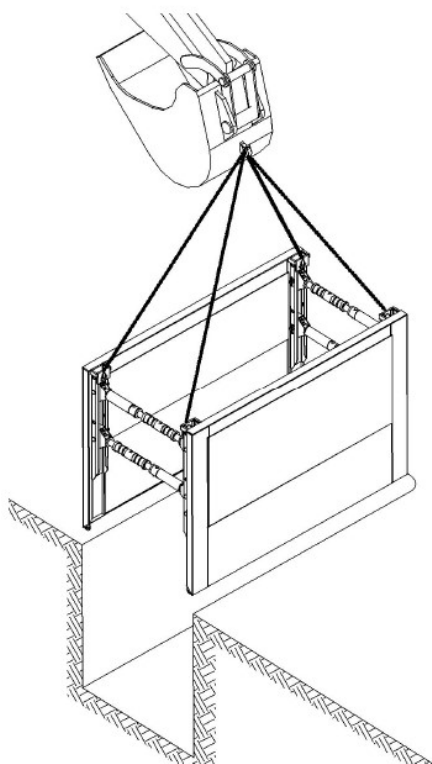
Per lifting eye along the cutting edge 49 kN

The shoring box is placed into the totally pre-excavated trench.

The place and adjust method is allowed only if the following requirements are given:

- Temporary steady soil
- Outside of the sphere of buildings or structural plants
- Outside of the sphere of circulation spaces and endangered lines
- Settlements can be accepted

A soil is characterised as temporary steady if it does not have considerable collapses in the time between start of excavation and placing of the shoring.



For trench depths greater than the base plate height, when applying the place and adjust method, base and top boxes must be assembled outside of the trench and placed into the trench as a whole.

Base and top boxes are connected by means of box connectors and pins and secured with clips.

Attach the chains to the provided eyes in the profile at least at four points.

Place the completely assembled base and top box as a whole into the entirely preexcavated trench by means of lifting tools and appropriate lifting accessories.

The excavation length has to be limited to the box length.

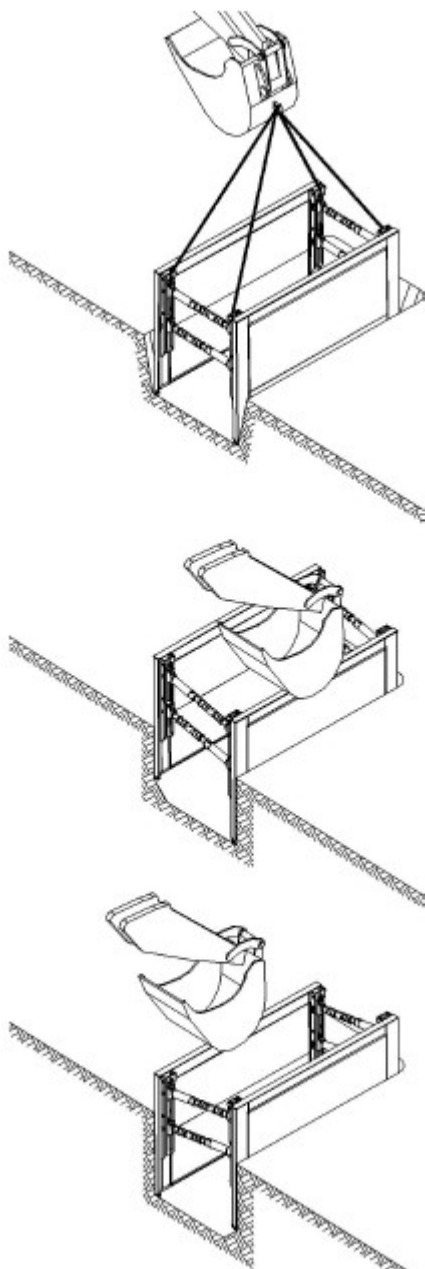
The opening between shoring and soil has to be filled and compacted.

Issue No: 01 Issue date: Aug 2018	Sheet 9 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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Installation Instructions

Cut & Lower Method

In unsteady soils, the shoring has to be installed by alternately pushing in and lowering.



Installation of base boxes

Pre-excavation max. 1,25 m and not more than one shoring section length. In principle the pre-excavation complies with the type of soil and safety regulations.

Attach the chains to the four eyes at the profile and place the base box which is spindled out to the required trench width, in the pre-excavated trench, align and push in.

Fill the opening between shoring and solid and compact!

Fill the opening between shoring and solid and compact!

The shoring plates are to be pushed in and not battered. For safety reasons it is not allowed to push the extension pipes. In this phase the trench may not be entered.

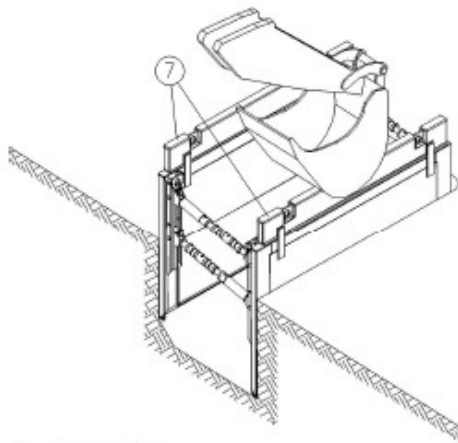
Excavate about further 0,50m and alternately push in the plates.

The smaller the steps or pushes are carried out the better for the shoring! Do not push more than 50 cm the one side and limit the swivelling angle of the spindles to +/-8°.

Repeat this procedure until reaching the required trench depth.

<p>Issue No: 01 Issue date: Aug 2018</p>	<p>Sheet 10 of 12</p>	<p>National Trench Safety can support your project. Call our National Team - 03332 076 007</p>
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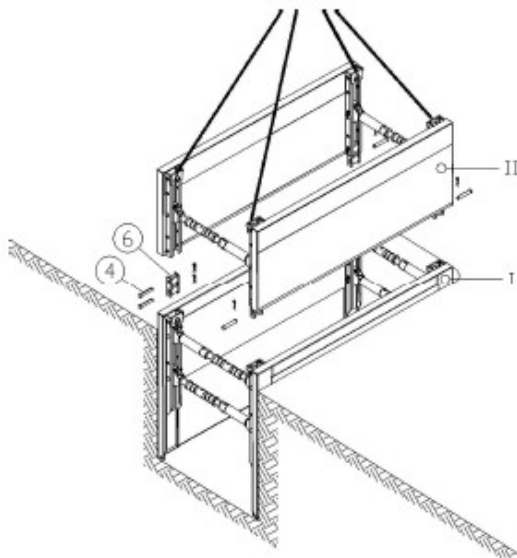
Installation Instructions



7 protection rail

Use of protection rails

To protect the shoring plates and ensure a long life cycle we recommend the use of protection rails.



I base box 4 pin 40*230
 II top box 6 connector

Installation of top boxes

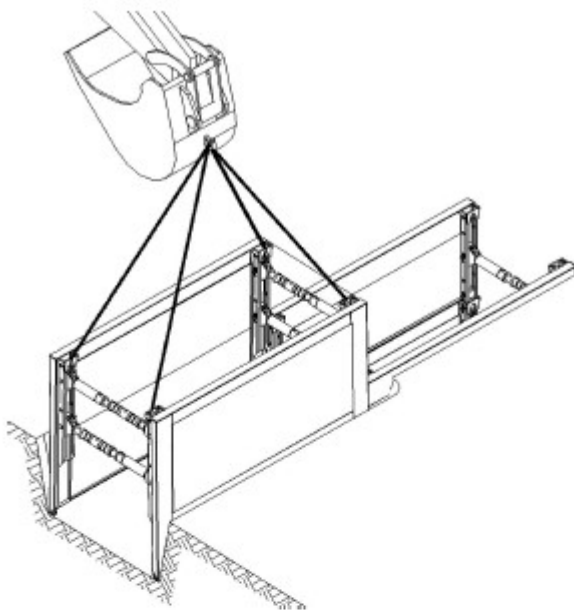
For greater trench depths top boxes are to be used. The top box, pre-assembled to trench width, is attached to the four eyes at the profile, aligned over the base box described and connected by means of box connectors and pins f40*230mm.

The further installation is effected as above by alternately excavating and pushing in of the shoring plates.

The top edge of the shoring must overlap the surrounding site by at least 5 cm!

Issue No: 01 Issue date: Aug 2018	Sheet 11 of 12	National Trench Safety can support your project. Call our National Team - 03332 076 007
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Installation Instructions



Installation of further shoring sections

Once the foregoing shoring section is installed to full depth, it can be started with the next shoring section..

The installation is effected analogously as described before.

After the installation of the shoring boxes, the pipe laying can be started in the shored and secured trench.

After completion of the pipe laying the re-in-stallation of the shoring is effected.

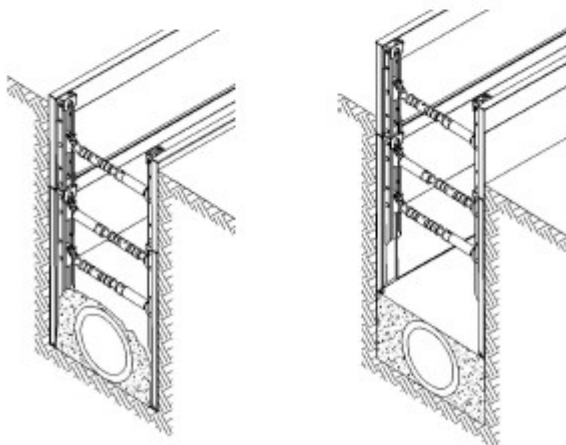
According to compacting possibilities bring in about 0,50m filling material. Lift the shoring box by the filled height. That followed the compaction of the filling material.

The smaller the lifting steps the better for the shoring! Do not lift more than 0,50 cm to one side and limit the swivelling angle of the spindles to +/-8°.

Repeat this procedure as described until the shoring can be lifted out of the trench according to the safety regulations. Only use the corresponding eyes for the lifting. It is not allowed to lift at the extension pipes!

We advise specifically that it is forbidden to enter the danger zone during the installation and re-installation.

In order to avoid an overstraining of the shoring plates, do not lift onesided. Attach lifting accessories at least at 2 eyes of the particular plate.



<p>Issue No: 01 Issue date: Aug 2018</p>	<p>Sheet 12 of 12</p>	<p>National Trench Safety can support your project. Call our National Team - 03332 076 007</p>
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