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E+S Trench shoring systems / Endsupported compact shoring systems

Lightweight-Boxes LBR



↑ Lightweight-Boxes

Shoring length	2,00 m - 3,50 m
Height base unit	1,60 m / 1,95 m / 2,25 m / 2,40 m
Height top unit	0,96 m / 1,32 m
Pipe culvert height	0,81 m / 1,16 m / 1,19 m / 1,34 m
Weight	745 kg - 1540 kg

Small in size, big in performance.

With base panel heights of 1.6 m to 2.4 m, these shoring systems cover the entire range of applications in inner-city civil engineering projects. They are mainly used for the laying of pipes and cables for electricity, gas and water.

Lightweight-Box 240 - from the small to the largest

With a base panel height of 2.40 m and a max. permitted trench box represent the upper limit in the E+S Lightweight class. It goes without saying that it comes equipped with all the features exhibited by all E+S

products. The 2.40 m high base panel is available in four lengths: 2.00 m, 2.50 m, 3.00 m and 3.50 m. The maximum pipe culvert height is 1.34 m. Like all the top panels, installation is simple and quick yet safe. The connection with post and pins eliminates the risk or error.

With system struts and intermediate tubes

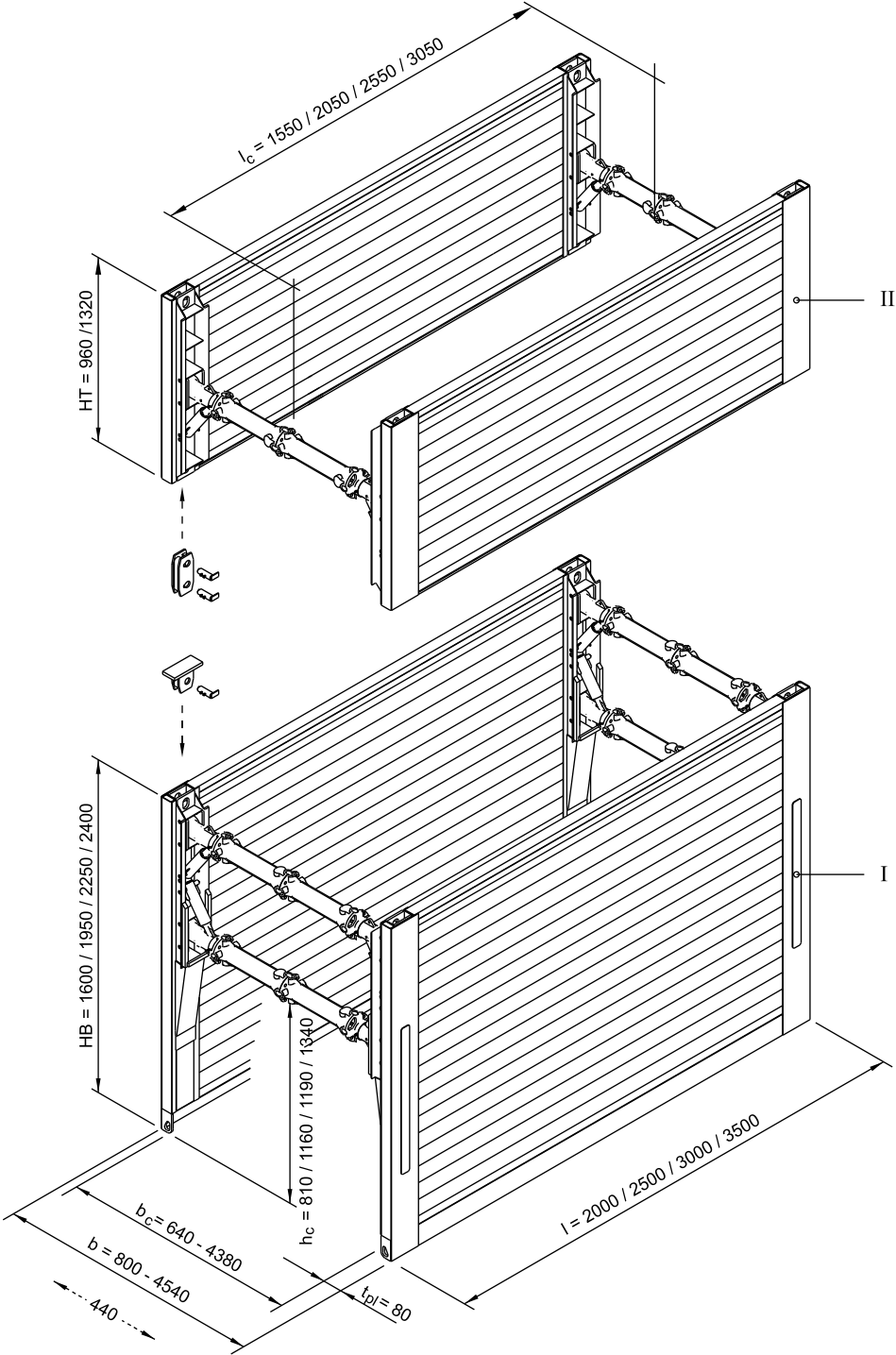
The strut system exclusive for E+S shoring systems, which can be steplessly adjusted from 0.81 up to 4.55 m, can be combined on the standard box with the 0.55 m long intermediate tubes to ensure maximum strength and versatility.

Installation as the situation demands.

According to the static requirement and the local conditions on site, the Lightweight-Box 240 can be installed by prior excavation or progressive excavation.

Lightweight-Boxes LBR

1



I	Base unit
II	Top unit
HB	Height base unit
HT	Height top unit
l	Length

l_c	Pipe culvert length
b	Shoring / trench width
b_c	Inner width
h_c	Pipe culvert height
t_{pl}	Thickness

Lightweight-Boxes

(All dimensions in mm)

Lightweight-Boxes LBR

Base units (Height 1,60 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
801 455	2,00	0,08	0,81	1,55	372,5	745,0	3,20	70,5
801 505	2,50	0,08	0,81	2,05	420,0	840,0	4,00	50,9
801 568	3,00	0,08	0,81	2,55	502,3	1.004,5	4,80	34,0
801 578	3,50	0,08	0,81	3,05	538,0	1.076,0	5,60	24,3

Base units (Height 1,95 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
801 475	2,00	0,08	1,16	1,55	422,5	845,0	3,90	58,3
801 525	2,50	0,08	1,16	2,05	477,5	955,0	4,88	46,6
801 565	3,00	0,08	1,16	2,55	548,0	1.096,0	5,85	34,0
801 575	3,50	0,08	1,16	3,05	617,5	1.235,0	6,83	24,3

Base units (Height 2,25 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
801 015	2,00	0,08	1,19	1,55	515,0	1.030,0	4,50	61,1
801 055	2,50	0,08	1,19	2,05	593,5	1.187,0	5,63	48,9
801 105	3,00	0,08	1,19	2,55	627,5	1.255,0	6,75	34,0
801 108	3,50	0,08	1,19	3,05	730,0	1.460,0	7,88	24,3

Base units (Height 2,40 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
801 210	2,00	0,08	1,34	1,55	550,0	1.100,0	4,80	50,6
801 215	2,50	0,08	1,34	2,05	635,0	1.270,0	6,00	40,5
801 220	3,00	0,08	1,34	2,55	675,0	1.350,0	7,20	34,0
801 110	3,50	0,08	1,34	3,05	770,0	1.540,0	8,40	24,3

Top units (Height 0,96 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
801 595	2,00	0,08	-	1,55	278,3	556,5	1,92	70,5
801 625	2,50	0,08	-	2,05	316,7	633,3	2,40	50,9
801 665	3,00	0,08	-	2,55	356,5	712,9	2,88	34,0
801 675	3,50	0,08	-	3,05	395,2	790,3	3,36	24,3

Top units (Height 1,32 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
801 628	2,00	0,08	-	1,55	340,5	681,0	2,64	70,5
801 630	2,50	0,08	-	2,05	390,9	781,8	3,30	50,9
801 635	3,00	0,08	-	2,55	407,9	815,8	3,96	34,0
801 680	3,50	0,08	-	3,05	430,0	860,0	4,62	24,3

Extension bars

see Accessories / Spares E+S compact shoring systems (page 24)

Lightweight-Boxes LBR

Trench widths (for cast iron tubular extension bars $l = 0.55$ m)

Number of extension bars	Length extension bars	b_c	b
n	[m]	[m]	[m]
0	0,00	0,64 - 1,08	0,80 - 1,24
1	0,55	1,19 - 1,63	1,30 - 1,70
2	1,10	1,74 - 2,18	1,90 - 2,34
3	1,65	2,29 - 2,73	2,45 - 2,89
4	2,20	2,84 - 3,28	3,00 - 3,44
5	2,75	3,39 - 3,83	3,55 - 3,99
max. 6	3,30	3,94 - 4,38	4,10 - 4,54

From-to sizes dependent on spindle adjustment range.

Other trench widths possible by combining the two different extension bar lengths $l = 0.25$ m and $l = 0.55$ m.

Larger trench widths available on request.

Accessories / Spares

see Accessories / Spares E+S compact shoring systems (page 24)

l	Length	A	Area
l_c	Pipe culvert length	G	Weight
b	Shoring / trench width	G / VP	Weight per shoring panel
b_c	Inner width	G / Box	Weight per shoring box
h_c	Pipe culvert height	eh	Earth pressure max.
t_{pl}	Thickness		

E+S Trench shoring systems / Endsupported compact shoring systems

Medium-Boxes

1



↑ Medium-Boxes

Shoring length	2,00 m - 4,50 m
Height base unit	2,60 m
Height top unit	1,32 m / 2,00 m
Pipe culvert height	1,45 m
Weight	1460 kg - 2780 kg

In a class of its own.

This series of shoring elements is located between the Lightweight class (Minibox and Lightweight-Boxes) and the capacity boxes. There is virtually no line of products in the Medium class that compares with the E+S range. The specific dimensions and design features of this shoring system make it suitable for universal and varied applications. In the Medium shoring range - pipes up to 1.45 m external diameter - these boxes with a base panel height of 2.60 m are an international bestseller.

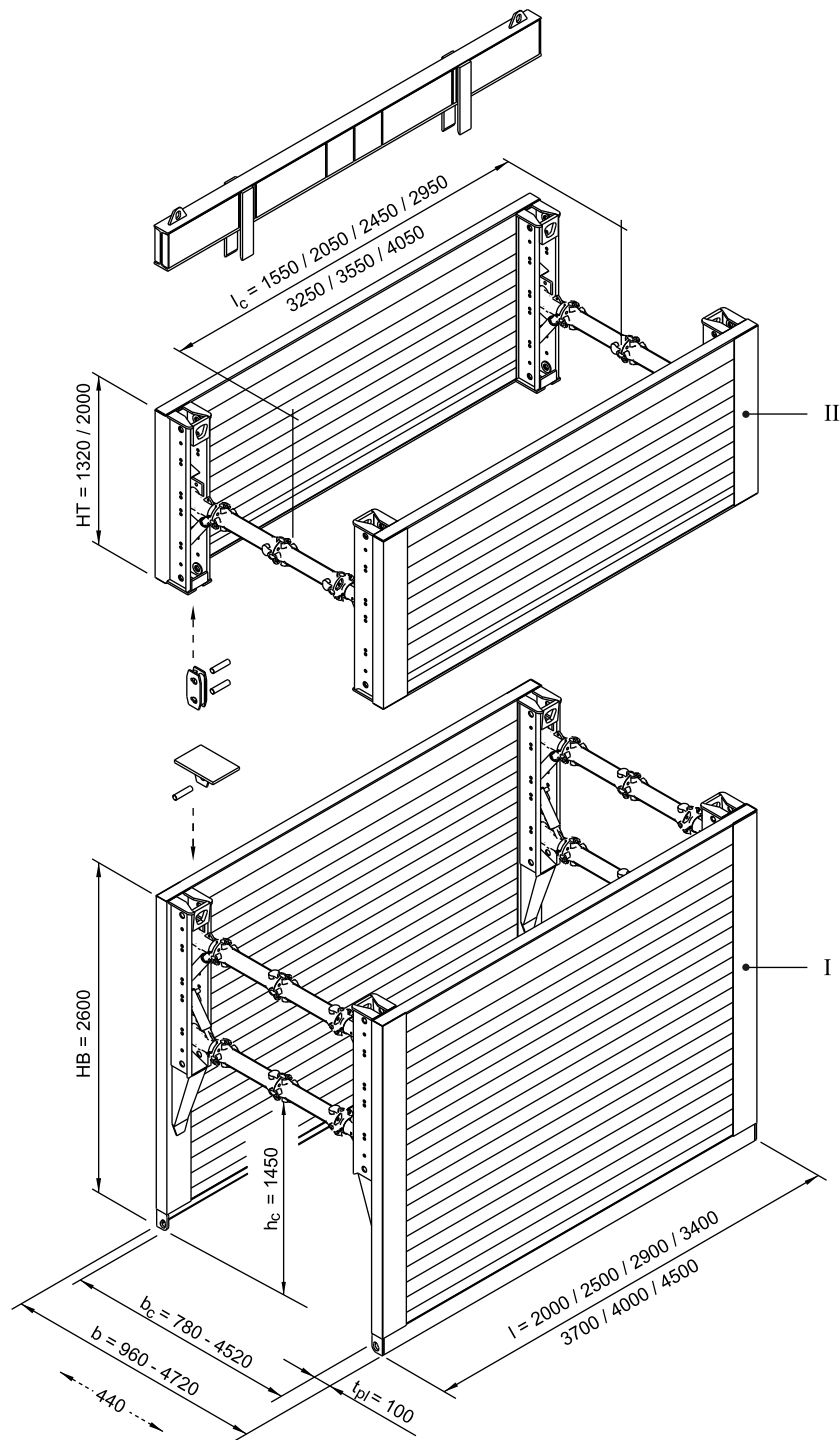
Two parts - one system.

The E+S strut system consists of three efficient individual components. The cast-iron nut. Made of nodular cast-iron (GGG 50). Effectively withstands the tensile and compressive forces. The spindle. Manufactured with threaded tube with friction-welded flange joints and four holes for the flange connecting screws. Thanks to its stepless adjustment facility, it can be adapted to the demanded trench width.

The intermediate tube. The basic version is made of nodular cast iron (GGG 40). The module lengths are 0.25 and 0.55 m. To transmit exceptional forces, intermediate carrier tubes HE-B 180/220 in additional lengths are available. However different the shoring system may be in size, all the boxes of the compact class - from the Lightweight through to the Magnum-Box - use one and the same strut system.

Medium-Boxes

1



I	Base unit
II	Top unit
HB	Height base unit
HT	Height top unit
l	Length

l_c	Pipe culvert length
b	Shoring / trench width
b_c	Inner width
h_c	Pipe culvert height
t_{pl}	Thickness

Medium-Boxes

(All dimensions in mm)

Medium-Boxes

Base units (Height 2,60 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
800 010	2,00	0,10	1,46	1,55	730,0	1.460,0	5,20	70,0
800 100	2,50	0,10	1,46	2,05	825,0	1.650,0	6,50	60,0
800 150	2,90	0,10	1,46	2,45	908,0	1.816,0	7,54	55,0
800 200	3,40	0,10	1,46	2,95	1.028,0	2.056,0	8,84	50,8
800 300	3,70	0,10	1,46	3,25	1.118,0	2.236,0	9,62	42,3
800 400	4,00	0,10	1,46	3,55	1.257,0	2.514,0	10,40	44,0
800 440	4,50	0,10	1,46	4,05	1.390,0	2.780,0	11,70	34,2

Top units (Height 1,32 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
800 550	2,00	0,10	-	1,55	463,0	926,0	2,64	70,0
800 600	2,50	0,10	-	2,05	531,0	1.062,0	3,30	60,0
800 650	2,90	0,10	-	2,45	578,0	1.156,0	3,83	55,0
800 700	3,40	0,10	-	2,95	658,0	1.316,0	4,49	50,8
800 800	3,70	0,10	-	3,25	692,0	1.384,0	4,88	42,3
800 900	4,00	0,10	-	3,55	775,0	1.550,0	5,28	44,0
800 950	4,50	0,10	-	4,05	820,0	1.640,0	5,94	34,2

Top units (Height 2,00 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
802 550	2,90	0,10	-	2,45	840,0	1.680,0	5,80	55,0
802 700	3,40	0,10	-	2,95	920,0	1.840,0	6,80	50,8
802 750	3,70	0,10	-	3,25	1.005,0	2.010,0	7,40	42,3

Extension bars

see Accessories / Spares E+S compact shoring systems (page 24)

Trench widths (for cast iron tubular extension bars l = 0.55 m)

Number of extension bars	Length extension bars	b _c	b
n	[m]	[m]	[m]
0	0,00	0,78 - 1,22	0,98 - 1,42
1	0,55	1,32 - 1,77	1,52 - 1,97
2	1,10	1,88 - 2,32	2,08 - 2,52
3	1,65	2,43 - 2,87	2,63 - 3,07
4	2,20	2,98 - 3,42	3,18 - 3,62
5	2,75	3,53 - 3,97	3,73 - 4,17
max. 6	3,30	4,08 - 4,52	4,28 - 4,72

From-to sizes dependent on spindle adjustment range.

Other trench widths possible by combining the two different extension bar lengths l = 0.25 m and l = 0.55 m.

Larger trench widths available on request.

Medium-Boxes

Trench widths (for extension bars HEB 180)

l [m]	b _c [m]	b [m]
0,000	0,780 - 1,220	0,980 - 1,420
0,275	1,055 - 1,495	1,255 - 1,695
0,550	1,330 - 1,770	1,530 - 1,970
1,100	1,880 - 2,320	2,080 - 2,520
1,650	2,430 - 2,870	2,630 - 3,070
2,200	2,980 - 3,420	3,180 - 3,620
2,200 + 1,100	4,080 - 4,520	4,280 - 4,720

From-to dimensions depend on the spindle adjustment range.

Other trench widths are possible by combining different HEB lengths.

Larger trench widths are available on request.

Accessories / Spares

see Accessories / Spares E+S compact shoring systems (page 24)

l	Length	A	Area
l _c	Pipe culvert length	G	Weight
b	Shoring / trench width	G / VP	Weight per shoring panel
b _c	Inner width	G / Box	Weight per shoring box
h _c	Pipe culvert height	eh	Earth pressure max.
t _{pl}	Thickness		

E+S Trench shoring systems / Endsupported compact shoring systems

Magnum-Boxes

1



↑ *Magnum-Boxes*

Shoring length	2,00 m - 6,84 m
Height base unit	3,15 m / 4,00 m
Height top unit	1,32 m / 1,44 m / 2,00 m
Pipe culvert height	1,75 m / 2,00 m / 2,46 m
Weight	1860 kg - 7130 kg

Compact yet big enough for large pipe dimensions.

The boxes of the Medium and Magnum class have captured a leading position in the market for efficiently laying unusually wide or long pipes. What distinguishes these boxes is their outstanding performance features such as shoring depth up to 6.00 m and trench width of over 4.70 m, with a vertical pipe clearance of up to 2.46 m.

As you like it. Extreme culvert heights, extreme culvert lengths.

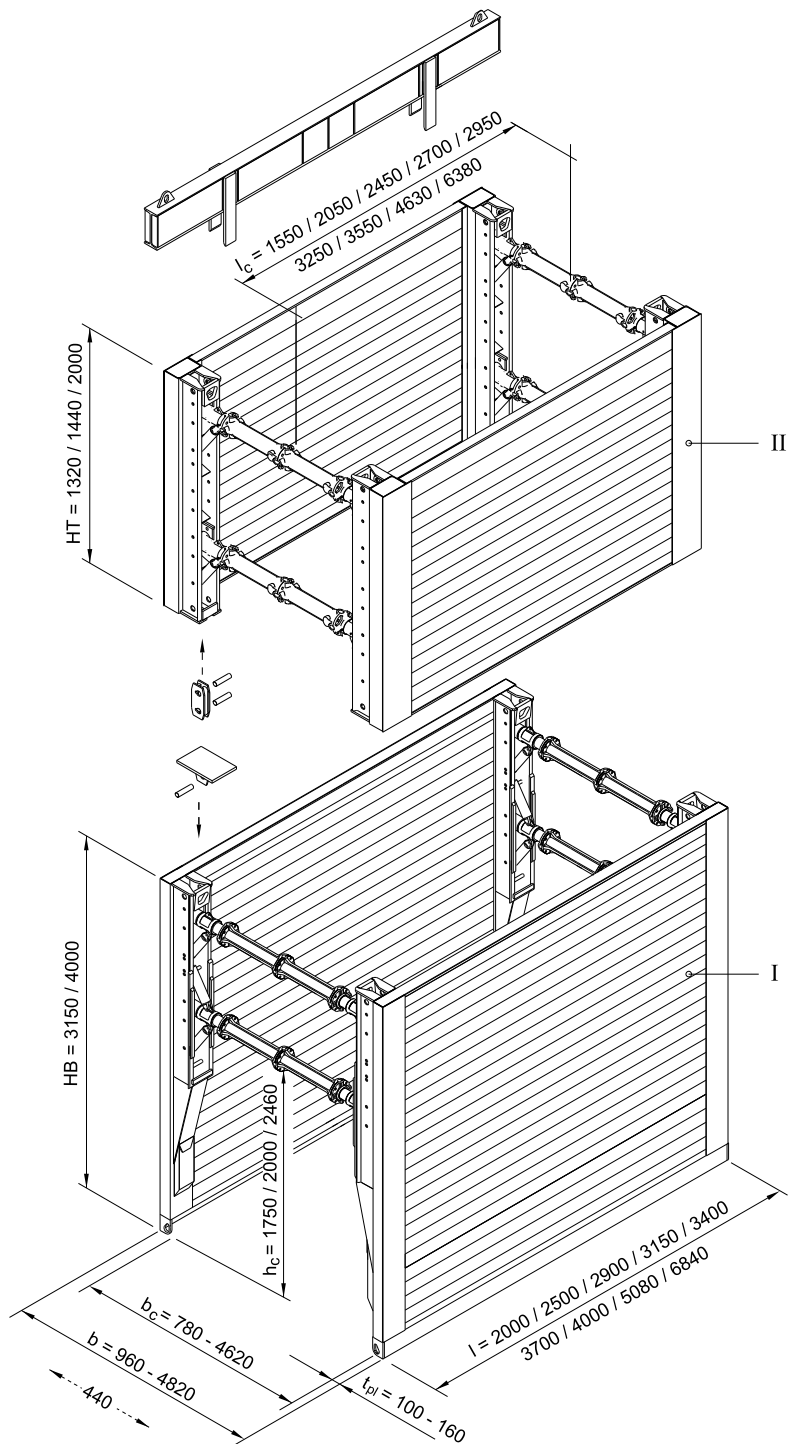
Thanks of the huge range of models in the Medium and Magnum class, E+S is in a position to offer trench boxes for completely different purposes, and with specific design

features and performance parameters. If the size of pipe diameter is the crucial factor, trench boxes are called for with a large clearance between the bottom strut and the bottom edge of the box panels. For pipes up to 2.50 m diameter. In cases where it is not so much the height as the extreme pipe culvert length which is important, the externally supported Magnum-Boxes with large clearance between the struts are the ideal choice, for pipes up to 6 m long.

However different the shoring system may be in size, all the boxes of the compact class - from the Lightweight through to the Magnum-Box - use one and the same strut system.

Magnum-Boxes

1



- I Base unit
- II Top unit
- HB Height base unit
- HT Height top unit
- I Length

- l_c Pipe culvert length
- b Shoring / trench width
- b_c Inner width
- h_c Pipe culvert height
- t_{pl} Thickness

Magnum-Boxes

(All dimensions in mm)

Magnum-Boxes

Base units (Height 3,15 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
802 036	2,00	0,10	2,01	1,55	930,0	1.860,0	6,30	69,5
802 040	2,50	0,10	2,01	2,05	1.042,0	2.084,0	7,50	55,7
802 050	2,90	0,10	2,01	2,45	1.138,0	2.276,0	8,70	48,0
802 175	3,40	0,10	2,01	2,95	1.260,0	2.520,0	10,20	41,0
802 210	3,70	0,10	2,01	3,25	1.428,0	2.856,0	11,10	37,7
802 300	4,00	0,10	2,01	3,55	1.579,0	3.158,0	12,00	35,8
802 425	5,08	0,12	2,01	4,63	1.918,0	3.836,0	15,24	28,6
802 460	6,84	0,16	1,75	6,38	3.565,0	7.130,0	21,55	25,08

Base units (Height 4,00 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
802 100	3,15	0,10	2,46	2,70	1.385,0	2.770,0	12,60	46,0
802 197 A	3,40	0,10	2,46	2,95	1.568,0	3.136,0	13,60	41,0

Top units (Height 1,32 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
800 550	2,00	0,10	-	1,55	463,0	926,0	2,64	70,0
800 600	2,50	0,10	-	2,05	531,0	1.062,0	3,30	60,0
800 650	2,90	0,10	-	2,45	578,0	1.156,0	3,83	55,0
800 700	3,40	0,10	-	2,95	658,0	1.316,0	4,49	50,8
800 800	3,70	0,10	-	3,25	692,0	1.384,0	4,88	42,3
800 900	4,00	0,10	-	3,55	775,0	1.550,0	5,28	44,0
802 814	5,08	0,12	-	4,63	1.110,0	2.220,0	6,71	34,2

Top units (Height 1,44 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
802 815	6,84	0,16	-	6,38	1.505,0	3.010,0	9,85	25,8

Top units (Height 2,00 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
802 550	2,90	0,10	-	2,45	840,0	1.680,0	5,80	55,0
802 600	3,15	0,10	-	2,70	860,0	1.720,0	6,30	60,7
802 700	3,40	0,10	-	2,95	920,0	1.840,0	6,80	50,8
802 750	3,70	0,10	-	3,25	1.005,0	2.010,0	7,40	42,3

Extension bars

see Accessories / Spares E+S compact shoring systems (page 24)

Magnum-Boxes

Trench widths (for cast iron tubular extension bars $l = 0.55$ m)

Anz.-ZwSt. n	$l_{ZwSt.}$ [m]	for base element $h = 3,15$ m				for base element $h = 4,00$ m		
		b_c [m]	element $l = 4,00$ m	element $l = 5,08$ m	element $l = 6,84$ m	b_c [m]	element $l = 3,15$ m	Element $l = 3,40$ m
			b [m]	b [m]	b [m]		b [m]	b [m]
0	0,000	0,78 - 1,22	0,98 - 1,42	1,02 - 1,46	1,10 - 1,54	0,88 - 1,32	1,04 - 1,48	1,08 - 1,52
1	0,550	1,33 - 1,77	1,53 - 1,97	1,57 - 2,01	1,65 - 2,09	1,43 - 1,87	1,59 - 2,03	1,63 - 2,07
2	1,100	1,88 - 2,32	2,08 - 2,52	2,12 - 2,56	2,20 - 2,64	1,98 - 2,42	2,14 - 2,58	2,18 - 2,62
3	1,650	2,43 - 2,87	2,63 - 3,07	2,67 - 3,11	2,75 - 3,19	2,53 - 2,97	2,69 - 3,13	2,73 - 3,17
4	2,200	2,98 - 3,42	3,18 - 3,62	3,22 - 3,66	3,30 - 3,74	3,08 - 3,52	3,24 - 3,68	3,28 - 3,72
5	2,750	3,53 - 3,97	3,73 - 4,17	3,77 - 4,21	3,85 - 4,29	3,63 - 4,07	3,79 - 4,23	3,83 - 4,27
max. 6	3,300	4,08 - 4,52	4,28 - 4,72	4,32 - 4,76	4,40 - 4,84	4,18 - 4,62	4,34 - 4,78	4,38 - 4,82

From-to sizes dependent on spindle adjustment range.

Other trench widths possible by combining the two different extension bar lengths $l = 0.25$ m and $l = 0.55$ m.

Larger trench widths available on request.

Trench widths (for extension bars HEB 180)

Anz.-ZwSt. n	$l_{ZwSt.}$ [m]	for base element $h = 3,15$ m				for base element $h = 4,00$ m		
		b_c [m]	element $l = 4,00$ m	element $l = 5,08$ m	element $l = 6,84$ m	b_c [m]	element $l = 3,15$ m	Element $l = 3,40$ m
			b [m]	b [m]	b [m]		b [m]	b [m]
0	0,000	0,78 - 1,22	0,98 - 1,42	1,02 - 1,46	1,10 - 1,54	0,88 - 1,32	1,04 - 1,48	1,08 - 1,52
1	0,275	1,055 - 1,495	1,255 - 1,695	1,295 - 1,735	1,375 - 1,815	1,155 - 1,595	1,315 - 1,755	1,355 - 1,795
1	0,550	1,33 - 1,77	1,53 - 1,97	1,57 - 2,01	1,65 - 2,09	1,43 - 1,87	1,59 - 2,03	1,63 - 2,07
1	1,100	1,88 - 2,32	2,08 - 2,52	2,12 - 2,56	2,20 - 2,64	1,98 - 2,42	2,14 - 2,58	2,18 - 2,62
1	1,650	2,43 - 2,87	2,63 - 3,07	2,67 - 3,11	2,75 - 3,19	2,53 - 2,97	2,69 - 3,13	2,73 - 3,17
1	2,200	2,98 - 3,42	3,18 - 3,62	3,22 - 3,66	3,30 - 3,74	3,08 - 3,52	3,24 - 3,68	3,28 - 3,72
1	3,300	4,08 - 4,52	4,28 - 4,72	4,32 - 4,76	4,40 - 4,84	4,18 - 4,62	4,34 - 4,78	4,38 - 4,82

From-to dimensions depend on the spindle adjustment range.

Other trench widths are possible by combining different HEB lengths.

Larger trench widths are available on request.

Accessories / Spares

see Accessories / Spares E+S compact shoring systems (page 24)

Anz _{ZwSt.}	Number of extension bars	t_{pl}	Panel thickness
$l_{ZwSt.}$	Total extension bar length	A	Area
l	Length	G	Weight
l_c	Max. pipe length	G / VP	Weight per shoring panel
b	Shoring / trench width	G / Box	Weight per shoring box
b_c	Inner width	eh	Max. soil pressure
h_c	Vertical clearance		

E+S Trench shoring systems / Endsupported compact shoring systems

Linear box

1



Linear box

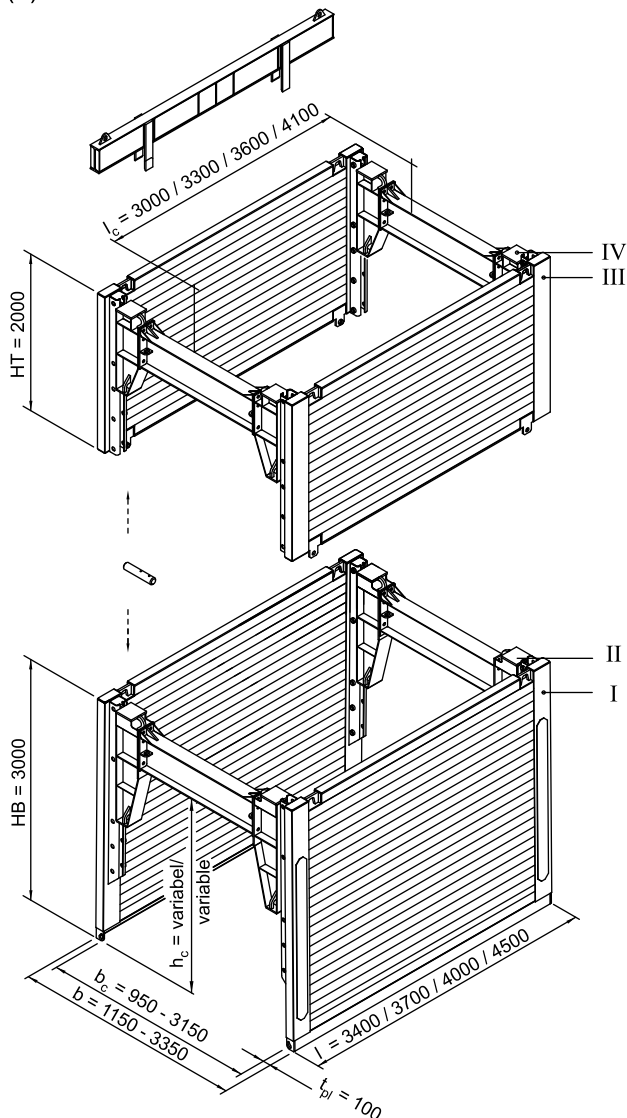
Shoring length	3,40 m / 3,70 m / 4,00 m / 4,50 m
Height base unit	3,00 m
Height top unit	1,32 m / 2,00 m
Pipe culvert height	variable
Weight	2050 kg - 2940 kg

Like all E+S box systems, the Linear-Box is transported and supplied in its fully assembled state so that only the extension bars have to be fitted to achieve the desired trench width. As top, alternatively either a top element with boogie car or the top with spreading appendant to the Medium and Magnum shoring is applicable.

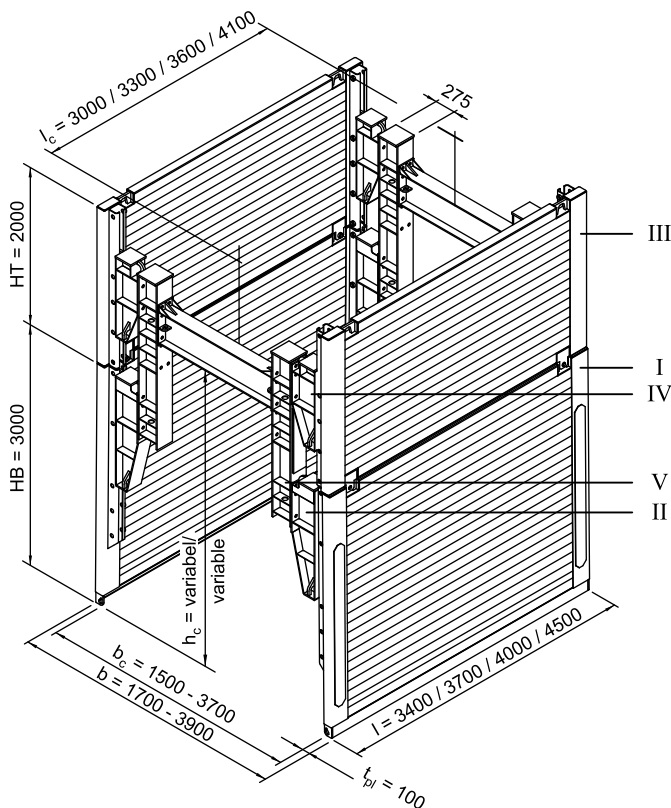
The E+S Linear-Box shoring system is a combination of slide rail shoring and box shoring. Thanks to the vertically displaceable boogie car (the principle of the linear shoring system), the shoring is extremely versatile and can thus adapt to a wide range of different site requirements.

Linear box

(1)



(2)



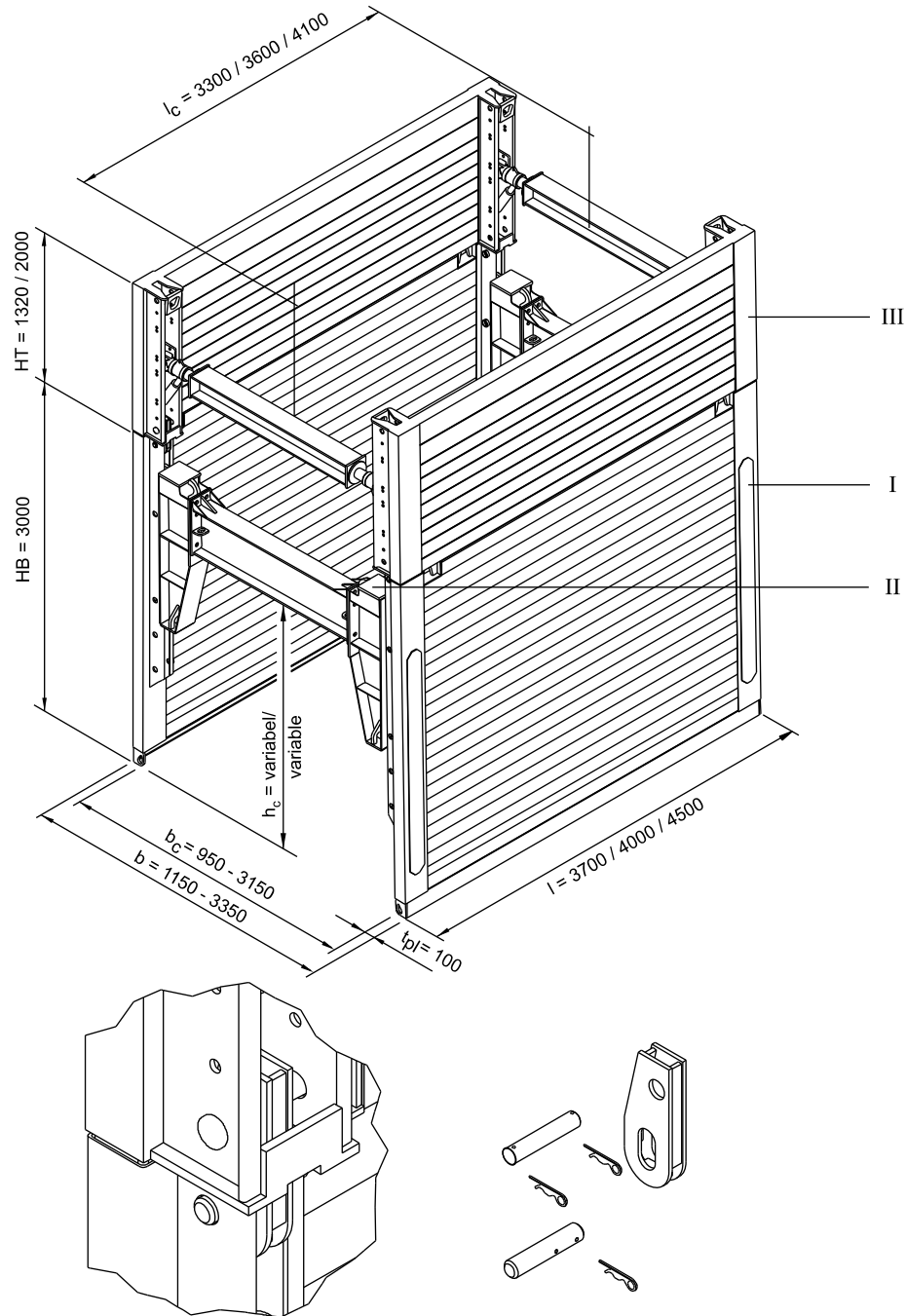
I	Base unit with boogie car
II	Linear-Box boogie car (base unit)
III	Top unit with boogie car
IV	Linear-Box boogie car (top unit)
V	Extension
HB	Height base unit
HT	Height top unit

l	Length
l_c	Pipe culvert length
b	Shoring / trench width
b_c	Inner width
h_c	Pipe culvert height
t_{pl}	Thickness

↑ (1) Linear box base module with top module, (2) Linear box base module with top module and extension

(All dimensions in mm)

Linear box



I	Base unit with boogie car	l_c	Pipe culvert length
II	Linear-Box boogie car (base unit)	b	Shoring / trench width
III	Top unit with struts	b_c	Inner width
HB	Height base unit	h_c	Pipe culvert height
HT	Height top unit	t_{pl}	Thickness
l	Length		

Linear box base module with medium top box

(All dimensions in mm)

Linear box

Boogie car

Art. No.	Short description	l [m]	G [kg]
832 226	Linear box boogie car (base unit)	1,38	170,0
832 227	Linear box boogie car (top unit)	1,00	115,0

Base units with boogie car

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
802 328	3,40	3,00	0,10	variable	3,00	1.025,0	2.050,0	10,20	48,2
802 321	3,70	3,00	0,10	variable	3,30	1.089,0	2.178,0	11,10	40,9
802 323	4,00	3,00	0,10	variable	3,60	1.255,0	2.510,0	12,00	35,2
802 325	4,50	3,00	0,10	variable	4,10	1.470,0	2.940,0	13,50	27,4

Top units with boogie car

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
802 322	3,70	2,00	0,10	variable	3,30	822,0	1.644,0	7,40	40,9
802 324	4,00	2,00	0,10	variable	3,60	1.000,0	2.000,0	8,00	35,2
802 326	4,50	2,00	0,10	variable	4,10	1.077,0	2.154,0	9,00	27,4

Top units with struts

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
800 700	3,40	1,32	0,10	-	2,95	658,0	1.316,0	4,49	50,8
802 700	3,40	2,00	0,10	-	2,95	920,0	1.840,0	6,80	50,8
800 800	3,70	1,32	0,10	-	3,25	692,0	1.384,0	4,88	42,3
802 750	3,70	2,00	0,10	-	3,25	1.005,0	2.010,0	7,40	42,3
800 900	4,00	1,32	0,10	-	3,55	775,0	1.550,0	5,28	44,0
800 950	4,50	1,32	0,10	-	4,05	820,0	1.640,0	5,94	34,2

Extension bars (for base and top elements with roller unit)

see Accessories / Spares E+S compact shoring systems (page 24)

Extension bars (for top elements with spreaders)

see Accessories / Spares E+S compact shoring systems (page 24)

Trench widths

l _{ZwSt} [m]	b _c [m]	b [m]
0,000	0,950	1,150
0,275	1,225	1,425
0,550	1,500	1,700
1,100	2,050	2,250
1,650	2,600	2,800
2,200	3,150	3,350

Other trench widths possible by combining different IPE lengths.
Larger trench widths available on request.

Accessories / Spares

see Accessories / Spares E+S compact shoring systems (page 24)

E+S Trench shoring systems / Endsupported compact shoring systems

Manhole

1



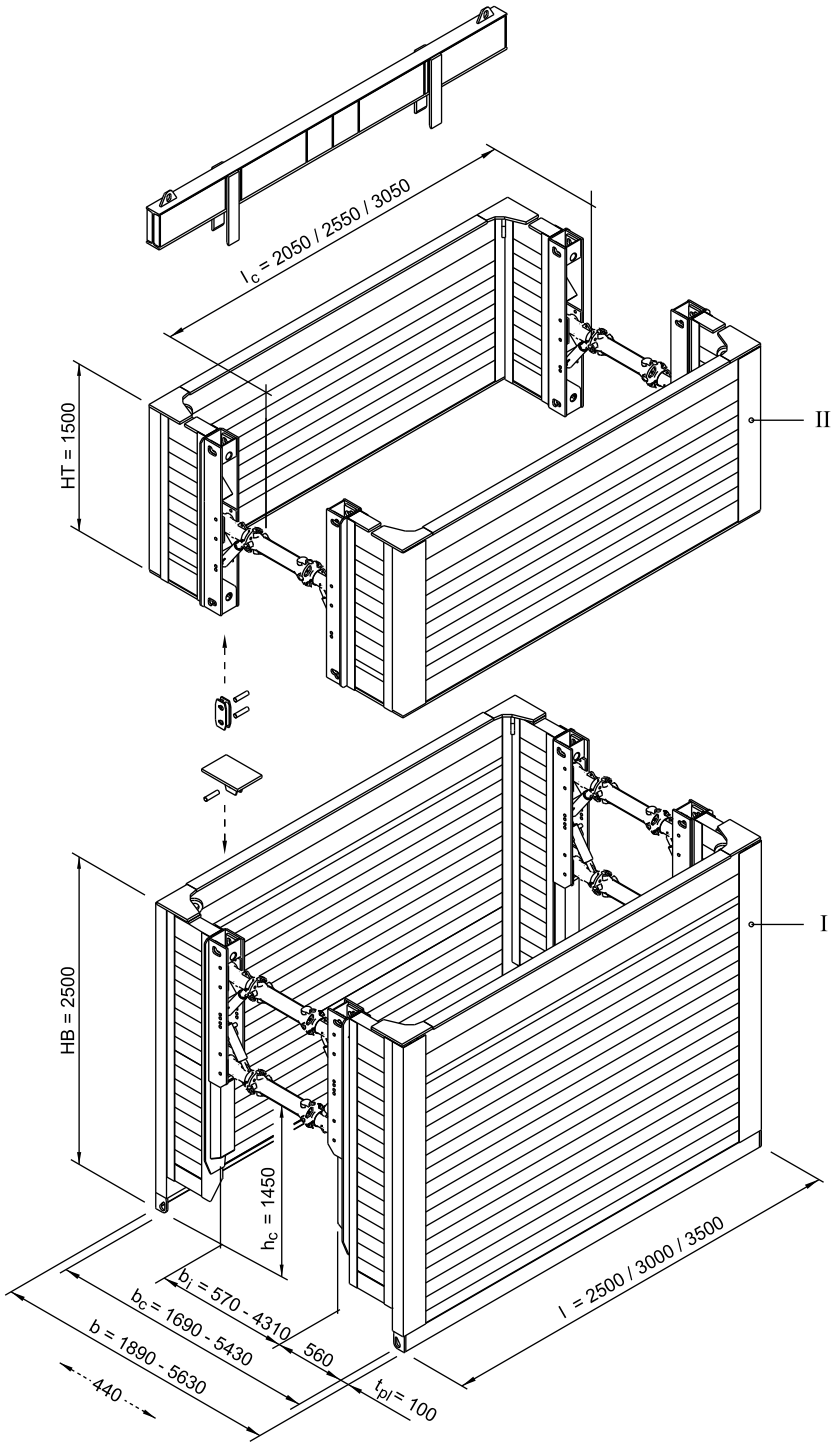
↑ *Manhole*

Shoring length	2,50 m / 3,00 m / 3,50 m
Height base unit	2,60 m
Height top unit	1,50 m
Pipe culvert height	1,45 m
Weight	2260 kg - 2710 kg

The Manhole is a shaft shoring element displaying all the features of the compact shoring system but having side walls at right angles to the panels which are designed to take and load so that a four sided excavation can be achieved safely and swiftly.

Manhole

1



I	Base unit
II	Top unit
HB	Height base unit
HT	Height top unit
I	Length
I_c	Pipe culvert length

b	Shoring / trench width
b_c	Inner width
b_i	Inner culvert width
h_c	Pipe culvert height
t_{pl}	Thickness

Manhole

(All dimensions in mm)

Manhole

Base units (Height 2,50 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	eh [kN/m²]
828 005	2,50	0,10	1,45	2,05	1.130,0	2.260,0	81,8
828 015	3,00	0,10	1,45	2,55	1.270,0	2.540,0	67,4
828 025	3,50	0,10	1,45	3,05	1.355,0	2.710,0	47,7

Top units (Height 1,50 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	eh [kN/m²]
829 005	2,50	0,10	-	2,05	944,0	1.888,0	90,9
829 015	3,00	0,10	-	2,55	1.015,0	2.030,0	67,4
829 025	3,50	0,10	-	3,05	1.090,0	2.180,0	47,7

Extension bars

see Accessories / Spares E+S compact shoring systems (page 24)

Trench widths (for cast iron tubular extension bars l = 0.55 m)

Number of extension bars n	Length extension bars [m]	b _c [m]	b _i [m]	b [m]
0	0,00	1,69 - 2,13	0,57 - 1,01	1,89 - 2,33
1	0,55	2,24 - 2,68	1,12 - 1,56	2,44 - 2,88
2	1,10	2,79 - 3,23	1,67 - 2,11	2,99 - 3,43
3	1,65	3,34 - 3,78	2,22 - 2,66	3,54 - 3,98
4	2,20	3,89 - 4,33	2,77 - 3,21	4,09 - 4,53
5	2,75	4,44 - 4,88	3,32 - 3,76	4,64 - 5,08
max. 6	3,30	4,99 - 5,43	3,87 - 4,31	5,19 - 5,63

From-to sizes dependent on spindle adjustment range.

Other trench widths possible by combining the two different extension bar lengths l = 0.25 m and l = 0.55 m.

Larger trench widths available on request.

Trench widths (for extension bars HEB 180)

l _{ZwSt} [m]	b _c [m]	b _i [m]	b [m]
0,000	1,690 - 2,130	0,570 - 1,010	1,890 - 2,330
0,275	1,965 - 2,405	0,845 - 1,285	2,165 - 2,605
0,550	2,240 - 2,680	1,120 - 1,560	2,440 - 2,880
1,100	2,790 - 3,230	1,670 - 2,110	2,990 - 3,430
1,650	3,340 - 3,780	2,220 - 2,660	3,540 - 3,980
2,200	3,890 - 4,330	2,770 - 3,210	4,090 - 4,530
2,200 + 1,100	4,990 - 5,430	3,870 - 4,310	5,190 - 5,630

From-to dimensions depend on the spindle adjustment range.

Other trench widths are possible by combining different HEB lengths.

Larger trench widths are available on request.

Accessories / Spares

see Accessories / Spares E+S compact shoring systems (page 24)

E+S Trench shoring systems / Endsupported compact shoring systems

Dragbox

1



↑ Dragbox

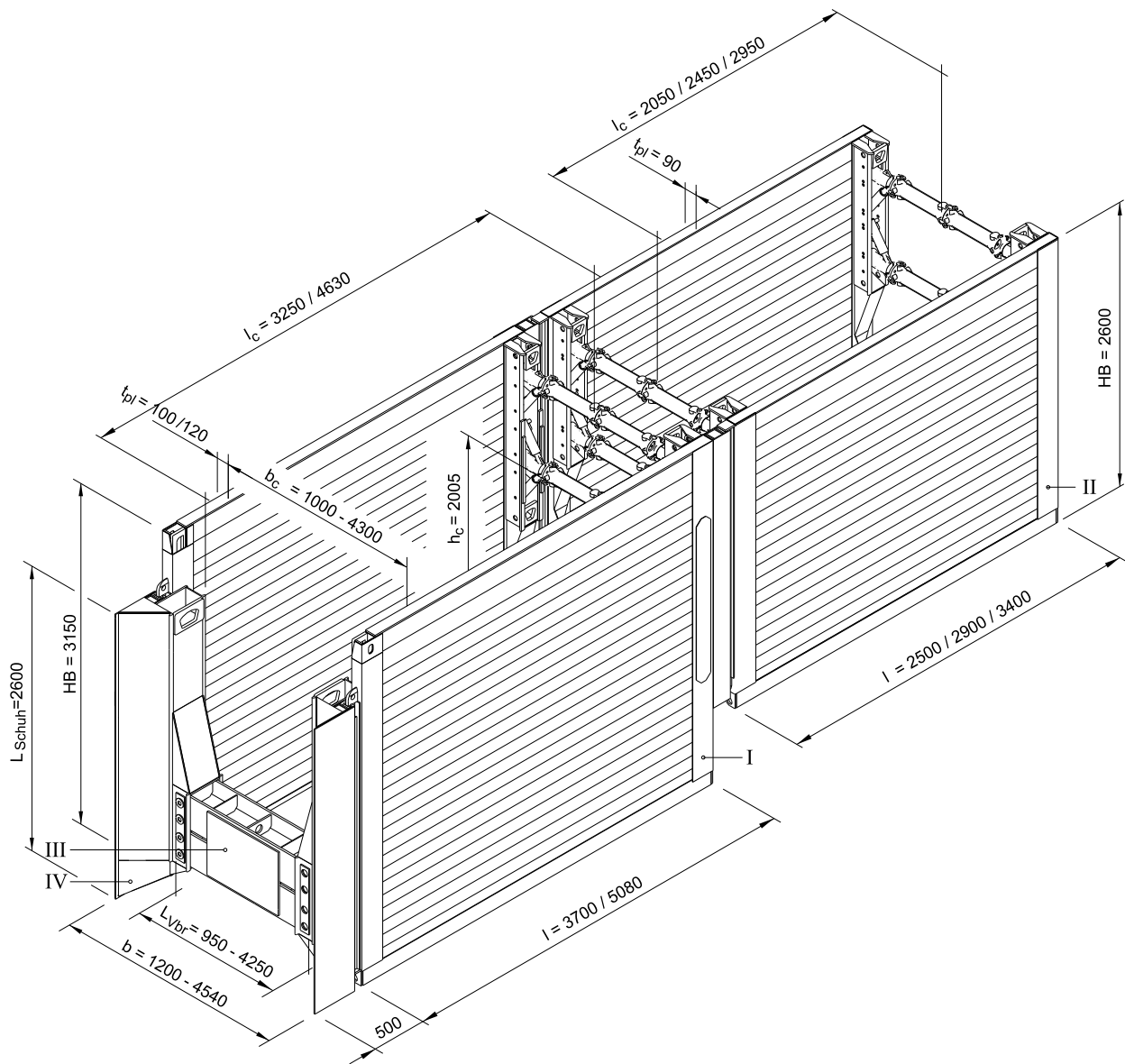
Shoring depth	max. 4,00 m
Panel length	3,70 m / 5,08 m
Base panel height	3,00 m / 3,15 m
Pipe culvert height	max. 2,00 m

The Dragbox was developed for shoring projects carried out exclusively on open terrain. The space available in the Dragbox and in the installed towing plate is exploited for pipe-laying. At the end of pipe-laying, the Dragbox is dragged forward with the towing plate for the next pipe-laying cycle.

To stabilize the system and for reasons of structural strength, the Dragbox has an extremely load-resistant connecting element - the cutting edge - which keeps the two shoring panels apart at the right distance and can be extended with special spacer bars.

Dragbox

1



I	Dragbox base unit
II	Towing plate
III	Dragbox-beam
IV	Dragbox cutting edge
HB	Height base unit
L_{Vbr}	Length dragbox-beam
L_{Schuh}	Length dragbox cutting edge

l	Length
l_c	Pipe culvert length
b	Shoring / trench width
b_c	Inner width
h_c	Pipe culvert height
t_{pl}	Thickness

Dragbox

(All dimensions in mm)

Dragbox

Base units (Height 3,00 m)

Art. No.	l [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]
802 270	3,70	0,10	2,00	3,25	1.372,0	2.744,0
802 410	5,08	0,12	1,88	4,63	1.895,0	3.790,0

Dragbox cutting edge

Art. No.	Short description	l [m]	G [kg]
847 100	Dragbox cutting edge right hand	0,65	580,0
847 150	Dragbox cutting edge left hand	0,65	580,0

Dragbox beam

Art. No.	Short description	l [m]	G [kg]
847 200	Dragbox beam	0,950	294,5
847 210	Dragbox beam	1,500	499,9
847 220	Dragbox beam	2,050	713,2
847 230	Dragbox beam	2,600	918,5
847 240	Dragbox beam	3,150	1.123,3
847 250	Dragbox beam	3,700	1.327,1
847 260	Dragbox beam	4,250	1.531,0

Pin

Art. No.	Short description	l [m]	G [kg]	d [m]
847 300	Pin (edgeless)	0,385	10,3	0,06
847 301	Pin (sharpened)	0,445	10,5	0,06

Extension bars

see Accessories / Spares E+S compact shoring systems (page 24)

Trench widths

l _{zwSt} n	Length dragbox beam [m]	b _c [m]	b [m]	b [m]
0,00	0,95	1,00	1,20	1,24
0,55	1,50	1,55	1,75	1,79
1,10	2,05	2,10	2,30	2,34
1,65	2,60	2,65	2,85	2,89
2,20	3,15	3,20	3,40	3,44
2,75	3,70	3,75	3,95	3,99
3,30	4,25	4,30	4,50	4,54
			for base units t _{pl} = 0,10 m	for base units t _{pl} = 0,12 m

Accessories / Spares

see Accessories / Spares E+S compact shoring systems (page 24)

l	Length	G	Weight
l _c	Pipe culvert length	G / VP	Weight per shoring panel
h _c	Pipe culvert height	G / Box	Weight per shoring box
t _{pl}	Thickness	d	Diameter

E+S Trench shoring systems / Endsupported compact shoring systems

Accessories / spares for E+S compact shoring systems

1

Extension bars

Art. No.	Short description	I [m]	G [kg]
850 091	Extension bar GGG 50	0,250	11,2
850 100	Extension bar GGG 50	0,550	18,7
850 112	Extension bar HEB 180	0,275	28,0
850 110	Extension bar HEB 180	0,550	43,0
850 124	Extension bar HEB 180	1,100	70,0
850 132	Extension bar HEB 180	1,650	100,0
850 135	Extension bar HEB 180	2,200	130,0
850 105	Extension bar HEB 220	0,275	40,0
850 115	Extension bar HEB 220	0,550	58,0
850 121	Extension bar HEB 220	1,100	98,0
850 130	Extension bar HEB 220	1,650	140,0
850 141	Extension bar HEB 220	2,200	180,0
831 030	Extension bar IPE 400 Linear box (element with roller unit)	0,275	50,0
831 040	Extension bar IPE 400 Linear box (element with roller unit)	0,550	75,0
831 050	Extension bar IPE 400 Linear box (element with roller unit)	1,100	115,0
831 060	Extension bar IPE 400 Linear box (element with roller unit)	1,650	155,0
831 070	Extension bar IPE 400 Linear box (element with roller unit)	2,200	195,0

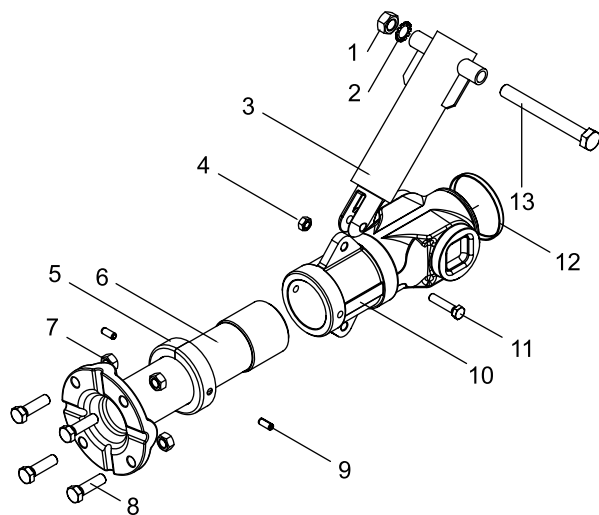
Accessories / Spares

Art. No.	Short description	I [m]	G [kg]	d [m]	Standard
842 752	Adapter for DKU piling frame, corner shoring, h = 0.50 m KDVI		55,0		
842 753	Adapter for DKU piling frame, corner shoring, h = 1.00 m KDVI		94,0		
842 750	Adapter for DKU piling frame, E+S spreader		31,0		
850 699	Bar for adjusting E+S/Krings spindles (Medium, Magnum, KS 100, slide rail)	0,7	2,5	0,024	
336 960	Bearing claw for DKU piling frame element		40,0		
302 125	Bearing plate -closed-		4,2		
850 500	Cast iron connector (for Medium boxes, Magnum boxes, Manhole)		6,7		
862 214	Connector (for Linear box, top unit with struts)		6,1		
HB 0190 F	Damping sleeve 10 x 24 mm		0,01		DIN 1481
842 099	DKU piling frame guide frame	2,27	105,0		
842 100	DKU piling frame guide frame	3,81	175,0		
859 981	Drop-in bearing block, E+S		25,6		
HD 0110 F	Grease nipple		0,01	0,01	DIN 71412
HD 0050 F	Metal cap for spindle		0,1		
HD 0013 F	Metal cap for spindle housing		0,2		
IA 0095 F	Nut M 12		0,01		DIN 985
IA 0120 F	Nut M 16		0,03		DIN 934
IA 0130 F	Nut M 20		0,03		DIN 934
IA 0185 F	Nut M 30		0,30		DIN 934
HD 0040 F	PE cap for the spindle		0,01		
850 600	Pin	0,195	1,8	0,035	
850 610	Pin (for Lightweight box)	0,095	0,5	0,030	
850 614	Pin 200 x 40 mm (Linear box roller unit)		1,9		
861 077	Pressure beam (Lightweight shoring, KS 60, KVL)	1,80	117,0		
861 078	Pressure beam (Lightweight shoring, KS 60, KVL)	2,30	138,0		
861 079	Pressure beam (Lightweight shoring, KS 60, KVL)	2,80	161,0		

Accessories / spares for E+S compact shoring systems

Accessories / Spares (contd.)

Art. No.	Short description	l [m]	G [kg]	d [m]	Standard
861 080	Pressure beam (Lightweight shoring, KS 60, KVL)	3,30	183,0		
861 076	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	1,60	175,5		
861 074	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	2,35	236,0		
861 070	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	2,80	271,0		
861 071	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	3,40	318,0		
851 010	Pressure plate (for Lightweight-Boxes)		5,0		
851 005	Pressure plate (for Medium Boxes, Magnum Boxes, Manhole)		17,0		
IB 0215 F	Screw M 12 x 55		0,06		DIN 933
IB 0310 F	Screw M 16 x 55		0,11		DIN 933
IB 0420 F	Screw M 20 x 180		0,56		DIN 601
IB 0360 F	Screw M 20 x 45		0,17		DIN 933
300 100	Shock absorber	0,143	4,5		
GB 0070 E	Spindle housing, left hand		9,4		
GB 0040 E	Spindle housing, right hand		9,4		
GB 0090 E	Spindle, lefthand -heavy duty-		17,1		
GB 0080 E	Spindle, lefthand -hollow-		9,5		
GB 0030 E	Spindle, righthand -heavy duty-		17,1		
GB 0020 E	Spindle, righthand -hollow-		9,5		
301 010	Spreader complete, left hand -heavy duty-		27,1		
301 000	Spreader complete, left hand -hollow-		19,5		
300 010	Spreader complete, right hand -heavy duty-		27,1		
300 000	Spreader complete, right hand -hollow-		19,5		
HE 0100 F	Spring cotter (Linear-Box)		0,01	0,006	
HE 0050 F	Spring cotter 6 mm		0,03	0,006	DIN 11024
ID 0160 F	Spring ring A 20		0,01		DIN 127
821 100	Suspension chain KL-13-8	5,000	25,7		
862 216	Top cover for Linear-Box		3,00		



- 1 Nut M 20
- 2 Lock washer A 20
- 3 Shock absorber
- 4 Nut M 12
- 5 Metal cap for spindle
- 6 Spindle, right / left
- 7 Nut M 16
- 8 Hexagon screw M 16 x 55
- 9 Damping sleeve 10 x 24 mm
- 10 Cast-iron nut, right / left
- 11 Hexagon screw M 12 x 55
- 12 PVC dust cap for spindle nut
- 13 Hexagon screw M 20 x 180

↑ E+S spreader, complete, right/left, with shock absorber

Krings Trench shoring systems / Endsupported compact shoring systems

KVL



↑ KVL

Shoring length	2,00 m - 3,50 m
Height base unit	1,50 m / 2,00 m / 2,40 m
Height top unit	0,50 m / 1,00 m
Pipe culvert height	0,72 m / 0,97 m / 1,30 m
Weight	527 kg - 1123 kg

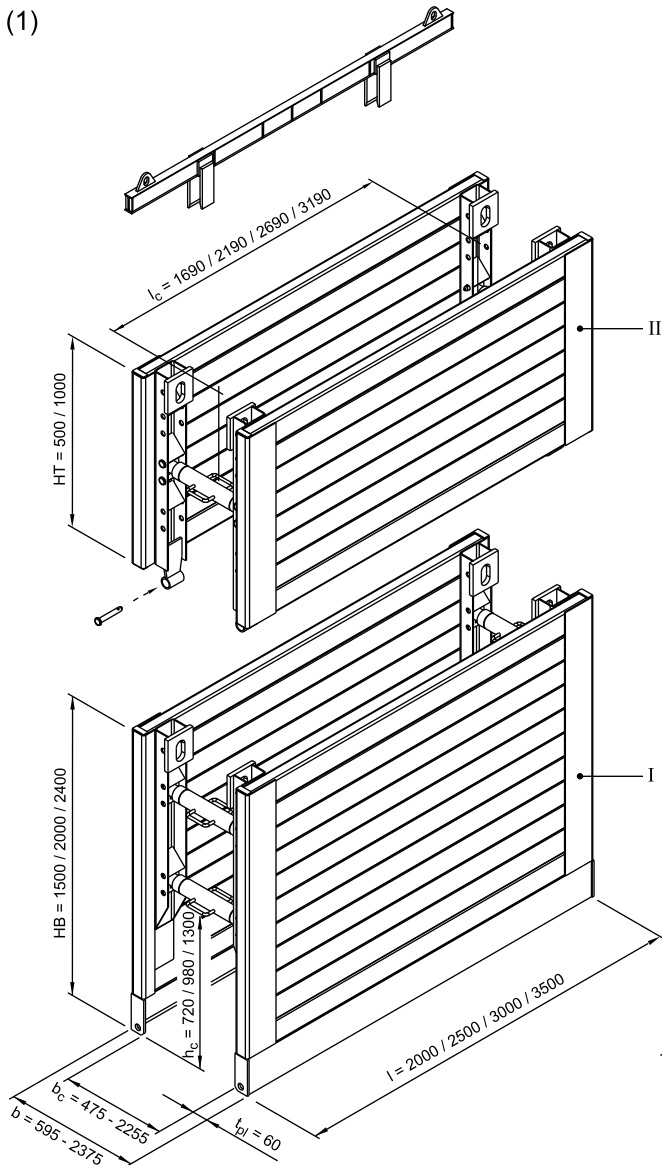
This small steel trench box is designed specifically for inner city shoring jobs. The KVL is ideal for the laying and modernization of gas and water pipes and telephone and power cables and for the creation of service lines.

Thanks to their low weight, the boxes are suitable for handling with small wheeled excavators. Sturdy struts, which can be adjusted to the desired trench width and quickly replaced (secured with bolts and spring pins), and sling lugs on the four corner posts simplify the handling of this type of shoring. Despite their low weight, the assembled boxes are stable and suitable for installation both by placement in the ready-dug trench and by lowering with concurrent excavation.

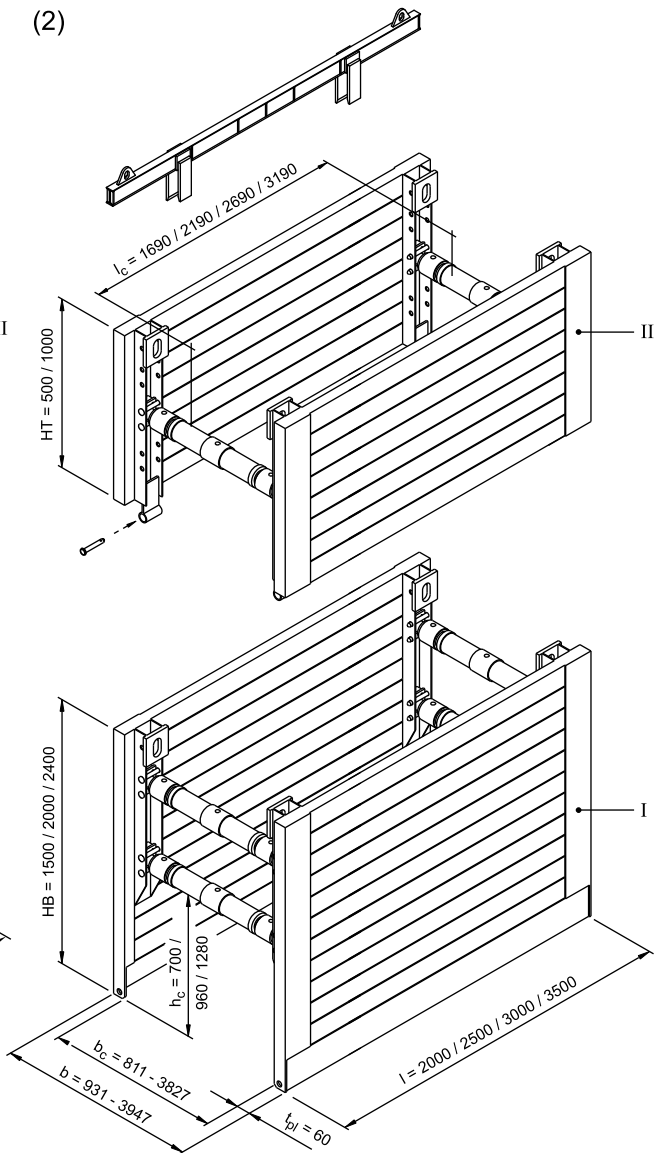
With the aid of an adapter, the struts developed for the KS 60 and KS 100 boxes can also be used if desired.

KVL

(1)



(2)



I Base unit
II Top unit
HB Height base unit
HT Height top unit
l Length

l_c Pipe culvert length
b Shoring / trench width
b_c Inner width
h_c Pipe culvert height
t_{pl} Thickness

↑ (1) KVL, (2) KVL with spindle 98x550 or 98x700 and adapter

(All dimensions in mm)

KVL

Base units

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
111 030	2,00	1,50	0,06	0,72	1,69	235,0	527,0 *	3,00	32,0
111 050	2,50	1,50	0,06	0,72	2,19	252,0	561,0 *	3,75	26,0
111 080	3,00	1,50	0,06	0,72	2,69	310,0	677,0 *	4,50	21,5
111 040	2,00	2,00	0,06	0,98	1,69	295,0	647,0 *	4,00	32,0
111 060	2,50	2,00	0,06	0,98	2,19	350,0	757,0 *	5,00	26,0
111 090	3,00	2,00	0,06	0,98	2,69	400,0	857,0 *	6,00	21,5
111 092	3,50	2,00	0,06	0,98	3,19	465,0	987,0 *	7,00	18,5
111 091	3,00	2,40	0,06	1,30	2,69	470,0	997,0 *	7,20	21,5
111 093	3,50	2,40	0,06	1,30	3,19	533,0	1.123,0 *	8,40	18,5

* with spindle 70x650

Top units

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
111 130	2,00	0,50	0,06	-	1,69	92,0	214,0 *	1,00	32,0
111 150	2,50	0,50	0,06	-	2,19	105,0	240,0 *	1,25	32,0
111 170	3,00	0,50	0,06	-	2,69	130,0	290,0 *	1,50	30,6
111 172	3,50	0,50	0,06	-	3,19	150,0	330,4 *	1,68	21,9
111 120	2,00	1,00	0,06	-	1,69	165,0	360,0 *	2,00	32,0
111 140	2,50	1,00	0,06	-	2,19	195,0	420,0 *	2,50	32,0
111 160	3,00	1,00	0,06	-	2,69	217,0	464,0 *	3,00	30,6
111 174	3,50	1,00	0,06	-	3,19	245,0	520,4 *	1,68	21,9

* with spindle 70x650

Extension bars

Art. No.	Short description	l [m]	G [kg]
118 050	Spindle - 70x600 (rubber pad oval)	0,465 - 0,670	9,0
118 080	Spindle - 70x800 (rubber pad oval)	0,665 - 1,070	13,1
118 010	Spindle - 70x1180 (rubber pad oval)	1,065 - 1,870	18,3
118 060	Spindle - 70x650 (rubber pad round)	0,523 - 0,617	12,2
118 070	Spindle - 70x740 (rubber pad round)	0,613 - 0,797	13,4
118 090	Spindle - 70x920 (rubber pad round)	0,799 - 1,161	15,8
118 020	Spindle - 70x1280 (rubber pad round)	1,153 - 1,878	20,5
118 100	Spindle - 70x1470 (rubber pad round)	1,339 - 2,254	25,4

Trench widths

Art. No.	Short description	Stroke [m]	b _c [m]	b [m]
118 050	Spindle - 70x600 (rubber pad oval)	0,205	0,475 - 0,680	0,595 - 0,800
118 080	Spindle - 70x800 (rubber pad oval)	0,405	0,675 - 1,080	0,795 - 1,200
118 010	Spindle - 70x1180 (rubber pad oval)	0,805	1,075 - 1,880	1,195 - 2,000
118 060	Spindle - 70x650 (rubber pad round)	0,094	0,533 - 0,627	0,653 - 0,747
118 070	Spindle - 70x740 (rubber pad round)	0,184	0,623 - 0,807	0,743 - 0,927
118 090	Spindle - 70x920 (rubber pad round)	0,362	0,809 - 1,171	0,929 - 1,291
118 020	Spindle - 70x1280 (rubber pad round)	0,725	1,163 - 1,888	1,283 - 2,008
118 100	Spindle - 70x1470 (rubber pad round)	0,915	1,349 - 2,264	1,469 - 2,384

KVL

Shoring widths for spindle 98x550 with adapter

Extension bar	l	b _c	b
	[m]	[m]	[m]
	without	0,811 - 1,011	0,931 - 1,131
139 430	0,30	1,111 - 1,311	1,231 - 1,431
139 445	0,50	1,311 - 1,511	1,431 - 1,631
139 385	1,00	1,811 - 2,011	1,931 - 2,131
139 400	1,50	2,311 - 2,511	2,431 - 2,631
139 420	2,00	2,811 - 3,011	2,931 - 3,131
139 425	2,50	3,311 - 3,511	3,431 - 3,631

Shoring widths for spindle 98x700 with adapter

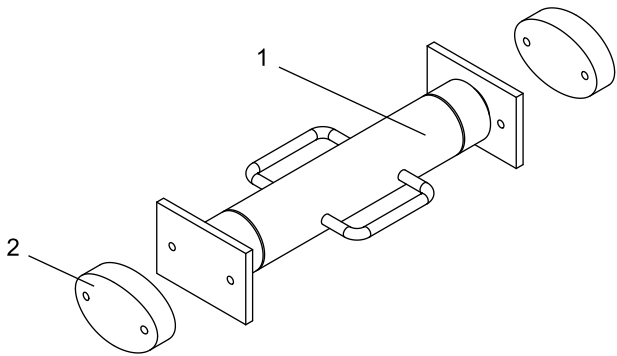
Extension bar	l	b _c	b
	[m]	[m]	[m]
	without	0,987 - 1,327	1,107 - 1,447
139 430	0,30	1,287 - 1,627	1,407 - 1,747
139 445	0,50	1,487 - 1,827	1,607 - 1,947
139 385	1,00	1,987 - 2,327	2,107 - 2,447
139 400	1,50	2,487 - 2,827	2,607 - 2,947
139 420	2,00	2,987 - 3,327	3,107 - 3,447
139 425	2,50	3,487 - 3,827	3,607 - 3,947

Accessories / Spares

see Accessories / Spares Krings compact shoring systems (page 51)

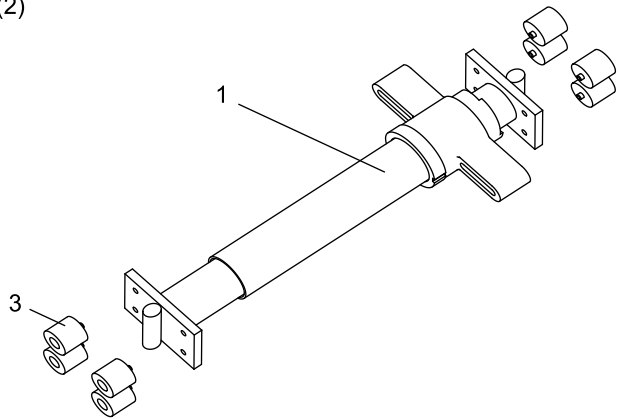
l	Length	t _{pl}	Thickness
l _c	Pipe culvert length	A	Area
b	Shoring / trench width	G	Weight
b _c	Inner width	G / VP	Weight per shoring panel
h	Height	G / Box	Weight per shoring box
h _c	Pipe culvert height	eh	Earth pressure max.

(1)



↑ (1) KVL spindle, 70 x 600 / 800 / 1180

(2)



↑ (2) KVL spindle, 70 x 650 / 740 / 920 / 1280 / 1470

- 1 Spindle
2 Rubber parts (elliptical)

- 3 Rubber element Ø 40 mm

Krings Trench shoring systems / Endsupported compact shoring systems

KS 60



KS 60

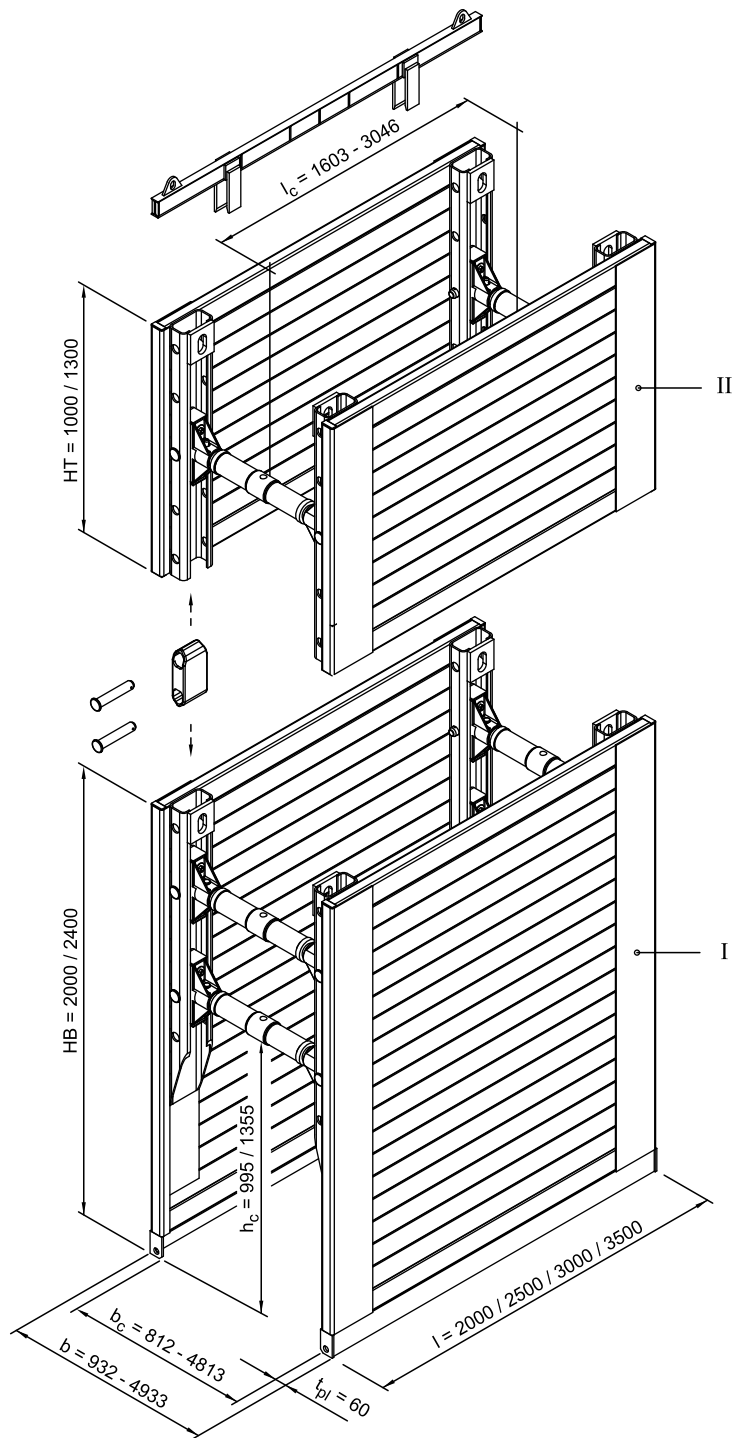
Shoring length	2,00 m - 3,50 m
Height base unit	2,00 m / 2,40 m
Height top unit	1,00 m / 1,30 m
Pipe culvert height	max. 1,355 m
Weight	1185 kg - 1565 kg

Within its performance class, the strong KS 60 is designed for high loading, low weight and a high standard of safety. These features make this lightweight box ideal for shoring in open terrain and for medium-size inner-city trenching applications.

Depending on shoring depth and in consultation with our technical department, the load-bearing capacity can be increased in certain cases.

The struts are compatible with the box and slide rail system. The loads are taken up by the articulated sprung knobs between the struts and the shoring panel. Small excavators can be used for quick and easy box placement and lowering.

KS 60



I	Base unit
II	Top unit
HB	Height base unit
HT	Height top unit
l	Length

l _c	Pipe culvert length
b	Shoring / trench width
b _c	Inner width
h _c	Pipe culvert height
t _{pl}	Thickness

KS 60

(All dimensions in mm)

KS 60

Base units

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
131 060	3,00	2,00	0,06	0,995	2,61	460,0	1.185,0 *	6,00	27,0
131 080	3,50	2,00	0,06	0,995	3,05	560,0	1.385,0 *	7,00	26,5
131 040	2,00	2,40	0,06	1,355	1,61	394,0	1.053,0 *	4,80	40,0
131 050	2,50	2,40	0,06	1,355	2,11	460,0	1.185,0 *	6,00	32,0
131 070	3,00	2,40	0,06	1,355	2,61	515,0	1.295,0 *	7,20	27,0
131 090	3,50	2,40	0,06	1,355	3,05	650,0	1.565,0 *	8,40	26,5

* with spindle 98x700

Top units

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
131 140	3,00	1,00	0,06	-	2,61	265,0	705,0 *	3,00	27,0
131 160	3,50	1,00	0,06	-	3,05	333,0	841,0 *	3,50	26,5
131 120	2,00	1,30	0,06	-	1,61	260,0	695,0 *	2,60	40,0
131 130	2,50	1,30	0,06	-	2,11	295,0	765,0 *	3,25	32,0
131 150	3,00	1,30	0,06	-	2,61	330,0	835,0 *	3,90	27,0
131 170	3,50	1,30	0,06	-	3,05	395,0	965,0 *	4,55	26,5

* with spindle 98x700

Struts / Extension bars

see Accessories / Spares Krings compact shoring systems (page 51)

Shoring widths for spindle 98x550

Extension bar	l [m]	b _c [m]	b [m]
	without	0,812 - 1,012	0,932 - 1,132
139 430	0,30	1,112 - 1,312	1,232 - 1,432
139 445	0,50	1,312 - 1,512	1,432 - 1,632
139 385	1,00	1,812 - 2,012	1,932 - 2,132
139 400	1,50	2,313 - 2,512	2,432 - 2,632
139 420	2,00	2,812 - 3,012	2,932 - 3,132
139 425	2,50	3,312 - 3,512	3,432 - 3,632

Shoring widths for spindle 98x700

Extension bar	l [m]	b _c [m]	b [m]
	without	0,988 - 1,328	1,108 - 1,448
139 430	0,30	1,288 - 1,628	1,408 - 1,748
139 445	0,50	1,488 - 1,828	1,608 - 1,948
139 385	1,00	1,988 - 2,328	2,108 - 2,448
139 400	1,50	2,488 - 2,828	2,608 - 2,948
139 420	2,00	2,988 - 3,328	3,108 - 3,448
139 425	2,50	3,488 - 3,828	3,608 - 3,948

KS 60

Shoring widths for spindle 98x817

Extension bars	Total extension bar length	b _c	b
	[m]	[m]	[m]
0	0,00	0,913 - 1,313	1,033 - 1,433
1	0,50	1,413 - 1,813	1,533 - 1,933
2	1,00	1,913 - 2,313	2,033 - 2,433
3	1,50	2,413 - 2,813	2,533 - 2,933
4	2,00	2,913 - 3,313	3,033 - 3,433
5	2,50	3,413 - 3,813	3,533 - 3,933
6	3,00	3,913 - 4,313	4,033 - 4,433
7	3,50	4,413 - 4,813	4,533 - 4,933

A maximum of 7 extension bars with a length of 500 mm may be used.

Different and larger widths are possible by combining different spacer bars.

Accessories / Spares

see Accessories / Spares Krings compact shoring systems (page 51)

l	Length	t _{pl}	Thickness
l _c	Pipe culvert length	A	Area
b	Shoring / trench width	G	Weight
b _c	Inner width	G / VP	Weight per shoring panel
h	Height	G / Box	Weight per shoring box
h _c	Pipe culvert height	eh	Earth pressure max.

Krings Trench shoring systems / Endsupported compact shoring systems

KS 100



↑ KS 100

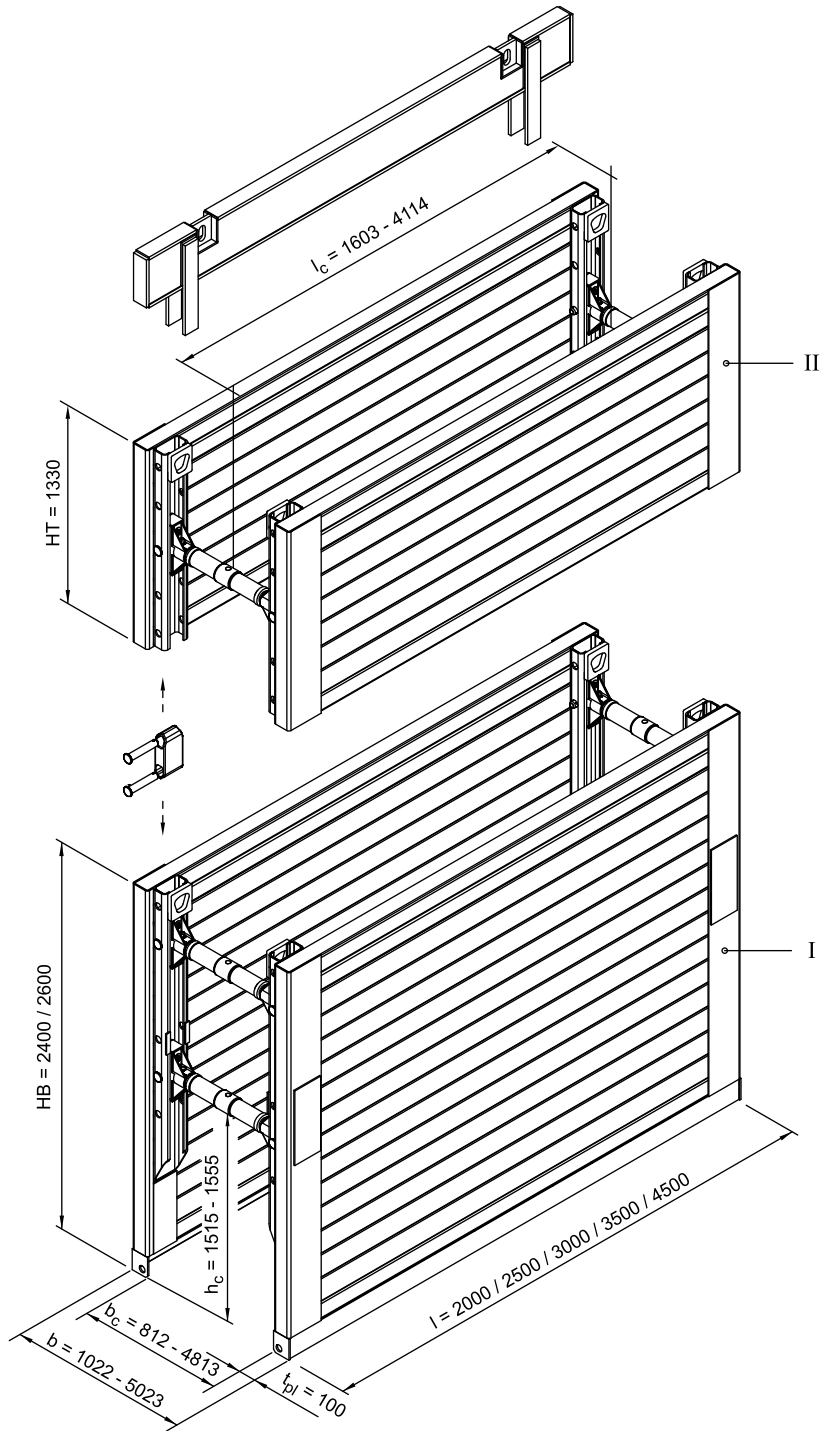
Shoring length	2,00 m - 4,50 m
Height base unit	2,40 m / 2,60 m
Height top unit	1,30 m
Pipe culvert height	max. 1,56 m
Weight	1399 kg - 2715 kg

The KS 100 is a versatile trench box for a wide range of shoring tasks. It is the world's most frequently used trench box. Its uncomplicated use in countless variations in terms of trench width, assignment depth, lengths available on site and conventional vertical pipe clearances (up to 1.56 m) make all settings possible within the quoted maximum sizes. Its most cost-effective use is in trenches up to about 6 m deep.

The struts are compatible with the box and slide rail system. As on all KRINGS trench boxes, working with this edge-supported compact element in practical sizes is very straightforward inexpensive, safe and reliable. No disturbance to the environment is caused by driving or vibration. The boxes can be installed by placement in the ready excavated trench or by lowering with concurrent excavation.

KS 100

2



- I Base unit
- II Top unit
- HB Height base unit
- HT Height top unit
- l Length

- l_c Pipe culvert length
- b Shoring / trench width
- b_c Inner width
- h_c Pipe culvert height
- t_pl Thickness

KS 100

(All dimensions in mm)

KS 100

Base units

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
132 030	2,00	2,40	0,10	1,52	1,614	567,0	1.399,0 *	4,80	60,0
132 050	2,50	2,40	0,10	1,52	2,114	675,0	1.615,0 *	6,00	57,0
132 070	3,00	2,40	0,10	1,52	2,614	761,0	1.787,0 *	7,20	48,0
132 090	3,50	2,40	0,10	1,52	3,114	830,0	1.925,0 *	8,40	44,0
132 140	4,00	2,40	0,10	1,52	3,614	1.000,0	2.265,0 *	9,60	40,0
132 156	4,50	2,40	0,10	1,52	4,114	1.120,0	2.505,0 *	10,80	31,8
132 040	2,00	2,60	0,10	1,56	1,614	612,0	1.489,0 *	5,20	55,0
132 060	2,50	2,60	0,10	1,56	2,114	711,0	1.687,0 *	6,50	52,0
132 080	3,00	2,60	0,10	1,56	2,614	813,0	1.891,0 *	7,80	44,0
132 100	3,50	2,60	0,10	1,56	3,114	905,0	2.075,0 *	9,10	44,0
132 150	4,00	2,60	0,10	1,56	3,614	1.090,0	2.445,0 *	10,40	40,0
132 121	4,50	2,60	0,10	1,56	4,114	1.225,0	2.715,0 *	11,70	31,8

* with spindle 98x700

Top units

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
132 190	2,00	1,30	0,10	-	1,614	370,0	915,0 *	2,60	60,0
132 200	2,50	1,30	0,10	-	2,114	430,0	1.035,0 *	3,25	57,0
132 210	3,00	1,30	0,10	-	2,614	486,0	1.147,0 *	3,90	48,0
132 220	3,50	1,30	0,10	-	3,114	570,0	1.315,0 *	4,55	44,0
132 260	4,00	1,30	0,10	-	3,614	660,0	1.495,0 *	5,20	40,0
132 261	4,50	1,30	0,10	-	4,114	730,0	1.635,0 *	5,85	31,8

* with spindle 98x700

Struts / Extension bars

see Accessories / Spares Krings compact shoring systems (page 51)

Shoring widths for spindle 98x550

Extension bar	l [m]	b _c [m]	b [m]
	without	0,812 - 1,012	1,022 - 1,222
139 430	0,30	1,112 - 1,312	1,322 - 1,522
139 445	0,50	1,312 - 1,512	1,522 - 1,722
139 385	1,00	1,812 - 2,012	2,022 - 2,222
139 400	1,50	2,313 - 2,512	2,522 - 2,722
139 420	2,00	2,812 - 3,012	3,022 - 3,222
139 425	2,50	3,312 - 3,512	3,522 - 3,722

Shoring widths for spindle 98x700

Extension bar	l [m]	b _c [m]	b [m]
	without	0,988 - 1,328	1,198 - 1,538
139 430	0,30	1,288 - 1,628	1,498 - 1,838
139 445	0,50	1,488 - 1,828	1,698 - 2,038
139 385	1,00	1,988 - 2,328	2,198 - 2,538
139 400	1,50	2,488 - 2,828	2,698 - 3,038
139 420	2,00	2,988 - 3,328	3,198 - 3,538
139 425	2,50	3,488 - 3,828	3,698 - 4,038

KS 100

Shoring widths for spindle 98x817

Extension bars	Total extension bar length	b _c	b
	[m]	[m]	[m]
0	0,00	0,913 - 1,313	1,123 - 1,523
1	0,50	1,413 - 1,813	1,623 - 2,023
2	1,00	1,913 - 2,313	2,123 - 2,523
3	1,50	2,413 - 2,813	2,623 - 3,023
4	2,00	2,913 - 3,313	3,123 - 3,523
5	2,50	3,413 - 3,813	3,623 - 4,023
6	3,00	3,913 - 4,313	4,123 - 4,523
7	3,50	4,413 - 4,813	4,623 - 5,023

A maximum of 7 extension bars with a length of 500 mm may be used.

Different and larger widths are possible by combining different spacer bars.

Accessories / Spares

see Accessories / Spares Krings compact shoring systems (page 51)

l	Length	t _{pl}	Thickness
l _c	Pipe culvert length	A	Area
b	Shoring / trench width	G	Weight
b _c	Inner width	G / VP	Weight per shoring panel
h	Height	G / Box	Weight per shoring box
h _c	Pipe culvert height	eh	Earth pressure max.

Krings Trench shoring systems / Endsupported compact shoring systems

KS 100 Eck



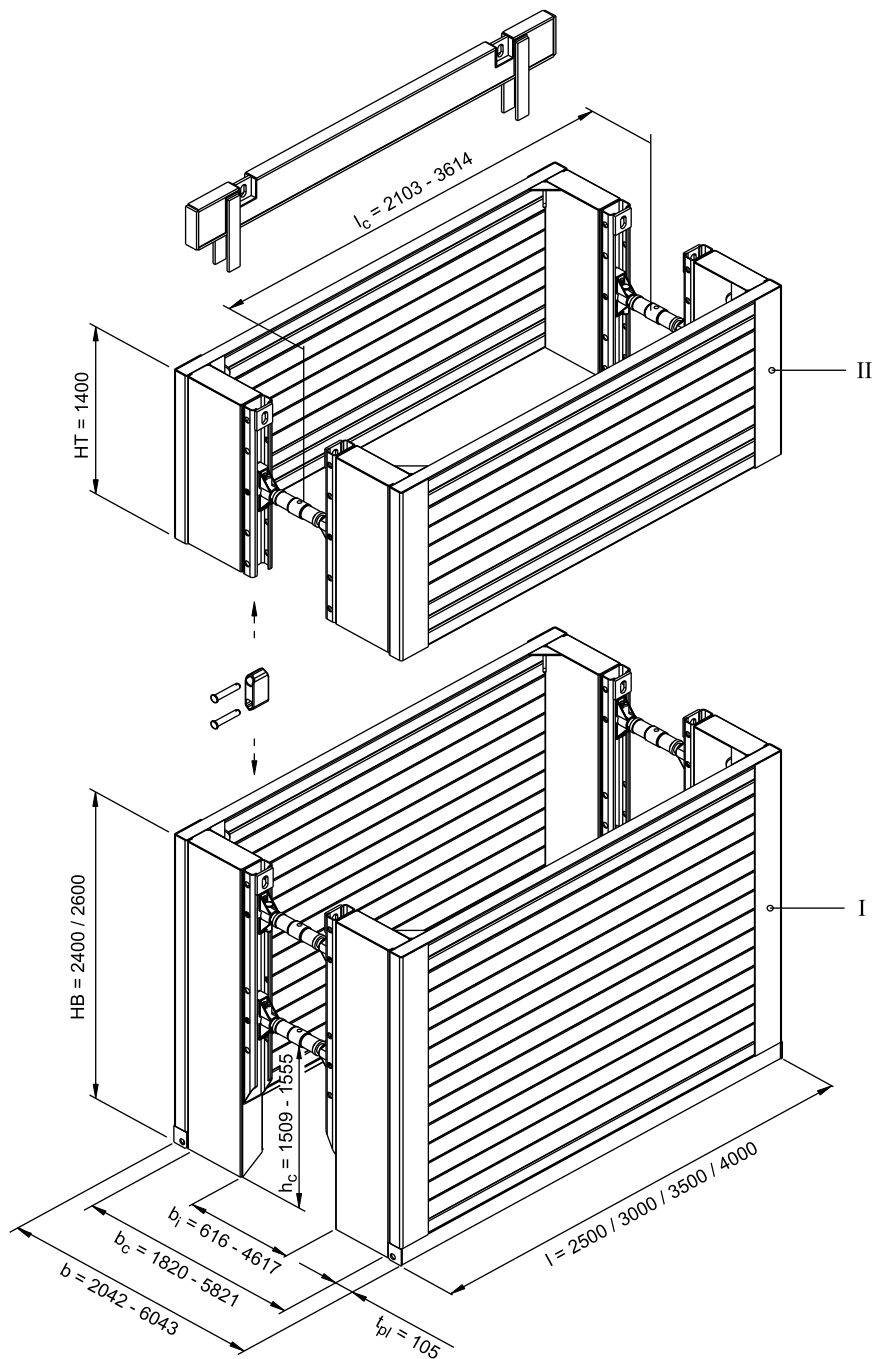
↑ KS 100 Eck

Shoring length	2,50 m - 4,00 m
Height base unit	2,40 m / 2,60 m
Height top unit	1,40 m
Pipe culvert height	max. 1,56 m
Shoring depth	max. 4,00 m

With the plug-on corner posts a trench protection can be made of the KS 100 simply and fast, with which the partially necessary widenings can be shored e.g. for the installation of a pit from finished units surely and economically.

This system is well overthought and in conjunction with the KS 100 ideal for creating pipelines and manholes. The dimension of this box or chosen to be compatible with the dimensions of catch basins and small pits. Also top-boxes are available to enable work in deep trenches.

KS 100 Eck



I	Base unit
II	Top unit
HB	Height base unit
HT	Height top unit
l	Length
l _c	Pipe culvert length

b	Shoring / trench width
b _c	Inner width
b _i	Inner culvert width
h _c	Pipe culvert height
t _{pl}	Thickness

KS 100 Eck

(All dimensions in mm)

KS 100 Eck

Base units

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
135 120	3,50	2,40	0,105	1,52	3,114	1.068,0	2.401,0 *	8,40	44,12
135 100	2,50	2,60	0,105	1,56	2,114	940,0	2.145,0 *	6,50	61,61
135 110	3,00	2,60	0,105	1,56	2,614	1.041,0	2.347,0 *	7,80	51,34
135 130	3,50	2,60	0,105	1,56	3,114	1.142,0	2.549,0 *	9,10	44,12
135 140	4,00	2,60	0,105	1,56	3,614	1.340,0	2.945,0 *	10,40	33,02

* with spindle 98x700

Top units

Art. No.	l [m]	h [m]	t _{pl} [m]	h _c [m]	l _c [m]	G / VP [kg]	G / Box [kg]	A [m²]	eh [kN/m²]
135 240	2,50	1,40	0,105	-	3,614	655,0	1.485,0 *	3,50	61,61
135 250	3,00	1,40	0,105	-	3,614	668,0	1.511,0 *	4,20	51,34
135 260	3,50	1,40	0,105	-	3,614	831,0	1.837,0 *	4,90	44,12
135 270	4,00	1,40	0,105	-	3,614	940,0	2.055,0 *	5,60	33,02

* with spindle 98x700

Struts / Extension bars

see Accessories / Spares Krings compact shoring systems (page 51)

Shoring widths for spindle 98x550

Extension bar	lh	b _i	b _c	b
	[m]	[m]	[m]	[m]
	without	0,616 - 0,816	1,820 - 2,020	2,042 - 2,242
139 430	0,30	0,916 - 1,116	2,120 - 2,320	2,342 - 2,542
139 445	0,50	1,116 - 1,316	2,320 - 2,520	2,542 - 2,742
139 385	1,00	1,616 - 1,816	2,820 - 3,020	3,042 - 3,242
139 400	1,50	2,116 - 2,316	3,320 - 3,520	3,542 - 3,742
139 420	2,00	2,616 - 2,816	3,820 - 4,020	4,042 - 4,242
139 425	2,50	3,116 - 3,316	4,320 - 4,520	4,542 - 4,742

Shoring widths for spindle 98x700

Extension bar	l	b _i	b _c	b
	[m]	[m]	[m]	[m]
	without	0,792 - 1,132	1,996 - 2,336	2,218 - 2,558
139 430	0,30	1,092 - 1,432	2,296 - 2,636	2,518 - 2,858
139 445	0,50	1,292 - 1,632	2,496 - 2,836	2,718 - 3,058
139 385	1,00	1,792 - 2,132	2,996 - 3,336	3,218 - 3,558
139 400	1,50	2,292 - 2,632	3,496 - 3,836	3,718 - 4,058
139 420	2,00	2,792 - 3,132	3,996 - 4,336	4,218 - 4,558
139 425	2,50	3,292 - 3,632	4,496 - 4,836	4,718 - 5,058

KS 100 Eck

Shoring widths for spindle 98x817

Extension bars	Total extension bar length	b_i	b_c	b
n	[m]	[m]	[m]	[m]
0	0,00	0,717 - 1,117	1,921 - 2,321	2,143 - 2,543
1	0,50	1,217 - 1,617	2,421 - 2,821	2,643 - 3,043
2	1,00	1,717 - 2,117	2,921 - 3,321	3,143 - 3,543
3	1,50	2,217 - 2,617	3,421 - 3,821	3,643 - 4,043
4	2,00	2,717 - 3,117	3,921 - 4,321	4,143 - 4,543
5	2,50	3,217 - 3,617	4,421 - 4,821	4,643 - 5,043
6	3,00	3,717 - 4,117	4,921 - 5,321	5,143 - 5,543
7	3,50	4,217 - 4,617	5,421 - 5,821	5,643 - 6,043

A maximum of 7 extension bars with a length of 500 mm may be used.

Different and larger widths are possible by combining different spacer bars.

Accessories / Spares

see Accessories / Spares Krings compact shoring systems (page 51)

l	Length	t_{pl}	Thickness
l_c	Pipe culvert length	A	Area
b	Shoring / trench width	G	Weight
b_c	Inner width	G / VP	Weight per shoring panel
b_i	Clear width of pipe opening	G / Box	Weight per shoring box
h	Height	eh	Earth pressure max.
h_c	Pipe culvert height		

Krings Trench shoring systems / Endsupported compact shoring systems

Dragbox



↑ Dragbox

Shoring length	4,60 m - 7,20 m
Height base unit	3,00 m / 3,50 m
Pipe culvert height	1,50 m / 1,90 m
Weight	2600 kg - 4506 kg

As well as the KRINGS shoring construction boxes, which are suitable for the known procedures of setting and adjusting, so-called Dragboxes are also offered. This construction type is widely used e.g. in the USA.

The Dragbox is provided with a cutting edge at the header side (in pulling direction). The dimensions of the plate are adapted to the needs of the construction. Due to its especially rugged construction, large-scale pipe passages are also possible. The dimensions are defined only by the service values of the hydraulic excavator employed.

The plate length should offer room for twice the pipe length, i.e. the Medium Dragbox length is approx. 4.0m to 5.0m. Through sliding in the channel routing, the normally usual work cycles of adjusting and lowering, supporting at the side and further adjusting can be dispensed with. The Dragbox progresses with the continuation of the channel, i.e. the employed excavator moves the box into the new position after the pipe installation and partial backfilling.

The main fields of application are channel building developments in free ground, where there are no (or very few) crossing lines, which makes this construction type economical. The pipe laying is implemented only within the protection of the Dragbox and, by this means, the highest level of safety is provided for the personnel working in the trench.

Krings Trench shoring systems / Endsupported compact shoring systems

Aluminium shoring



Aluminium shoring

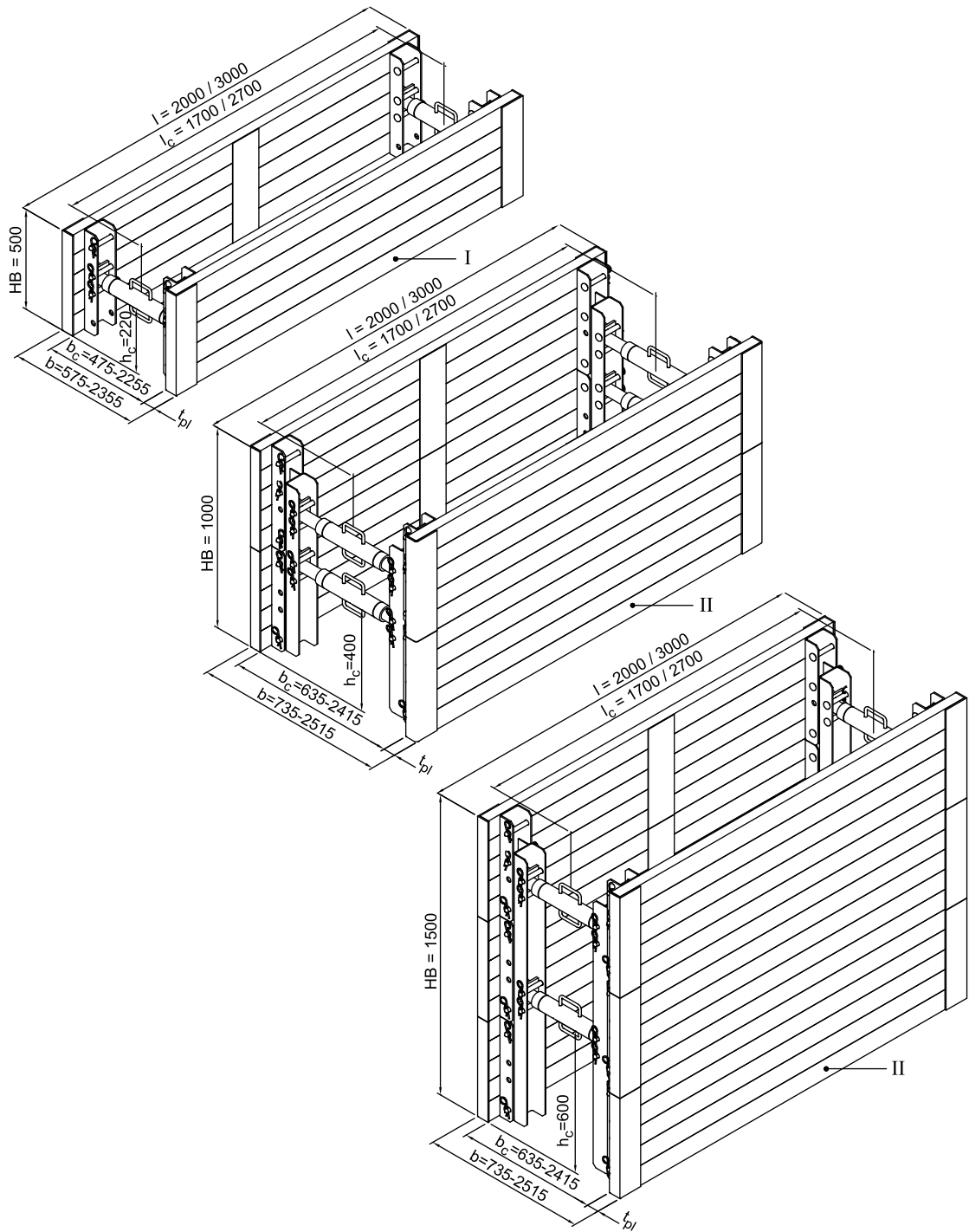
Shoring length	2,00 m - 3,00 m
Height base unit	0,50 m
Weight	94 kg - 418 kg

The Aluminium lightweight shoring is the ideal shoring system for trenches up to 3m deep in inner-city areas. It is used for all conventional trench shoring work and for the laying of cables, gas and water pipes, for service pipes and shafts, and for repairs and inspections. It is also used for launch and reception pits for trenchless pipe laying and for end-of-trench shoring for pipe-laying trenches.

The Aluminium lightweight shoring is suitable for all soil types. Cohesive soils: Insertion and step-by-step withdrawal of the complete shaft shoring. Noncohesive and flowing soils: Creation of a shaft ring with prior excavation; insertion of shoring shaft corners and aluminium planking alternately with excavation; creation of gaps between aluminium planks; removal possible from below.

Aluminium shoring

2



I, II	Aluminium shoring
HB	Element height
l	Length
l _c	Max. pipe length

b	Trench width
b _c	Inner width
h _c	Vertical clearance
t _{pl}	Thickness

Aluminium shoring

(All dimensions in mm)

Aluminium shoring

Base units

Art. No.	Short description	l [m]	h [m]	h _c [m]	G / VP [kg]
805 400	Aluminium shoring panel	2,00	0,50	0,22	31,5
805 500	Aluminium shoring panel	3,00	0,50	0,22	43,6

Extension bars

Art. No.	Short description	l [m]	G [kg]
118 050	Spindle - 70x600 (rubber pad oval)	0,465 - 0,670	9,0
118 080	Spindle - 70x800 (rubber pad oval)	0,665 - 1,070	13,1
118 010	Spindle - 70x1180 (rubber pad oval)	1,065 - 1,870	18,3
118 060	Spindle - 70x650 (rubber pad round)	0,523 - 0,617	12,2
118 070	Spindle - 70x740 (rubber pad round)	0,613 - 0,797	13,4
118 090	Spindle - 70x920 (rubber pad round)	0,799 - 1,161	15,8
118 020	Spindle - 70x1280 (rubber pad round)	1,153 - 1,878	20,5
118 100	Spindle - 70x1470 (rubber pad round)	1,339 - 2,254	25,4

Trench widths

Art. No.	Short description	Stroke [m]	b _c [m]	b [m]
118 050	Spindle - 70x600 (rubber pad oval)	0,205	0,475 - 0,680	0,575 - 0,780
118 080	Spindle - 70x800 (rubber pad oval)	0,405	0,675 - 1,080	0,775 - 1,180
118 010	Spindle - 70x1180 (rubber pad oval)	0,805	1,075 - 1,880	1,175 - 1,980
118 060	Spindle - 70x650 (rubber pad round)	0,094	0,533 - 0,627	0,633 - 0,727
118 070	Spindle - 70x740 (rubber pad round)	0,184	0,623 - 0,807	0,723 - 0,907
118 090	Spindle - 70x920 (rubber pad round)	0,362	0,809 - 1,171	0,909 - 1,271
118 020	Spindle - 70x1280 (rubber pad round)	0,725	1,163 - 1,888	1,263 - 1,988
118 100	Spindle - 70x1470 (rubber pad round)	0,915	1,349 - 2,264	1,449 - 2,364

Accessories / Spares

Art. No.	Short description	l [m]	G [kg]	d [m]	Standard
888 407	Coupler for Aluminium/Flex shoring	0,83	14,0		
888 405	Coupler for Aluminium/Flex shoring	1,33	21,4		
138 030	Pin	0,125	0,4	0,020	
138 200	Spring cotter 92 x 5	0,092	0,1	0,005	

l Length
h Height
t_{pl} Thickness

G Weight
G / VP Weight per shoring panel

Krings Trench shoring systems / Endsupported compact shoring systems

Flex shoring



↑ Flex shoring

Shoring/board length	2,00 m / 2,25 m / 2,50 m / 3,00 m
Element height	0,50 m / 1,00 m / 1,50 m
Pipe culvert height	0,22 m / 0,60 m
Board thickness	5 cm / 6 cm / 7 cm
Shoring depth	max. 1,50 m

Krings Flex Shoring – ecological high-speed timber shoring

Krings Flex Shoring as an environment-friendly alternative to aluminium lightweight shoring is ideal for the laying of gas and water supply lines and other service connections

down to depths of about 1.5 m and for pipe clearances of up to 0.6 m.

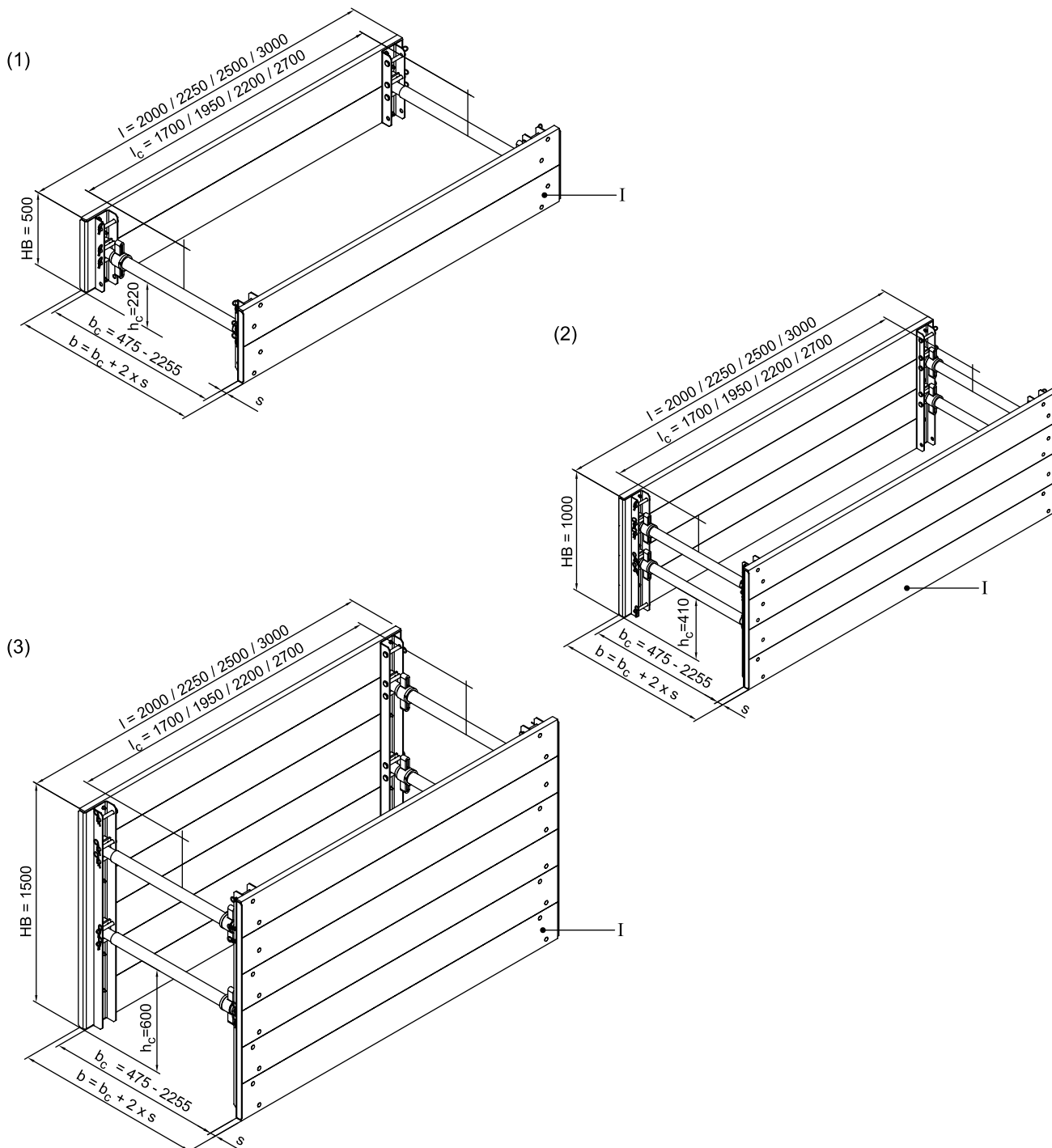
For example the 0.5 m high base elements can be easily connected with a cross member to effectively respond to different pipe clearances.

Easy assembly

The steel corner posts are simply screwed onto the ends of the timber boards and, with the aid of a cross member, will take the usual and proven KVL spindles.

The timber boards are provided by the customer in various lengths and thicknesses.

Flex shoring



I Flex shoring element
 l Length
 l_c Pipe culvert length
 b Trench width

b_c Inner width
 HB Element height
 h_c Pipe culvert height
 s Board thickness

↑ (1) Flex shoring sample combination, height 500 mm, (2) Flex shoring combination example, height 1000 mm, (3) Flex shoring combination example, height 1500 mm

(All dimensions in mm)

Flex shoring

Base panels

Art. No.	Short description	h [m]	h _c [m]	G / VP [kg]
888 401	Base/top cross member	0,50	0,22	7,6
888 410	Base cross member	1,00	0,41	18,6
888 400	Base cross member	1,50	0,60	25,7

Extension bars

Art. No.	Short description	l [m]	G [kg]
118 050	Spindle - 70x600 (rubber pad oval)	0,465 - 0,670	9,0
118 080	Spindle - 70x800 (rubber pad oval)	0,665 - 1,070	13,1
118 010	Spindle - 70x1180 (rubber pad oval)	1,065 - 1,870	18,3
118 060	Spindle - 70x650 (rubber pad round)	0,523 - 0,617	12,2
118 070	Spindle - 70x740 (rubber pad round)	0,613 - 0,797	13,4
118 090	Spindle - 70x920 (rubber pad round)	0,799 - 1,161	15,8
118 020	Spindle - 70x1280 (rubber pad round)	1,153 - 1,878	20,5
118 100	Spindle - 70x1470 (rubber pad round)	1,339 - 2,254	25,4

Trench widths

Art. No.	Short description	Stroke [m]	b _c [m]	b [m]
118 050	Spindle - 70x600 (rubber pad oval)	0,205	0,475 - 0,680	0,489 - 0,694
118 080	Spindle - 70x800 (rubber pad oval)	0,405	0,675 - 1,080	0,689 - 1,094
118 010	Spindle - 70x1180 (rubber pad oval)	0,805	1,075 - 1,880	1,089 - 1,894
118 060	Spindle - 70x650 (rubber pad round)	0,094	0,533 - 0,627	0,547 - 0,641
118 070	Spindle - 70x740 (rubber pad round)	0,184	0,623 - 0,807	0,637 - 0,821
118 090	Spindle - 70x920 (rubber pad round)	0,362	0,809 - 1,171	0,823 - 1,185
118 020	Spindle - 70x1280 (rubber pad round)	0,725	1,163 - 1,888	1,177 - 1,902
118 100	Spindle - 70x1470 (rubber pad round)	0,915	1,349 - 2,264	1,363 - 2,278

Accessories / Spares

Art. No.	Short description	l [m]	G [kg]	d [m]	Standard
138 030	Pin	0,125	0,4	0,020	
138 200	Spring cotter 92 x 5	0,092	0,1	0,005	
888 407	Coupler for Aluminium/Flex shoring	0,83	14,0		
888 405	Coupler for Aluminium/Flex shoring	1,33	21,4		
888 406	Coupler for Aluminium/Flex shoring	1,83	30,0		

Timber plank with a height of 0.25 m and lengths between 2.00 m and 3.00 m and saucer-head screws M 10 and nuts M 10 to be provided by customer.

Minimum system resistance (design) [kN/m²], timber plank

Shoring length	Supported width	For plank width s [cm]			
		4	5	6	7
2,00 m	1,76 m	10,2	15,9	22,9	31,2
2,25 m	2,01 m	7,8	12,2	17,6	23,9
2,50 m	2,26 m	6,2	9,6	13,9	18,9
3,00 m	2,76 m	4,1	6,5	9,3	12,7

(EC5, NH S10, Usage Class 2)

l	Flex shoring element	b _c	Inner width
l	Length	HB	Element height
l _c	Pipe culvert length	h _c	Pipe culvert height
b	Trench width	s	Board thickness

Krings Trench shoring systems / Endsupported compact shoring systems

Sheet pile machine DPV

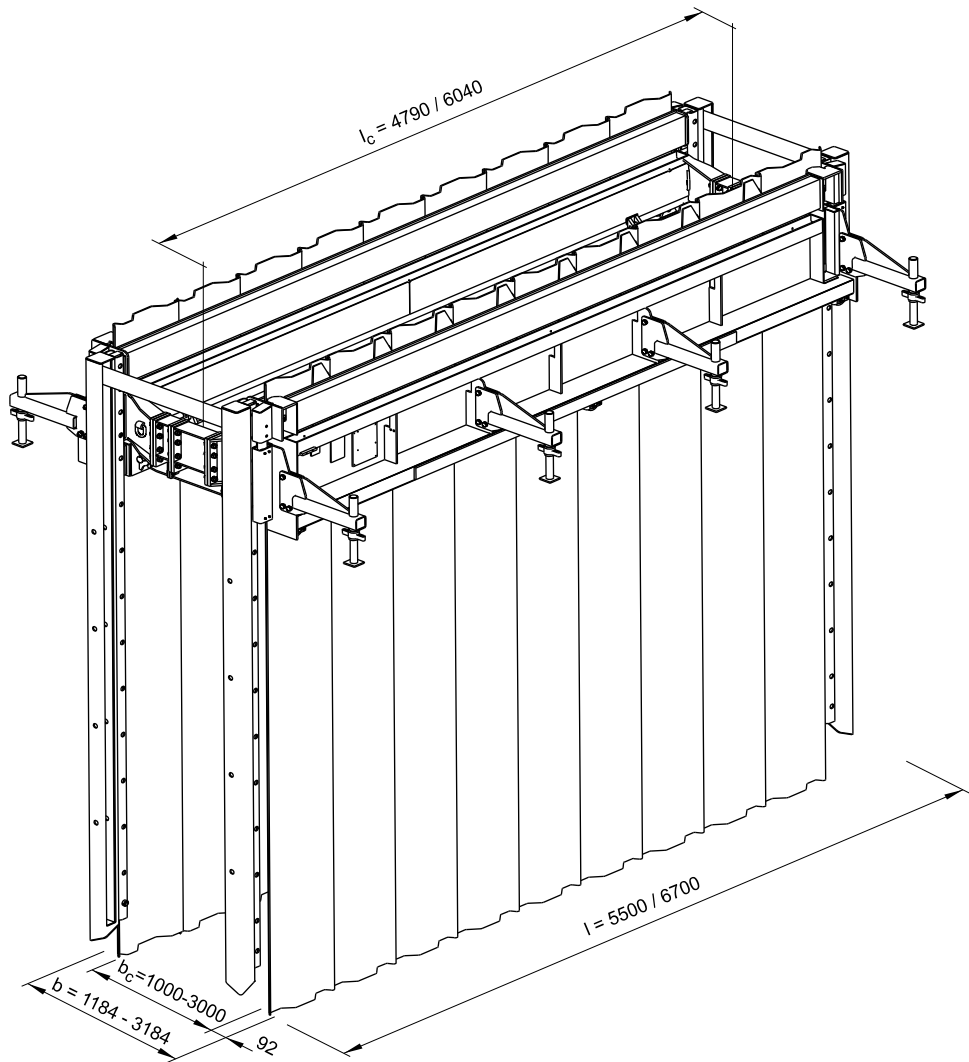


↑ Sheet pile machine DPV

Shoring length	5,50 m / 6,70 m
Shoring width	1,00 m - 3,00 m
Shoring depth	4,50 m / 5,50 m
Pressing force	7,65 t / 9,00 t
Number of sheet piles	14 pcs. / 18 pcs.

The shoring machine has been developed for the construction and repair of underground utility lines in narrow streets, with crossing services and nearby structures or in innercity locations where disruption to infrastructure and traffic must be kept to a minimum. The press shoring machine is preferred as a vibration-free method.

Sheet pile machine DPV



l	Length	b	Shoring / trench width
l _c	Pipe culvert length	b _c	Inner width

Sheet pile machine DPV

(All dimensions in mm)

Technical Data

Art. No.	Short description	l [m]	b [m]	l _c [m]	T [m]	Sheet piles	Pressing force [t]	eh [kN/m²]
285 100	DPV 500	5,50	1,00 - 3,00	4,79	4,50	14 KD 750 / 10	7,65	25,80
285 110	DPV 600	6,70	1,00 - 3,00	6,04	5,50	18 KD 750 / 10	9,00	28,58

Installation

see Instructions for use

l	Length	eh	Earth pressure max.
l _c	Pipe culvert length	T	Shoring depth
b	Trench width		

Krings Trench shoring systems / Endsupported compact shoring systems

Accessories / Spares Krings compact shoring systems

Struts / Extension bars

Art. No.	Short description	l [m]	G [kg]
139 385	Plug-in adapter pipe, ZW SB - 108x1000	1,00	28,0
139 400	Plug-in adapter pipe, ZW SB - 108x1500	1,50	37,4
139 420	Plug-in adapter pipe, ZW SB - 108x2000	2,00	47,3
139 425	Plug-in adapter pipe, ZW SB - 108x2500	2,50	60,0
139 430	Plug-in adapter pipe, ZW SB - 108x300	0,30	13,8
139 445	Plug-in adapter pipe, ZW SB - 108x500	0,50	17,7
139 470	Plug-in adapter pipe, ZW SB - 121x1000	1,00	36,3
139 510	Plug-in adapter pipe, ZW SB - 121x500	0,50	25,1
108 950	Spindle -heavy duty design-, lefthand, 98x817		32,0
108 960	Spindle -heavy duty design-, righthand, 98x817		33,0
138 260	Spindle to stick, 98x392		15,7
138 280	Spindle to stick, 98x550		22,0
138 290	Spindle to stick, 98x700		34,0
138 300	Spindle to stick, 98x817, complete		76,9

Accessories / Spares

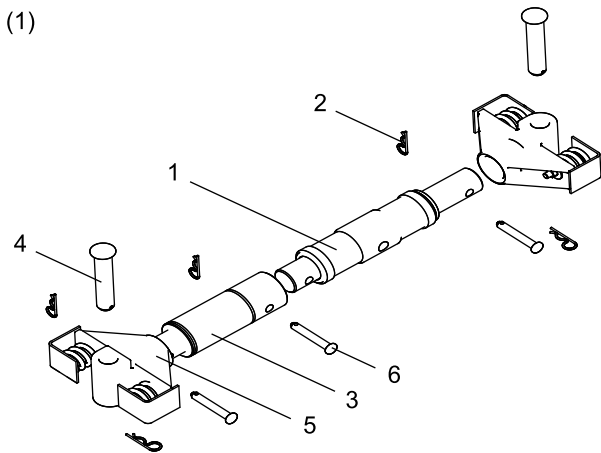
Art. No.	Short description	l [m]	G [kg]	d [m]	Standard
842 752	Adapter for DKU piling frame, corner shoring, h = 0.50 m KDVI		55,0		
842 753	Adapter for DKU piling frame, corner shoring, h = 1.00 m KDVI		94,0		
850 699	Adjustment bar	0,7	2,5	0,024	
336 960	Bearing claw for DKU piling frame element		40,0		
139 070	Chain sling connection, 4-leg, 2300 x 13	2,30	45,0		
139 080	Chain sling connection, 4-leg, 2800 x 13	2,80	57,0		
139 100	Connection stanchion 290 x 145		5,5		
842 099	DKU piling frame guide frame	2,27	105,0		
842 100	DKU piling frame guide frame	3,81	175,0		
842 982	Drop-in bearing block, adjustable		12,0		
859 982	Drop-in bearing block, Krings		175,0		
138 020	Fixing for pressure spring 100 x 85	0,100	0,8	0,085	
119 011	KVL adapter for spindles 98x530 / 98x700		6,5		
138 170	Mushroom FP 80		13,0		
IA 0120 F	Nut M 16		0,03		DIN 934
IA 0130 F	Nut M 20		0,03		DIN 934
138 030	Pin	0,125	0,4	0,020	
138 040	Pin	0,140	0,4	0,020	
138 070	Pin	0,212	2,5	0,043	
861 077	Pressure beam (Lightweight shoring, KS 60, KVL)	1,80	117,0		
861 078	Pressure beam (Lightweight shoring, KS 60, KVL)	2,30	138,0		
861 079	Pressure beam (Lightweight shoring, KS 60, KVL)	2,80	161,0		
861 080	Pressure beam (Lightweight shoring, KS 60, KVL)	3,30	183,0		
861 076	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	1,60	175,5		
861 074	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	2,35	236,0		
861 070	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	2,80	271,0		
861 071	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	3,40	318,0		
138 160	Pressure spring FP 80	0,084	0,8	0,054	
100 690	Rubber parts GPU 30 x 40		0,1		
IB 0310 F	Screw M 16 x 55		0,11		DIN 933

Accessories / Spares Krings compact shoring systems

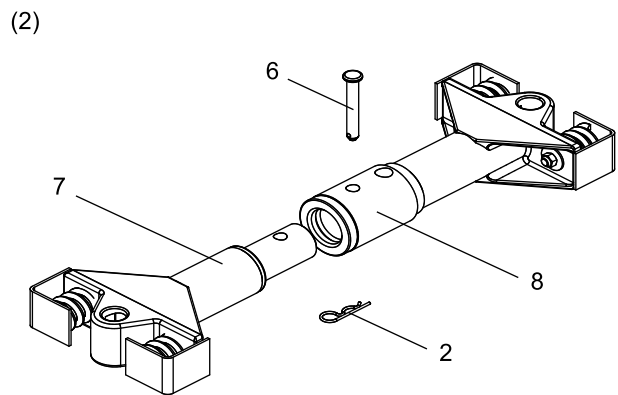
Accessories / Spares (contd.)

Art. No.	Short description	l [m]	G [kg]	d [m]	Standard
IB 0360 F	Screw M 20 x 45		0,17		DIN 933
138 200	Spring cotter 92 x 5	0,092	0,1	0,005	
ID 0160 F	Spring ring A 20		0,01		DIN 127
821 100	Suspension chain KL-13-8	5,000	25,7		
139 110	Wire rope 4-legs, 1800 x 20	1,80	40,0		
139 115	Wire rope 4-legs, 2300 x 20	2,30	44,0		
139 120	Wire rope 4-legs, 2800 x 20	2,80	46,0		

l	Length	G	Weight
d	Diameter		



↑ (1) Strut 98 x 392 / 550 / 700



↑ (2) Strut 98 x 817

1	Spindle	5	Mushroom spring
2	Spring cotter	6	Pin Ø 43
3	Plug-in extension bar	7	Spindle, right
4	Pin Ø 43	8	Spindle, left

Universal DKU piling frame element



↑ Universal DKU piling frame element

Shoring length	2,27 m / 3,81 m
Height sheet pile element	1,00 m
Pipe culvert length	max. 3,35 m
Application depth	variable

The universal shoring method

The DKU piling frame element is a low-deformation, universal and cost-effective shoring method. It is particularly suitable for inner-city projects with supply lines cross the trench in addition to proven large-area steel shoring. The DKU element serves as the upper guide for sheet piles inserted vertically into the ground. The sheet piles are pressed into the ground by the excavator bucket with minimum vibration while excavation continues. The DKU element is assembled and pre-adjusted on the same principle as edge-supported shoring systems.

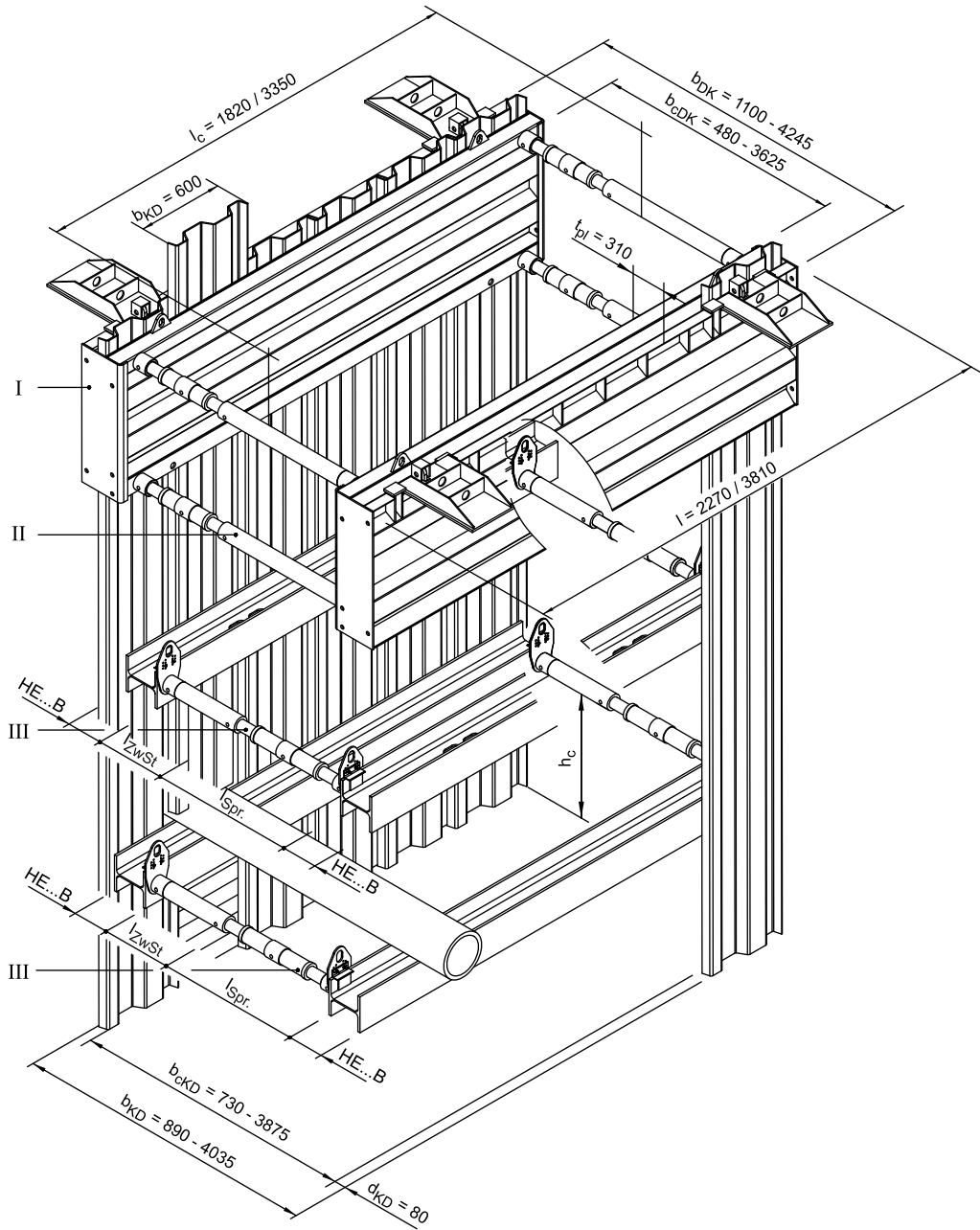
The varied applications of the new DKU element are made possible by the use of different supplementary components:

- The DKU as an autonomous shoring unit with struts.
- The slide-rail adapter permits its use in E+S single slide-rail linear shoring, Krings single slide-rail parallel shoring and in corner single slide rails.
- By using the corner shoring adapter, the piling frame can be used for creating a closed (4-sided) shaft.
- A further application is the installation of the elements in series.

Large pipe clearances are then possible in accordance with static load requirements. The E+S spreader systems and the Krings spindle systems are proven support components for the DKU element. At great depths and in accordance with the static load requirements, this universal system makes use of the E+S and Krings waling struts as waling for the sheet piles.

Universal DKU piling frame element

Universal DKU piling frame element with Krings system spreaders



I	Universal DKU piling frame element
II	Sheet pile
III	Waling strut
IV	Adapter for DKU E+S spreader
HB	Height base unit
B _{KD}	Sheet pile width
d _{KD}	Sheet pile thickness
t _{pl}	Thickness

l	Length
l _c	Pipe culvert length
h _c	Pipe culvert height
b _{cKD}	Sheet pile clear width
b _{KD}	Sheet pile shoring width
b _{cDK}	Piling frame clear width
b _{DK}	Piling frame shoring width

↑ Universal DKU piling frame element with Krings system spreaders

(All dimensions in mm)

Universal DKU piling frame element

Universal DKU piling frame element with Krings system spreaders (height 1.00 m)

Art. No.	Short description	l [m]	l _c [m]	G / VP [kg]	G / Box [kg]	KD / Box
842 671	Universal DKU piling frame element	2,27	1,82	510,0	1.320,0	8
842 674	Universal DKU piling frame element	3,81	3,35	785,0	1.870,0	14

You can find further piling frame elements at our website www.es-verbau.com

Extension bars

see Accessories / Spares E+S compact shoring systems (page 24)

Trench widths

	SP SB 98x550		SP SB 98x700	
l _{ZwSt} [m]	b _{cKD} [m]	b _{cDK} [m]	b _{cKD} [m]	b _{cDK} [m]
0,00	0,86 - 1,06	0,61 - 0,81	1,04 - 1,38	0,79 - 1,13
0,30	1,16 - 1,36	0,91 - 1,11	1,34 - 1,68	1,09 - 1,43
0,50	1,36 - 1,56	1,11 - 1,31	1,54 - 1,88	1,29 - 1,63
1,00	1,86 - 2,06	1,61 - 1,81	2,04 - 2,38	1,79 - 2,13
1,50	2,36 - 2,56	2,11 - 2,31	2,54 - 2,88	2,29 - 2,63
2,00	2,86 - 3,06	2,61 - 2,81	3,04 - 3,38	2,79 - 3,13
2,50	3,36 - 3,56	3,11 - 3,31	3,54 - 3,88	3,29 - 3,63
	b _{KD} = b _{cKD} + 0,16 m	b _{DK} = b _{cDK} + 0,62 m	b _{KD} = b _{cKD} + 0,16 m	b _{DK} = b _{cDK} + 0,62 m

Waler struts

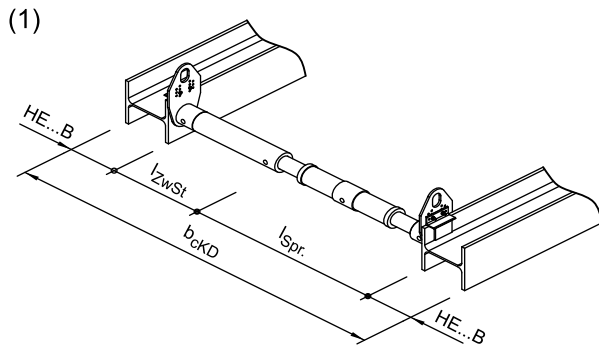
l_{Spr.} (SP SB 98x550) = 620 mm - 820 mm

l_{Spr.} (SP SB 98x700) = 796 mm - 1136 mm

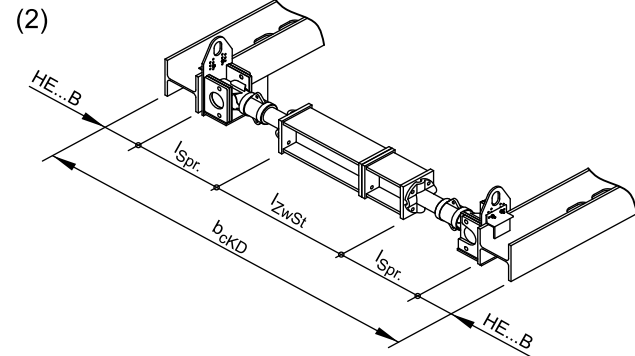
l_{ZwSt} = b_{cKD} - 2 x HE...B - l_{Spr.}

l_{Spr.} = 420 mm - 640 mm

l_{ZwSt} = b_{cKD} - 2 x HE...B - 2 x l_{Spr.}



↑ (1) HEB with Krings drop-in bearing block



↑ (2) HEB girder with E+S drop-in bearing block

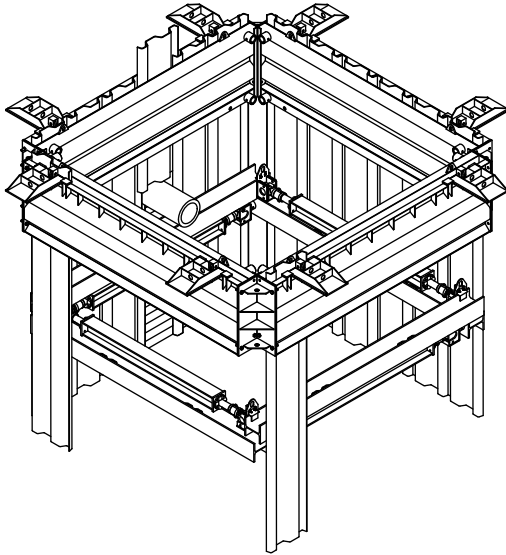
Accessories / Spares

see Accessories / Spares E+S compact shoring systems (page 24)

l	Length	b _{cDK}	Piling frame clear width
l _c	Pipe culvert length	b _{DK}	Piling frame shoring width
l _{Spr.}	Spreader length	KD / Box	Number of piles / box
l _{ZwSt}	Length extension bar	A	Area
b _{cKD}	Sheet pile clear width	G / VP	Weight per shoring panel
b _{KD}	Sheet pile shoring width	G / Box	Weight per shoring box

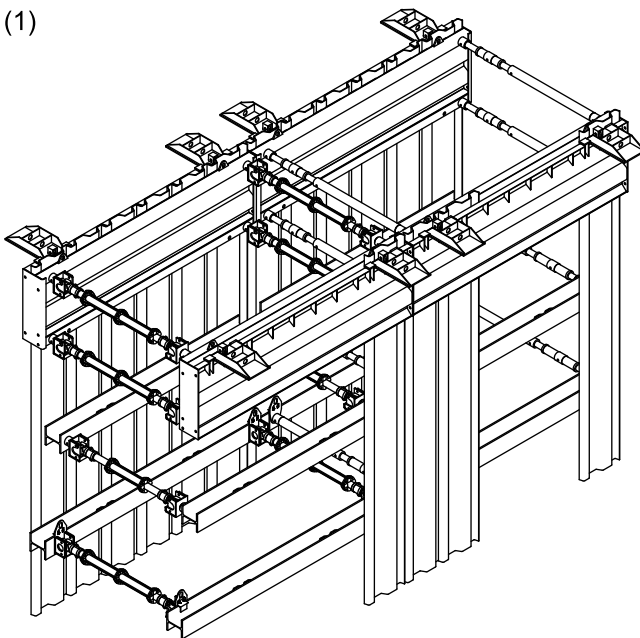
Universal DKU piling frame element

Examples of additional possible technical solutions

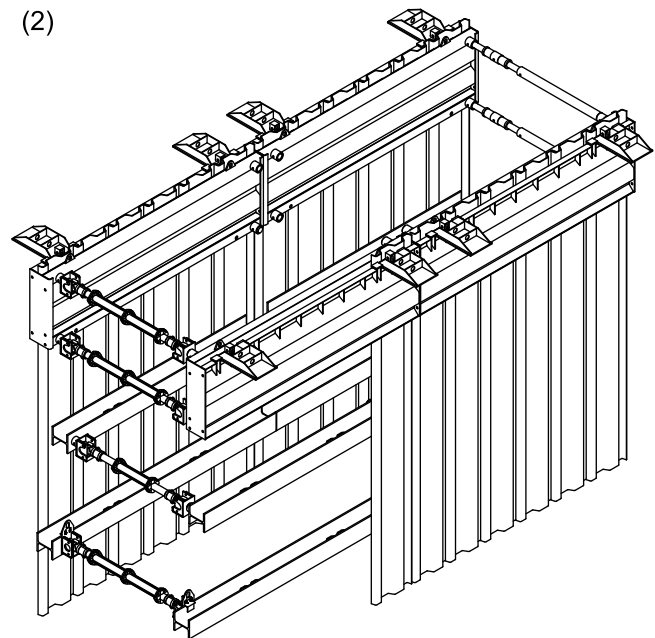


↑ Piling frame shoring with corner connector

(1)



(2)



↑ (1) DKU piling frame shoring in series, (2) DKU piling frame shoring with installation window

Strut removal in accordance with static requirements

Associated products

Pipe grab RG 2500 / RG 5000



↑ Pipe grab RG 2500 / RG 5000

The Krings pipe grabs are facilities for safe transportation and handling of pipes, witch have done good jobs every day at many pipe-laying sites throughout many years. After picking up their load, the grab arms are secured automatically. A locking system is to prevent accidental release.

Gripper heads

Art. No.	Short description	G [kg]	Loading [kg]
282 150	Gripper head RK I / 2,5 t	82,0	2500
282 160	Gripper head RK II / 5,0 t	200,0	5000

Gripper arms

Art. No.	Short description	G [kg]	Loading [kg]
282 120	Gripper arm Type 50 (RK I/2,5t)	30,0	2500
282 130	Gripper arm Type 80 (RK I/2,5t)	34,0	2500
282 140	Gripper arm Type 90 (RK II/5,0t)	42,0	5000
282 100	Gripper arm Type 125 (RK II/5,0t)	70,0	5000
282 110	Gripper arm Type 150 (RK II/5,0t)	80,0	5000

Associated products

Pipe puller SZ 10



↑ Pipe puller SZ 10

Tracking force	100 kN
Pulling length	not limited
Working path (stroke)	500 mm
Motor	1,3 kW - 2400 U/Min - 12 V
Pipe diameter	400 mm - 2400 mm
Pulling cable	20 m - 75 m
Power supply (Battery)	12 V / 170 Ah
Operating pressure	160 bar

All important components are mounted on an easy to move wagon. With the anker the wagon is fastened into the pipe. With the steel cable, the other pipe is moved through the vertical ancor with a maximum pulling force of 11 tons. The simple alternative where the cylinder is mounted into the pipe. Here also smaller pipe diameters can be entered. Operating both machines can be done from the machine or through the cable remote control.

Pipe puller

- compact construction
- integrated function parts, such as hydraulic cylinders, control unit, double clamping ties, 12 V battery, as well as the vertical anchoring as a socket spindle on smooth-running trolley
- vertical anchoring in the connector between two pipes
- adaptation to the different pipe diameters by means of distance sleeves between spindle and clamping cap.

Pipe puller with support frame

- economical alternative to the pipe puller
- actuator: 12 V battery, electrical unit 3.5 kW with heavy-current feed
- cable always tensioned through double tie construction
- operation at the device or via remote control with 4-key control unit
- easy of transport through limit-stop lugs
- tie beam lying below the middle of the pipe
- telescopic beam with manual gripping handles, for insert and bell sleeve pipes

Associated products

Site road system



Site road system

Length	2340 mm
Width	3800 mm
Height	160 mm
Weight	869 kg
Area	8,892 m ²
Maximum load	12 t axle load

Easy and quick to lay

The use of the modern Site road opens up new technical and economic opportunities for those involved in construction projects.

Simple assembly

The Site road is composed of strong angles laid length-wise and various special profiles laid crosswise. The assembly of the 2.34 m long and 3.80 m wide elements on the site couldn't be simpler. An excavator lifts the elements one after another from a reversing truck, and then they are connected together with a kind of chain joint.

Accessories / Spares

Art. No.	Short description	l [m]	b [m]	A [m ²]	G [kg]
880 100	Site road panel	2,34	3,80	8,892	869,0
880 150	Bolt				4,5
880 200	Drive up/ramp	0,48	3,80	1,824	334,0
852 350	Chain sling connection, 4 leg	3,00			55,6
880 152	Pin				2,56

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Editor

ThyssenKrupp Bauservice GmbH
Division Emunds + Staudinger / Krings
Ottostraße 30
41836 Hückelhoven-Baal
GERMANY

Phone: +49 2433 453-0
Fax: +49 2433 453-100
E-mail: ES-Krings@thyssenkrupp.com
www.es-verbau.com

Composition and Production

visaplan GmbH
www.visaplan.com

indivis GbR
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