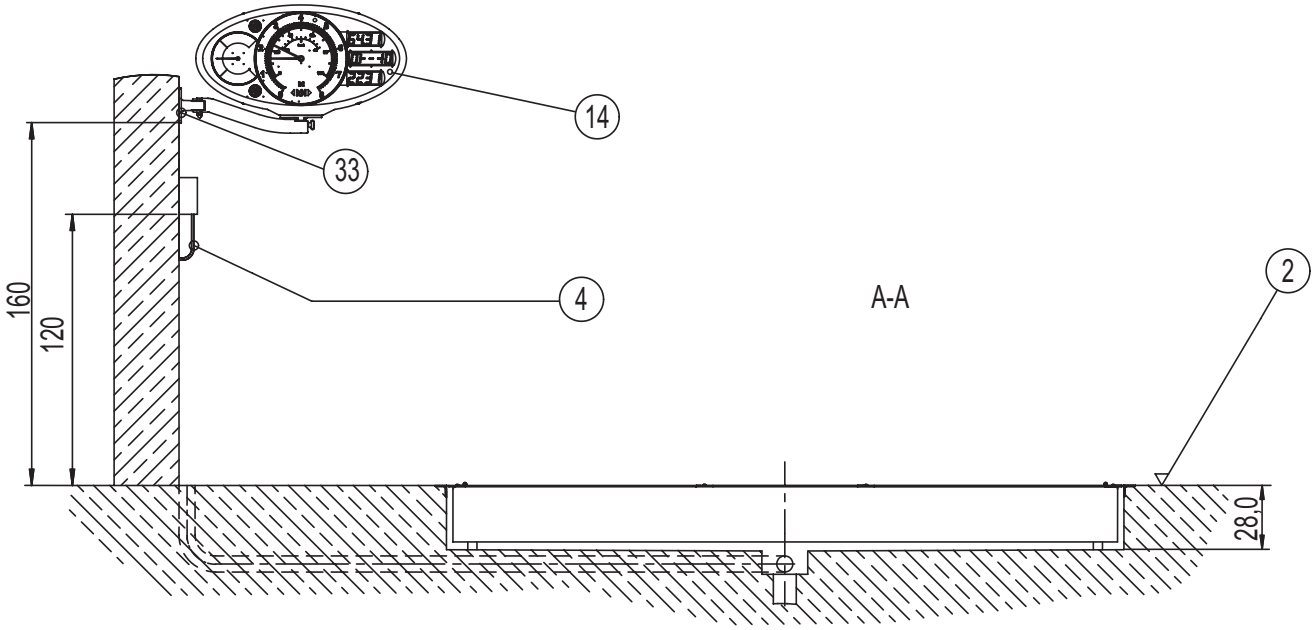

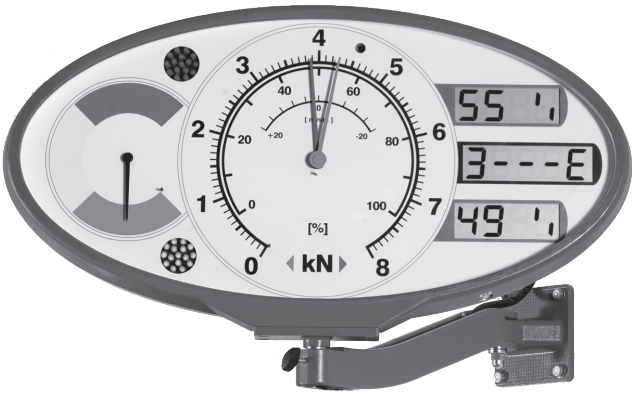

Brake Tester BD 660

en Planning File

BEISSBARTH®
German Precision Engineering

Contents

1. Assembly requirements

1.1 General information

Die folgenden Montagevoraussetzungen müssen erfüllt sein, bevor ein Techniker mit der Montage bzw. Verkabelung beginnt.

Following assembly requirements have to be fulfilled before a technician starts to assembly or rewire a brake tester:

The specifications given in this planning file are mininal requirements in order to guarantee a correct installation of the BD 660. According the implementation of the given specifications, special national regulations, directives and standards have to be taken in account!
The Beissbarth GmbH in not liable for defects according to nonobservance of national regulations.

1.1.1 Delivery

The following components / materials are not included in the standard delivery capacity:
- mounting frame
- support material
- edge protection
- plastic pipes

These components / materials can be ordered additionally as an option.

1.1.2 Utilities

To ease the assembly, the following utilities must be available:
- an appropriate lifting jack to bring the brake tester in the foundation
- a draw wire to be laid in the empty pipes between the foundation and the display and between the foundation and the control cabinet

1.2 Foundation

Establish the foundation following the plan of pit.

Follow the instructions precisely!
- The foundation must be laid on load-bearing soil and extend down to the frost line.
- The dimensions of the foundation must correspond with soil conditions
- Conrete quality according to EN 206-1, with reinforceing steel mesh complying with max. test bed vehicle load.
- A draw wire is to be installed if pipes are laid.
- All dimensions on the drawing are minimum dimensions and allow for a tolerance of + 1cm
- Surface level according to DIN 18202, Table 3, level tolerances line 4, column 5, distance = 15m.
  (Floor level to tolerance must be upheld 5m for and after the pit, taken from pit upper edge.)
- Fix the mounting frame, edge protection etc. before concreting in order to avoid a buoying upwards or slipping of these devices during the concreting procedure.
- Positioning of an empty pipe DN70 between the foundation for the mechanics and the display.

Important:
The empty pipe must be put with its underside on the floor.

A photo of a concrete-casted mounting frame see attachment.

1.3 Electrical system

The local power connection 400V / 3Ph~N (230 V / 3 Ph~) must be directed to the main switch box, following the foundation plan

Important:
When using the column, make sure that the feed under the stand takes place (see the plan of pit).

Important:
The electric connection to the machine (inlet) has to be executed by a local authorized electrician.

1.4 Wall fastening

In deliveries with wall braket, make sure that the wall is suitable for the fastening (fastening anchor).

Special fastening anchor for pit walls or similar are not included in the delivery capacity.

1.5 Outdoor assembly

Important:
For outdoor assembly, make sure that display and printer are protected from environment influences (rain, snow). Outdoor operation with a suitable rain shield and observation of the permissible temperature range is possible. Otherwise it is not possible to give a guarantee for eventual damages.

1.6 Miscellaneous

For repairing and restoring works on foundation and wires that exceed the delivered length of 15 meters, we will charge for time and extra material.

We would like to thank you in advance for your understanding and your efforts.

2. Overview of the Item References

Nr	Beschreibung	Bemerkung	
1	***Minimum requirements for the concrete quality:*** Outdoor area (without de-icing salt exposure) Outdoor area (with de-icing salt exposure) Indoor area (without any particular exposure)	***Strength properties***: C 25/35 C 30/37 LP C 20/25	***Type of exposure***: XC4, XF1 XC4, XD2, XF4 XC3
2	Top surface of finished floor		
3	PVC pipe DN70	***Caution:*** Do not lay pipe in tight curves. Prepare cable pulls to centre of pit.	
4	Site requirements: Mains feed cable	5 x 2,5 mm^2, if mains voltage 3 x 400 V (3 Ph, N, PE) fuse protection 3 x 25 A / C-3pole or 4 x 4 mm^2 , if mains voltage 3 x 230 V (3 Ph, PE) fuse protection 3 x 32 A / C-3pole	
5	Fixing of the Power Supply Box on the wall	Mounting kit EDP 935 603 247 4 dowels S6 (Fa. Fischer) 4 screws DIN 96 4x40	
6	Fixing of the Power Supply Box on the column	4 screws DIN 84 M4x12	
7	Water drainig pipe	***Attention:*** water drainig pipe as required	
8	Leveling kit	EDP 935 603 159 only for brake testers with integrated weight cells	
9	Mounting kit suspension tester (clamping units)	EDP 935 662 012	
10	Mountig kit suspension tester (dowels)	EDP 935 694 001	
11	Resting surface	The testline must be levelled at all resting surfaces (max. tolerace 2 mm)	
12			
13	Hazard areas	Must be marked with yellow and black stripes in accordance with DIN 4844 T1	
14	Analogue display		
15	IPB-beams	The customer is responsible for obtaining 2 I-beams IPB 100 x 100 x 2500mm long centric drilled Ø = 70mm.	
16	PC-Station	Or customer-PC	
17	Fitting frame ST 600	EDP 935 634 019 Muss von Kunden bestellt und einbetoniert werden (nur für Wiegeeinrichtung).	
18	Direction of travel		
19			
20	Wall on site		
21	Structurals dimension in cm	Make a conreful on site check of all foundation work.	
22	Power supply 230V for PC		
23	Support frame	1 set EDP 935 603 109 must be ordered and concreted by customers only for brake testers with integrated weight cells	
24	Distance support frame	Only for weight cells.	
25	Distance heigth compensation with weight cells		
26			
27	Edge protection BD 500, BD 600	EDP 935 604 008 Optional accessory, must be ordered and concreted by customers.	
28	Edge protection SDL 430, SDL 435	EDP 935 624 005 Optional accessory, must be ordered and concreted by customers.	
29	Edge protection BD 600, TL/SL	EDP 935 694 001 Optional accessory, must be ordered and concreted by customers.	
30	Alternative bottom attachment (dowels)	See plan: EDP 925 690 024	
31			
32	Fixing of the column	Fixing kit EDP 935 603 229 4 dowels S12 (Fa. Fischer), 4 screws DIN 571-10 x 80 4 washers DIN9021-10,5	

Nr	Beschreibung	Bemerkung
33	Fixing of the wall braket	Fixing kit EDP 935 603 229 4 dowels S12 (Fa. Fischer), 4 screws DIN 571-10 x 80 4 washers DIN9021-10,5 See load diagramm chapter 4
34		
35		
36		
37		
38	Assembling case for SDL test lane	Assembling case complete EDP 935 604 170 Optional accessory, must be ordered and concreted by customers
39		
40	Edge protection BD 660	EDP 935 604 229 Optional accessory, must be ordered and concreted by customers
41	Edge Protection BD 700	EDP 935 874 012 Optional accessory, must be ordered and concreted by customers
50	Plane concrete slab	
51	Fill with concrete up to top edge of the U-profile. Pay attention to the cant to the middle profile.	
52	Fill with concrete all around up to the top edge of the assembling case.	
53	Fill with concrete up to top edge of the L-profile. Pay attention to the cant to the water drain.	
54		
55	Plan of pit drawn without assembly case.	
56	Plan of pit drawn with assembly case.	

Tab. 1: Overview item references

Note:
Address of german producers of permanent safety markings:

Argelith Bodenkeramik H. Bitter GmbH
Postfach 1240
49145 Bad Essen
Tel. 0049-(0)5472-402-0
Fax. 0049-(0)5472-1512 ***Produkt: black / yellow glazed tile***
http://www.eco-select.de

Permalight Aktiengesellschaft
Hoher Holzweg 32
30966 Arnum
Tel. 0049- (0)5101-6263-0
Fax. 0049- (0)51051-5013
http://www.permalight.com

Fuse Protection of the Power Supply
It is absolutely necessary to use a 3-pole circuit breaker of type “C” for the fuse protection of the power supply. Single circuit breakers are not permissible.
Disregard of this notice can damage your test stand.
➢ The electric connection to the machine (inlet) has to be executed by a local authorized electrician.

Please note:
The following drawings are mounting guidelines. Deviations from the given device positions are allowed. Errors and omissions excepted!

3. Plans of Pit and Installation

3.1 BD 660 with Wall Bracket

3.1.1 Plan of Pit

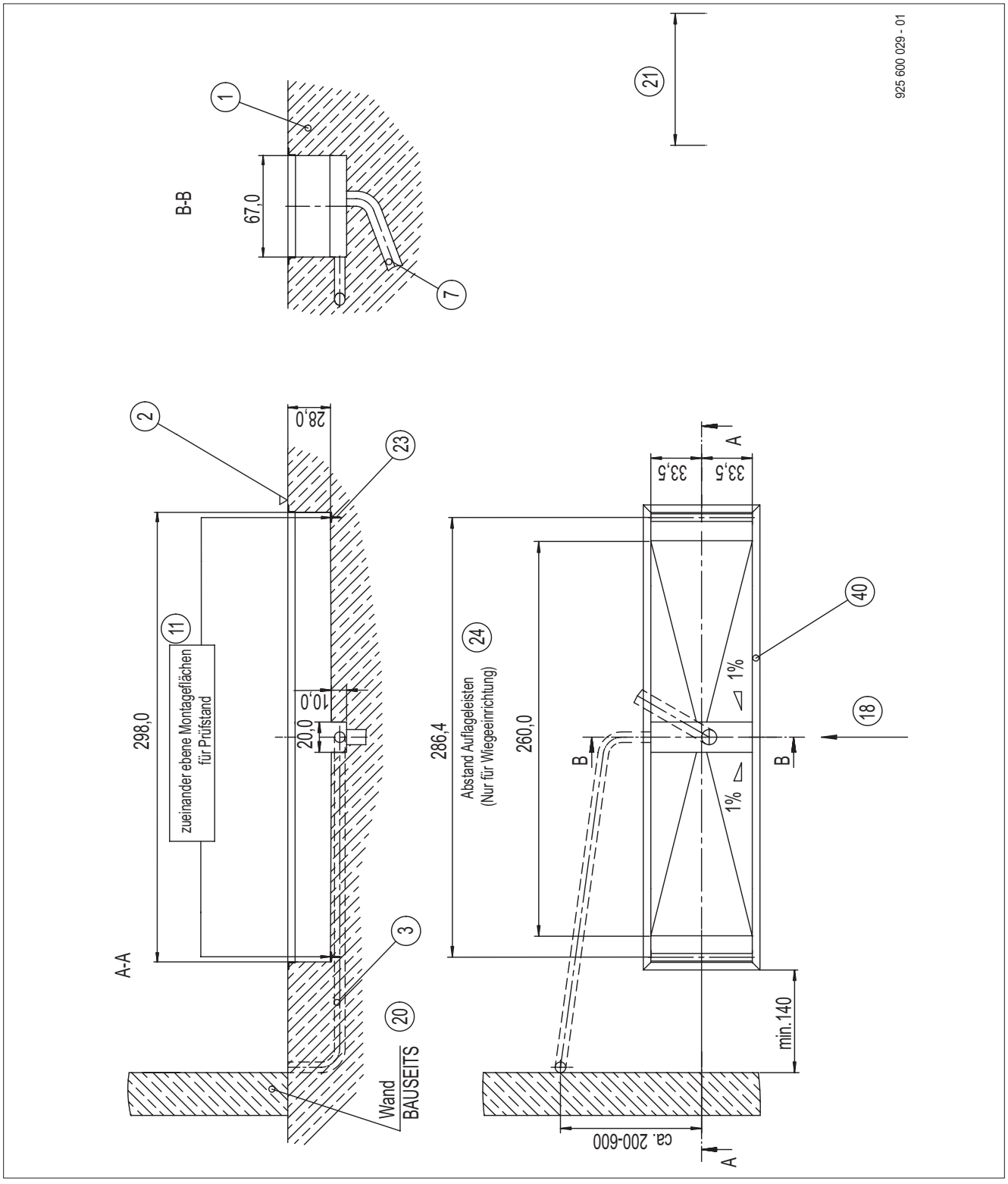

Fig. 1: Plan of Pit BD 660 with wall bracket - Overview

Item references see chapter 2

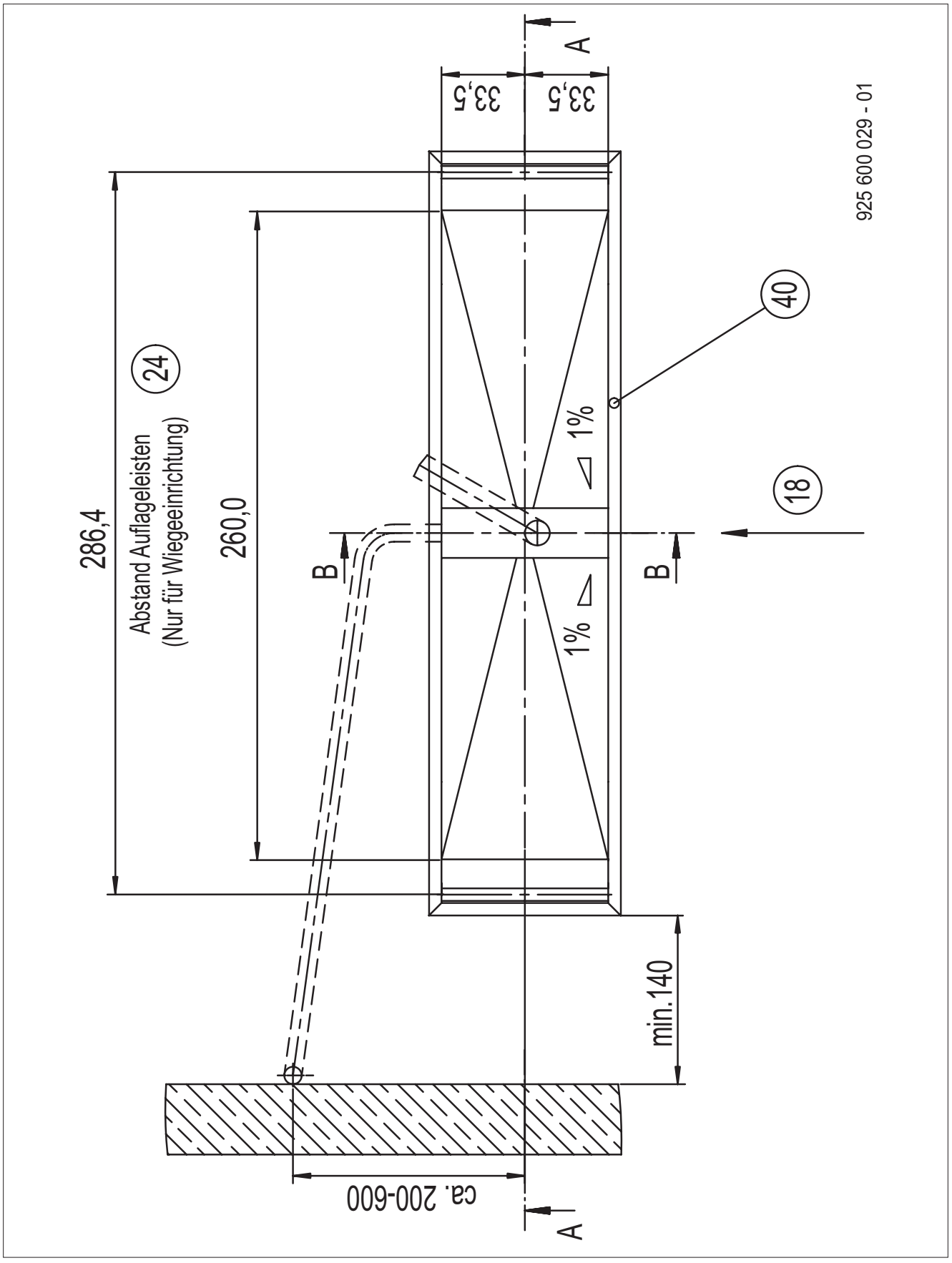

Fig. 2: Plan of Pit BD 660 with wall bracket - Ground plan

Item references see chapter 2

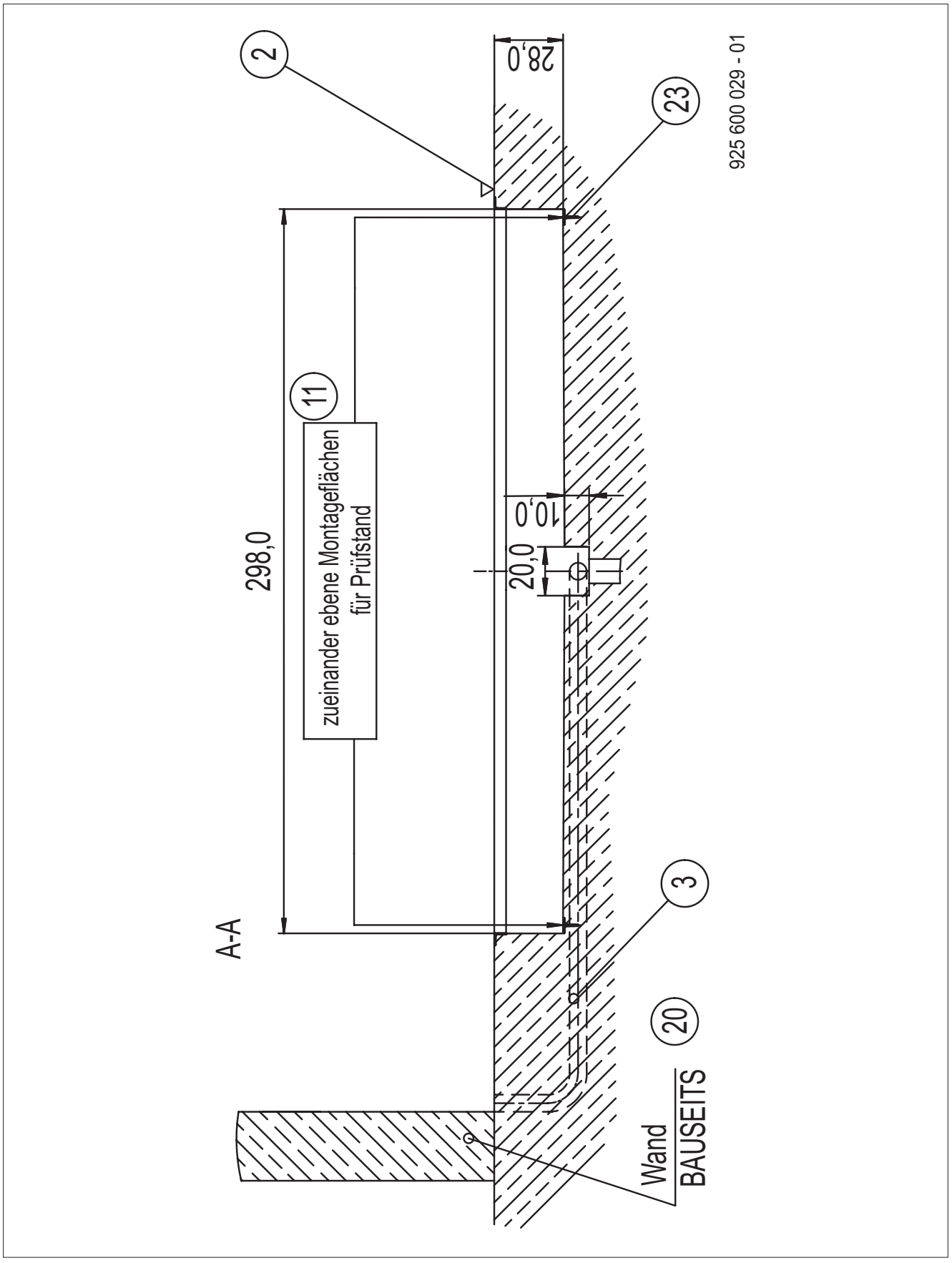

Fig. 3: Plan of Pit BD 660 with wall bracket - Sectional view A-A

Item references see chapter 2

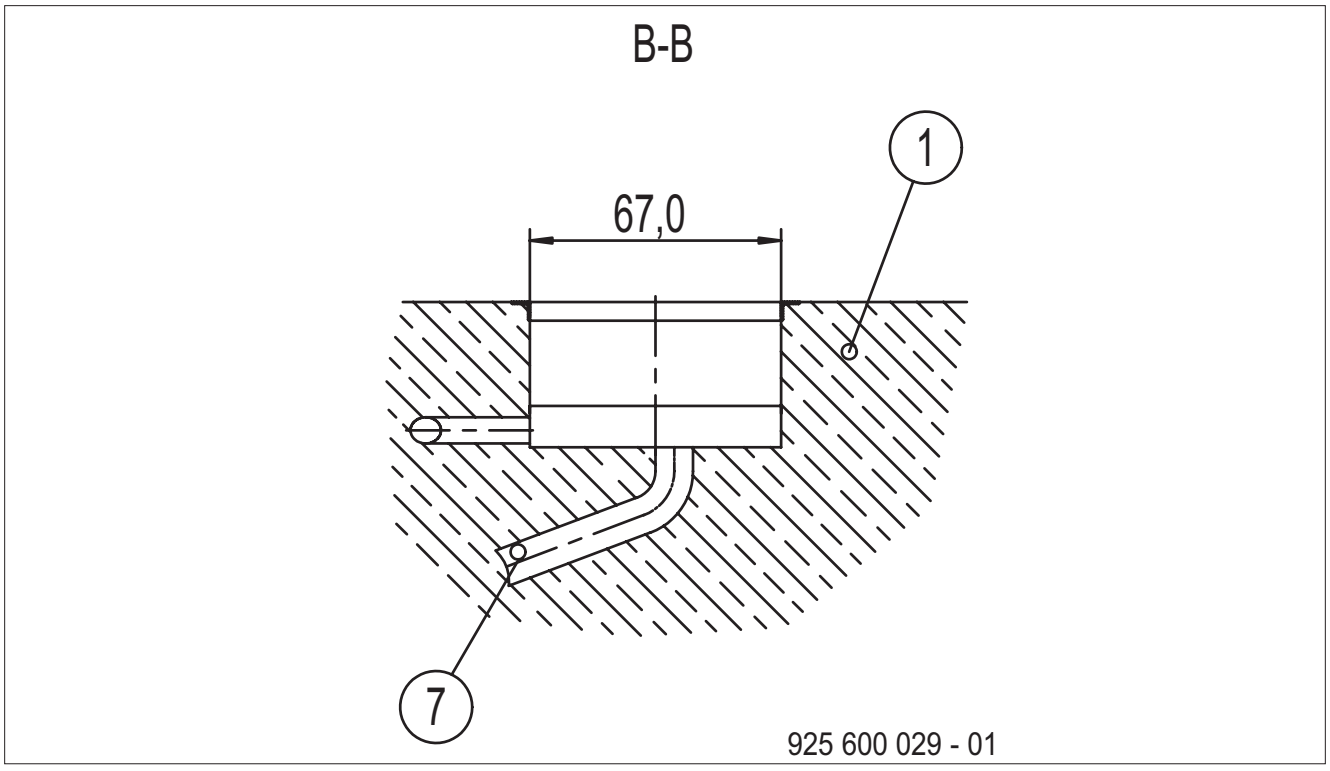

Fig. 4: Plan of Pit BD 660 with wall bracket - Sectional view B-B

Item references see chapter 2

3.1.2 Installation Plan

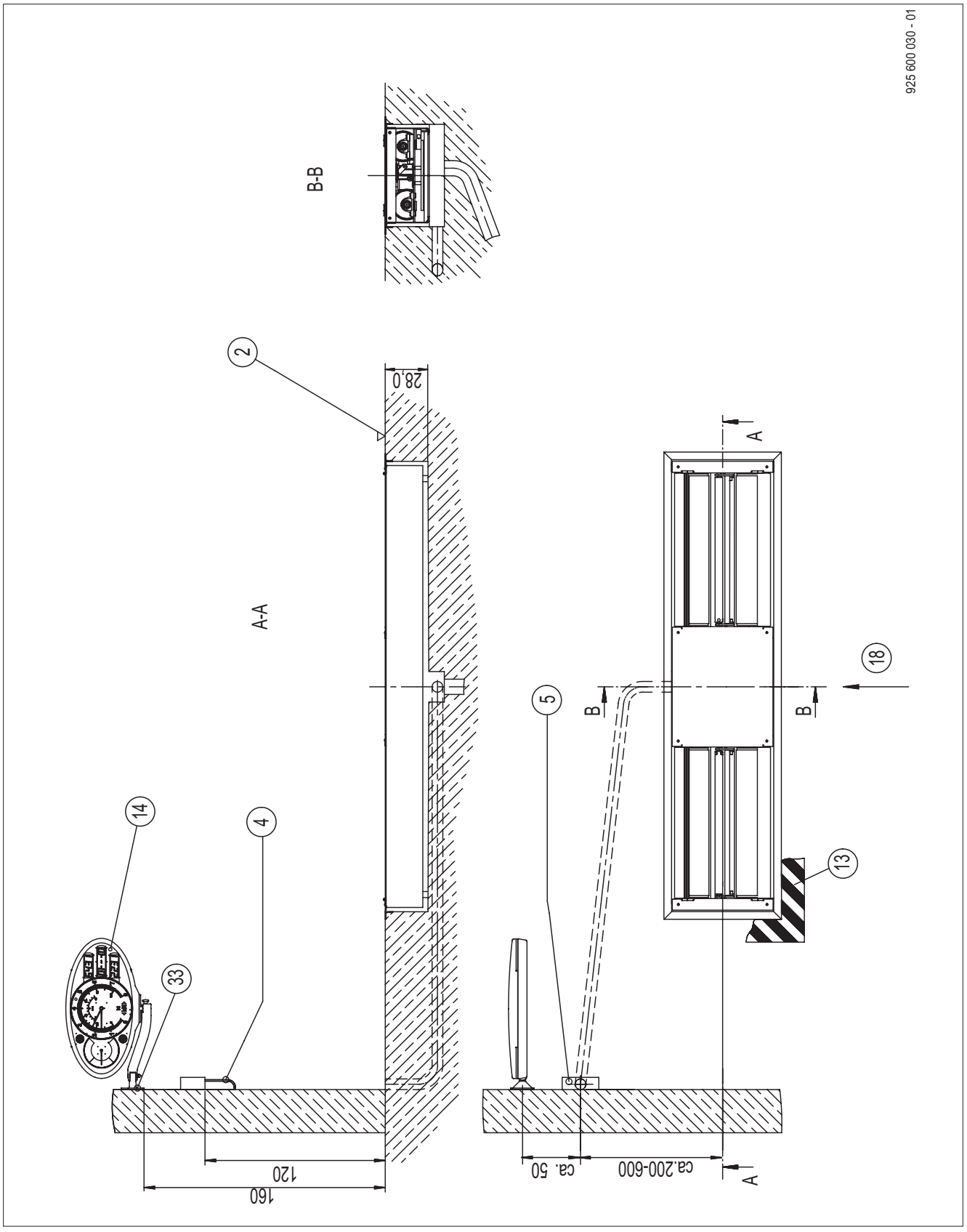

Fig. 5: Installation plan BD 660 with wall bracket - Overview

Item references see chapter 2

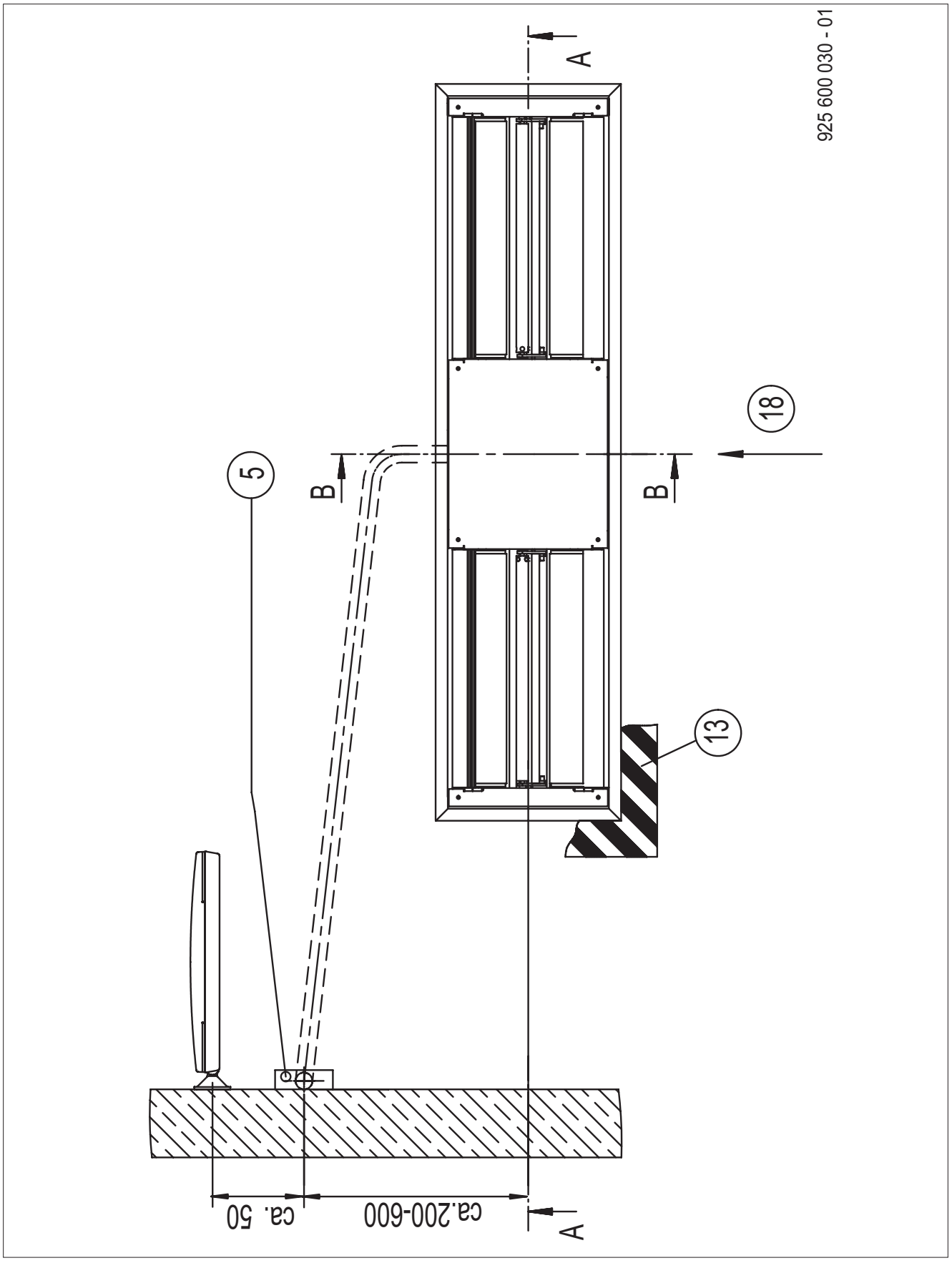

Fig. 6: Installation plan BD 660 with wall bracket - Ground plan

Item references see chapter 2

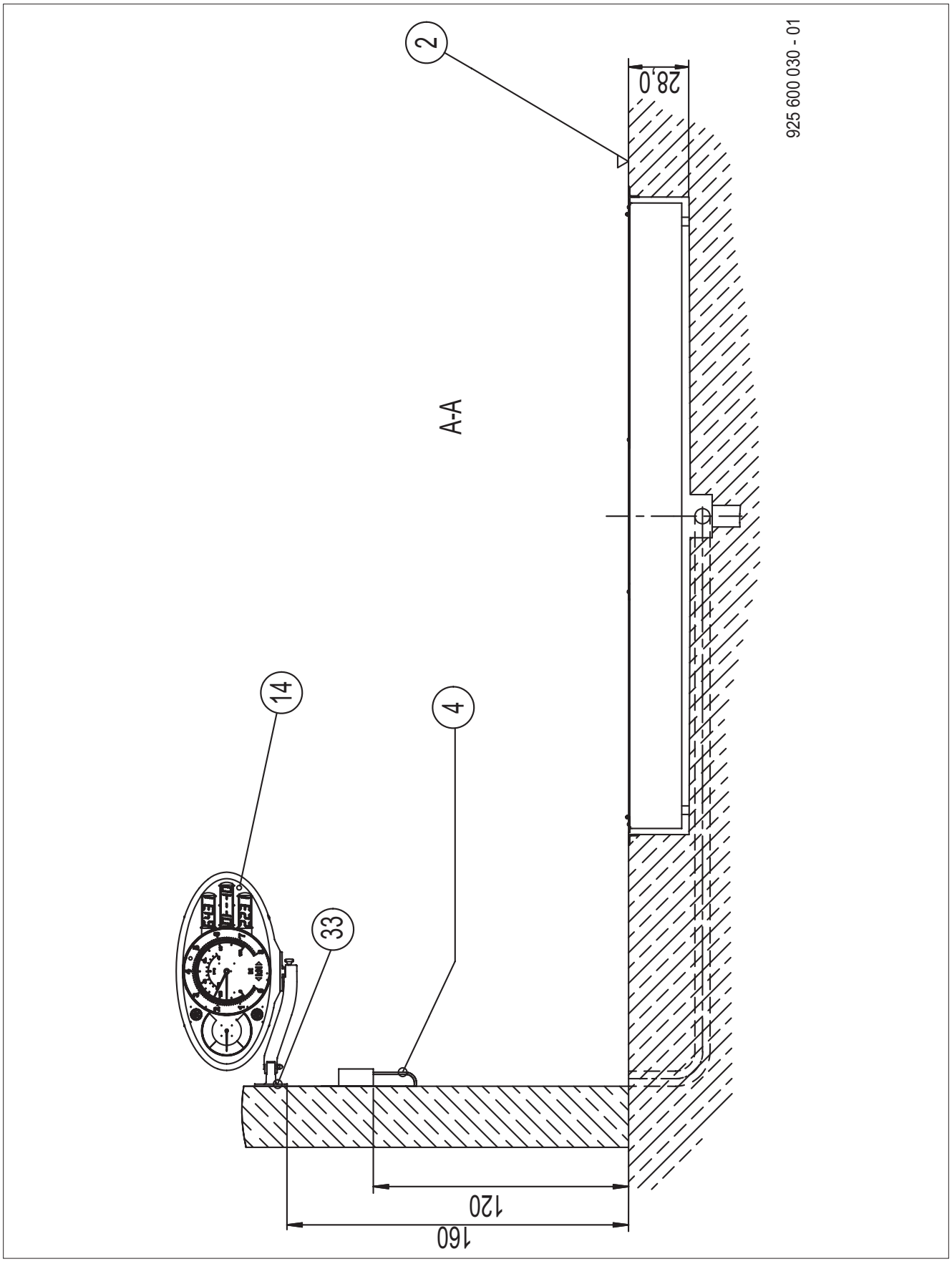

Fig. 7: Installation plan BD 660 with wall bracket - Sectional view A-A

Item references see chapter 2

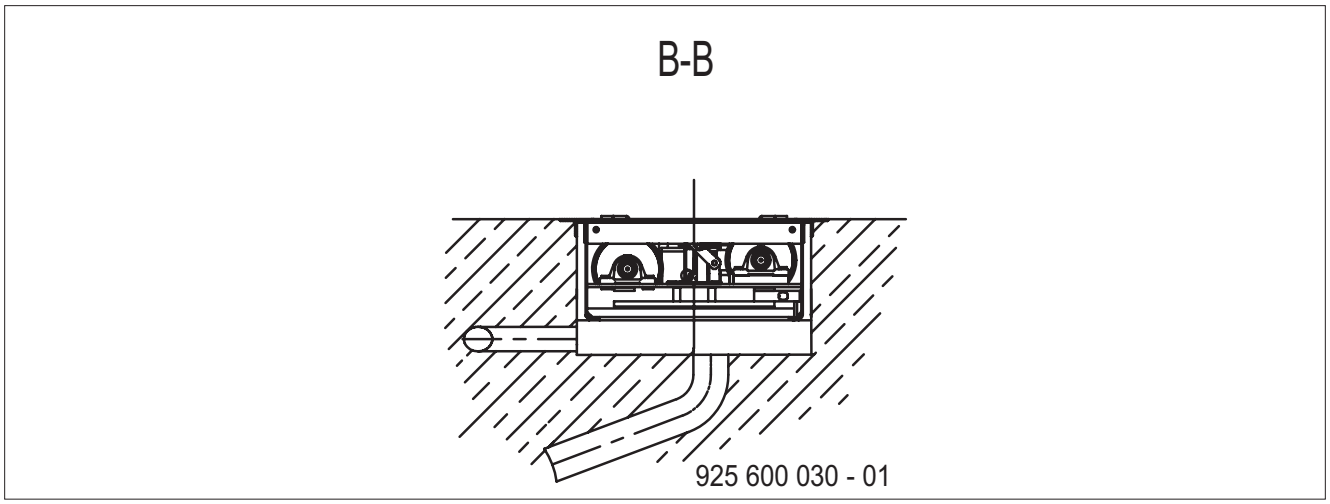

Fig. 8: Installation plan BD 660 with wall bracket - Sectional view B-B
Item references see chapter 2

3.2 BD 660 with Column

3.2.1 Plan of Pit

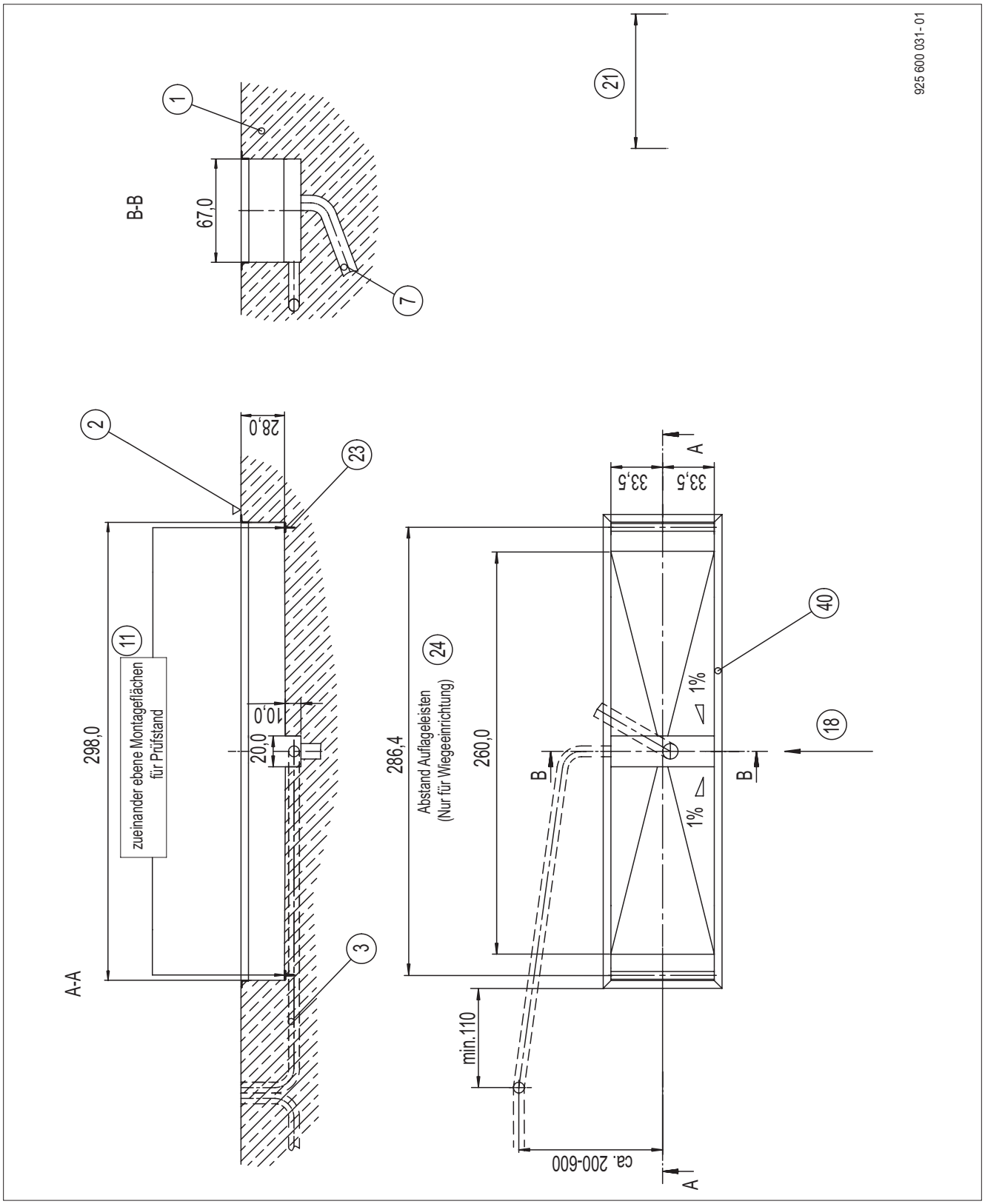

Fig. 9: Plan of pit BD 660 with column - Overview

Item references see chapter 2

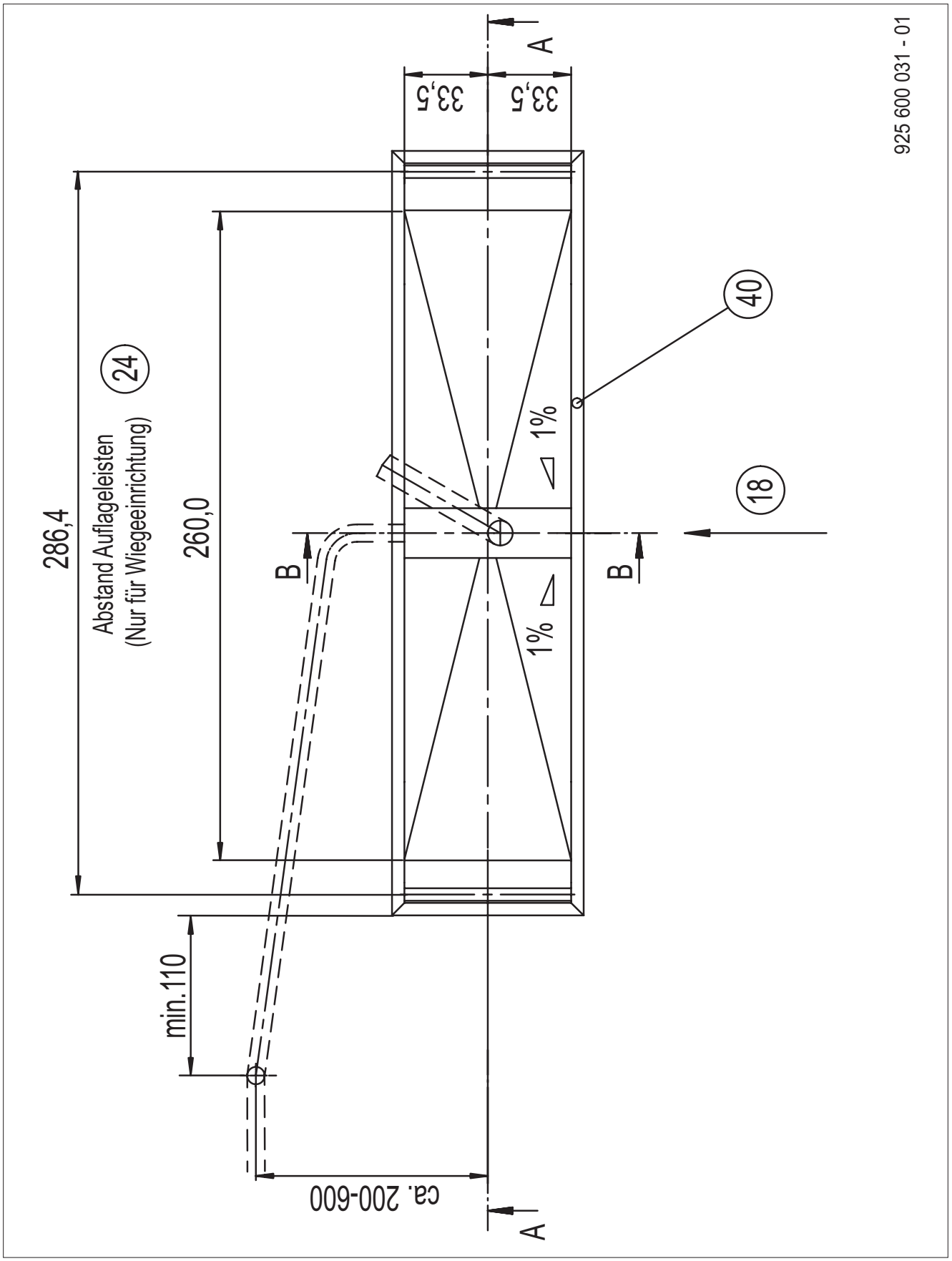

Fig. 10: Plan of pit BD 660 with column - Ground plan

Item references see chapter 2

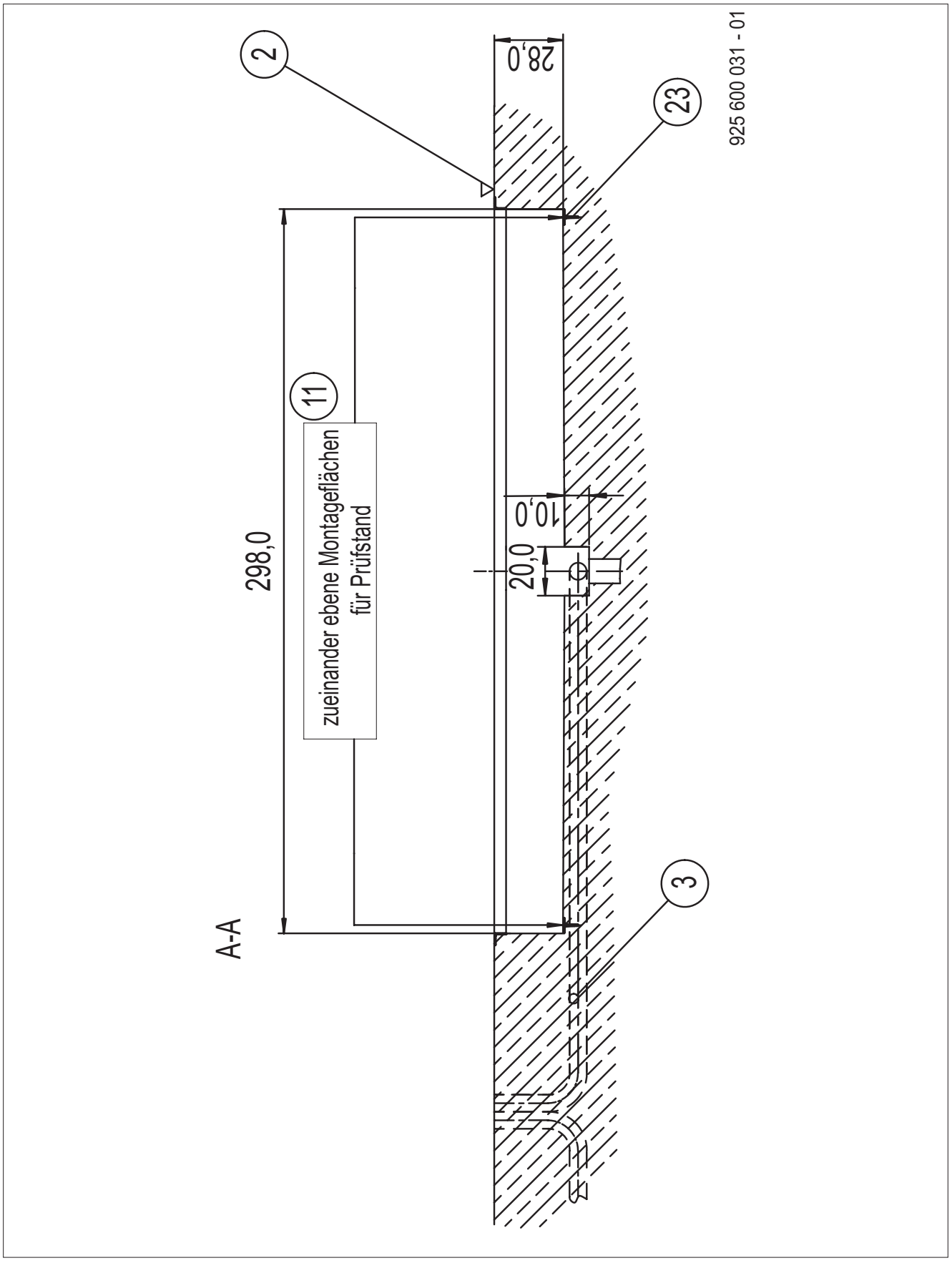

Fig. 11: Plan of pit BD 660 with column - Sectional view A-A

Item references see chapter 2

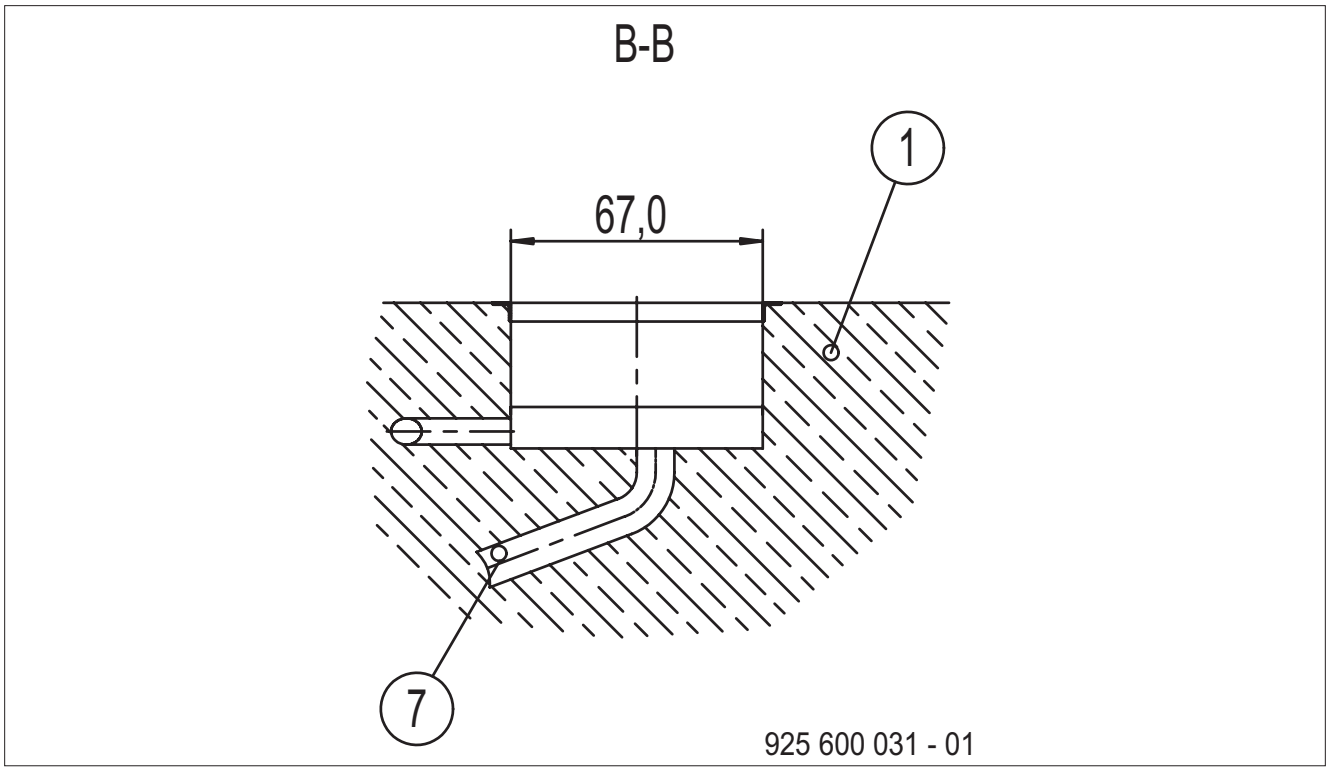

Fig. 12: Plan of pit BD 660 with column - Sectional view B-B
Item references see chapter 2

3.2.2 Installation Plan

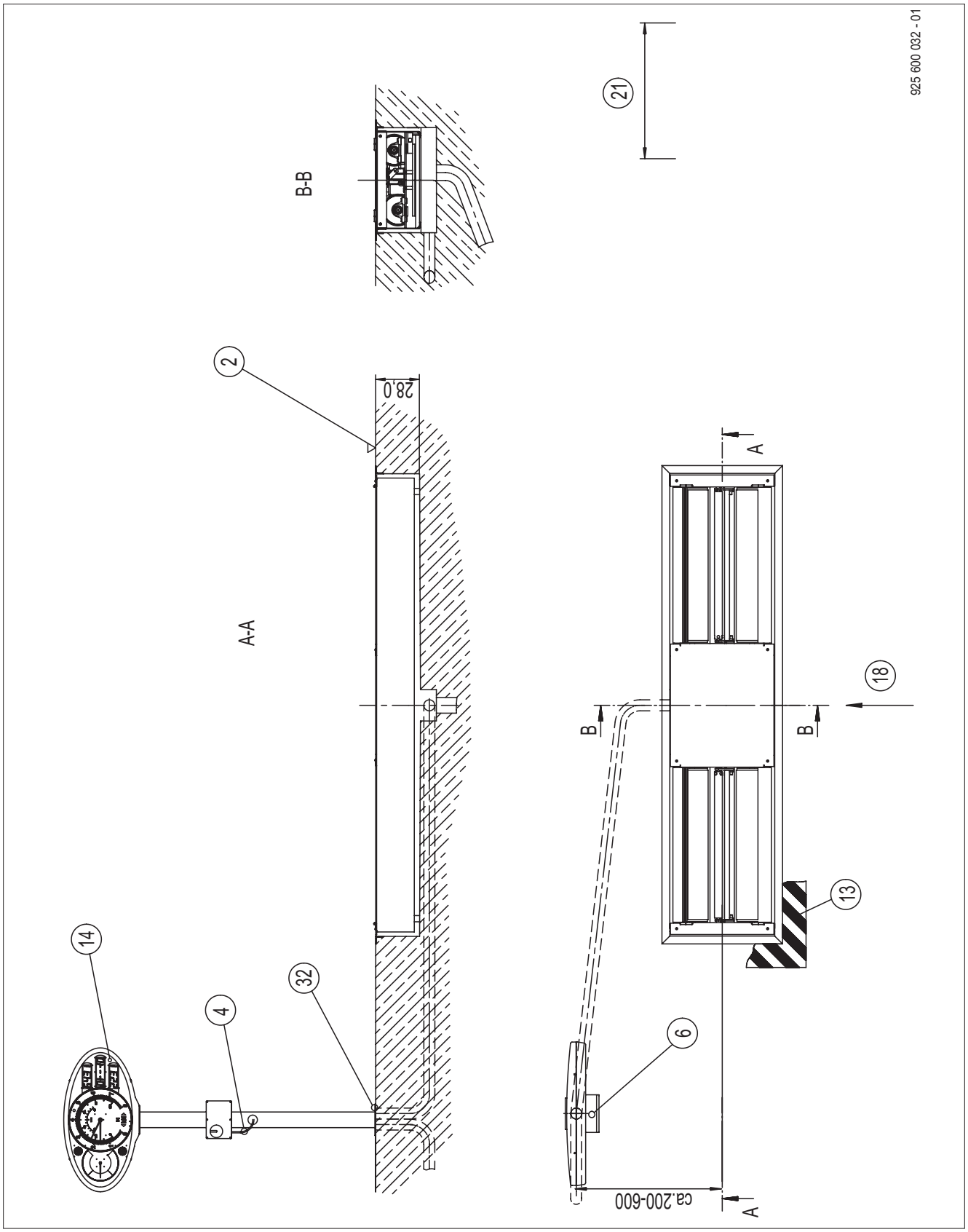

Fig. 13: Installation plan BD 660 with column- Overview

Item references see chapter 2

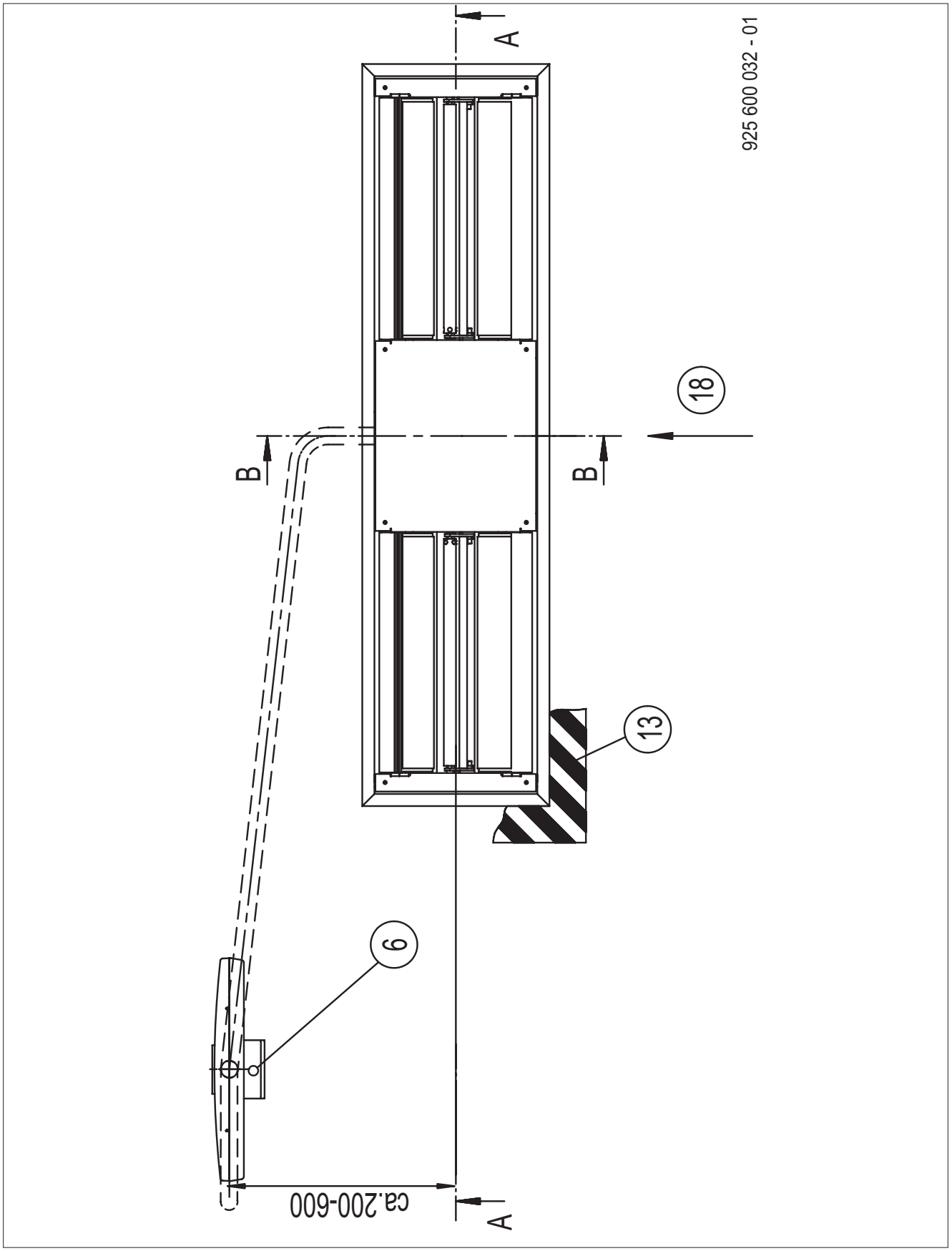

Fig. 14: Installation plan BD 660 with column- Ground view

Item references see chapter 2

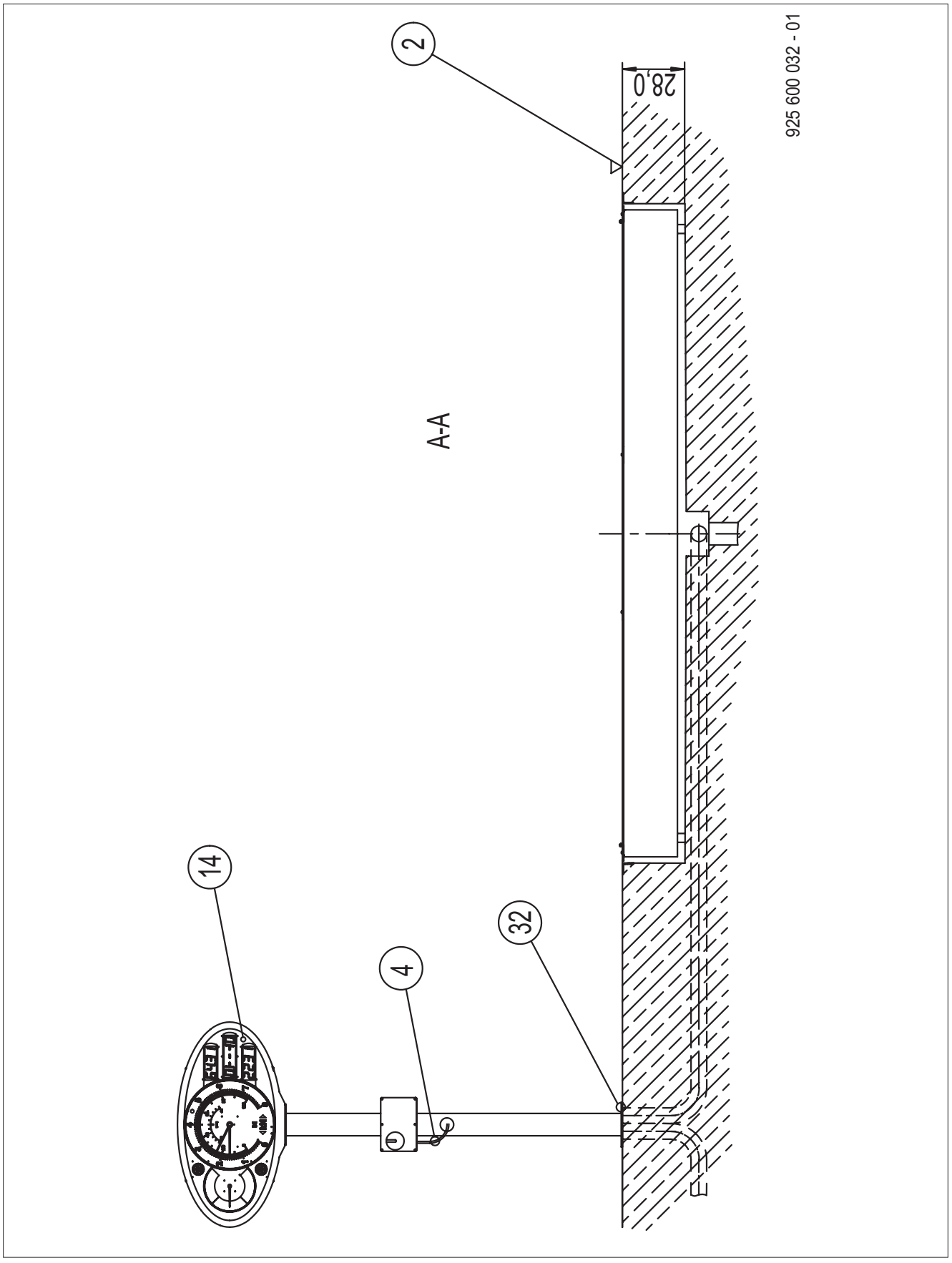

Fig. 15: Installation plan BD 660 with column- Sectional view A-A

Item references see chapter 2

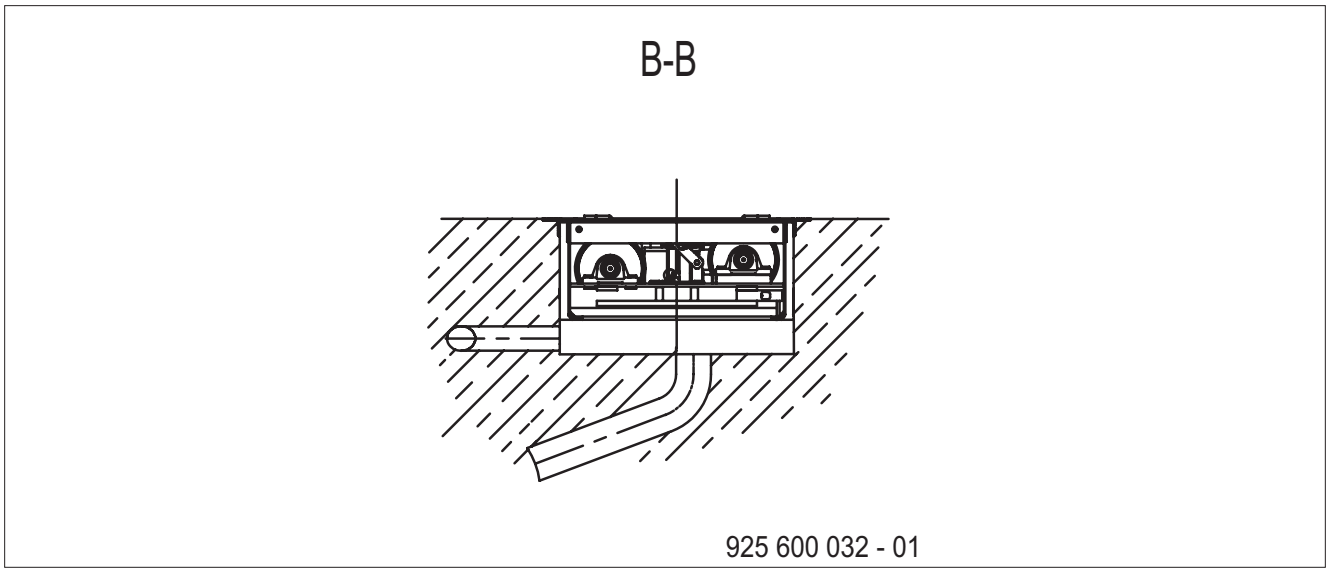

Fig. 16: Installation plan BD 660 with column- Sectional view B-B
Item references see chapter 2

3.3 BD 660 with PC, Suspension Tester and Side Slip Tester

3.3.1 Plan of Pit

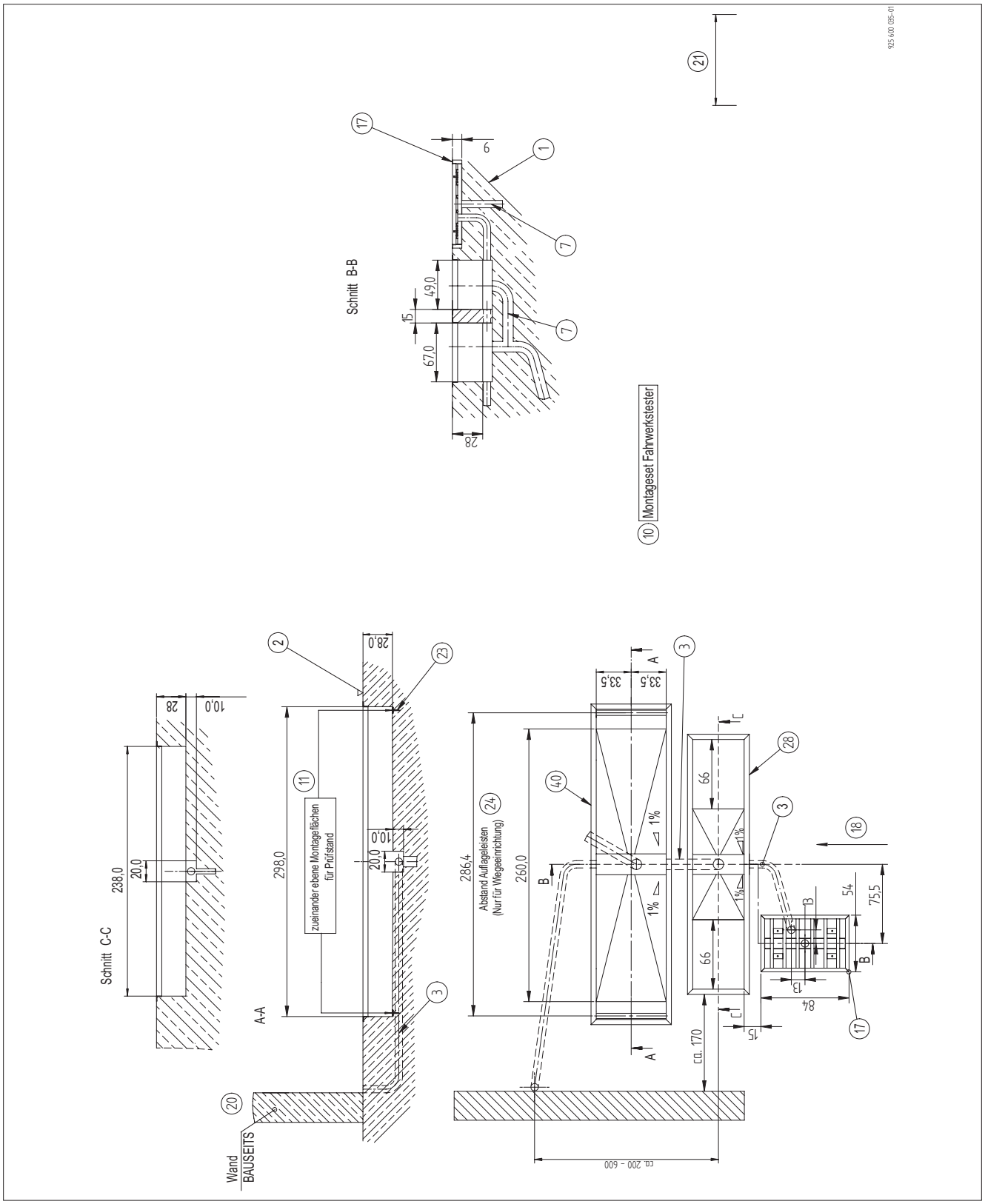

Fig. 17: Plan of Pit BD 660 with PC, suspension tester and side slip tester - Overview

Item references see chapter 2

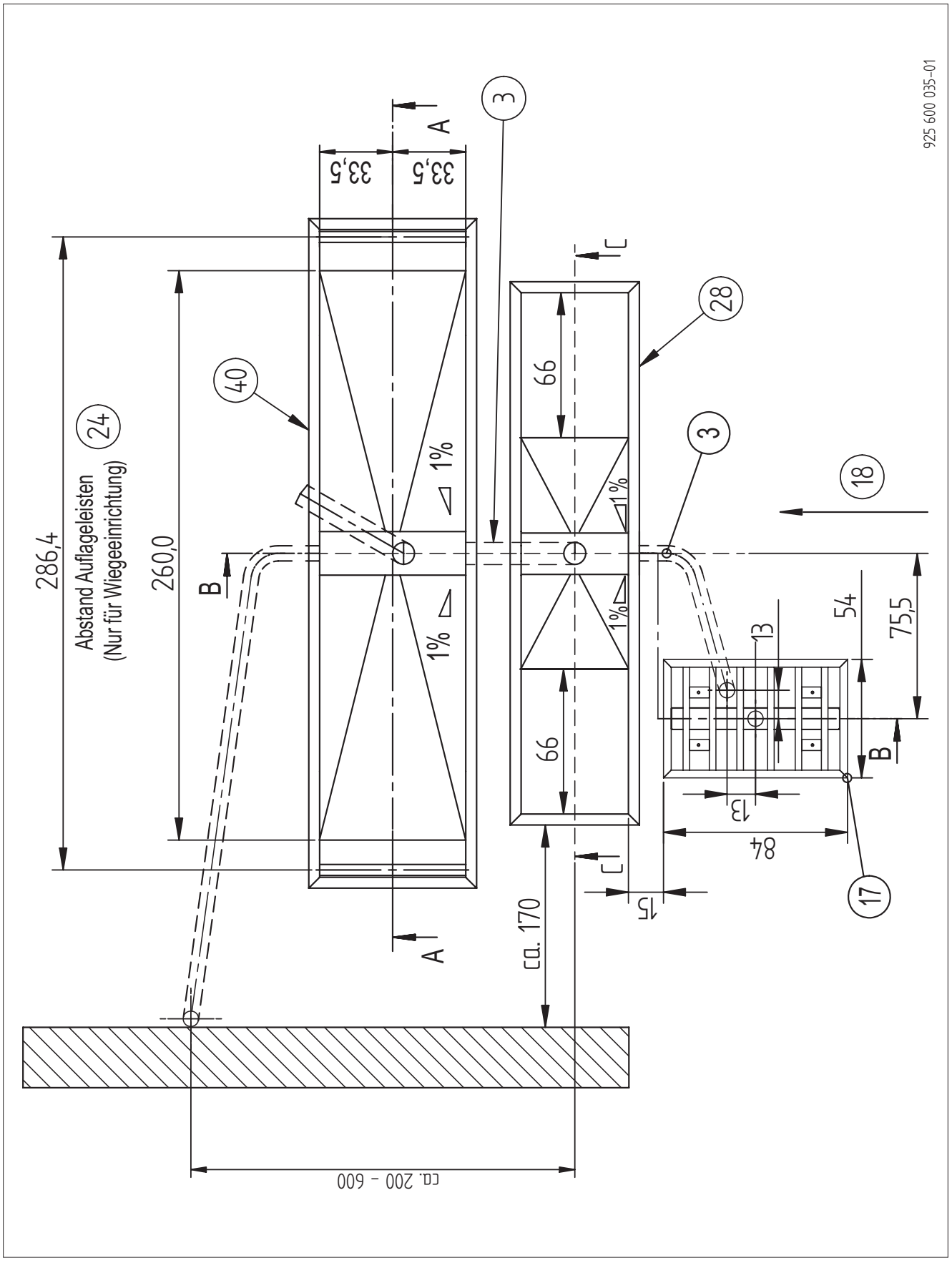

Fig. 18: Plan of Pit BD 660 with PC, suspension tester and side slip tester - Ground plan

Item references see chapter 2

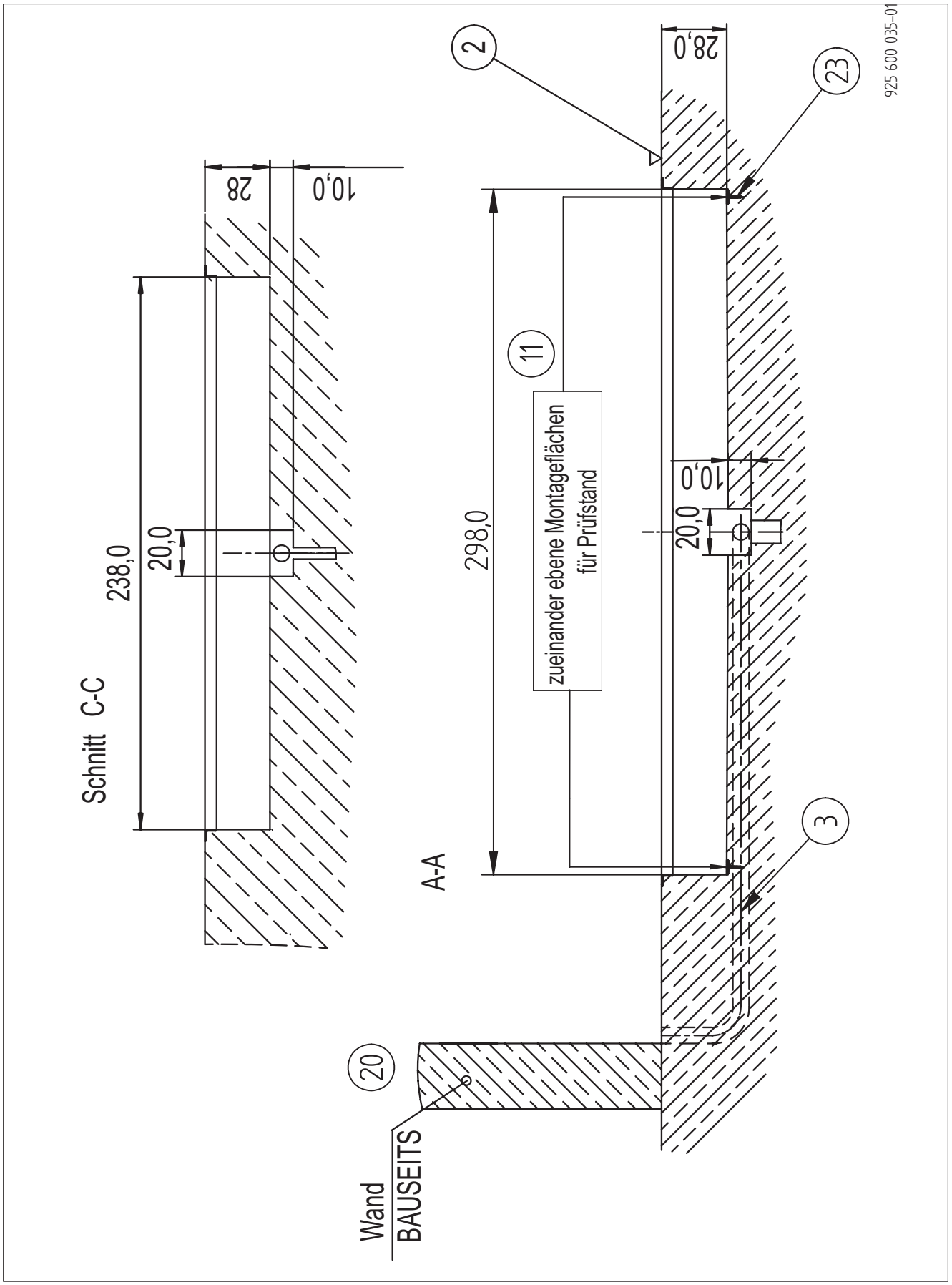

Fig. 19: Plan of Pit BD 660 with PC, suspension tester and side slip tester - Sectional view A-A and C-C
Item references see chapter 2

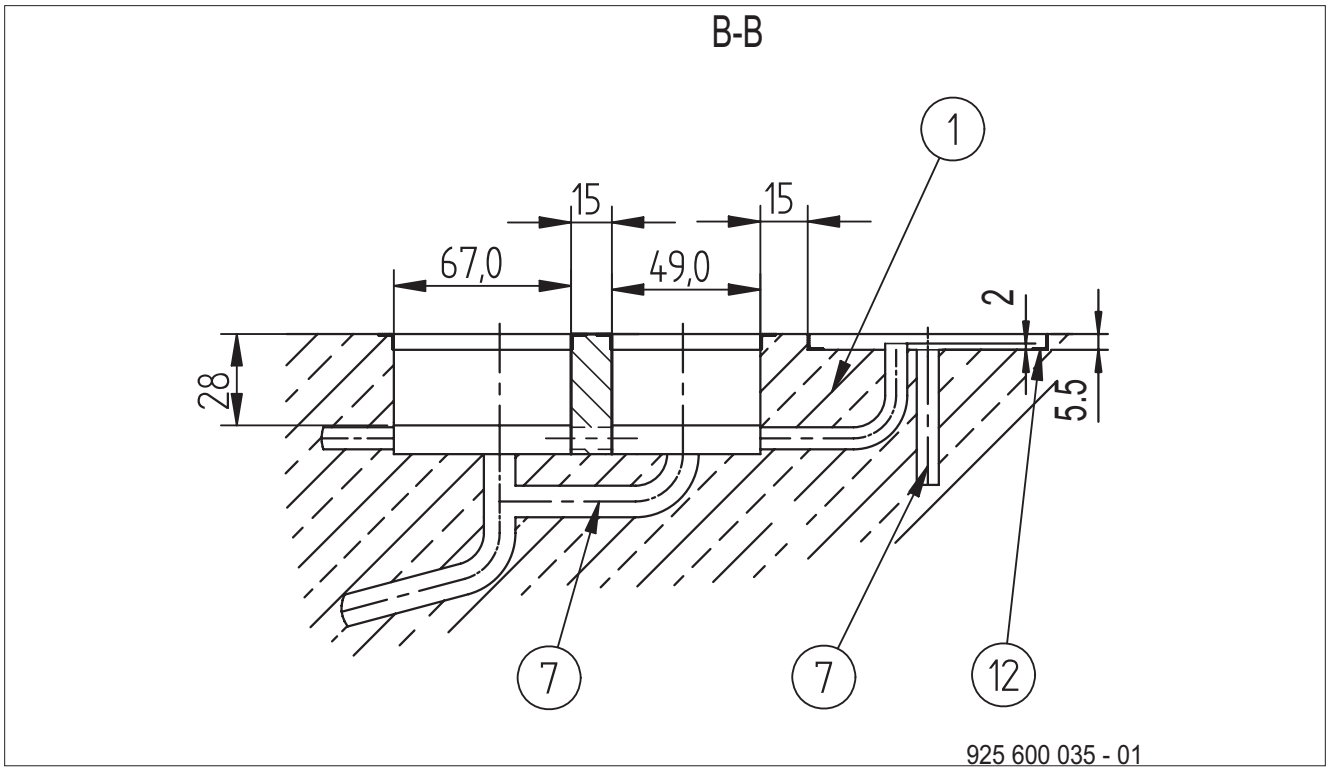

Fig. 20: Plan of Pit BD 660 with PC, suspension tester and side slip tester - Sectional view B-B
Item references see chapter 2

3.3.2 Installation Plan

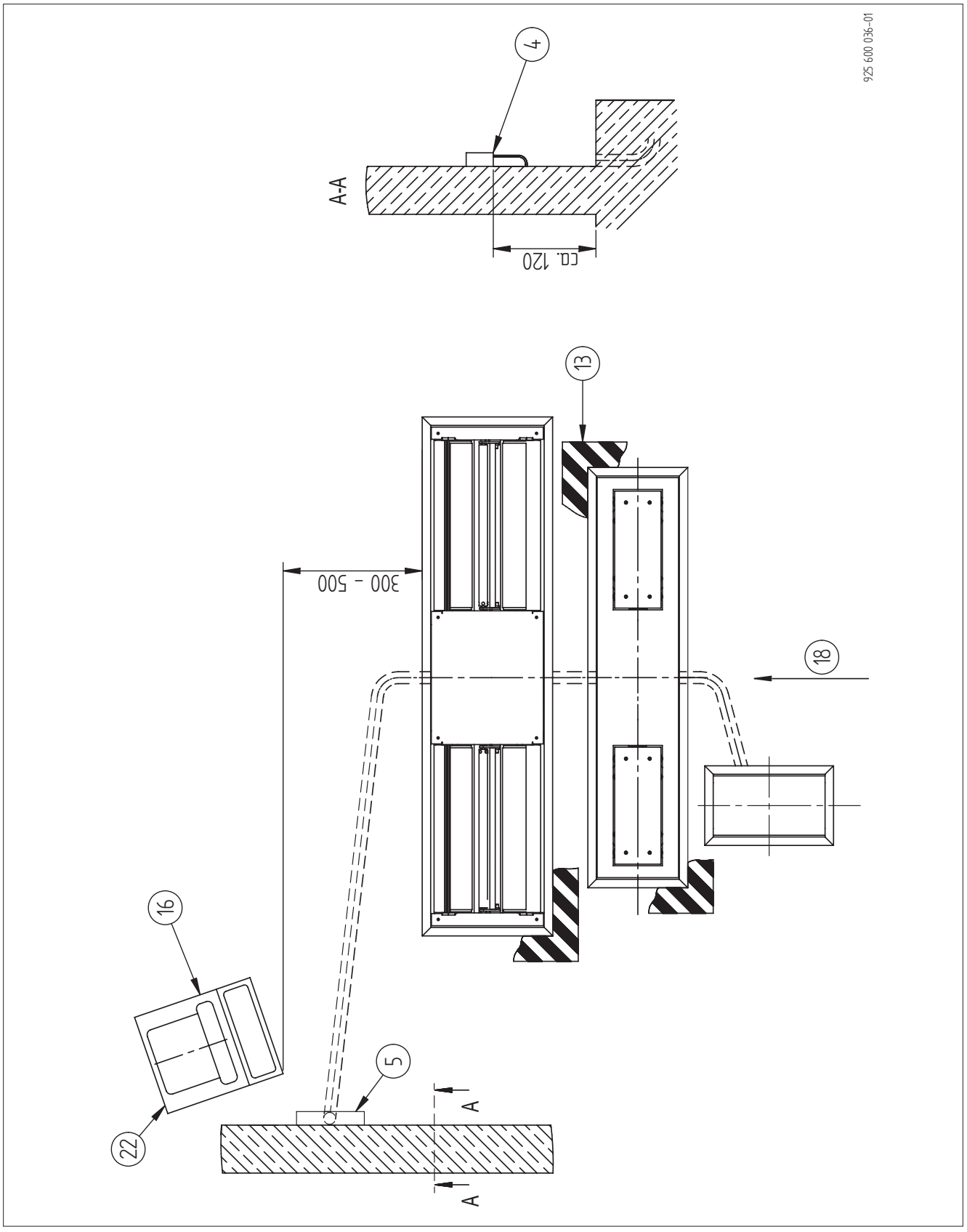

Fig. 21: Installation plan BD 660 with PC, suspension tester and side slip tester - Overview
Item references see chapter 2

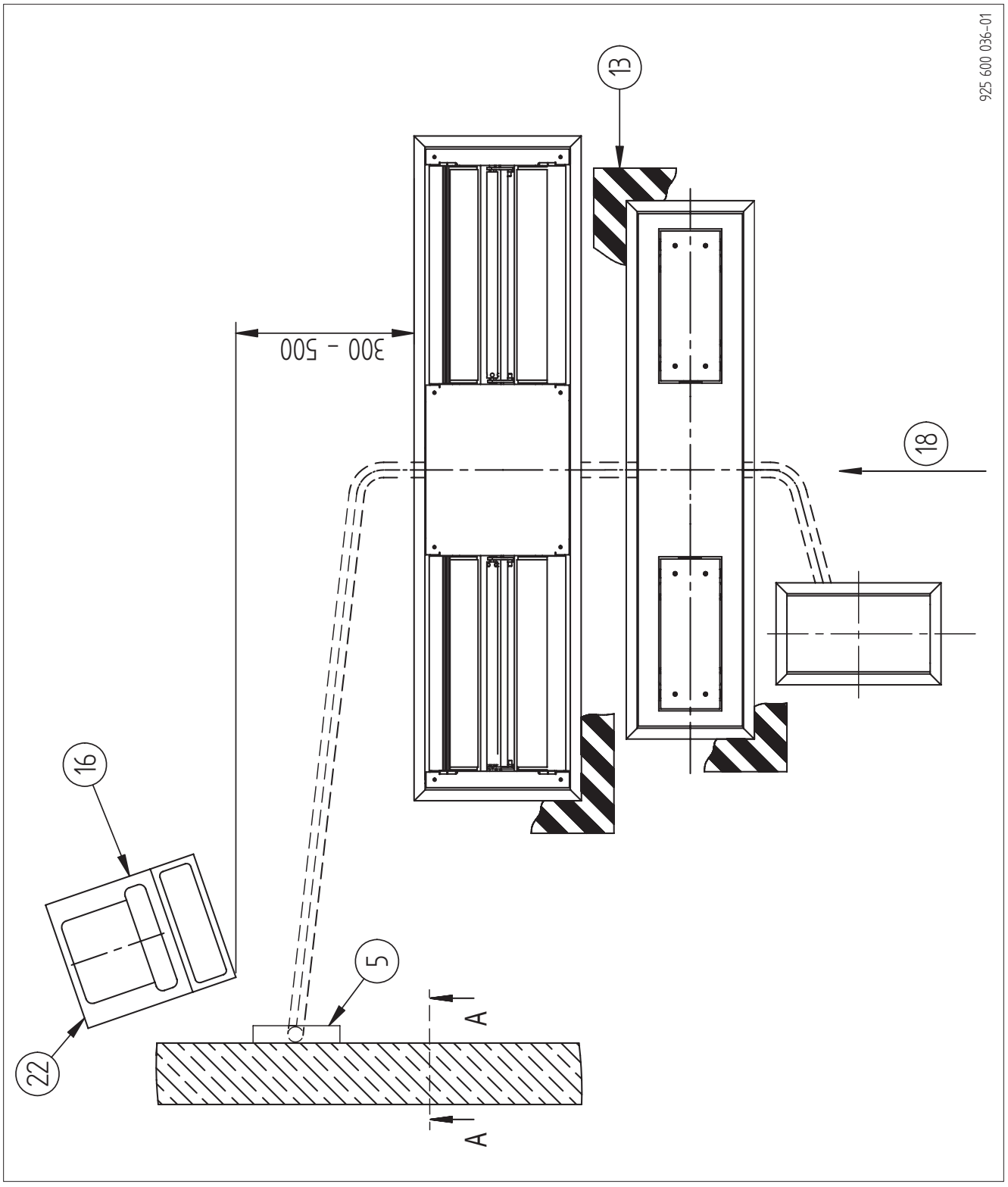

Fig. 22: Installation plan BD 660 with PC, suspension tester and side slip tester - Ground plan
Item references see chapter 2

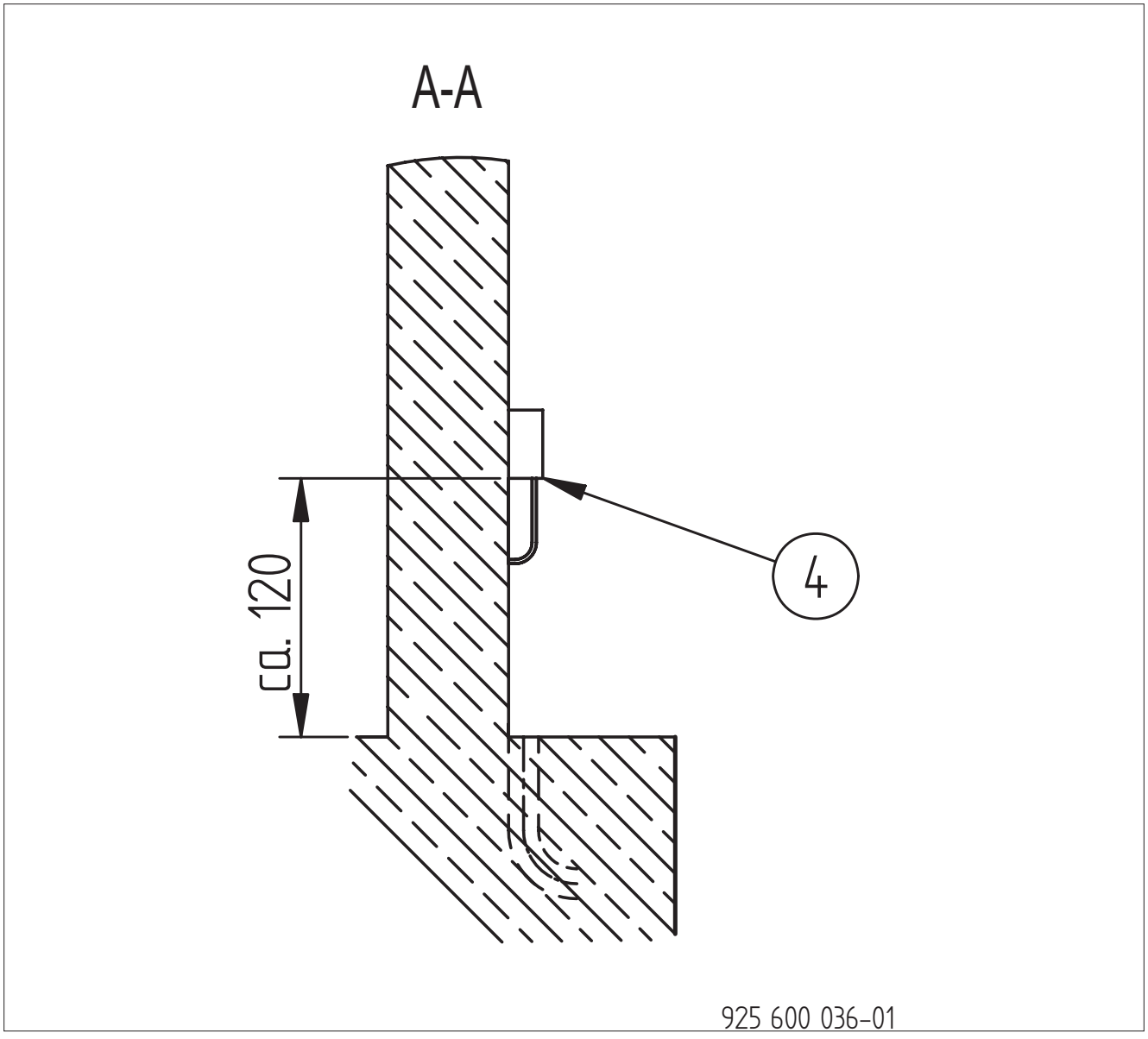

Fig. 23: Installation plan BD 660 with PC, suspension tester and side slip tester - Sectional view A-A
Item references see chapter 2

4. Load diagram

Calculated load per dowel:

Fig. 24: Analogue display 2x6 kN

Net weight	= 200 N
External load	= 200 N
Arm lever l1	= 531 mm
Bracket lever l2	= 133 mm

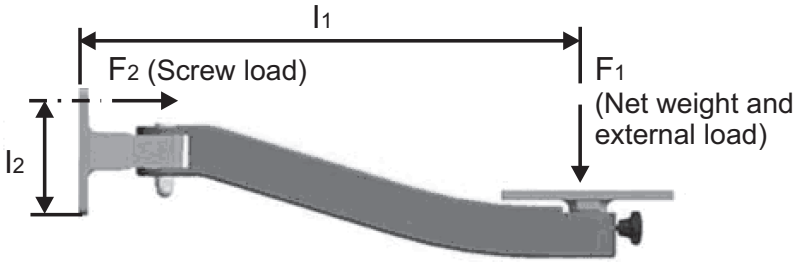

Fig. 25: Load diagram

Max. tensile force F2 in a screw:

$$F_2 = \frac{F_1 \times l_1}{l_2} = \frac{(200N + 200N) \times 531\ mm}{2 \times 133\ mm} = \underline{\underline{800\ N}}$$

Fig. 26: Calculation of the max. tensile force

Four suitable wall plugs with M10 screws are to be provided by the sutomer for the above loads. The condition of the wall must be taken into consideration.

Examples of plugs in concrete wall B15: Fischer S12

- Fischer S12
- Fischer Automatic Stahldübel FA 10/15-1
- Hilti Hülsenanker HLC 10x40
- Hilti Kompaktdübel HKD M10 oder gleichwertige

! If you have any doubt about the fastening, please contact the well-know dowel manufacturers or their agents.

! ***IMPORTANT***:
If the texture of material of the wall does not allow it to be plugged perfectly, column 935 602 134 is to be used instead of the wall bracket.

5. Auxiliary Equipment

5.1 Edge Protection Brake Tester

Fig. 27: Edge Protection (EDP 935 604 229)

Main dimensions including armouring approx. 3200 x 900 x 120 mm

5.2 Support

Fig. 28: 1 Set Support EDP 935 603 109 (2 pieces)

Main dimensions approx. 670 x 200 x 120 mm

5.3 Edge Protection Suspension Tester

Fig. 29: Edge Protection (EDP 935 624 005)
Main dimensions including armouring approx.2700 x 800 x 120 mm

5.4 Fitting Frame Side Slip Tester

Fig. 30: Fitting Frame Side Slip Tester (EDP 935 634 019)
Main dimensions including armouring approx. 840 x 700 x 120 mm

6. Tables

Measuring unit	Conversion
1 ft	0,305 m
1 m	3,281 ft
1 inch	0,0254 m = 25,4 mm
1 m = 1000 mm	39,37 inch
1 cm = 0,01 m	0,394 inch
10 N	1 kgf

Tab. 2: ***Measuring units and their conversion***

7. Attachment

Fig. 31: Assembling case concret-casted (example)

8. Notes

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