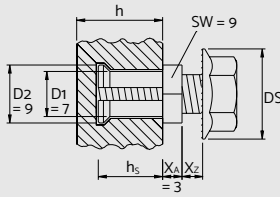




KEIL undercut anchors attach façade panels securely and invisibly to the substructure. Our high-quality fixing elements are available in different designs and with matching spacer discs.



# UNDERCUT ANCHOR KH AA



D1 = drill hole Ø; D2 = undercut Ø; SW = shaft spanner gap  
X<sub>z</sub> = anchor hex

## Product information

- ▶ The undercut anchor consists of an anchor sleeve with matching hex bolt with locking ratchets (screw).
- ▶ Drill hole, anchor sleeve and screw length must be matched to the desired insertion depth and the bracket of choice. Only the use of matching parts will make the assembly **quick, simple and safe**.
- ▶ Insert the at the base compressed anchor sleeve, together with the required bracket, into the undercut hole.
- ▶ Screw in the screw, exerting gentle pressure on the bracket (in order to fix the anchor). The locking ratchets of the screw will cut into the bracket, securing the screw.
- ▶ The anchor sleeve is expanded to its original dimensions by inserting the screw to a controlled depth, making it sit snugly against the panel in the undercut area of the drill hole. After the assembly, the anchor will sit in the undercut hole **free of expansion pressure** (i.e. the bracket can still be rotated with a certain amount of physical effort).
- ▶ KEIL undercut anchors are monitored externally.

h <sub>min</sub> = panel thickness [mm]	h <sub>s</sub> = insertion depth [mm]	X <sub>z</sub> = clamping thickness [mm]	l = nominal length [mm]	DS = bolt head Ø [mm]	article no.
6.0	4.0	1.5	M6x8.5	14	555 020 820
6.0	4.0	3.0	M6x10	14	555 020 742
8.0	5.5	0.0	M6x8.5	14	555 020 856
8.0	5.5	1.5	M6x10	14	555 020 724
8.0	5.5	3.0	M6x11.5	14	555 020 712
9.5	7.0	0.0	M6x10	14	555 020 804
9.5	7.0	1.5	M6x11.5	14	555 020 780
9.5	7.0	3.0	M6x13	14	555 020 830
11.0	8.5	0.0	M6x11.5	14	555 020 823
11.0	8.5	1.5	M6x13	14	555 020 752
11.0	8.5	3.0	M6x14.5	14	555 020 777
13.0	10.0	0.0	M6x13	14	555 020 809
13.0	10.0	1.5	M6x14.5	14	555 020 734
13.0	10.0	3.0	M6x16	14	555 020 715
13.0	10.0	6.0	M6x19	14	555 020 848
14.5	11.5	0.0	M6x14.5	14	555 020 700
16.0	13.0	1.5	M6x17.5	14	555 020 802
18.0	15	0.0	M6x17.5	14	555 020 815
18.0	15	1.5	M6x19	14	555 020 756
18.0	15	3.0	M6x20.5	14	555 020 759
18.0	15	6.0	M6x23.5	14	555 020 826

Further dimensions on request.

### Application

- ▶ Natural stone
- ▶ Artificial stone
- ▶ Manufactured stone
- ▶ Ceramics
- ▶ Laminate (HPL)
- ▶ Synthetic material
- ▶ Fibre cement
- ▶ Glass fibre reinforced concrete (GFRC)
- ▶ Glass ceramics
- ▶ Solid surface materials
- ▶ Ultra high performance concrete (UHPC)

### Accessories

- ▶ Depth control guide (p. 56)
- ▶ Torque wrench 1-6 Nm (p. 60)
- ▶ Wrench sockets, DIN 3126 (p. 61)
- ▶ Special open-ended spanner, SW9 (p. 61)

### Design



Anchor sleeve incl. hex bolt with locking ratchets, stainless steel A4.

### Instructions for use

- ▶ Use according to approval and KEIL assembly instructions for anchors (p. 12). Please find documents with relevance to building regulations under [www.keil-fixing.de/en/approvals](http://www.keil-fixing.de/en/approvals).

### Packaging unit - surcharges

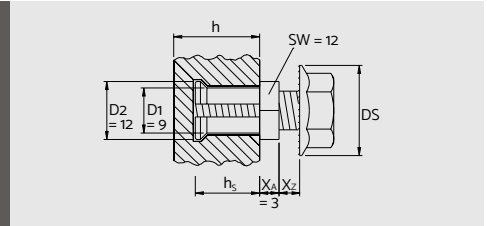
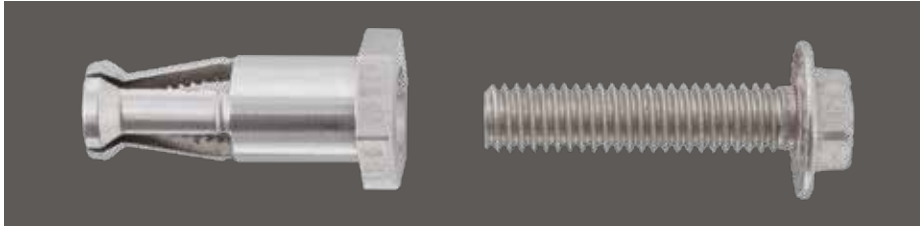
- ▶ Packaging unit = 500.  
For orders of less than 500 pieces the following surcharges will accrue:
  - ▶ 1-49 + 40 %
  - ▶ 50-99 + 25 %
  - ▶ 100-499 + 10 %

Microsoft Germany Headquarters, Munich, DE © Andreas Frisch, GSP Architekten



INTERESTING FACTS  
ASSEMBLY INSTRUCTIONS  
UNDERCUT ANCHORS  
FIXING DEVICES  
DRILLING TOOLS  
DRILLING TECHNIQUE  
ASSEMBLY AIDS  
GENERAL INFORMATION

# UNDERCUT ANCHOR KH AA 9/12



D1 = drill hole  $\varnothing$ ; D2 = undercut  $\varnothing$ ; SW = shaft spanner gap; X<sub>s</sub> = anchor hex

$h_{\min}$ = panel thickness [mm]	$h_s$ = insertion depth [mm]	Xz = clamping thickness [mm]	thread length [mm]	DS = bolt head $\varnothing$ [mm]	article no.
25.0	20.0	0.0	M6x23	14	555 020 601
25.0	20.0	1.5	M6x24.5	14	555 020 602
25.0	20.0	3.0	M6x26	14	555 020 603
25.0	20.0	6.0	M6x29	14	555 020 604

Further dimensions on request.

## Application

For the invisible, back-mounted attachment of façade panels, especially of soft stones.

## Accessories

- ▶ Depth control guide (p. 56)
- ▶ Torque wrench, 1-6 Nm (p. 60)

## Design



Anchor sleeve incl. hex bolt with locking ratchets, stainless steel A4.

## Instructions for use

- ▶ Use according to KEIL assembly instructions for anchors (p. 12).

## Packaging unit - Surcharges

- ▶ Packaging unit = 100.
- For orders of less than 100 pieces the following surcharges will accrue:
  - ▶ 1-49 + 40 %
  - ▶ 50-99 + 25 %

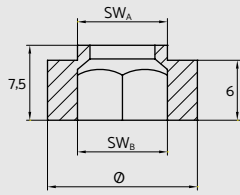
## Product information

- ▶ The undercut anchor consists of an anchor sleeve with matching hex bolt with locking ratchets (screw)
- ▶ Drill hole, anchor sleeve and screw length must be matched to the desired insertion depth and the bracket of choice. Only the use of matching parts will make the assembly **quick, simple and safe**.
- ▶ Insert the at the base compressed anchor sleeve, together with the required bracket, into the undercut hole.
- ▶ Screw in the screw, exerting gentle pressure on the bracket (in order to fix the anchor). The locking ratchets of the screw will cut into the bracket, securing the screw.
- ▶ The anchor sleeve is expanded to its original dimensions by inserting the screw to a controlled depth, making it sit snugly against the panel in the undercut area of the drill hole. After the assembly, the anchor will sit in the undercut hole **free of expansion pressure** (i.e. the bracket can still be rotated with a certain amount of physical effort).

Microsoft Germany Headquarters, Munich, DE © Andreas Frisch, GSP Architekten



# SPACER DISC KH



## Product information

Panel attachment for substructure independent of panel thickness.

**Advantages of the KEIL fixing system for the attachment of façade panels with high tolerances in thickness:**

- ▶ Balancing of tolerances in panel thickness up to 6 mm (4 mm for drill head).
- ▶ No reduction in pull-out load for thinner panels.
- ▶ For thicker panels, the countersink will be manufactured in one single step together with the drilling and undercutting of the panel.
- ▶ The front side of the panel is always the reference measure (therefore there will be no more need for different spacers).
- ▶ The insertion of the anchor and the bracket can be carried out in one step.

outer $\varnothing$	height up to hex [mm]	height incl. hex [mm]	$SW_A$ = spanner gap without [mm]	$SW_B$ = spanner gap within [mm]	article no.
15	6	7.5	SW9	SW9	555 432 200
18	6	7.5	SW9	SW12	555 432 201

### Application

- ▶ Mount the spacer disc inside the calibrated undercut drill hole in order to balance tolerances in panel thickness.
- ▶ The spacer disc will offer a reference surface with a consistent distance to the front side of the panel for the assembly of the bracket.
- ▶ Natural stone
- ▶ Artificial stone
- ▶ Manufactured stone
- ▶ Glass fibre reinforced concrete (GFRC)

### Accessories

- ▶ façade drill bit diamond tipped with countersink (p. 29)

### Design



Disc with inner and outer hex from AlCuMgPb

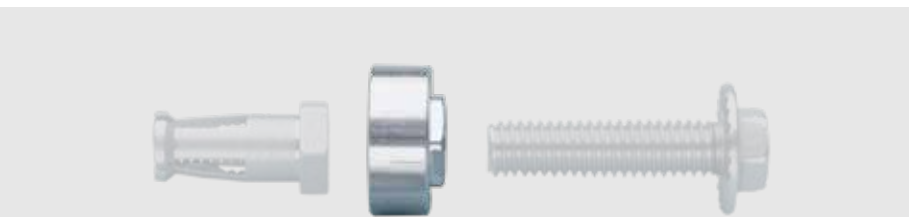
### Instructions for use

- ▶ Only for drilling machines which are designed to drill consistently with the front side of the panel.
- ▶ Use according to approval and KEIL assembly instructions for anchors (p. 12). Please find documents with relevance to building regulations under [www.keil-fixing.de/en/approvals](http://www.keil-fixing.de/en/approvals).

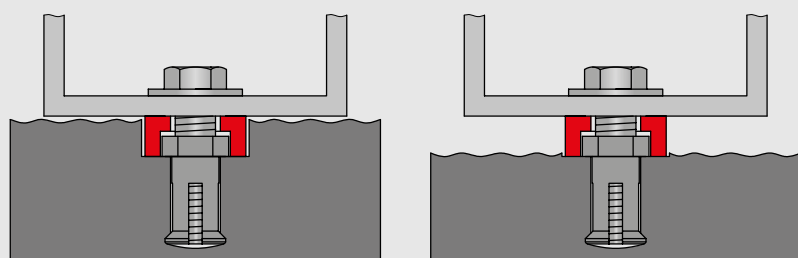
### Packaging unit - surcharges

- ▶ Packaging unit = 500.
- For orders of less than 500 pieces the following surcharges will accrue:
  - ▶ 1-49 + 40 %
  - ▶ 50-99 + 25 %
  - ▶ 100-499 + 10 %

Museum of Liverpool, Liverpool, GB © Vincent Phillips

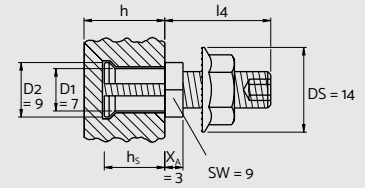
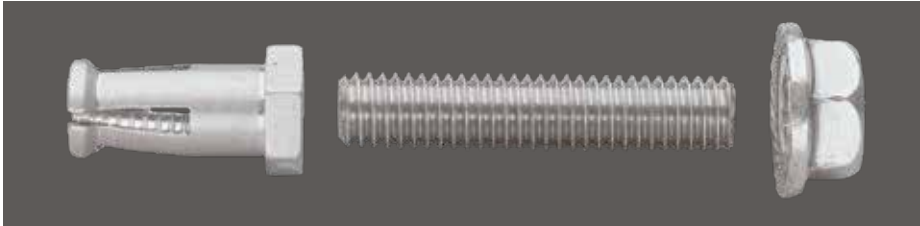


Panel attachment to substructure independent of panel thickness and rear surface flatness.



INTERESTING FACTS  
ASSEMBLY INSTRUCTIONS  
UNDERCUT ANCHORS  
FIXING DEVICES  
DRILLING TOOLS  
DRILLING TECHNIQUE  
ASSEMBLY AIDS  
GENERAL INFORMATION

# UNDERCUT ANCHOR KH BH



D1 = drill hole Ø; D2 = undercut Ø; SW = shaft spanner gap; DS = nut head; X<sub>z</sub> = anchor hex

$h_{min}$ = panel thickness [mm]	$h_s$ = insertion depth [mm]	$X_z$ = clamping thickness [mm]	$l_4$ = nominal length [mm]	article no.
9.5	7.0	4.0	M6x20	555 020 708
9.5	7.0	14.0	M6x30	555 020 736
11.0	8.5	2.5	M6x20	555 020 790
11.0	8.5	12.5	M6x30	555 020 822
13.0	10.0	11.0	M6x30	555 020 741
13.0	10.0	21.0	M6x40	555 020 744
13.0	10.0	31.0	M6x50	555 020 757
13.0	10.0	41.0	M6x60	555 020 748
18.0	13.0	3.0	M6x25	555 020 853
18.0	15	1.5	M6x25	555 020 714
18.0	15	6.5	M6x30	555 020 710
18.0	15	11.5	M6x35	555 020 781
18.0	15	16.5	M6x40	555 020 749
18.0	15	26.5	M6x50	555 020 764
18.0	15	36.5	M6x60	555 020 788
18.0	15	46.5	M6x70	555 020 803

Further dimensions on request.

## Application

- ▶ Natural stone
- ▶ Artificial stone
- ▶ Manufactured stone
- ▶ Ceramics
- ▶ Laminate (HPL)
- ▶ Synthetic material
- ▶ Fibre cement
- ▶ Glass fibre reinforced concrete (GFRC)
- ▶ Glass ceramics

## Accessories

- ▶ Depth control guide (p. 56)
- ▶ Wrench sockets, DIN 3126 (p. 61)
- ▶ Special open-ended spanner, SW9 (p. 61)
- ▶ Screw-in tool for stud bolts (p. 61)

## Design



Anchor sleeve incl. threaded pin with inner hex and nut with locking ratchets from stainless steel A4

## Instructions for use

- ▶ When screwed in, the threaded pin must fit flush with the tip of the anchor sleeve.
- ▶ Use according to approval and KEIL assembly instructions for anchors (p. 12). Please find documents with relevance to building regulations under [www.keil-fixing.de/en/approvals](http://www.keil-fixing.de/en/approvals).

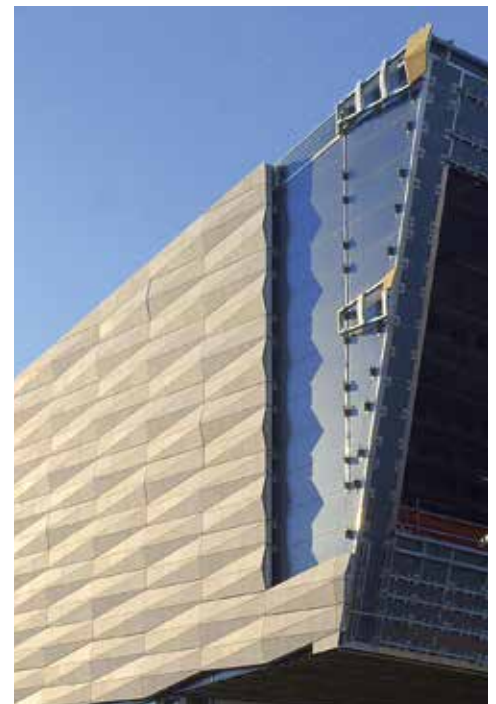
## Packaging unit - surcharges

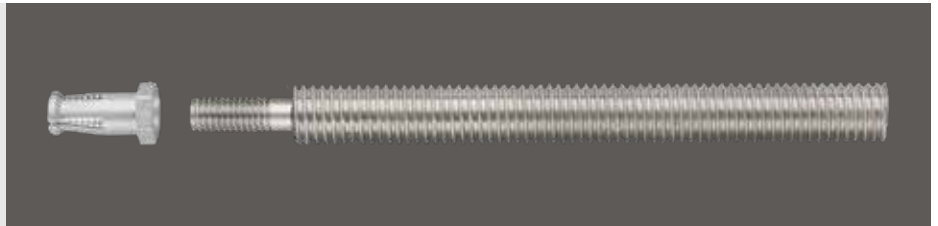
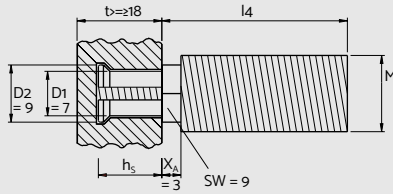
- ▶ Packaging unit = 500.
- For orders of less than 500 pieces the following surcharges will accrue:
  - ▶ 1-49 + 40 %
  - ▶ 50-99 + 25 %
  - ▶ 100-499 + 10 %

## Product information

- ▶ The undercut anchor consists of an anchor sleeve, a threaded pin and a nut with locking ratchets.
- ▶ Drill hole, anchor sleeve and threaded pin length must be matched to the desired insertion depth and the bracket of choice. Only the use of matching parts will make the assembly **quick, simple** and **safe**.
- ▶ Insert the at the base compressed anchor sleeve into the undercut hole.
- ▶ The anchor sleeve is expanded to its original dimensions by inserting the threaded pin to a controlled depth, making it sit snugly against the panel in the undercut area of the drill hole. After the assembly, the anchor will sit in the undercut hole **free of expansion pressure** (i.e. the bracket can still be rotated with a certain amount of physical effort).
- ▶ Screw on the bracket with the nut.
- ▶ KEIL undercut anchors are monitored externally.

Museum of Liverpool, Liverpool, GB © Vincent Phillips





D1 = drill hole Ø; D2 = undercut Ø; h = panel thickness;  
SW = shaft spanner gap; X<sub>s</sub> = anchor hex

## Product information

- ▶ The KEIL plug-in-bolt in connection with the KEIL undercut anchor allows for the attachment of natural stone panels without any substructure.
- ▶ The retaining and load-bearing bolts are attached to the back side of the panel with the aid of the undercut anchor.
- ▶ The holes drilled into the substrate are filled with permissible mortar.
- ▶ The plug-in-bolts on the façade panel are inserted into the filled drill holes.
- ▶ The façade panel is adjusted and fixed. After the temperature-related setting time, the panel is anchored safely and **without expansion pressure**. With/without insulation.
- ▶ Single panels can be replaced subsequently.
- ▶ High degree in safety due to the optimal distribution of the weight load.
- ▶ The correct screw-in depth is warranted by the system.
- ▶ KEIL undercut anchors are monitored externally.

h <sub>s</sub> = insertion depth [mm]	M = bolt Ø [mm]	l <sub>4</sub> = nominal length [mm]	article no.
15	8	15	555 720 713
15	8	100	555 720 716
15	8	150	555 720 620
15	8	200	555 720 625
15	8	300	555 720 629
15	10	15	555 720 721
15	10	100	555 720 610
15	10	150	555 720 613
15	10	200	555 720 636
15	12	100	555 720 641
15	12	150	555 720 645
15	12	200	555 720 649
15	14	100	555 720 655
15	14	200	555 720 663
15	16	200	555 720 678
15	16	300	555 720 739
15	18	200	555 720 689
15	18	300	555 720 740
15	20	200	555 720 698
15	20	300	555 720 741
15	22	300	555 720 742

Further dimensions on request.

### Applications

- ▶ Natural stone
- ▶ Artificial stone
- ▶ Manufactured stone
- ▶ Ceramics
- ▶ Laminate (HPL)
- ▶ Synthetic material
- ▶ Fibre cement
- ▶ Glass ceramics

### Accessories

- ▶ Depth control guide (p. 56)
- ▶ Special open-ended wrench, SW9 (p. 61)

### Design



Anchor sleeve incl. reduced threaded bolt from stainless steel A4

### Instructions for use

- ▶ from l<sub>4</sub> > 90 mm surface grooving onwards
- ▶ Use according to approval and KEIL assembly instructions for anchors (p. 12). Please find documents with relevance to building regulations under [www.keil-fixing.de/en/approvals](http://www.keil-fixing.de/en/approvals).

### Packaging - surcharges

- ▶ Packaging unit = 500.  
For orders of less than 500 pieces the following surcharges will accrue:
  - ▶ 1-49 + 40 %
  - ▶ 50-99 + 25 %
  - ▶ 100-499 + 10 %

