

KH system for Wirbelstar KH



VB3-T-026-en - 07/24 - PDF

Application Instruction

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SERVICES

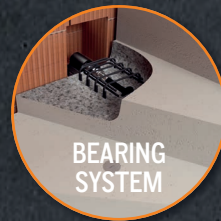
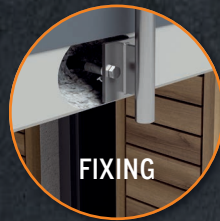
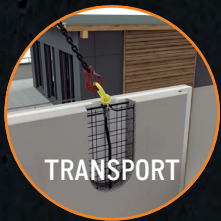
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THE KH SYSTEM – THE PERFECT SOLUTION FOR SUCCESSFUL ARCHITECTURAL PRECAST

The KH system was developed specifically for exposed precast concrete elements in order to minimise the openings created by transport anchors and then cover them in style. The system consists of two components. Retaining caps are fixed to the formwork before concreting and hold the transport anchor in the correct position. After production and mounting of the precast element, the sealing caps are used to close the openings in a visually attractive way. These are available in plastic, stainless steel and concrete. With only three different recess sizes the full range of threaded anchors from RD/M 12 to RD/M 52 are covered.

The KH system is a well-coordinated combination of the PHILIPP lifting device Wirbelstar KH and the corresponding recess formers resp. sealing caps.

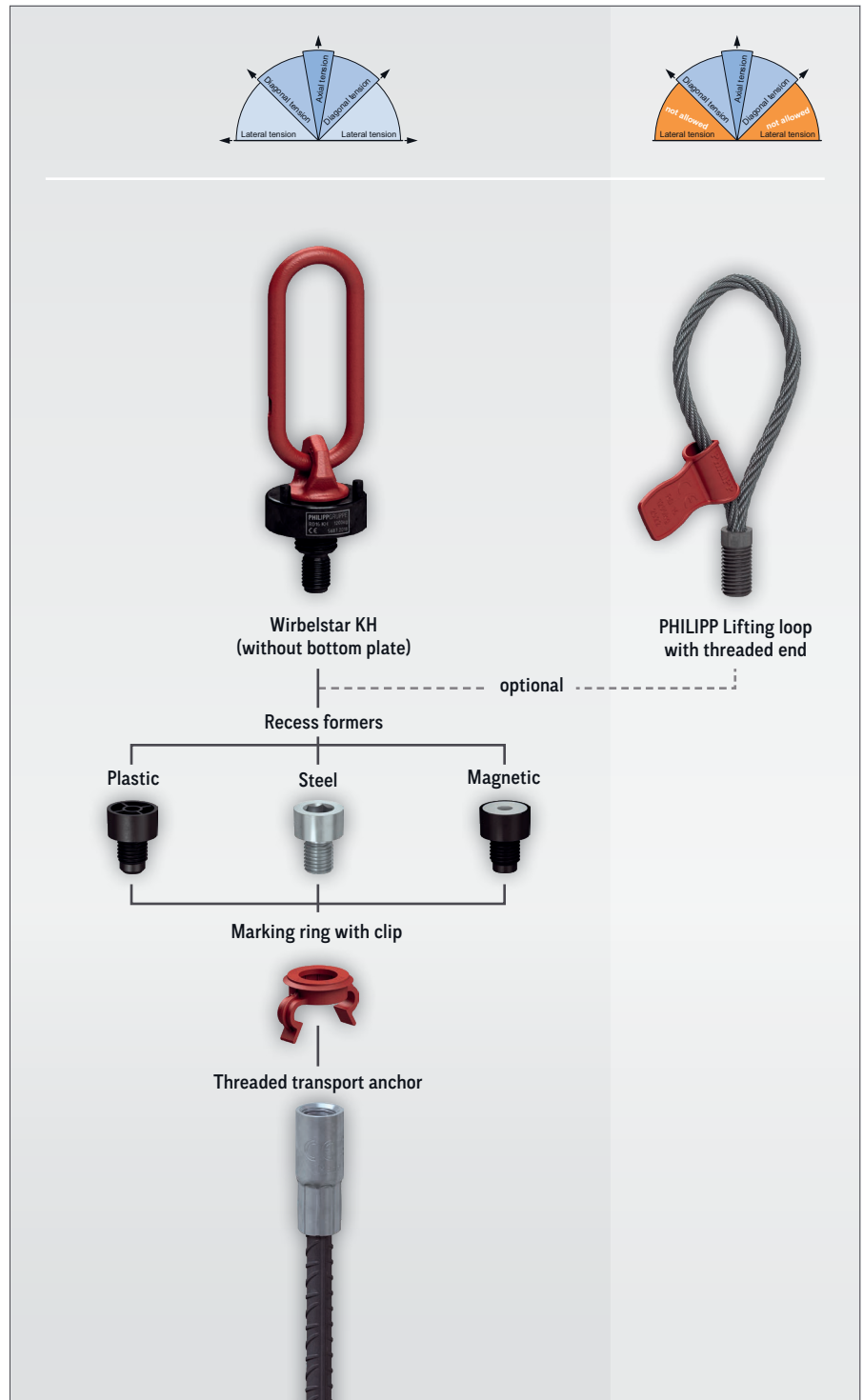
COMBINATIONS:

- » Wirbelstar KH
(without bottom plate)
- » Recess formers KH
 - › Plastic retaining cap KH
 - › Steel retaining cap KH
 - › Magnetic retaining cap KH
- » Sealing caps
 - › Sealing cap KH (plastic)
 - › Sealing cap KH (concrete)
 - › Sealing cap KH (stainless steel)
- » Transport anchor
 - › Can be combined with all PHILIPP Threaded transport anchors type RD



FUTHER INFORMATION

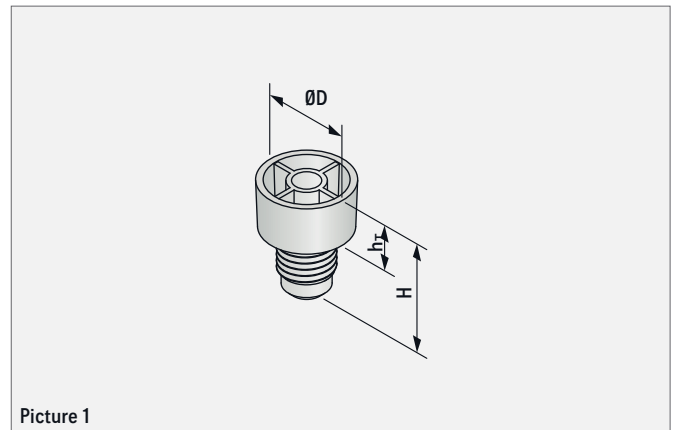
For further information about possible combinations of lifting devices, recess formers and sealing caps please refer to the document [Threaded transport anchors system-combinations](#).



RETAINING CAP

PLASTIC RETAINING CAP KH

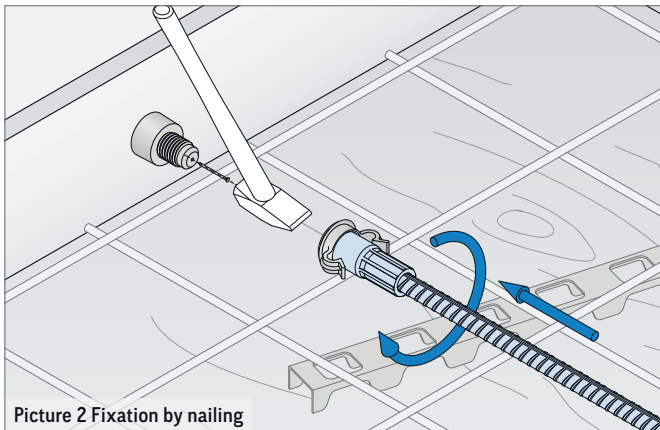
Firstly, the Plastic retaining caps KH are fixed to the formwork by nailing or hot bonding. Now the Threaded transport anchor can be screwed onto the fixed retaining cap KH. In order to avoid a change of position of the transport anchor during concreting, it may be necessary, depending on the length of the transport anchor, to fix it additionally to the reinforcement of the concrete element. After the demoulding the Plastic retaining cap KH can be quickly and easily removed e.g. with the PHILIPP tool 67WS (Page 6).



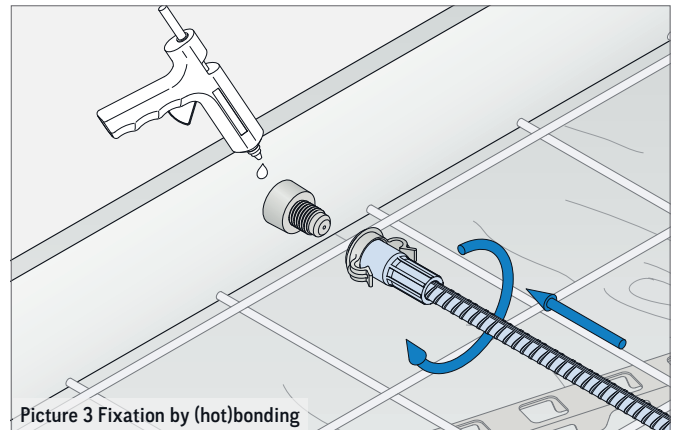
Picture 1

TABLE 1: PLASTIC RETAINING CAP KH

| Ref. no. | Type RD/M | Thread | ØD (mm) | H (mm) | h _T (mm) |
|----------|-----------|--------|---------|--------|---------------------|
| 72KH12 | 12 | M 12 | 27 | 35 | 15 |
| 72KH16 | 16 | M 16 | 27 | 35 | 15 |
| 72KH20 | 20 | M 20 | 27 | 35 | 15 |
| 72KH24 | 24 | M 24 | 27 | 35 | 15 |



Picture 2 Fixation by nailing



Picture 3 Fixation by (hot)bonding

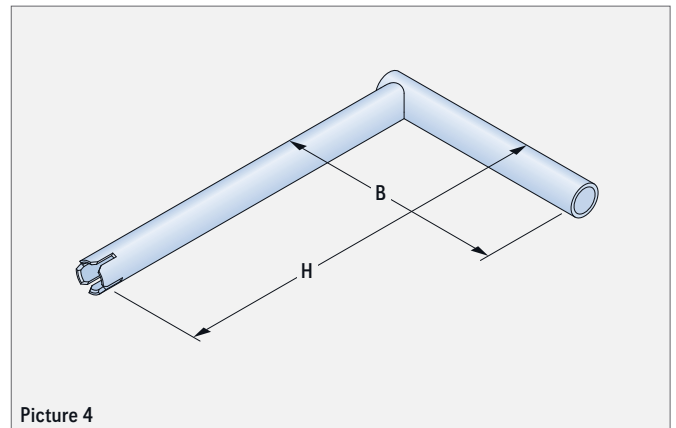
RETAINING CAP

KEY FOR PLASTIC RETAINING CAP KH

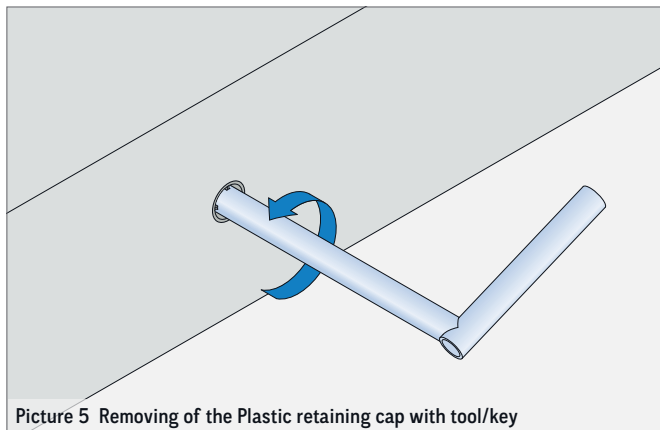
The tool/key is used for an easy unscrewing of the Plastic retaining cap KH from the transport anchor set in concrete. For all Plastic retaining caps (type 12-24) this tool can be used.

TABLE 2: KEY FOR PLASTIC RETAINING CAP KH

| Ref. no. | B (mm) | H (mm) |
|----------|-----------|-----------|
| 67WS | 130 | 220 |



Picture 4



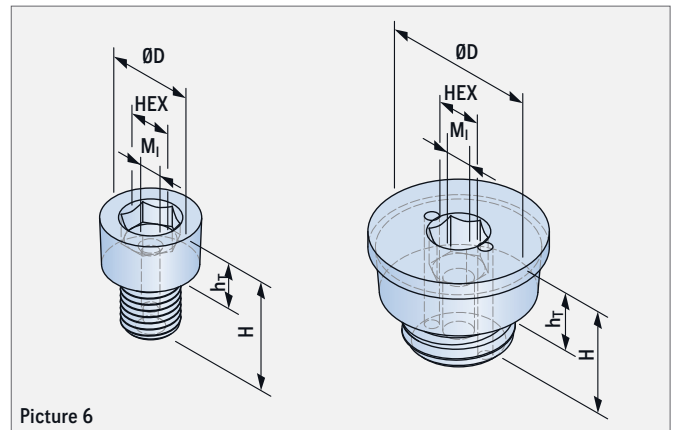
Picture 5 Removing of the Plastic retaining cap with tool/key

RETAINING CAP

STEEL RETAINING CAP KH

With Steel retaining caps KH threaded transport anchors can be fixed with screws (with metric thread) or nails to the formwork. Depending on the length of the Threaded transport anchors, it may be necessary to fix the anchor to the reinforcement of the concrete element additionally.

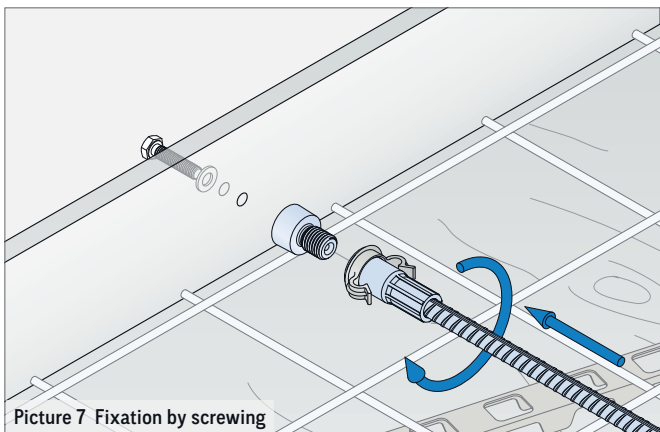
After demoulding, the Steel retaining cap KH can be quickly and easily removed with an Allen key (see table 3).



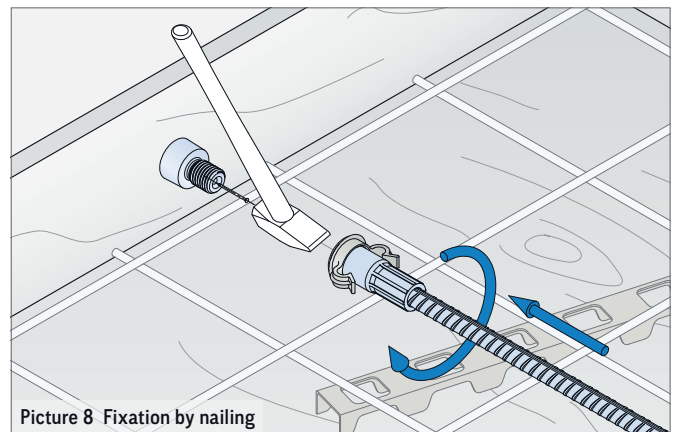
Picture 6

TABLE 3: STEEL RETAINING CAP KH

| Ref. no. | Type RD / M | Thread | M ₁ (mm) | ØD (mm) | H (mm) | h _T (mm) | HEX (mm) |
|-------------|----------------|--------|------------------------|------------|-----------|------------------------|-------------|
| 72KH12STAHL | 12 | M 12 | M6 | 27 | 35 | 15 | 14 |
| 72KH16STAHL | 16 | M 16 | M6 | 27 | 35 | 15 | 14 |
| 72KH20STAHL | 20 | M 20 | M10 | 27 | 35 | 15 | 14 |
| 72KH24STAHL | 24 | M 24 | M10 | 27 | 35 | 15 | 14 |
| 72KH30STAHL | 30 | M 30 | M10 | 48 | 35 | 19 | 14 |
| 72KH36STAHL | 36 | M 36 | M10 | 48 | 35 | 19 | 14 |
| 72KH42STAHL | 42 | M 42 | M10 | 48 | 45 | 19 | 14 |
| 72KH52STAHL | 52 | M 52 | M10 | 65 | 50 | 22 | 14 |



Picture 7 Fixation by screwing

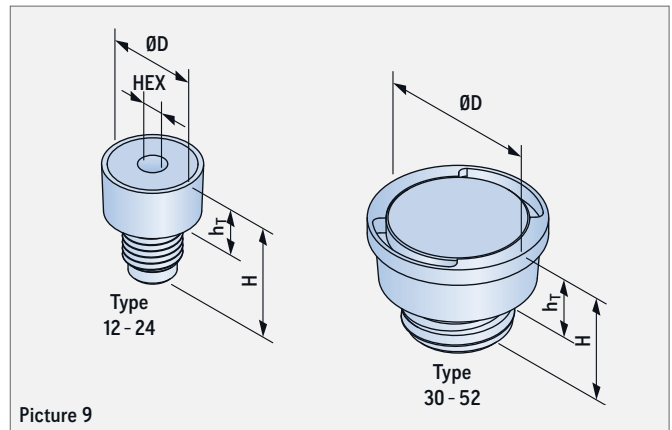


Picture 8 Fixation by nailing

RETAINING CAP

MAGNETIC RETAINING CAP KH

The Magnetic retaining caps KH are fixed to the steel formwork with an already screwed-on transport anchor. Here, a correction of the position on the formwork is possible at any time. In order to avoid a change of position of the transport anchor during concreting, it may be necessary, depending on the length of the transport anchor, to fix it additionally to the reinforcement of the concrete element. After the demoulding, the Magnetic retaining cap KH can be removed easily and quickly with an Allen key (type RD/M 12-24, see page 9) according to table 4 or by using a special key (type RD/M 30-52). In order to achieve the optimum adhesion force of the retaining cap KH the adhesive surface of the retaining cap and the steel formwork shall be cleaned after use.



Picture 9

TABLE 4: MAGNETIC RETAINING CAP KH

| Ref. no. | Type RD / M | Thread | ØD (mm) | H (mm) | h _T (mm) | Adhesion (kg) | HEX (mm) |
|-------------|----------------|--------|------------|-----------|------------------------|------------------|-------------|
| 72MAXKH12ST | 12 | M 12 | 27 | 35 | 15 | 20 | 7 |
| 72MAXKH16ST | 16 | M 16 | 27 | 35 | 15 | 20 | 7 |
| 72MAXKH20ST | 20 | M 20 | 27 | 35 | 15 | 20 | 7 |
| 72MAXKH24ST | 24 | M 24 | 27 | 35 | 15 | 20 | 7 |
| 72MAXKH30ST | 30 | M 30 | 48 | 35 | 19 | 50 | - |
| 72MAXKH36ST | 36 | M 36 | 48 | 35 | 19 | 50 | - |
| 72MAXKH42ST | 42 | M 42 | 48 | 45 | 19 | 50 | - |
| 72MAXKH52ST | 52 | M 52 | 65 | 50 | 22 | 50 | - |



FURTHER INFORMATION

HANDLING!

Improper handling may result in skin bruises and haematomas. Due to the high impact speeds, parts of the magnet can splinter and cause injuries. Magnets do not belong in children's hands. Also swallowing of the magnets can cause serious medical problems. Persons with pacemakers are advised to keep a certain safety distance to strong magnets. Also direct contact with magnetic materials can lead to allergic reactions (e.g. against ceramic and metallic materials as well as zinc, nickel or plastics).

TEMPERATURE!

Please note that the magnets have a maximum operating temperature of 80 °C. At temperatures above 80 °C, they may permanently lose some of their adhesive force.

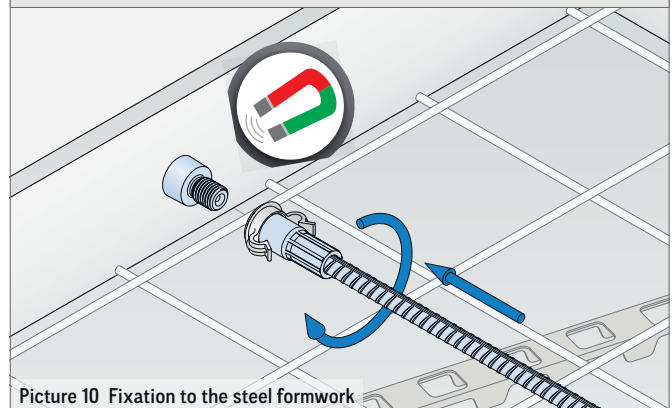
EFFECT!

Please note that magnetic fields can delete data media such as hard disks, cards with magnetic stripes etc. Electronic and mechanic components such as pacemaker, watches, counters, compasses, displays can be influenced or destroyed. Therefore, keep a distance of at least one metre to these objects.



NOTE ON CONCRETING

If concrete is poured over the magnetically fixed transport anchor, the magnetic recess former on the formwork may be displaced. To avoid this, the area of the anchor must be skipped during concreting



Picture 10 Fixation to the steel formwork

RESPONSIBILITY!

The Magnets are coated to protect them. This coat can be removed during normal use. Splintering of the coating is possible when magnets collide. But this does not affect the performance of the magnets and is no reason for complaint. Mechanical influences such as welding or grinding must be avoided in all cases.

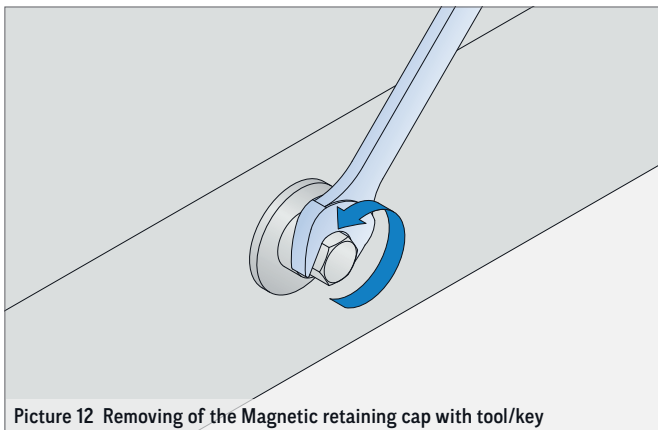
RETAINING CAP

KEY FOR MAGNETIC RETAINING CAP KH

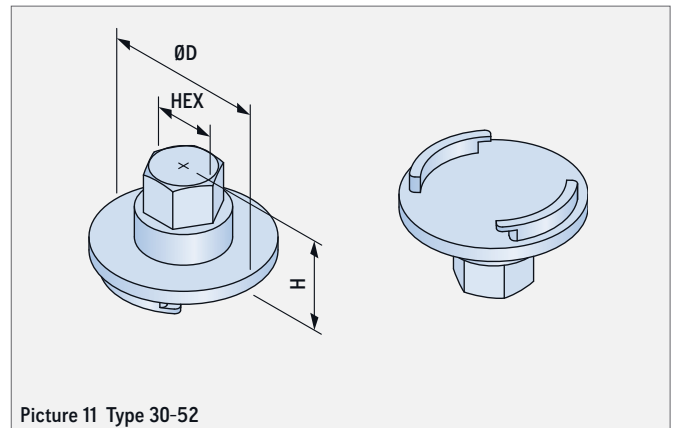
The tool/key is used for an easy unscrewing of the Magnetic retaining cap KH from the transport anchor set in concrete. Due to its special geometry, the tool/key can be used for all retaining cap sizes (type 30-52) of the KH system.

TABLE 5: KEY FOR MAGNETIC RETAINING CAP KH

| Ref. no. | ØD (mm) | H (mm) | HEX (mm) |
|-----------------|------------|-----------|-------------|
| 72MAXKHST-S3052 | 50 | 27 | 19 |



Picture 12 Removing of the Magnetic retaining cap with tool/key



Picture 11 Type 30-52

SEALING CAPS

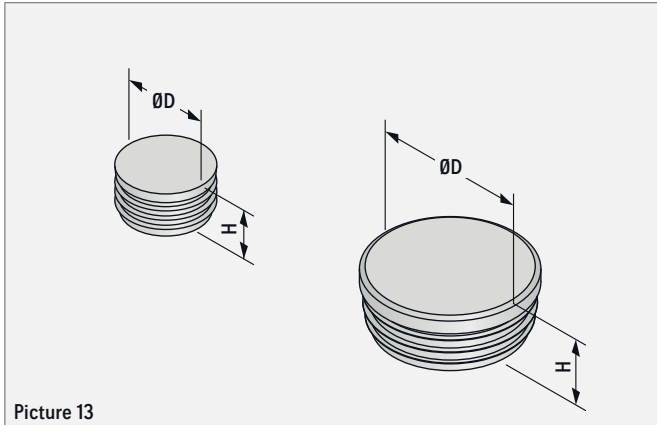
SEALING CAP KH (PLASTIC)

The Plastic sealing cap KH covers the complete range of thread sizes from 12 to 52 (table 9) with only four types. As the Plastic sealing cap is only pressed into the entire recess, it has no disturbing recesses on the visible surface for screwing in and out (slot, hexagon socket). Hence, the Plastic sealing cap offers an visual attractive solution to close recesses surface-flush.

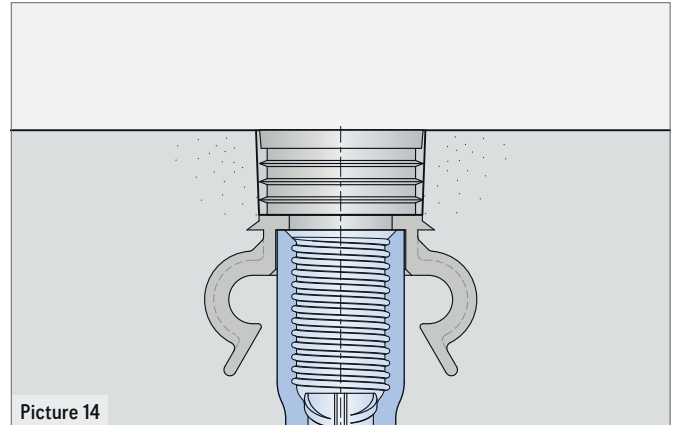


NOTE!

Sealing caps are used exclusively as visual attractive closing of the recesses and protection of the thread. In order to avoid damage to the concrete element (e.g. spalling due to frost), the user shall ensure that the Sealing caps are protected against moisture penetration.



Picture 13



Picture 14

TABLE6: SEALING CAP KH (PLASTIC, SURFACE-FLUSH)

| Ref. no. | Type RD / M | ØD (mm) | H (mm) |
|---------------|----------------|------------|-----------|
| 72AS01224PLAN | 12 - 24 | 27 | 15 |
| 72AS03042PLAN | 30 - 42 | 48 | 19 |
| 72AS052PLAN | 52 | 65 | 21 |

SEALING CAPS

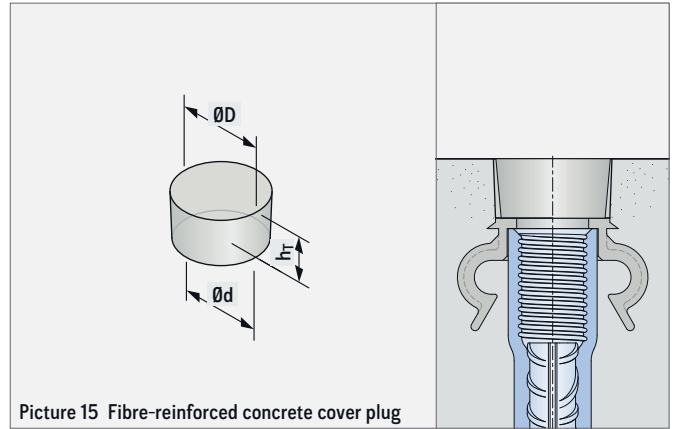
SEALING CAP KH (CONCRETE)

The KH concrete cover plug is a visually sophisticated and high-quality solution for sealing the recesses. The cover plug completely seals the entire recess.



NOTE!

Sealing caps are used exclusively as visual attractive closing of the recesses and protection of the thread. In order to avoid damage to the concrete element (e.g. spalling due to frost), the user shall ensure that the Sealing caps are protected against moisture penetration.



Picture 15 Fibre-reinforced concrete cover plug

TABLE 7: SEALING CAP KH (CONCRETE)

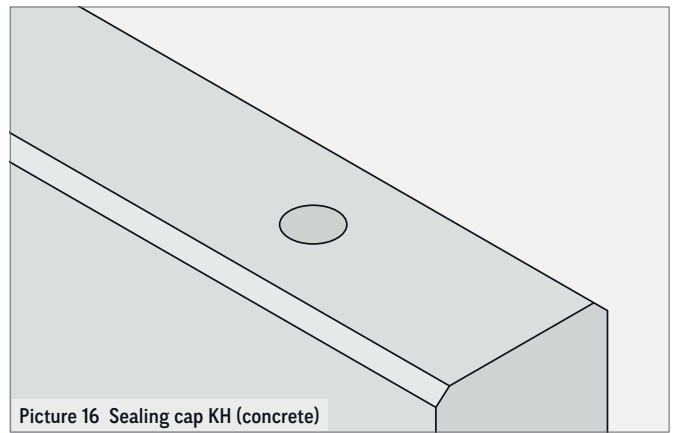
| Ref. no. | Type RD / M | ØD (mm) | Ød (mm) | h _T (mm) |
|-------------|----------------|------------|------------|------------------------|
| 72AS01224FB | 12 - 24 | 27 | 25 | 14 |
| 72AS03042FB | 30 - 42 | 48 | 40 | 19 |

Other colours are available on request.



COLOUR VARIATION

This product may vary in colour (within the delivery and to the finished part).



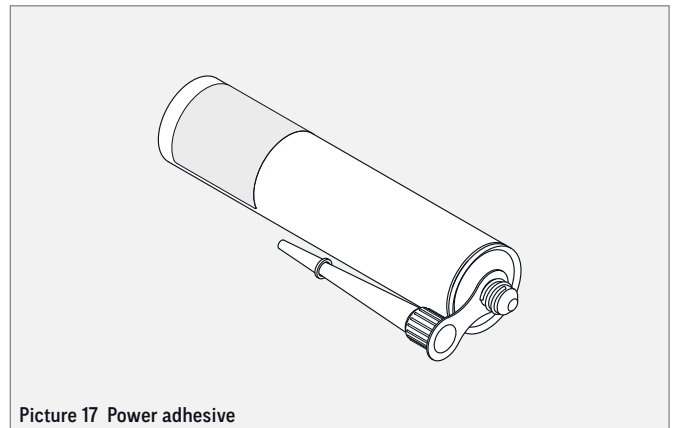
Picture 16 Sealing cap KH (concrete)

POWER ADHESIVE

The power adhesive is used to glue in the concrete cover plug KH. Complete bonding of the cover plugs significantly reduces the risk of damage caused by frost, for example.

TABLE 8: POWER ADHESIVE

| Ref. no. | Colour | Content (ml) |
|------------------|--------|-----------------|
| 72FB-KRAFTKLEBER | grey | 310 |



Picture 17 Power adhesive



PRODUCT TIP!

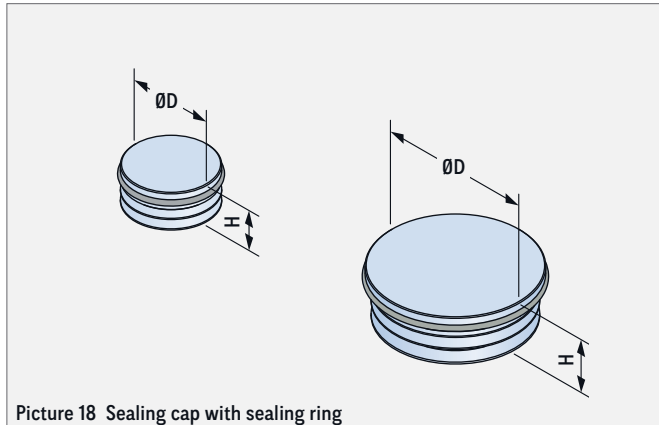
As direct force on the concrete cover plugs (e.g. in stairs) can lead to damage, we recommend using stainless steel cover plugs for installation! (see page 12 and 13)

SEALING CAPS

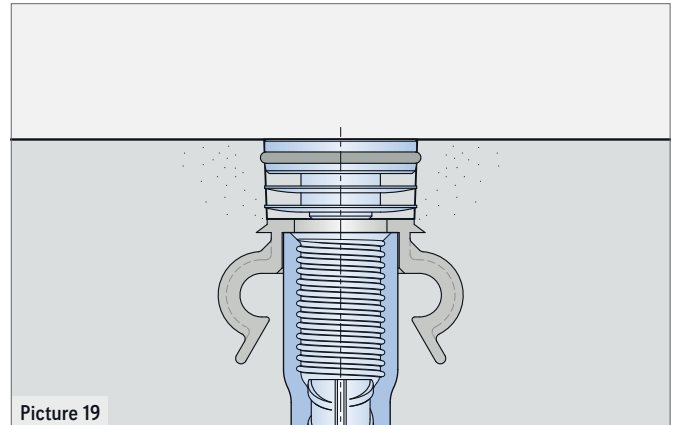
SEALING CAP KH (STAINLESS STEEL, FOR INDENTATION)

The stainless steel Sealing cap KH covers the complete range of thread sizes from 12 to 52 (table 9) with only three types. As the sealing cap is only pressed into the entire recess, it has no disturbing recesses on the visible surface for screwing in and out

(slot, hexagon socket). Hence, the Sealing cap in stainless steel offers an visual attractive solution to close recesses surface-flush. In addition, the cap has a sealing ring on the upper circumference to make it more difficult for water to penetrate.



Picture 18 Sealing cap with sealing ring



Picture 19

TABLE 9: SEALING CAP KH (STAINLESS STEEL, SURFACE-FLUSH)

| Ref. no. | Type RD / M | ØD (mm) | H (mm) |
|-------------|----------------|------------|-----------|
| 72AS01224VA | 12 - 24 | 27 | 15 |
| 72AS03042VA | 30 - 42 | 48 | 17 |
| 72AS052VA | 52 | 65 | 20 |

SEALING CAP

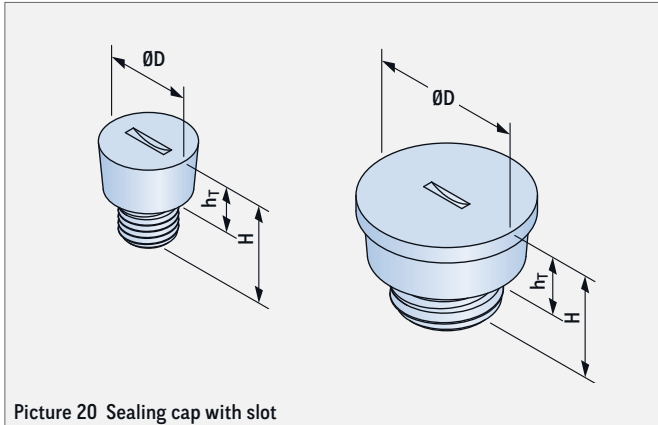
SEALING CAP KH (STAINLESS STEEL WITH SLOT)

The Sealing cap KH in stainless steel offers an visual attractive solution to close recesses surface-flush (picture 21 and 23 and picture 18). It is available with slot or hexagon socket on the visible surface to provide a possibility to unscrew and remove it.

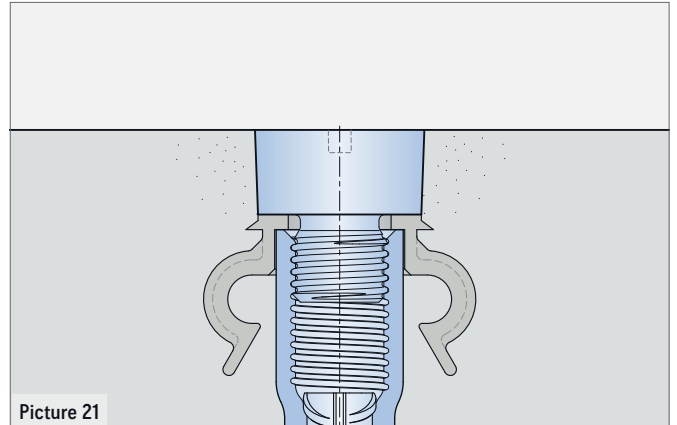


NOTE!

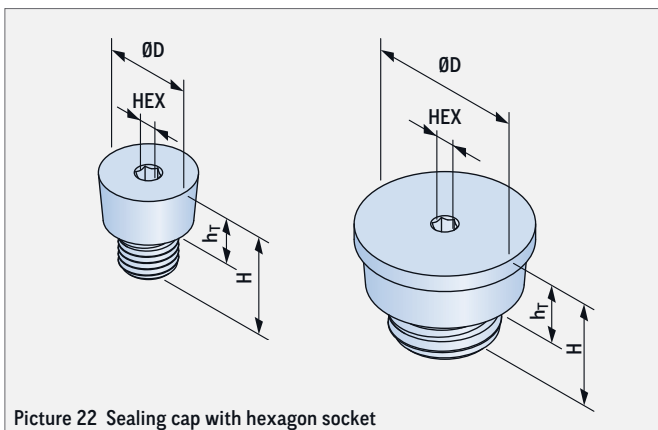
Sealing caps are used exclusively as visual attractive closing of the recesses and protection of the thread. In order to avoid damage to the concrete element (e.g. spalling due to frost), the user shall ensure that the Sealing caps are protected against moisture penetration.



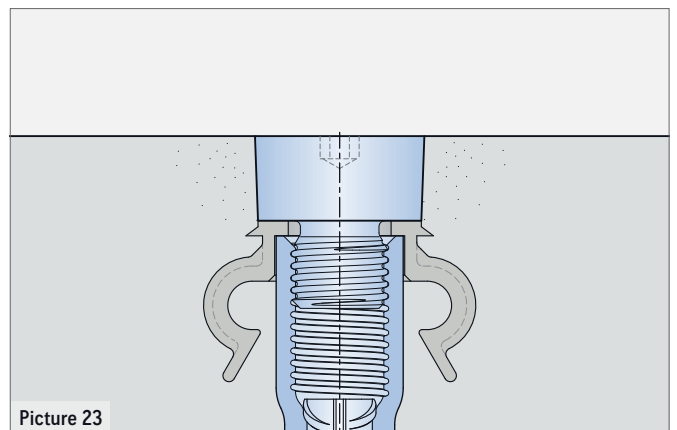
Picture 20 Sealing cap with slot



Picture 21



Picture 22 Sealing cap with hexagon socket



Picture 23

Table 10: Sealing cap KH (stainless steel)

| Ref. no. | | Type RD / M | Thread | ØD (mm) | H (mm) | h _T (mm) | HEX (mm) |
|-------------|---------------------|----------------|--------|------------|-----------|------------------------|-------------|
| with slot | with hexagon socket | | | | | | |
| 72AS012VA-S | 72AS012VA-ISK | 12 | M 12 | 27 | 30 | 15 | 6 |
| 72AS016VA-S | 72AS016VA-ISK | 16 | M 16 | 27 | 30 | 15 | 6 |
| 72AS020VA-S | 72AS020VA-ISK | 20 | M 20 | 27 | 30 | 15 | 6 |
| 72AS024VA-S | 72AS024VA-ISK | 24 | M 24 | 27 | 30 | 15 | 6 |
| 72AS030VA-S | 72AS030VA-ISK | 30 | M 30 | 48 | 35 | 19 | 6 |
| 72AS036VA-S | 72AS036VA-ISK | 36 | M 36 | 48 | 35 | 19 | 6 |
| 72AS042VA-S | 72AS042VA-ISK | 42 | M 42 | 48 | 35 | 19 | 6 |
| 72AS052VA-S | 72AS052VA-ISK | 52 | M 52 | 65 | 40 | 22 | 8 |

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