

# PHILIPPGROUP

## PHILIPP KH system



VB3-V-026-en - 03/20 - PDF

for PHILIPP Wirbelstar KH

Application Instruction

## Transport and mounting systems for prefabricated building

### ■ Technical department

Our staff will be pleased to support your planning phase with suggestions for the installation and use of our transport and mounting systems for precast concrete construction.

### ■ Special designs

Customized to your particular needs.

### ■ Practical tests on site

We ensure that our concepts are tailored precisely to your requirements.

### ■ Inspection reports

For documentation purposes and your safety.

### ■ On-site service

Our engineers will be pleased to instruct your technicians and production personnel at your plant, to advise on the installation of precast concrete parts and to assist you in the optimisation of your production processes.

### ■ High safety level when using our products

Close cooperation with federal materials testing institutes (MTIs), and official approvals for the use of our products and solutions whenever necessary.

### ■ Software solutions

The latest design software, animated videos and CAD libraries can always be found under [www.philipp-gruppe.de](http://www.philipp-gruppe.de).

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## The KH system – the perfect solution for successful architectural precast

This system has been developed specifically for architectural precast. Because the fact is: transport anchors create openings in precast concrete elements - not necessarily the dream of architects. We have set ourselves the target of finding a solution for these openings that meets the requirements of architects.

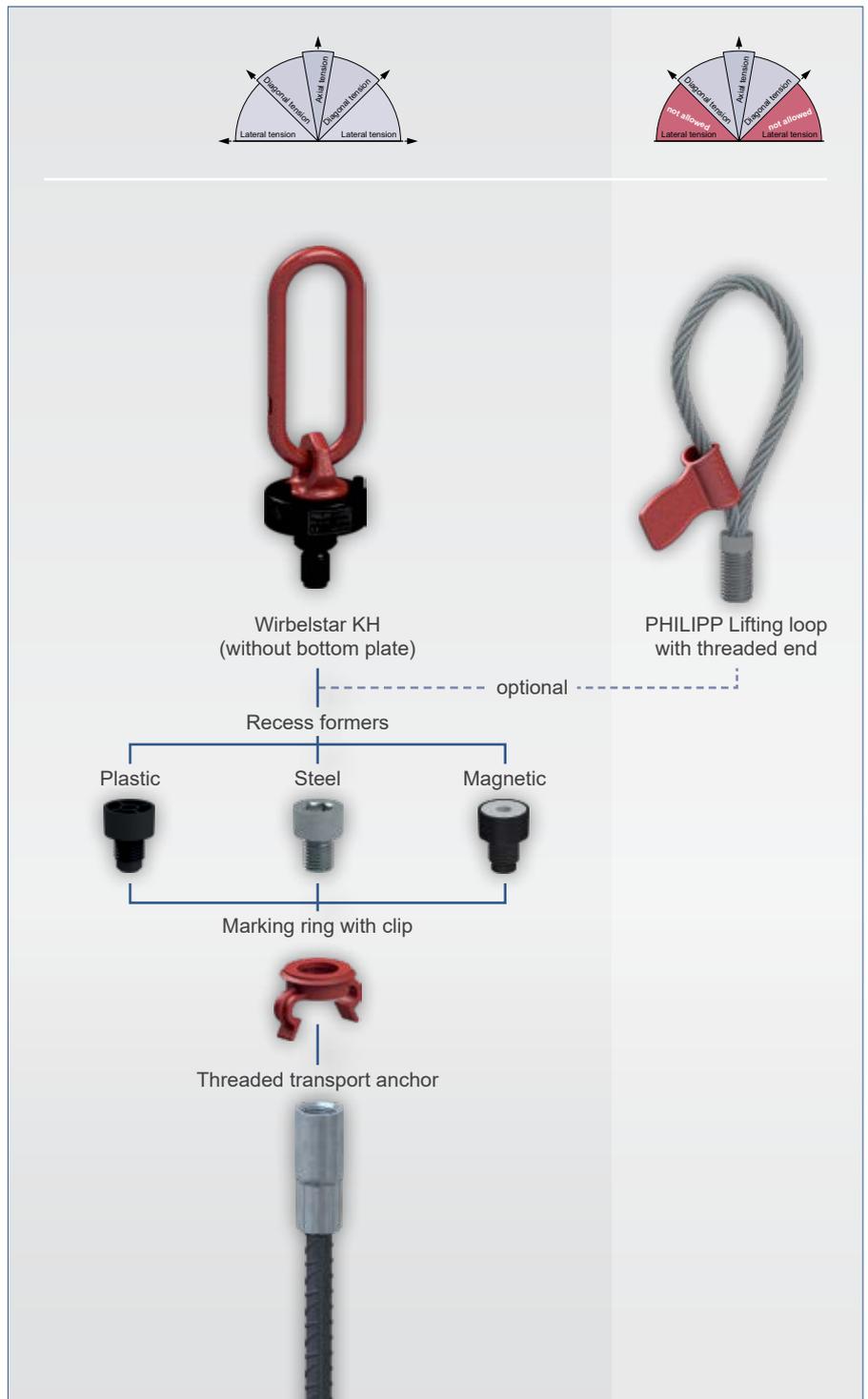
The result is an optimally designed system that offers the user the possibility of minimizing the openings created by the transport anchors in architectural precast elements and then covering them in style.

The KH 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 both plastic and stainless steel. 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:

- ☑ **Lifting device**
  - ☑ 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 (stainless steel)
- ☑ **Transport anchor**
  - ☑ Can be combined with all PHILIPP Threaded transport anchors type RD



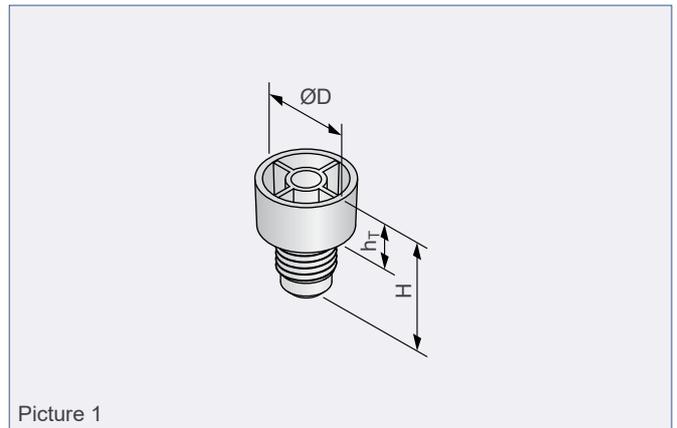
For further information about possible combinations of lifting devices, recess formers and sealing caps please refer to the document *Threaded transport anchors system-Combinations!*



## Retaining cap

### Plastic retaining cap KH

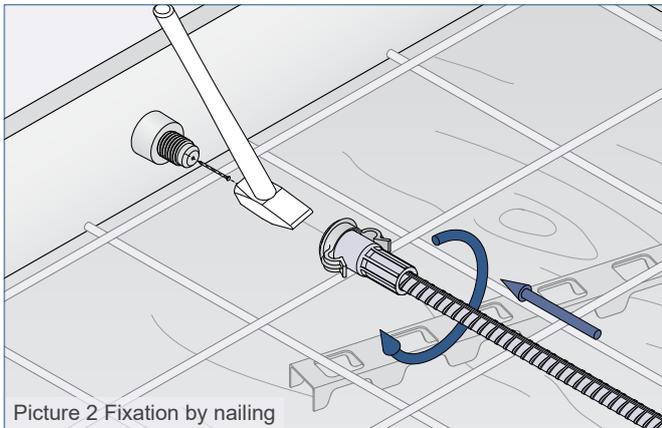
Firstly, the Plastic retaining caps KH are fixed to the formwork by nailing or hot bonding. Now the Threaded transport anchor can be screwed onto the fixed retaining cap KH. In order to avoid a change of position of the transport anchor during concreting, it may be necessary, depending on the length 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).



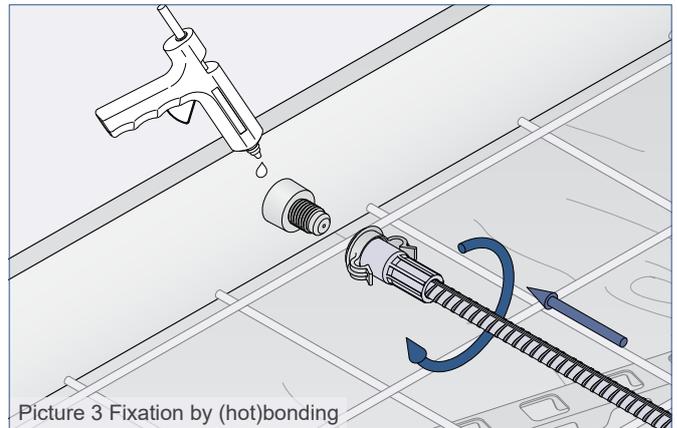
Picture 1

**Table 1: Plastic retaining cap KH**

Ref.-no.	Type RD/M	Thread	ØD [mm]	H [mm]	h <sub>T</sub> [mm]
72KH12	12	M 12	27	35	15
72KH14	14	M 14	27	35	15
72KH16	16	M 16	27	35	15
72KH18	18	M 18	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

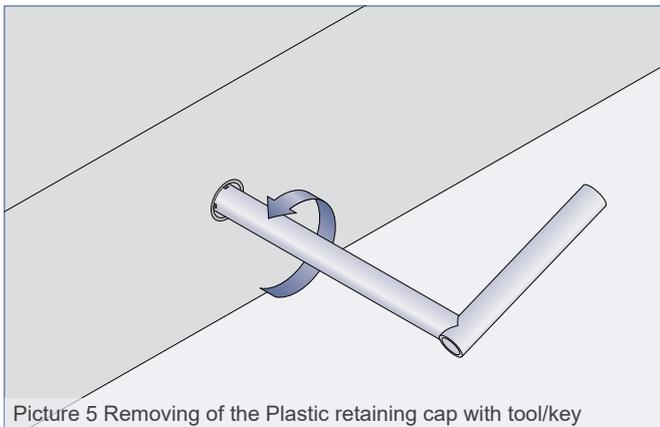
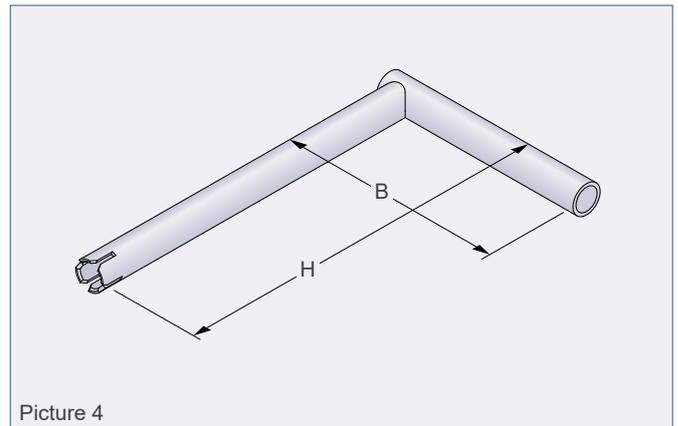
## Retaining cap

### 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

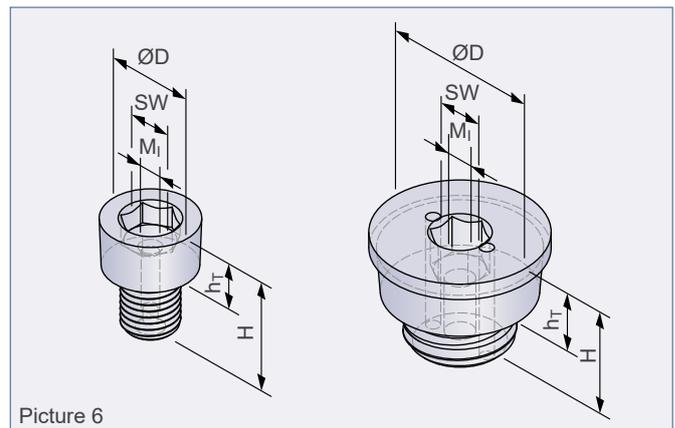


## Retaining cap

### 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.

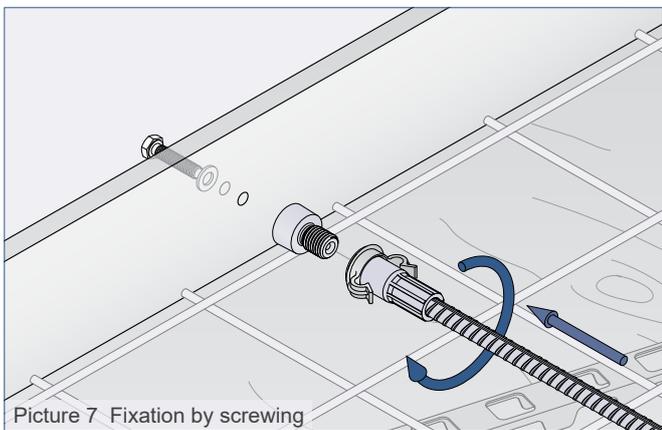
After demoulding, the Steel retaining cap KH can be quickly and easily removed with an Allen key (see table 3).



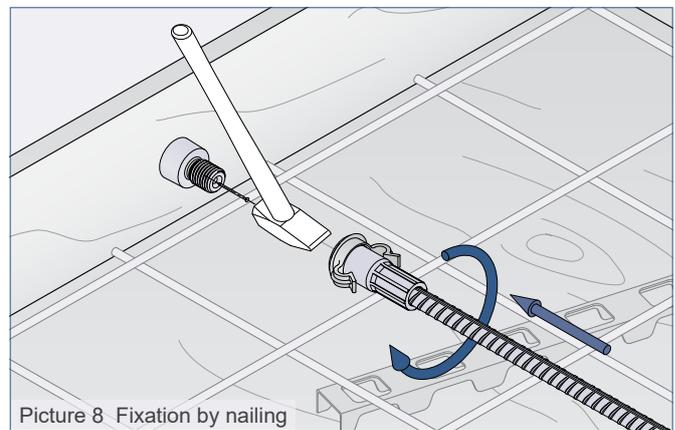
Picture 6

**Table 3: Steel retaining cap KH**

Ref.-no.	Type RD / M	Thread	M <sub>i</sub> [mm]	ØD [mm]	H [mm]	h <sub>T</sub> [mm]	SW [mm]
72KH12STAHL	12	M 12	M6	27	35	15	14
72KH14STAHL	14	M 14	M6	27	35	15	14
72KH16STAHL	16	M 16	M6	27	35	15	14
72KH18STAHL	18	M 18	M10	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

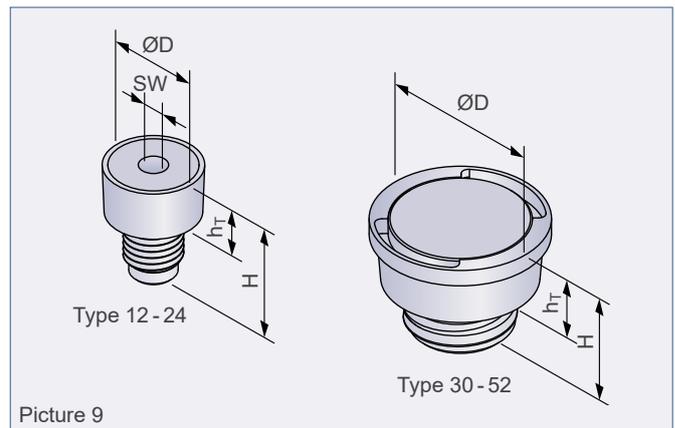


Picture 8 Fixation by nailing

## Retaining cap

### Magnetic retaining cap KH

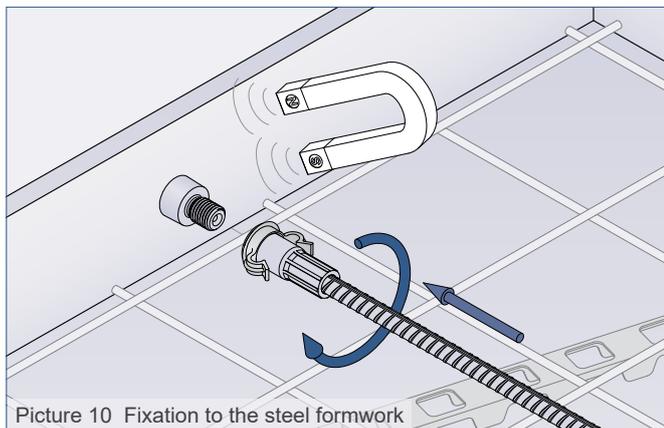
The Magnetic retaining caps KH are fixed to the steel formwork with an already screwed-on transport anchor. Here, a correction of the position on the formwork is possible at any time. In order to avoid a change of position of the transport anchor during concreting, it may be necessary, depending on the 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 Magnetic 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 <sub>T</sub> [mm]	SW [mm]
72MAXKH12ST	12	M 12	27	35	15	7
72MAXKH14ST	14	M 14	27	35	15	7
72MAXKH16ST	16	M 16	27	35	15	7
72MAXKH18ST	18	M 18	27	35	15	7
72MAXKH20ST	20	M 20	27	35	15	7
72MAXKH24ST	24	M 24	27	35	15	7
72MAXKH30ST	30	M 30	48	35	19	-
72MAXKH36ST	36	M 36	48	35	19	-
72MAXKH42ST	42	M 42	48	45	19	-
72MAXKH52ST	52	M 52	65	50	22	-



Picture 10 Fixation to the steel formwork



### 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).

### 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.

### 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.

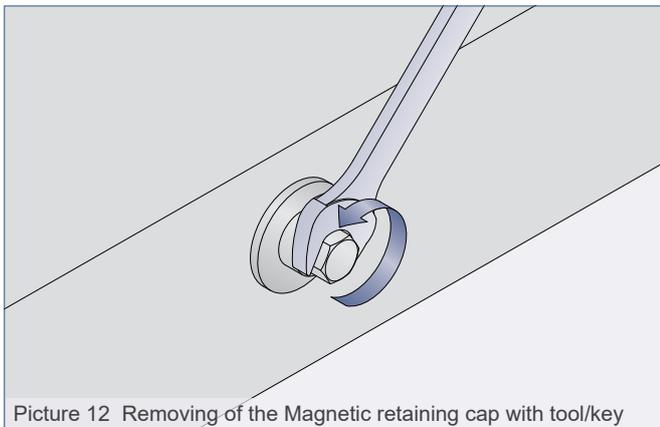
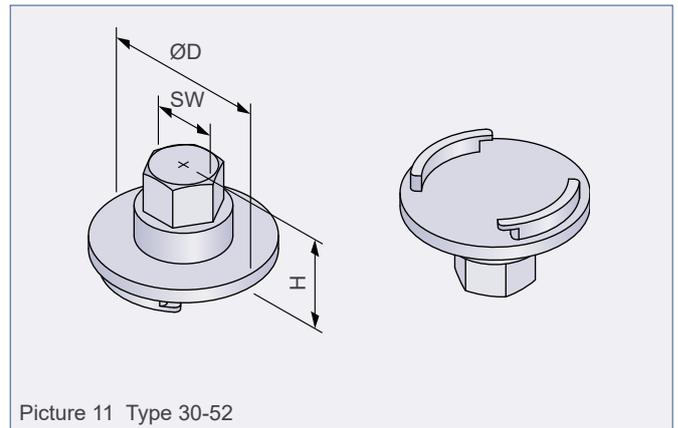
## Retaining cap

### 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]	SW [mm]
72MAXKHST-S3052	50	27	19

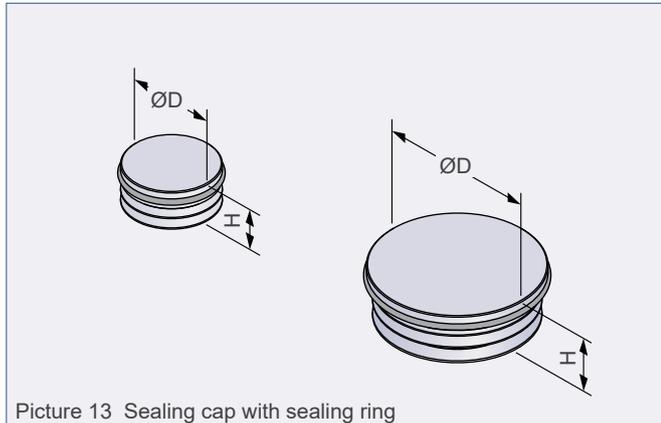


## Sealing caps

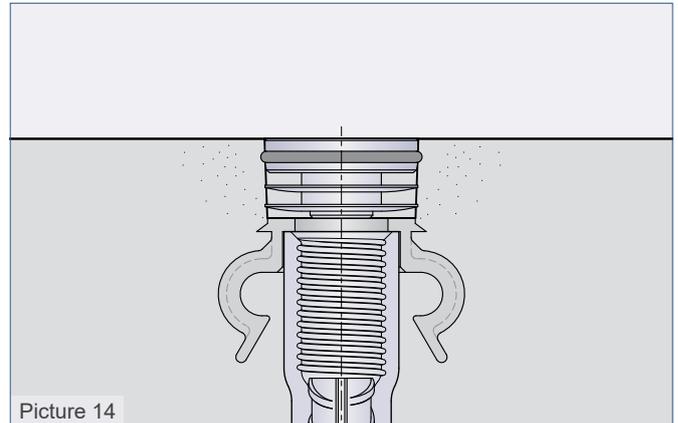
### Sealing cap KH (stainless steel, for indentation)

The stainless steel Sealing cap KH covers the complete range of thread sizes from 12 to 52 (table 6) with only three types. As the sealing cap is only pressed into the Threaded transport anchor, 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 13 Sealing cap with sealing ring



Picture 14

**Table 6: Sealing cap KH (stainless steel, surface-flush)**

Ref.-no.	Type RD / M	ØD [mm]	H [mm]
72ASO1224VA	12 - 24	27	15
72ASO3042VA	30 - 42	48	17
72ASO52VA	52	65	20

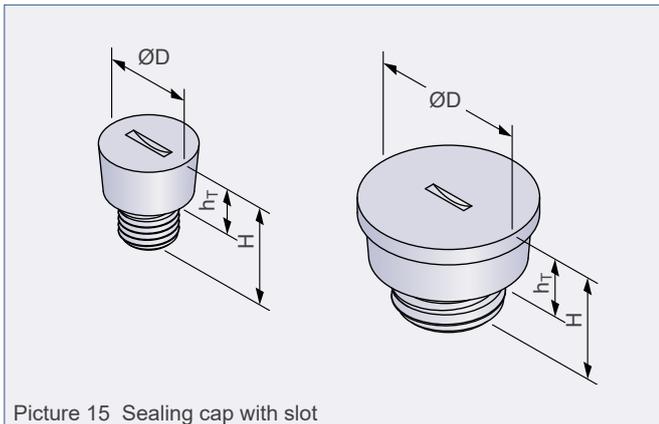
## Sealing cap

### Sealing cap KH (stainless steel)

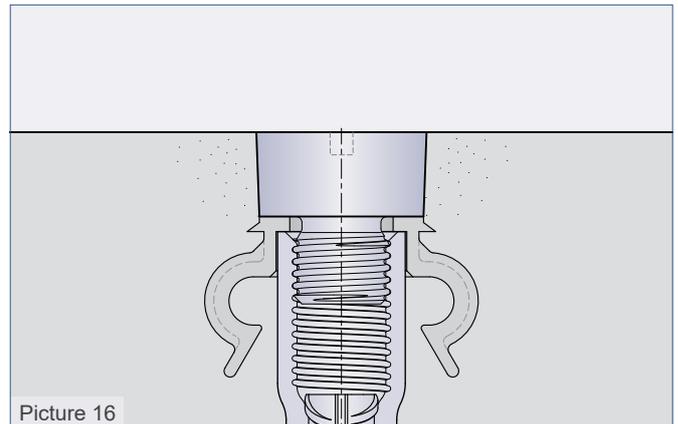
The Sealing cap KH in stainless steel offers an visual attractive solution to close recesses surface-flush (picture 16 and picture 18). It is available with slot or hexagon socket on the visible surface to provide a possibility to unscrew and remove it.



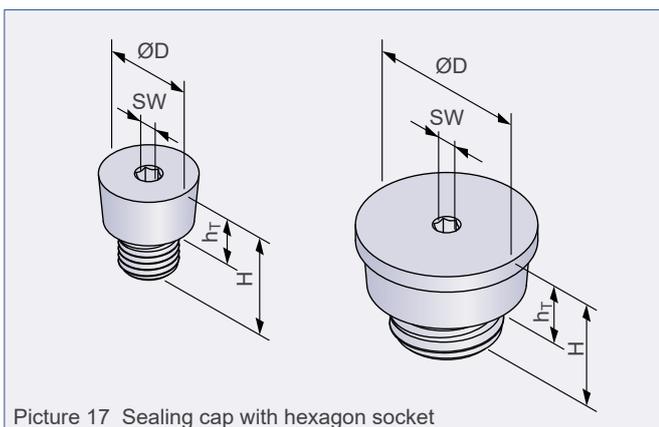
Sealing caps are used exclusively as visual attractive closing of the recesses and protection of the thread. In order to avoid damage to the concrete element (e.g. spalling due to frost), the user shall ensure that the Sealing caps are protected against moisture penetration.



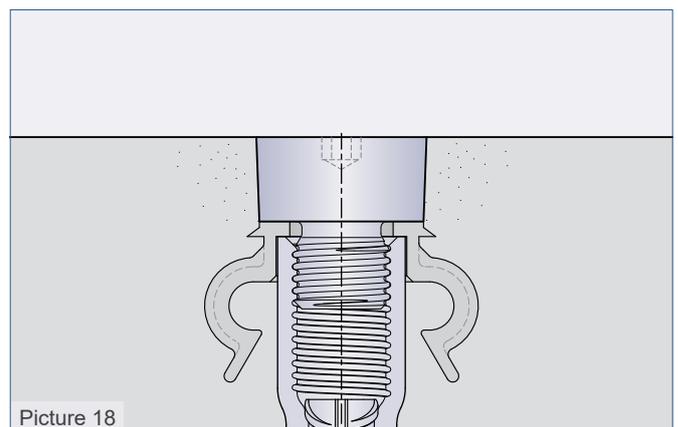
Picture 15 Sealing cap with slot



Picture 16



Picture 17 Sealing cap with hexagon socket



Picture 18

**Table 7: Sealing cap KH (stainless steel)**

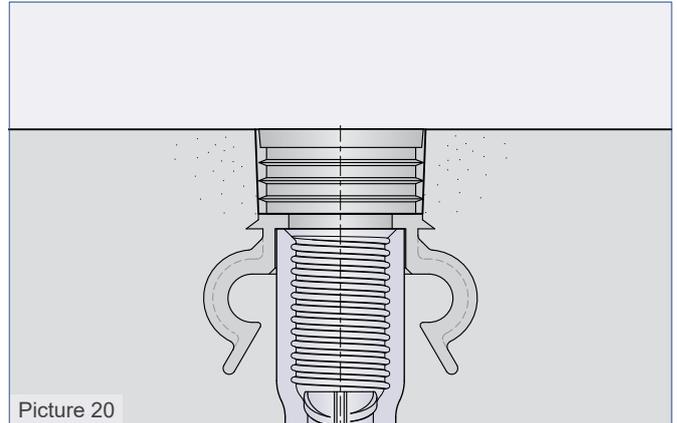
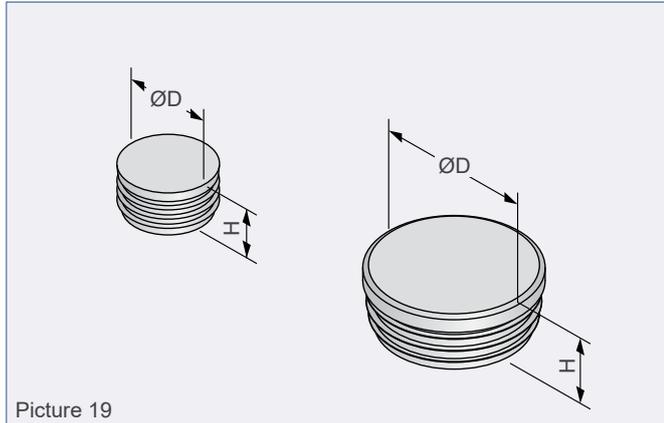
Ref.-no.		Type RD / M	Thread	ØD [mm]	H [mm]	h <sub>T</sub> [mm]	SW [mm]
with slot	with hexagon socket						
72ASO12VA-S	72ASO12VA-ISK	12	M 12	27	30	15	6
72ASO14VA-S	72ASO14VA-ISK	14	M 14	27	30	15	6
72ASO16VA-S	72ASO16VA-ISK	16	M 16	27	30	15	6
72ASO18VA-S	72ASO18VA-ISK	18	M 18	27	30	15	6
72ASO20VA-S	72ASO20VA-ISK	20	M 20	27	30	15	6
72ASO24VA-S	72ASO24VA-ISK	24	M 24	27	30	15	6
72ASO30VA-S	72ASO30VA-ISK	30	M 30	48	35	19	6
72ASO36VA-S	72ASO36VA-ISK	36	M 36	48	35	19	6
72ASO42VA-S	72ASO42VA-ISK	42	M 42	48	35	19	6
72ASO52VA-S	72ASO52VA-ISK	52	M 52	65	40	22	8

## Sealing cap

### Sealing cap (plastic)

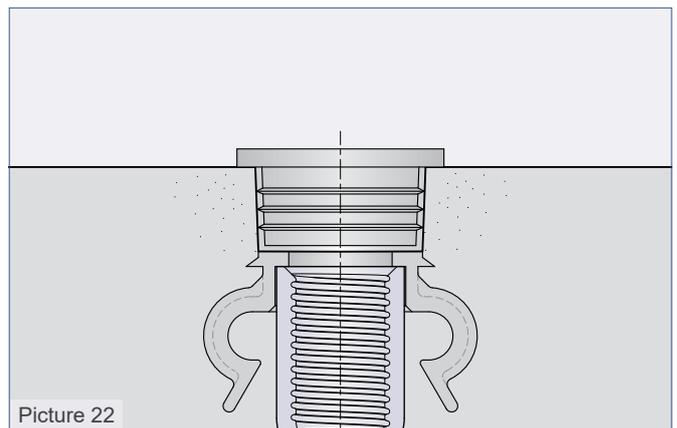
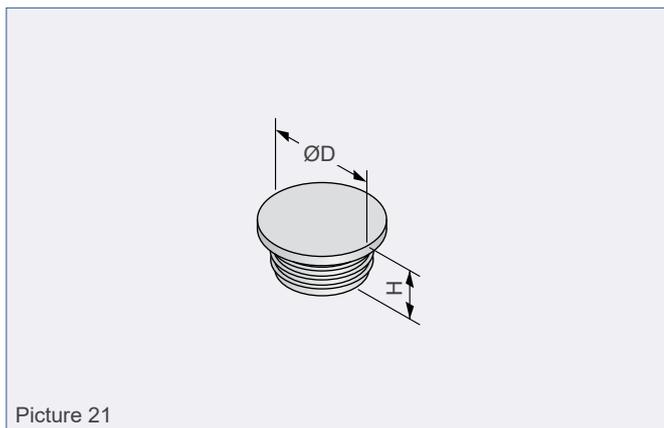
The Plastic sealing cap KH covers the complete range of thread sizes from 12 to 52 (table 9) with only four types. As the Plastic sealing cap is only pressed into the Threaded transport anchor, it has no disturbing recesses on the visible surface for screwing in and out (slot, hexagon socket). Hence,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

 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.



**Table 8: Sealing cap KH (plastic, surface-flush)**

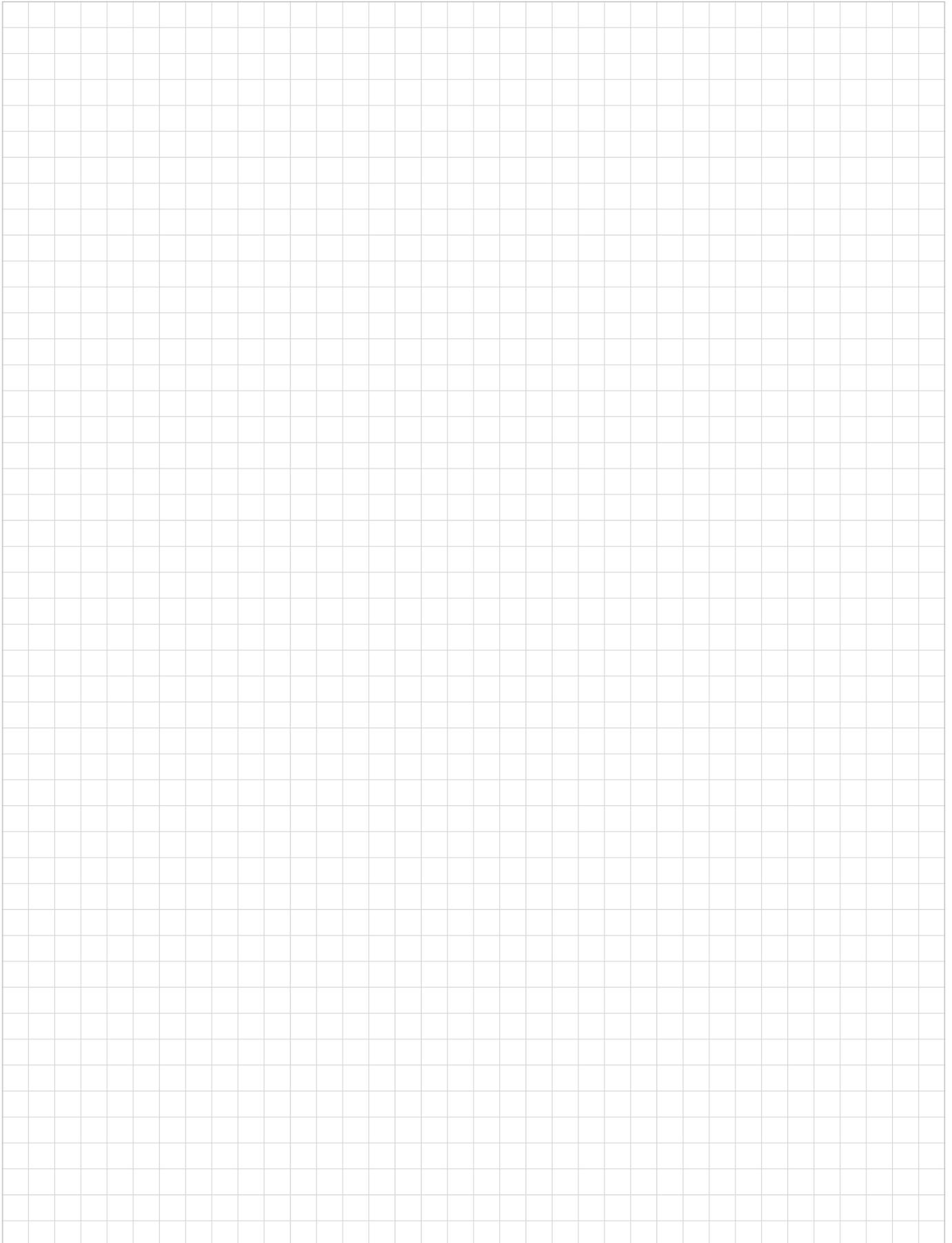
Ref.-no.	Type RD / M	ØD [mm]	H [mm]
72ASO1224PLAN	12 - 24	27	15
72ASO3042PLAN	30 - 42	48	19
72ASO52PLAN	52	65	21



**Table 9: Sealing cap KH (plastic, with overlap)**

Ref.-no.	Type RD / M	ØD [mm]	H [mm]
72ASO	12 - 24	34	16

Notes:



Our customers trust us to deliver. We do everything in our power to reward their faith and we start each day intending to do better than the last. We provide strength and stability in an ever-changing world.

## Welcome to the PHILIPP Group

Sustainable  
solutions

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