TÜV CERT
DIN EN ISO 9001
Reg.-Nr. 73 100 1561

PHILIPP GROUP

Swivel Lifting Device - PHILIPP Wirbelstar

Using Instruction

PHILIPP GROUP
QUALITY MADE IN GERMANY

Special Version KH

Committed. Competent. Your reliable partner.

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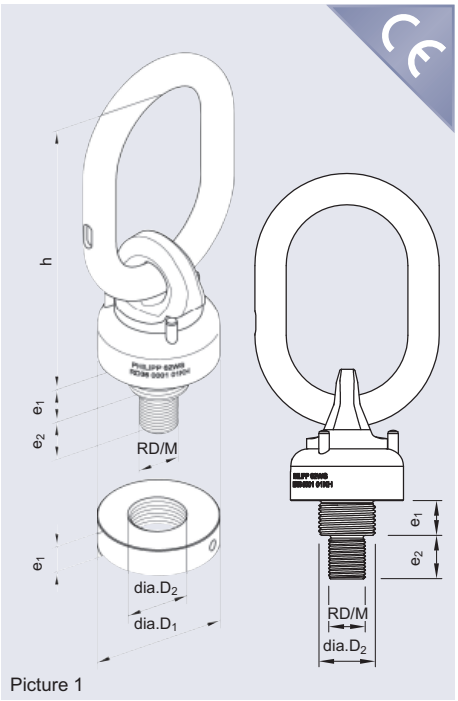
07/07 - EN

USING INSTRUCTIONS OF PHILIPP WIRBELSTAR KH

The **PHILIPP Wirbelstar KH** is part of the **PHILIPP Transport Anchor System** and complies with the „safety rules for transport anchors and -systems for precast concrete units“ (BGR 106).

On use of **PHILIPP Wirbelstar KH** attention must be paid to this using instruction, the installation instruction of **PHILIPP Transport Anchor System** as well as the general part.



Picture 1

Version: KH

Table 1: Load Bearing Capacities and Dimensions

Art.-No. RD-Thread	Art.-No. M-Thread	Type	Load Bearing Capacity F_Z 0°-90°	dia. D_1	dia. D_2	b	h	e_1	e_2
			[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
62WS12KH	62WS12MKH	12	5.0	47	24	35	125	14	16
62WS14KH	62WS14MKH	14	8.0	52	24	35	126	14	18
62WS16KH	62WS16MKH	16	12.0	56	24	35	151	14	21
62WS18KH	62WS18MKH	18	16.0	59	24	60	152	14	23
62WS20KH	62WS20MKH	20	20.0	70	24	60	158	14	26
62WS24KH	62WS24MKH	24	25.0	74	24	75	187	14	31
62WS30KH	62WS30MKH	30	40.0	90	42	90	219	14	39
62WS36KH	62WS36MKH	36	63.0	101	42	100	255	14	47

The weight of 1.0ton results in 10kN.

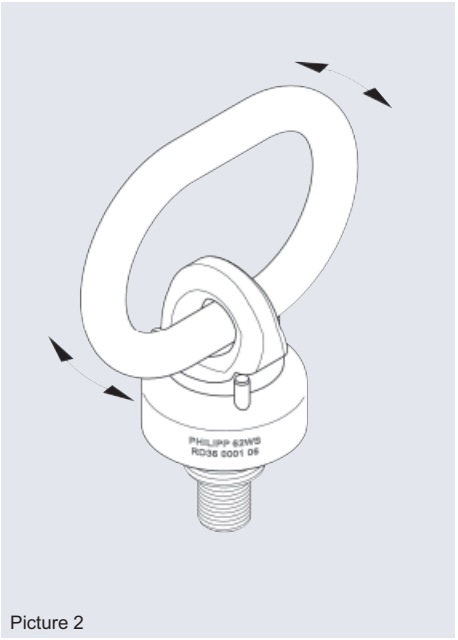
1. Material

The **PHILIPP Wirbelstar KH** consists of a forged ring bolt with a chain link and a bottom plate made from special hardened steel. The inside construction consists of a bearing inlay.

2. Application

The **PHILIPP Wirbelstar KH** is used as a lifting device within the **PHILIPP Transport Anchor System**. The **PHILIPP Wirbelstar KH** is available with metric or special RD thread (with metric pitch) and can be screwed in the threaded anchor like a normal screw. The chain link is used to tighten or loosen **PHILIPP Wirbelstar KH**. Therefore the chain link must be pulled through the ring bolt so that its recesses fits to one of the three pins located at the circumference of the **PHILIPP Wirbelstar KH**. This efficient lever-arm enables convenient tightening and removing without any tool. The **PHILIPP Wirbelstar KH** must be driven in a way that the bottom plate has throughout contact with the concrete surface. This is particularly important because on lifting the **PHILIPP Wirbelstar KH** a deviation is initiated and spalling is largely prevented. Due to that bending and damage to the thread can be avoided.

The PHILIPP Wirbelstar KH is especially suitable for lateral and diagonal tension and is therefore excellently convenient for tilt-up of flat manufactured panels.


Picture 2

Because of it’s ball-bearing, the hanger moves after achievement of the nominal load bearing into the right diagonal force direction without removing the bottom plate of the **PHILIPP Wirbelstar KH**.
The use of **PHILIPP Wirbelstar KH** with adapter plate requires **PHILIPP Recess Former** (72SAT12K until 72SAT36K or 72SATM12K until 72SATM36K). Thus the vertical location of **PHILIPP Wirbelstar KH** is guaranteed.

USING INSTRUCTIONS OF PHILIPP WIRBELSTAR KH

Due to its double thread the **PHILIPP Wirbelstar KH** can be used as usual Wirbelstar (Picture 3) and as Wirbelstar-special version (KH) (Picture 4) for the installation in a sunk position. The threaded anchor must then be installed by using a special fixing device (article no. 72KH..).

The application of Wirbelstar KH is only admissible with this spezial recess former.

3. Safety Advice

The PHILIPP Wirbelstar KH counts as lifting device and is therefore subject of an annual inspection (BGR 500 Section 2.8). This inspection must be executes by an expert and is the responsibility of the user. The **PHILIPP Wirbelstar KH** is maintenance-free. Because of its ball-bearing, penetration of dirt can be largely excluded.

In general the particular accident prevention regulations must be taken into account.
The right hook size and form should be considered because thus the durability can be extended.

The component parts of the **PHILIPP Wirbelstar KH** are manufactured with a special thermal procedure. Welding and other strong heating influences on the **PHILIPP Wirbelstar KH** are inadmissible.

If during use or inspection it occurs that chain link and bottom plate heavily twist against each other, send it to **PHILIPP Group** for correction maintenance.

If the **PHILIPP Wirbelstar KH** was loaded by exceptional forces (e.g. overstraining) an extraordinary inspection must be carried out by an expert.
The inspection should include the below mentioned criterions.

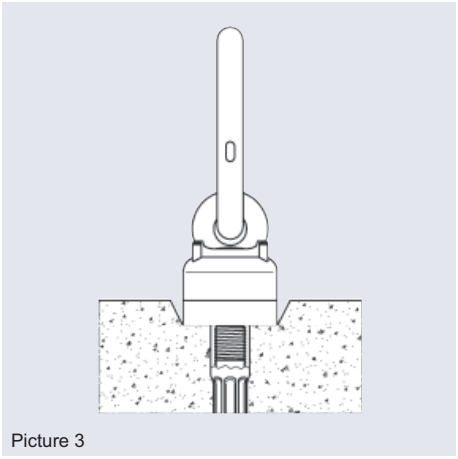
The use of damaged load equipment or items which are already in replacement state is inadmissible. The replacement state of the **PHILIPP Wirbelstar KH** is determined according to the German regulation (BGR 500 section 2.8).

4. Replacement State and Inspection

Prior inspection the **PHILIPP Wirbelstar KH** must be cleaned and the following points must be taken account:

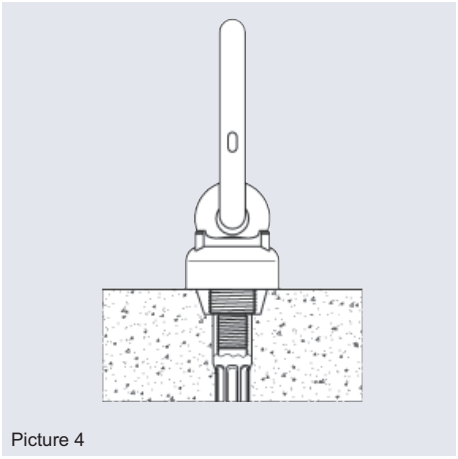
- on plastic deformation the replacement state of the **PHILIPP Wirbelstar KH** is reached. Those deformations can be.
  - deformed chain link (Picture 5)
  - deformed thread
  - stretching caused by overload (Picture 6 and Table 2)
- on exceeding of permissible wear measures, replacement state of wear is also reached.

If you wish a proper and documented inspection please don't hesitate to contact our **PHILIPP Inspection Service** under the following telephone number: +49 (0) 6021/ 4027-0.



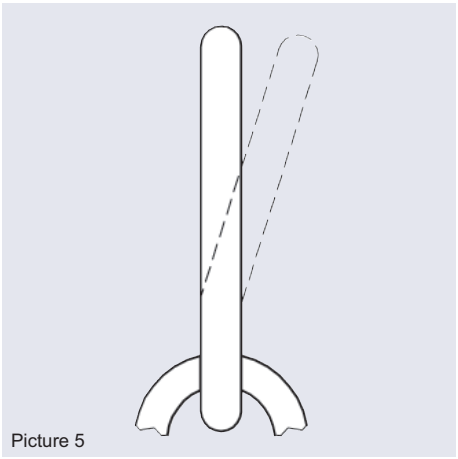
Picture 3

Application with recess former for Wirbelstar



Picture 4

Application with fixing device (Typ KH)

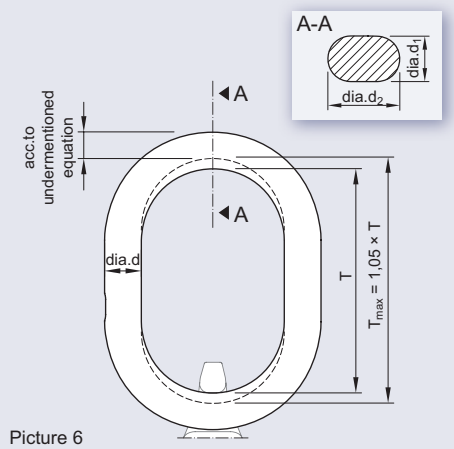


Picture 5

Table 2: Inspection Measures of the Chain Link

Type	Pitch T [mm]	T_{max}=1.05 × T [mm]	dia.d [mm]	0.9 × dia.d [mm]
12	85	89	10.0	9.0
14	85	89	10.0	9.0
16	110	116	10.0	9.0
18	95	100	16.0	14.4
20	102	107	16.0	14.4
24	125	131	18.0	16.2
30	148	155	22.0	19.8
36	160	168	26.0	23.4

Furthermore the radius of the chain link diameter should be observed during inspection. The replacement state for this part is reached, if the chain link has a diminution by 10% (Picture 6,7 and Table 3).

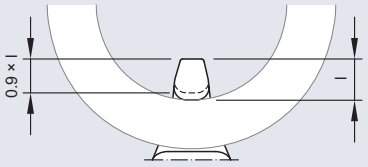


Picture 6

$$\frac{dia.d_1 + dia.d_2}{2} > 0{,}9 \times dia.d$$

Table 3: Inspection Measures of the Ring Bolt

Type	l [mm]	l × 0.9 [mm]
12	10.0	9.0
14	10.0	9.0
16	10.0	9.0
18	17.0	15.3
20	17.0	15.3
24	17.0	15.3
30	22.0	19.8
36	28.0	25.2



Picture 7

5. Marking

The **PHILIPP Wirbelstar** is marked as follows:

- manufacturer
- year of manufacturing
- load bearing capacity
- type/ thread size
- CE marking