

# PFEIFER swivel eyes

Item-No. 05.051  
Item-No. 05.052

For use by:

- trained and qualified personal



**PFEIFER**

Thread System  
Lifting device

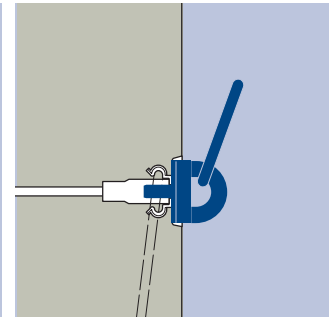
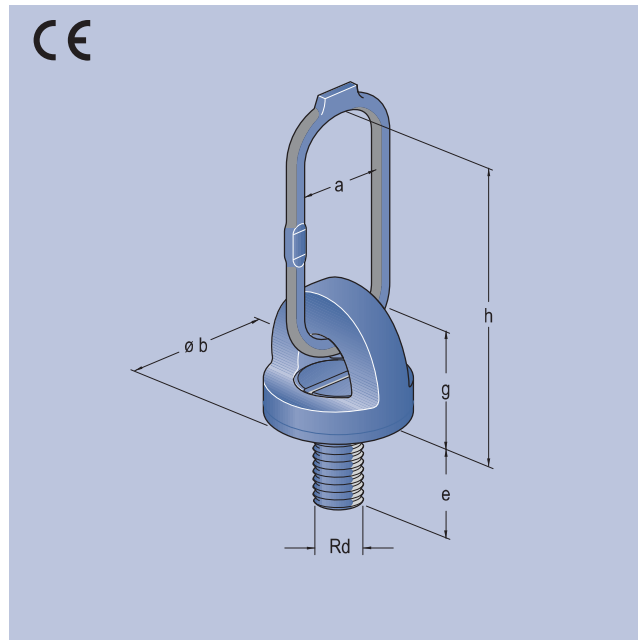
The PFEIFER swivel eye is the most universal lifting device for the PFEIFER thread system. The pivot plate can turn to any load direction without becoming unscrewed.

Straight pull, parallel and transversal shear pull are thereby possible.

**Advantages:** Reliable lifting device, long service life, safe attachment for all load directions, unambiguous assignment of use through PFEIFER colour coding

Material:

Steel, threaded bolt in special quality, lacquer as in the colour coding



PFEIFER swivel eyes

Item No.	Type/Size	N <sub>R, adm</sub> [kN]	V <sub>R, adm</sub> [kN]	Rd	Dimensions [mm]			g	h	Weight approx. [kg/piece]
					a	b	e			
05.051.121	Rd 12	5	2,5	Rd 12 x 1,75	50	47	16	48	115	0,45
05.051.141	Rd 14	8	4,0	Rd 14 x 2,00	50	52	18	50	114	0,50
05.051.161	Rd 16	12	6,0	Rd 16 x 2,00	60	56	21	60	152	0,85
05.051.181	Rd 18	16	8,0	Rd 18 x 2,50	60	59	23	62	150	0,90
05.051.201	Rd 20	20	10,0	Rd 20 x 2,50	60	69	26	74	160	1,55
05.051.241	Rd 24	25	12,5	Rd 24 x 3,00	75	74	31	78	185	2,00
05.051.301	Rd 30	40	20,0	Rd 30 x 3,50	90	89	39	90	220	3,60
05.051.361	Rd 36	63	31,5	Rd 36 x 4,00	100	101	47	107	255	5,50
05.051.421	Rd 42	80	40,0	Rd 42 x 4,50	100	109	55	112	255	6,20
05.051.521	Rd 52	125	62,5	Rd 52 x 5,00	140	129	68	131	345	13,20
05.052.561	Rd 56	150	—	Rd 56 x 5,50	140	200	70	165	370	21,50
05.052.601	Rd 60	200	—	Rd 60 x 5,50	180	250	75	190	470	39,00



**Notice:** Swivel eyes in sizes Rd 56 and Rd 60 are intended for loads at angles of inclination up to max. 12,5°. Transversal shear pull, such as when erecting wall elements, is not intended for swivel eyes Rd 56 and Rd 60.

Technical installation instructions on page 75

Example order for 50 PFEIFER swivel eyes Rd 30: 50 PFEIFER swivel eyes, Ref.-No. 05.051.301

Slab edge installation

Slab face installation

Lifting Anchor

Column-shaped installation

Specialised applications

Accessories

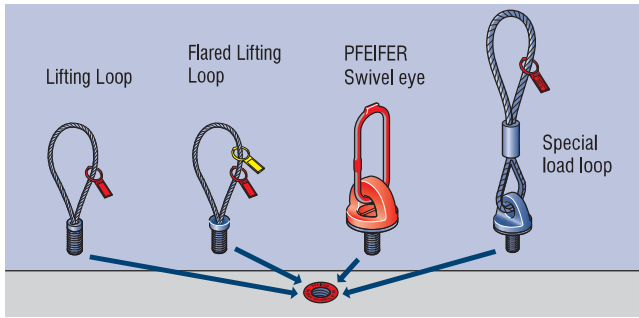
Lifting device

General Technical Info

# Instructions for installation and use

## System

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS



The PFEIFER lifting devices lifting loop, swivel eye and special lifting loops are the only admissible lifting devices that are part of the PFEIFER thread system. In combination with concreted-in PFEIFER lifting anchors they form the matching lifting anchor system. This provides an unambiguous allocation of the lifting devices according to thread type and size.

**Caution:** The instructions for installation and use of the selected anchor type must be complied with!

**Warning:** The use of non-matched system components can cause reduced safety levels and is not permitted. This can cause a hazard to life and limb. Always use the PFEIFER components that are matched to each other!

## Safety

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS

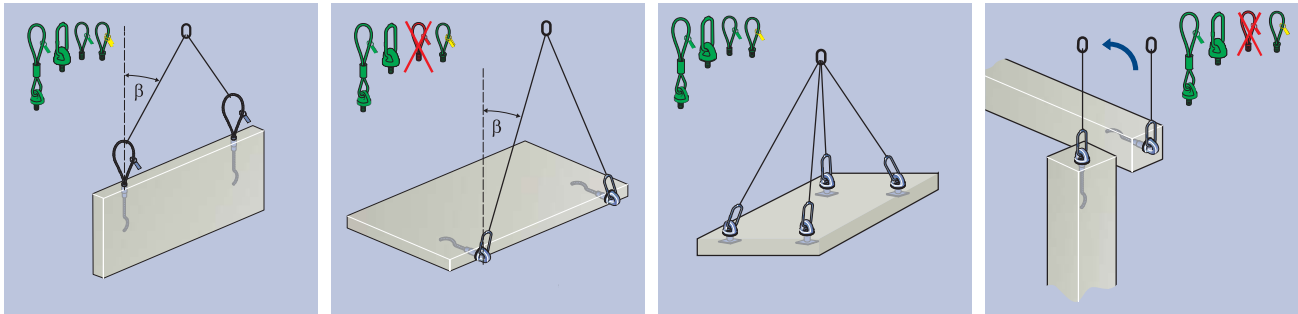
The following safety parameter values for the PFEIFER lifting anchor system are derived as follows in accordance with the VDI/BV-BS 6205 directive, with the prerequisite of the machinery directive 2006/42/EC. For this, a load-side dynamic working coefficient  $\psi_{dyn} = 1.3$  was assumed.

- Steel failure wire rope:  $\gamma_s = 4,0$
  - Steel failure chains or full sections:  $\gamma_s = 3,0$
  - Concrete failure (procedure B\*):  $\gamma_c = 2,5$
  - Concrete failure (procedure A\*):  $\gamma_c = 2,1$
- \* for factory monitored fabrication of the prefab concrete elements

## Use

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PFEIFER lifting loops, swivel eyes and special lifting loops are intended to be lifting devices for the lifting anchors of the PFEIFER thread system. Other lifting devices – recognisable from differing manufacturer/type designation – are not permitted. The PFEIFER lifting loops, swivel eyes and special lifting loops must be fully screwed into the lifting anchor threaded sockets as far as the stop.



## Dimensioning

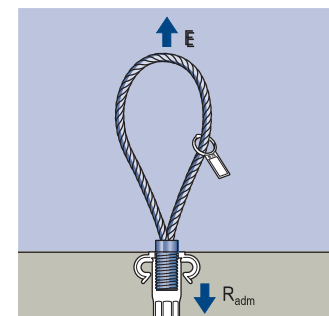
FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS

Table 1

Type/thread Rd	Maximum load capacity		Colour coding	Minimum screw-in depth t [mm]				Minimum curvature radius for special lifting loops and lifting loop (see p. 13) R [mm]
	$N_{R, adm} / (0^\circ-45^\circ)$ [kN]	$V_{R, adm} / (>45^\circ)$ [kN]						
12 x 1,75	5,0	2,5	Pastel orange	20	16	16	20	9,0
14 x 2,00	8,0	4,0	Pure white	22	18	18	-	9,0
16 x 2,00	12,0	6,0	Flame red	25	21	21	24	10,5
18 x 2,50	16,0	8,0	Light pink	29	23	23	-	12,0
20 x 2,50	20,0	10,0	Pastel green	33	26	26	33	14,5
24 x 3,00	25,0	12,5	Anthracite grey	40	31	31	39	16,5
30 x 3,50	40,0	20,0	Emerald green	56	39	39	51	21,0
36 x 4,00	63,0	31,5	Light blue	67	47	47	63	24,0
42 x 4,50	80,0	40,0	Silver grey	80	55	55	-	30,0
52 x 5,00	125,0	62,5	Sulphur yellow	97	68	68	-	36,0
56 x 5,50	150,0	-	Pastel orange	-	70	70	-	42,0
60 x 5,50	200,0	-	Flame red	-	75	75	-	46,0

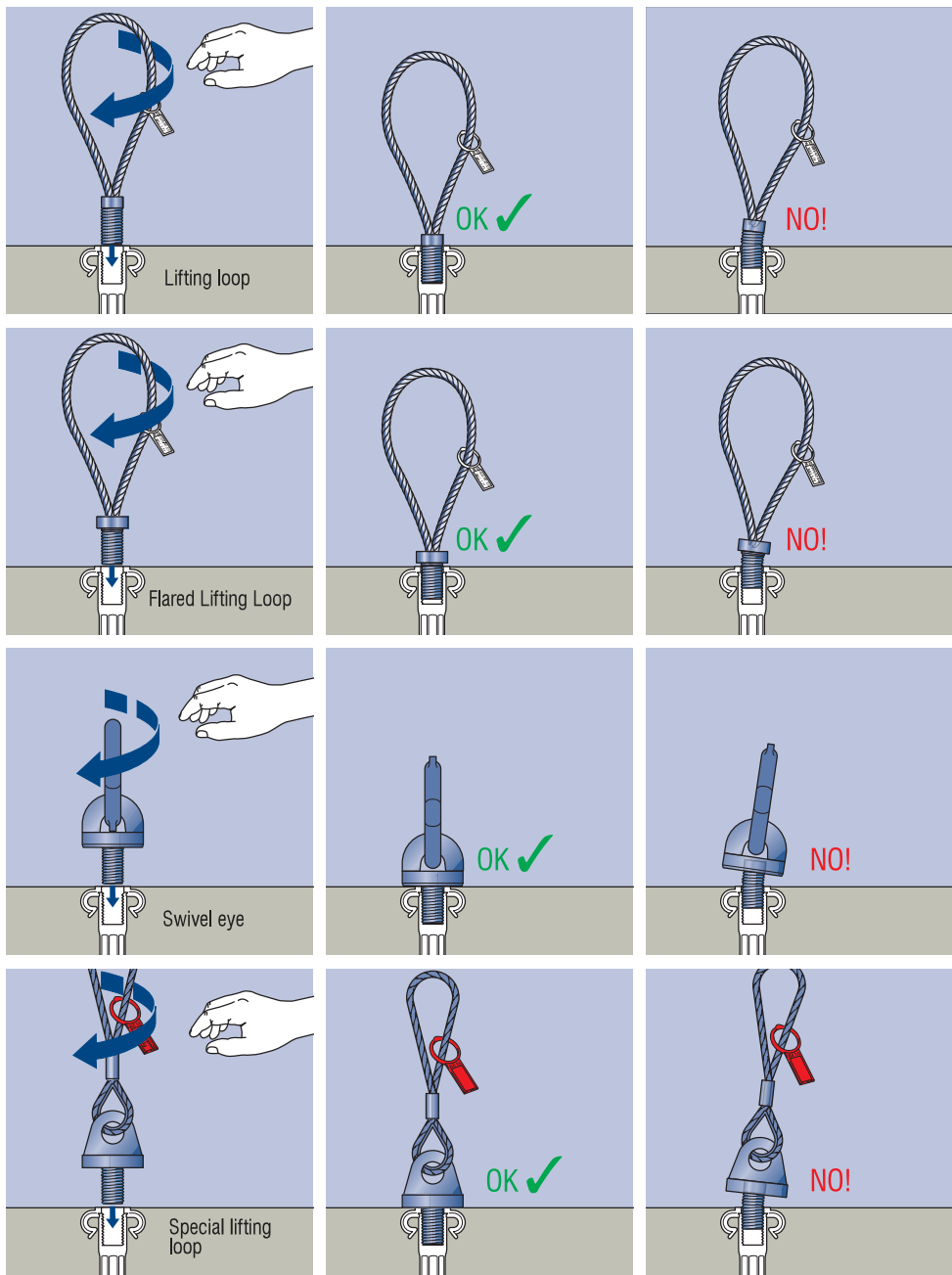
$$E \leq R_{adm}$$

**Notice:** determination of stress according to VDI/BV-BS 6205



# Installation

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS



**Warning:** An inadequate screw-in depth reduces the safety level or can even result in failure. This can result in injury or death. Screw the thread in fully to the last turn (see Table 1)! No more than one thread pitch may protrude from the lifting anchor.

**Notice:** The flared lifting loop is completely screwed in the socket by hand. In doing so, the flare has finally no contact with the concrete surface! There's always a small gap between the flared lifting loop and the concrete element (see page 77).

**Warning:** A rotation mechanism that is faulty because of dirt or damage results in unscheduled loads that can result in reduced carrying capacities and hence falling down. Check that the rotary mechanism rotates freely before putting it into use.

**Caution:** It is not permitted to use grippers, iron bars or similar tools for screwing in and out. This can damage the lifting devices. Always screw the lifting devices in and out manually!

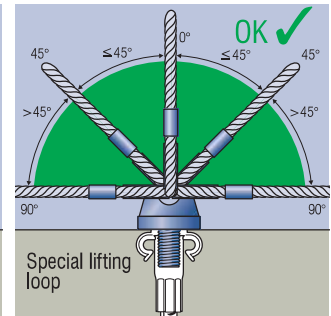
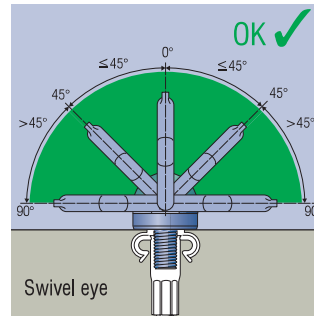
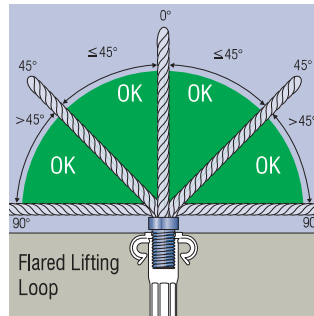
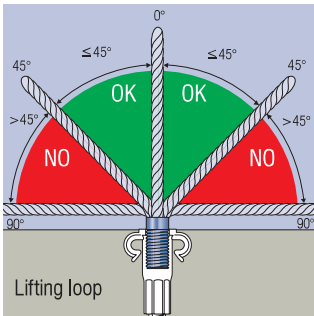
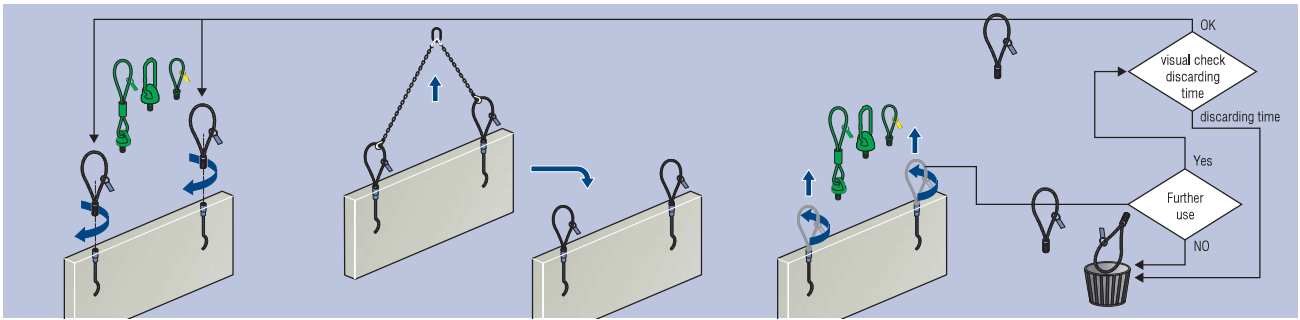
**Warning:** Using force to screw in the lifting devices can cause damage. This reduces the carrying capacity and falls can result. This causes a hazard to life and limb. Lifting devices must always be screwed in gently by hand.

**Warning:** Dirty threads of lifting devices and anchors can reduce the screw-in depth. This reduces the carrying capacity and structural elements can fall down as a result. This causes a hazard to life and limb. The thread must always be clean and lubricated! If appropriate, dirty thread in the lifting anchor should be cleaned using the reworking screw (p. 67), so that the full screw-in depth is available!

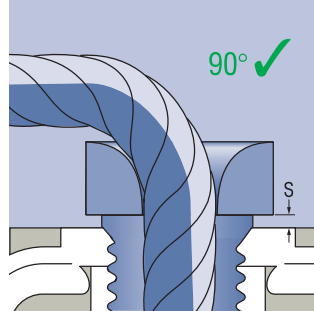
# Use

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<b>Tensile load</b>	0 – 45°	0 – 45°	0 – 45°	0 – 45°
<b>Transverse shear load</b>	<b>NO!</b>	<b>OK ✓</b>	<b>OK ✓</b>	Rd 12-52 <b>✓</b> Rd 56-60 <b>NO!</b>
<b>Temperature</b>	-20 to 80 °C	-20 to 80 °C	-20 to 80 °C	-20 to 80 °C



**Caution:** PFEIFER lifting devices can be over 4 kg in weight depending on their size. Injury can result if they fall. All extremities must be kept away from the hazardous area.

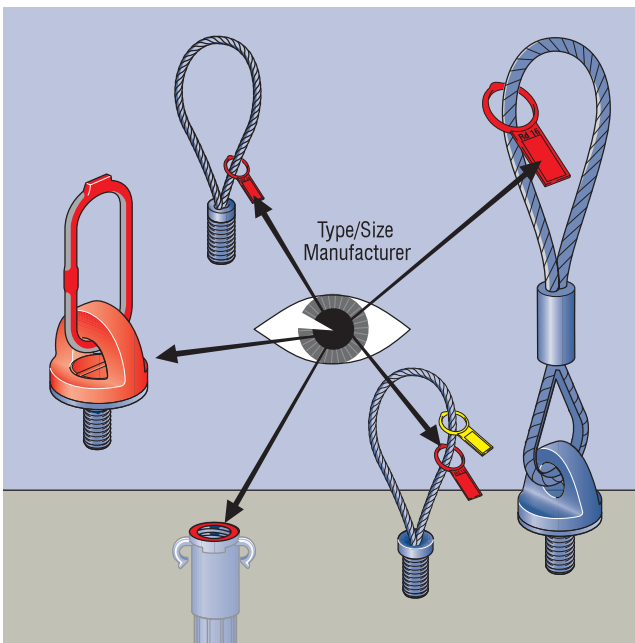


**Table 2 – Scheduled gaps in Flared Lifting Loop**

Type	Gap size S
Rd 12	1,75 mm
Rd 16	2,00 mm
Rd 20	3,00 mm
Rd 24	4,00 mm
Rd 30	4,00 mm
Rd 36	6,00 mm

## Use

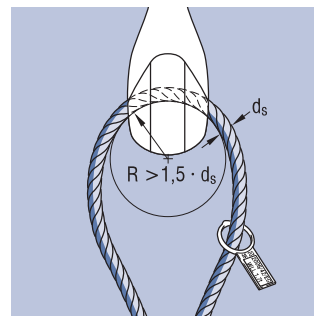
FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS



Check the system consistency by inspecting the data clip of the lifting anchor and the load capacity identification tag of the lifting loop.

Information on the markings:  
 – Type/Size – EC marking  
 – Year of manufacture – Manufacturer

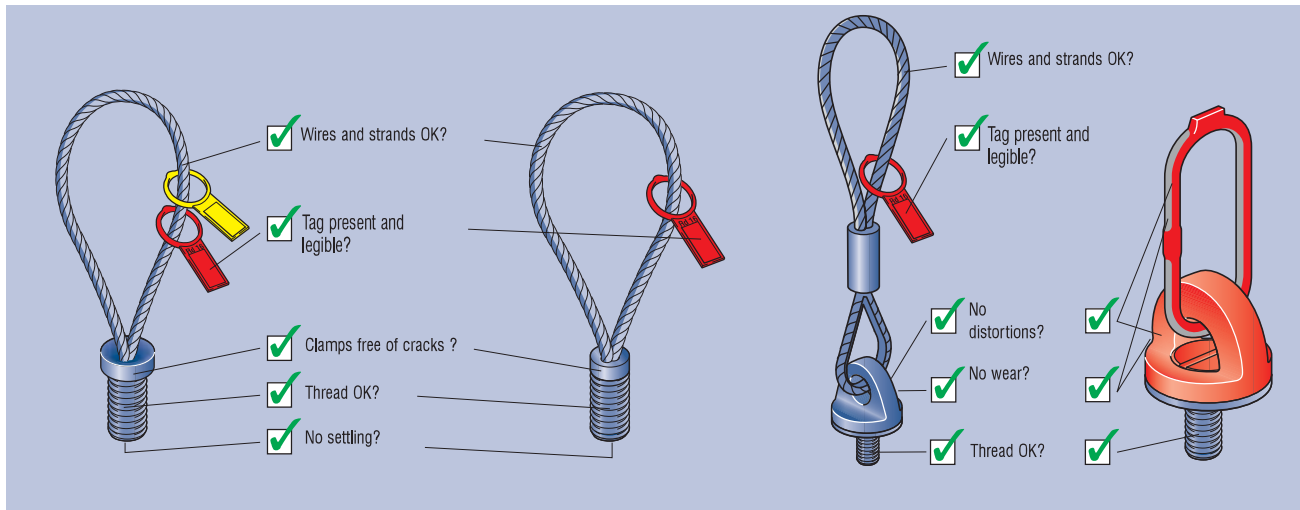
**Caution:** Missing or illegible markings can make it impossible to match lifting devices and anchors correctly. This can result in items falling and causing a hazard to life and limb. Lifting devices and anchors with absent or illegible markings must be immediately taken out of service!



**Warning:** If the deflection radius of the hook is too small, the lifting device can fail even at the rated load. This is a hazard to life. Only attach hooks with a deflection radius of at least 1.5 x the cable diameter.

# Original inspection and service life

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS



**Notice:** Before using for the first time, at least once a year and after special events, the lifting devices must be examined by the authorized specialist according to the specified criteria. Therefore, the parts must be metallically pure.

**Warning:** Any modification to the wire rope, oval link, thread, clamp or metal structural elements causes a weakening of the lifting device with the risk of failure and consequent falling of the structural element. Do not perform any repair work – dispose of the lifting devices instead.

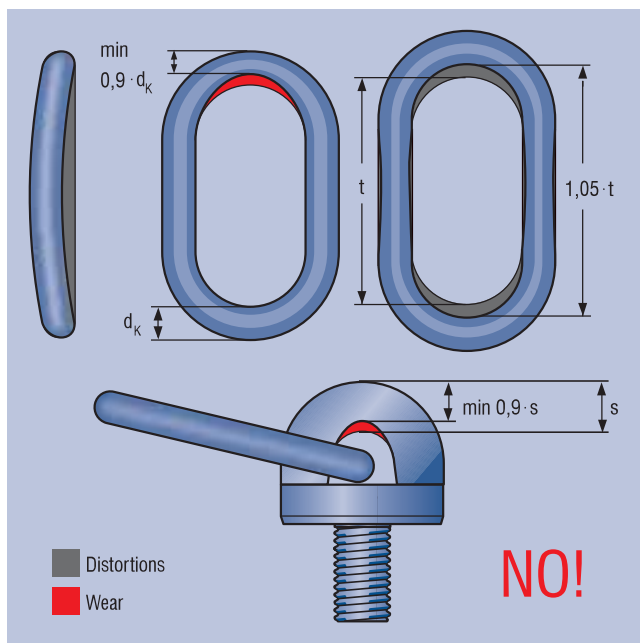
**Caution:** Do not use a lifting device which has an illegible or missing identification label. They must be discarded.

PFEIFER lifting devices may no longer be used if the following types of damage occur:

- Breakage of 4 single wires over a wire rope length of 3 x the wire rope diameter or an entire strand
- Crushing of the wire rope
- Deformation or damage to the wire rope or the tapped socket
- Heavy wear
- Corrosion pits
- Connection between wire rope and ferrule loosened or detached
- Settling in swaged on areas
- Distortion of oval link
- Pivot plate becoming loose
- Thread damage
- Thimble has considerable distortion or protrudes
- evident distortions, signs of wear

# Original inspection and discarding time

FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS



**Warning:** Damage, distortions, cracks and extensive corrosion pits can reduce the carrying capacity and lead to failure. This causes a hazard to life and limb. Any affected parts must be assessed by a suitably qualified person and, if necessary, taken out of service immediately.

**Warning:** The use of lifting devices that have reached the end of their serviceable life can result in failure. They must be clearly marked by the qualified person or made unusable.

# Original inspection and discarding time

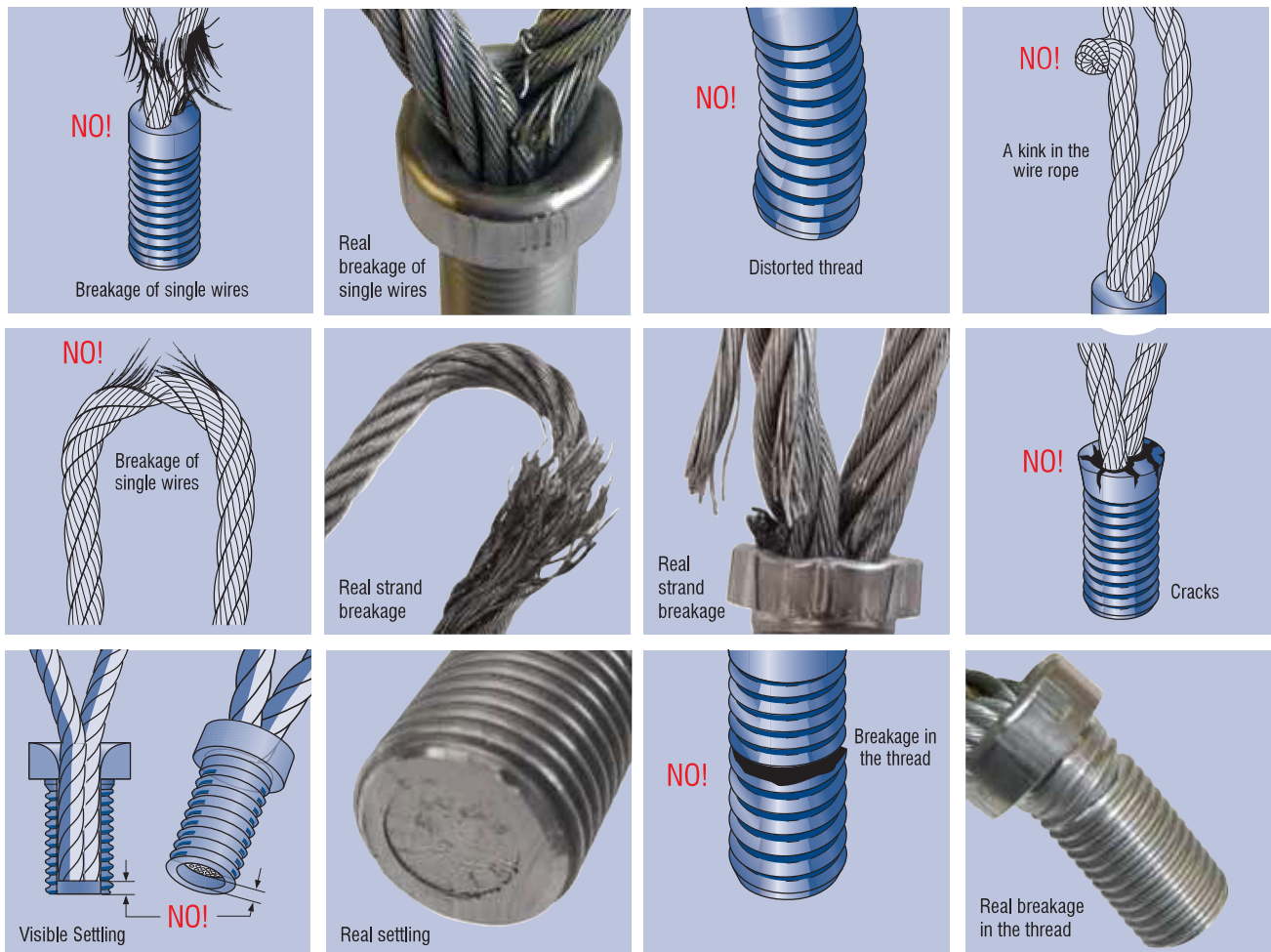
FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS

Table 2 – dimensions of oval link / swivel eye

Swivel eye	Inner width t [mm]	Limit value 1,05·t [mm]	Nominal diameter d <sub>k</sub> [mm]	Limit value 0,9·d <sub>k</sub> [mm]
Rd 12	80	84,00	10,2	9,18
Rd 14	80	84,00	10,2	9,18
Rd 16	110	115,50	13,3	11,97
Rd 18	110	115,50	13,3	11,97
Rd 20	110	115,50	16,5	14,85
Rd 24	135	141,75	19,0	17,10
Rd 30	160	168,00	23,0	20,70
Rd 36	180	189,00	27,0	24,30
Rd 42	180	189,00	27,0	24,30
Rd 52	260	273,00	36,0	32,40
Rd 56	260	273,00	36,0	32,40
Rd 60	340	357,00	45,0	40,50

Table 3 – dimensions of oval suspension ring / swivel eye & special lifting loop

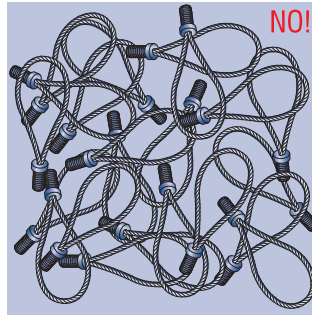
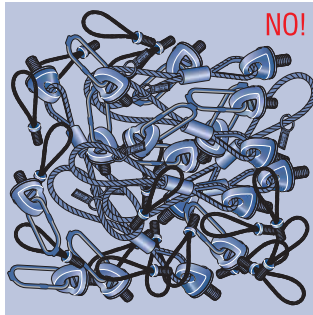
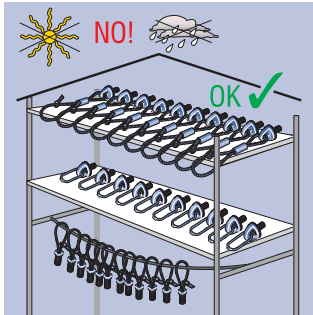
Swivel eye	Stirrup thickness S [mm]	Limit value 0,9·S [mm]
Rd 12	13,5	12,1
Rd 14	16,0	14,4
Rd 16	18,0	16,2
Rd 18	21,0	18,9
Rd 20	22,5	20,2
Rd 24	28,0	25,2
Rd 30	30,0	27,0
Rd 36	35,0	31,5
Rd 42	40,0	36,0
Rd 52	45,0	40,5
Rd 56	52,5	47,2
Rd 60	60,0	54,0



Slab edge installation  
 Slab face installation  
 Column-shaped installation  
 Specialised applications  
 Accessories  
 Lifting device  
 General Technical Info


## Storage


FOR PLANNERS, FOR PRECAST PLANTS, FOR USERS




## Misuse

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 **Warning:** Use of the anchor by untrained personnel results in the risk of incorrect use and the risk of items falling down, causing injury or death. Use only trained personnel.

 **Caution:** Incorrect use can result in safety hazards and reduced carrying capacity. This results in the risk of a fall and a hazard to life and limb. Lifting anchor systems must be used only as shown in the instructions for installation and use and only by suitable trained personnel.

 **Warning:** It is not admissible to use the lifting devices for lashing during the transport of precast concrete elements. This can result in the load falling and thus to injury or the death of persons. These lifting devices must be used only for lifting and moving precast concrete elements.

## Test service



The PFEIFER test service, with specially trained test technicians (EN 473) and the most modern equipment, is available to take over from you the responsibility for carrying out the legally prescribed inspection of your hoists, lifting and attachment devices. We can test at your site with one of our mobile vehicles with examination equipment, at our headquarters or in our branch locations.



The quality of our products and services is what underlies our success.