

PFEIFER

If it needs to be permanent –
cast-in!



10/2017

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PFEIFER DB-Anchors for permanent fixing

Successful construction ... with PFEIFER systems



The PFEIFER Group is one of Europe's leading manufacturers of cable, lifting and connecting technology, and cable construction. The Group consists of numerous domestic & foreign companies, with headquarters in Memmingen – Germany.

PFEIFER building technology is a market leader in lifting anchor technology for lifting and transporting precast concrete elements, and has been a valued and trusted partner in the industry for over 40 years.

In the early years the name PFEIFER was synonymous with threaded anchors in the precast industry. Today PFEIFER has gained a reputation for application-orientated fixing technology and an extensive, reliable range of products for the support and connection of precast concrete elements, as well as reinforcement technology.

Production at the headquarters in Memmingen and comprehensive technical know-how gained through many years of experience, form the basis of trusted and reliable supply and support for our customers throughout Europe.

"We put technology into practise"

The European Technical Approval issued for the DB anchor allows the product manufacturer to apply the CE mark to the building product and thus enables unhindered access to the entire European market or its contracting states.

 PFEIFER
branch offices





PFEIFER DB anchor:

Safe, economical and permanent – throughout Europe!



**Waved anchor
DB 682**



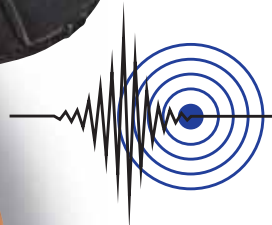
**Foot-mounted anchor
DB 682**



European Technical Approval ETA-11/0288

- Safety and quality
- Access to the European market
- Enables CE marking
- Uniform dimensioning method throughout Europe
- Product conforms to the construction product directive
- Qualification for the seismic performance categories C1 and C2

NEW



Permanent casting

- Maximum security for load application
- No noise, no dust – just cast in concrete
- Reinforcement for load application can be arranged
- Maximum installation security



PFEIFER DB anchor:

Safe, economical and permanent – throughout Europe!

+ Efficient

- High load-carrying capacities
- Small edge distances
- Wide range of applications

+ Reliable

- European Technical Approval – ETA
- No noise, no dust – just cast in concrete
- Base anchors with approval for seismic applications – performance categories C1 and C2

+ Innovative

- Foot-mounted anchor for the thinnest elements
- Data clip with unique load direction indicator

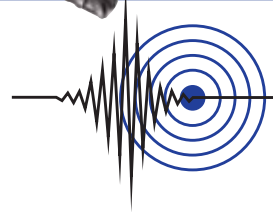
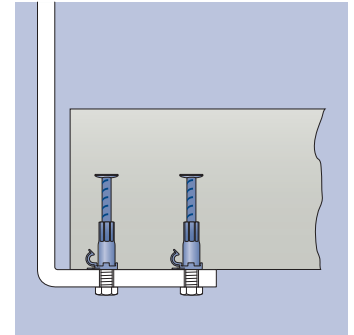
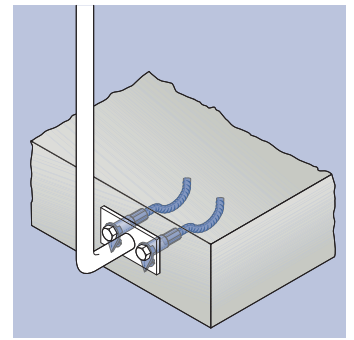
+ Cost effective

- No time-consuming drilling necessary on site;
- Anchors are ready for immediate use on site
- Rationalised product range for simple stock-keeping
- Dimensioning software free of charge



+ Quality

- Made in Germany
- CE marking
- External monitoring



Stair fixing with DB anchors



Application examples

- Fixing of balcony and bridge railings
- Fixings for power and other supply lines
- Individual anchoring of stadium seats

PFEIFER DB-Anchor for permanent fixing

Item No. 05.260



PFEIFER

Fixing Systems
Permanent fixing

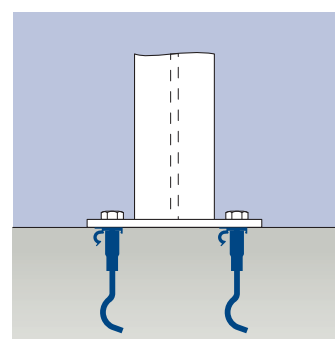
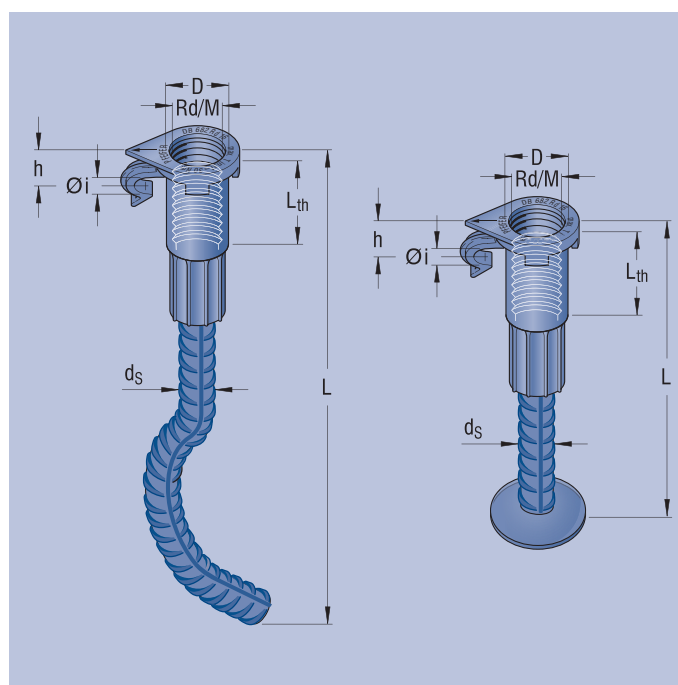
PFEIFER DB anchor DB 682 with European Technical Approval ETA-11/0288 for fixings in cracked or uncracked normal concrete from a quality of C20/25 with a predominantly static load. DB base anchors are also approved for seismic applications.

The design resistances can be determined individually for each application according to CEN/TS 1992-4:2009.

Materials:

Socket: special quality high grade precision steel tube, zinc-plated or stainless steel (1.4571), swaged on with BSt 500 S, forged-on or with waved bar, plain

Data clip: Plastic



Reference no. zinc-plated	Reference no. stainless steel	Rd/M** mm	Colour of data clip	Lth mm	ds mm	D mm	h mm	i mm	L* mm	Weight kg/100 pcs.
Foot-mounted anchor DB 682										
05.260.123.080	05.260.124.080	12 x 1.75	white	22	8	15.0	10.0	6.5	80	5,00
05.260.163.120	05.260.164.120	16 x 2.00	white	27	12	21.0	12.0	8.5	120	20,00
05.260.203.150	05.260.204.150	20 x 2.50	white	35	16	27.2	15.5	11.0	150	39,00
05.260.243.180	05.260.244.180	24 x 3.00	white	43	16	31.0	16.5	13.0	180	47,50
05.260.303.220	05.260.304.220	30 x 3.50	white	56	20	39.5	16.5	13.0	220	101,00
Waved anchor DB 682										
05.260.123.110	05.260.124.110	12 x 1.75	grey	22	8	15.0	10.0	6.5	110	6,50
05.260.163.174	05.260.164.174	16 x 2.00	grey	27	12	21.0	12.0	8.5	174	20,90
05.260.203.194	05.260.204.194	20 x 2.50	grey	35	16	27.2	15.5	11.0	194	49,00
05.260.243.252	05.260.244.252	24 x 3.00	grey	43	16	31.0	16.5	13.0	252	60,00
05.260.303.302	05.260.304.302	30 x 3.50	grey	56	20	39.5	16.5	13.0	302	100,00

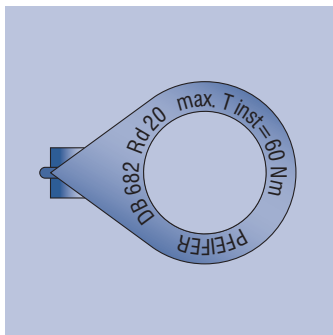
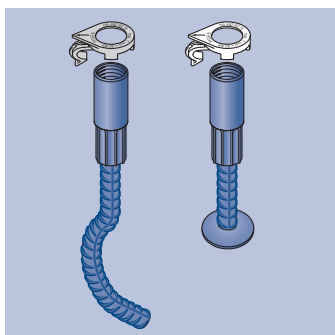
* incl. data clip 500

** DB anchors can also be supplied if necessary with a metric thread for a specific order.

Instructions for installation and use

PFEIFER DB-Anchor for permanent fixing

System



Scope of supply of the PFEIFER DB anchor system

- Reinforcing steel section, wave-shape curved (waved anchor, DB 682) or plate-shaped forged-on (foot-mounted anchor, DB 682), with swaged-on socket made of zinc-plated steel or
- Reinforcing steel section, wave-shaped curved (waved anchor, DB 682) or plate-shaped forged-on (foot-mounted anchor, DB 682), with swaged-on socket made of stainless steel (marking: “non-rusting”) and
- PFEIFER data clip:
 - Waved anchor DB 682: grey
 - Foot-mounted anchor DB 682: white



Warning: All modifications and welding work on the PFEIFER DB anchor system is prohibited. This can lead to reduced safety or even failure of the anchors. Use the anchors and the associated data clips only in the standard condition as delivered!

Fixing components (fastening bolts, washers, etc.) are not included in the scope of supply of the PFEIFER DB anchor system. These components must be procured for the specific project in accordance with the responsible planner's data and specifications.

Use

The PFEIFER foot-mounted anchor DB 682 and waved anchor DB 682 with European Technical Approval ETA-11/0288 for fixings in cracked or uncracked normal concrete from a quality of C20/25 with a predominantly static loading and has an approval for this for the performance categories C1 and C2. The anchor is supplied complete with data clip.

Dimensioning and anchor selection

The dimensioning of PFEIFER DB anchors is carried out in accordance with CEN/TS 1992-4:2009 “Dimensioning of the anchoring of fixings in concrete” under the responsibility of an engineer who is experienced in the field of anchorings and concrete construction. All parameters necessary for dimensioning are to be taken from the European Technical Approval ETA-11/0288.

PFEIFER provides dimensioning software with which both individual fixings and groups of anchors can be calculated quickly and verifiably. The software is available free of charge.

Taking into account the loads to be anchored, verifiable calculations and construction drawings must be prepared. With regard to the DB anchors, these must contain the following minimum data:

- Exact designation of the anchors to be used
- Position of the anchors (edge distances, axis distances etc.)
- Alignment of the data clip
- If necessary, additional reinforcement and its alignment in the case of transverse shear pull loads
- Minimum reinforcement
- Concrete strength class on which the dimensioning of the anchor was based

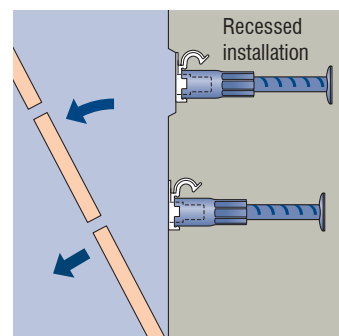
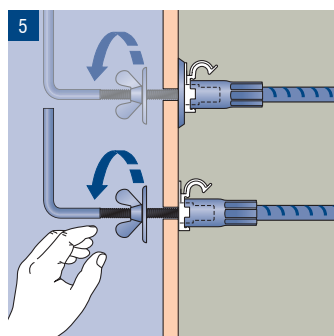
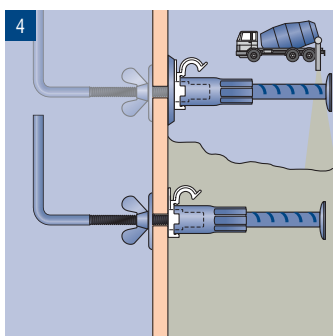
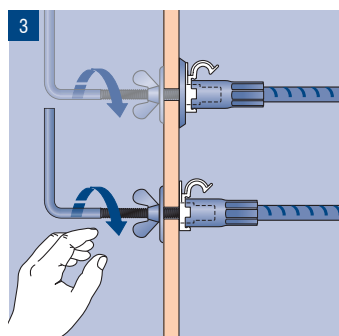
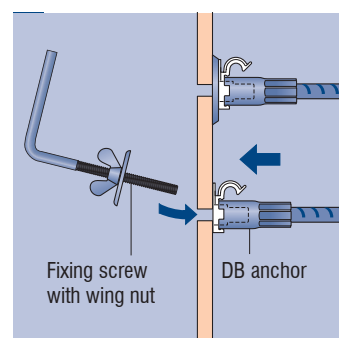
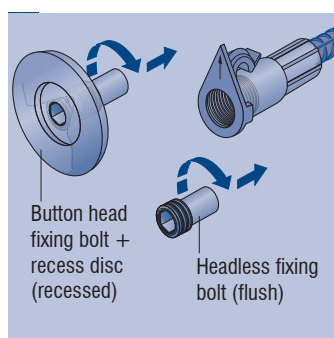
Installation

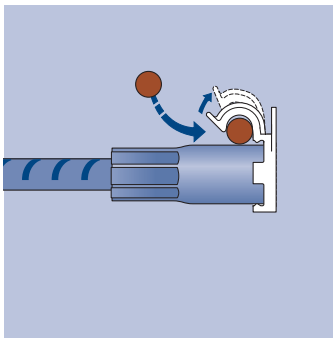
PFEIFER DB anchors with data clip and, if necessary, the retention reinforcement must be installed in accordance with the responsible planner's specifications. The anchors must be fastened to the formwork in such a way that they do not move when the reinforcement is installed or during the pouring and compaction of the concrete. According to the planning specifications, the anchors can be installed flush with the surface or recessed.

For simple and safe attachment to the formwork, we recommend the matching PFEIFER fixing accessories for the thread system.

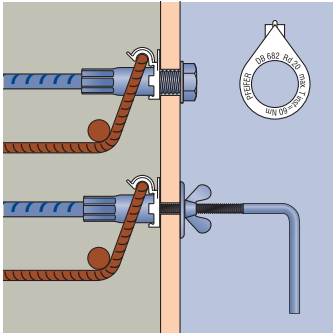


Notice: After removing the formwork, the inside of the tapped socket must be sealed against the ingress of water and oil until use or until the mounting of the attached element.

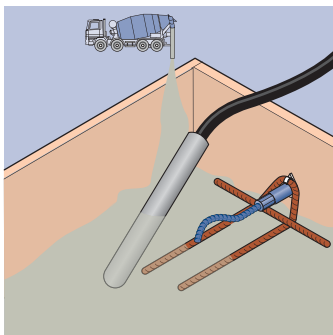




1. Align the data clip according to the responsible planner's specifications and the built-in reinforcement!



2. Install additional reinforcement according to the responsible planner's specifications! Ensure that there is direct contact between the socket and the additional reinforcement!
3. In order to guarantee a clean bond between the component and the concrete, make sure that the anchor is free from dirt, foreign bodies, oil, etc.



4. Pour the concrete carefully! Avoid direct contact between the vibrating surface and the anchor, including the retention reinforcement!
5. Compact the concrete properly in the vicinity of the socket, the ribbed reinforcing steel and the waved bar or the forged-on head!
6. The anchors must not be shifted or damaged by force! This impairs the function, reduces load-carrying capacities and may lead to the premature failure of the anchors.

PFEIFER fixing screw

Reference no.	Thread size M	fits size
05.206.083	M 6	Rd/M 12
05.206.083	M 8	Rd/M 16/20
05.206.103	M 10	Rd/M 24/30

See data sheet for weight and dimensions
Thread system p. 56

PFEIFER fixing bolt

Reference no.	Thread size M	fits size
05.211.123	M 12	Rd/M 12
05.211.163	M 16	Rd/M 16
05.211.203	M 20	Rd/M 20
05.211.243	M 24	Rd/M 24
05.211.303	M 30	Rd/M 30

See data sheet for weight and dimensions
Thread system p. 57

Use

The condition of the PFEIFER DB anchor must be checked before fixing the attached element. The interior of the socket must be dry and free of debris and contamination of all kinds. In particular in the case of anchor types made of stainless steel, it must be ensured that the seal of the socket base has not been damaged by the penetration of oil or other influences.

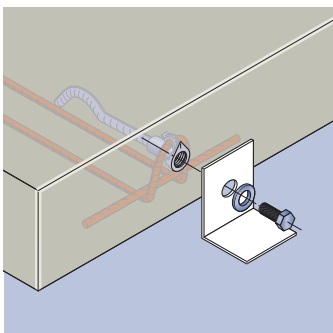
The bolts specified in the responsible planner's construction drawings are to be used for fixing. The minimum or maximum screw-in depths of the fastening bolts into the tapped sockets of the anchors must be checked in each case against the following table and adhered to.

The maximum installation torque max. T_{inst} in accordance with following table is to be adhered to.

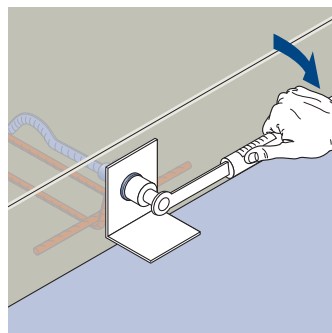
Table 1: Assembly parameters: waved anchor DB 682, foot-mounted anchor DB 682

			Rd/M 12	Rd/M 16	Rd/M 20	Rd/M 24	Rd/M 30
Bolt designation		[mm]	M 12	M 16	M 20	M 24	M 30
Maximum installation torque	max. T_{inst}	[Nm]	≤ 10	≤ 30	≤ 60	≤ 80	≤ 200
minimum screw-in depth	$L_{sd,min}$	[mm]	15	20	25	30	35
maximum possible screw-in depth	L_{th}	[mm]	24	29	37	45	58

Important instructions for use



1. The anchor may only be placed under load after the requisite concrete strength has been attained!
2. Check the DB anchor before use! In case of doubt regarding proper usability, the building site supervisor or responsible planner must be informed!
3. Avoid contamination of the interior of the socket; clean it if necessary!



4. Observe the maximum installation torque according to Table 1! Disregarding this can lead to damage to the anchor and thus to failure of the system. Mortal danger!
5. Use the bolts specified by the responsible planner! Check and adhere to the minimum or maximum screw-in depths according to Table 1! Disregarding this can lead to damage to the anchor!



Lifting Anchor Systems
Thread System



Lifting Anchor Systems
BS Anchor System



Lifting Anchor Systems
WK Anchor System



Fixing Systems
DB Anchor 682
for Permanent Fixing



Fixing Systems
Socket Dowels
Polyamide Sockets



Fixing Systems
HK Assembly Anchor System



Connection Systems
Column Shoe System
Wall Shoe System



Connection Systems
Stell Bearing
Staircase Bearing VarioSonic



Connection Systems
Sandwich Anchor System
Delta Anchor System



Connection Systems
Concrete Earthing System BEB



Reinforcement Systems
VS®-Wire Rope Loop System



Reinforcement Systems
PH Reinforcement Continuity System



Cable Tension Members
Tension Rod System



Attachment Materials
(Wire Ropes, Chains, Textiles)



Lashing Systems



Grabs for Reinforcing Steel
Balancing Spreader Beams

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at www.pfeifer.info.

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