Frame construction
Concrete inserts for columns, foundations and ceiling constructions
For secure cohesion ...

PFEIFER Connecting and Lifting Systems has been one of the leading manufacturers of professional concrete inserts for many decades. Frame structures consist of various precast elements that have to be moved and connected to one another properly. PFEIFER's products cover these applications completely. In several application examples, this brochure provides an overview of the specific precast elements of the frame structure as well as the inserts required.
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Columns
Lifting solutions

Industrially manufactured lifting anchor systems are generally used for lifting precast columns. The anchors must be reliable in use. They have to safely absorb all impacts from handling, lifting and assembly and transmit them into the structural element. The suitability of the systems is confirmed in the form of a declaration of conformity (CE marking) with corresponding documentation. In particular with the very tightly packed reinforcement layout in a column, the PFEIFER lifting solutions offer an ideal performance.
**WK System**
- Lifting anchor system with spherical heads
- Considerable saving of time for attachment
- Ideal for heavily reinforced structural elements
- Sturdy lifting devices with clear marking

**Thread System**
- Lifting anchor system with threaded coupling
- Wide variety of products for specific installation situations
- Low reinforcement outlay
- Slender column geometry is possible
- Extensive range of accessories

**BS Anchor System**
- Wire rope loop lifting anchor system
- Extremely high loads can be transported (Standard anchors up to 85 t)
- No additional lifting devices necessary
- Flexibility of the rope
Columns
Fixing solutions

In addition to lifting anchors, PFEIFER has also been producing products for permanent fixings to concrete structural elements for over 25 years. The ideal solution is offered for all demands on a fixing: whether for the implementation of load-bearing, approved fixing points or structural solutions for subordinate structural elements. In the precast column application field, even solid steel components can be connected to concrete columns with the help of PFEIFER DB Anchors.
DB Anchors for permanent fixings
- Permanent, load-bearing fixing point
- High performance through use in earthquake zones too
- Sign clip shows the load direction when installed
- Free dimensioning software
- European Technical Assessment (ETA)

Alternative for the DB Anchor:
Anchor Bolt G1-K
- Permanent, load-bearing fixing point
- Integrated, threaded bolt for connecting
- Anchoring of the highest loads
- Free dimensioning software
- European Technical Assessment (ETA)
See product overview page 22

Socket Dowels/Polyamide Socket
- Structural fixing points
- No additional reinforcement necessary
- Extensive range of variants
See product overview page 22
Columns
Solutions for connecting and reinforcing

PFEIFER offers a wide variety of concrete inserts for connecting the structural elements temporarily during the assembly or permanently, or for securing the connection via a sophisticated reinforcement layout. This allows the majority of the connections required in frame construction – e.g. rigid column connections or the connection of a wall to the column – to be implemented innovatively and efficiently.
VS® Systems
- Efficient wire rope loop system for the connection of a wall
- No direction-bound installation of the rails and bars
- Saving of assembly time through high degree of prefabrication
- German approval
- Case-related positioning of boxes
- Optimum profile for optimum connection
- Low mortar consumption

Column Shoe System – Column Shoe PCC
- Rigid connection of precast elements
- Immediate load-bearing screw connections mean no delay
- Efficient assembly process without supports
- Column adjustable under load

Fixing Bracket LCON
- Temporary or permanent angular connecting element for concrete structural elements
- Flexible tolerance range
- Works with different types of fixing systems
- Reusable
- Type-static calculation
Foundations
Lifting solutions

The PFEIFER product portfolio includes different possibilities to lift steel reinforced concrete foundations safely and to place them in the intended position on the building site. The reliable function of the lifting anchor employed is essential in these procedures, as the anchors have to safely absorb all stresses and introduce them into the structural element. The suitability of the PFEIFER lifting anchor systems is confirmed in the form of a declaration of conformity (CE marking) with corresponding documentation.
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- Lifting anchor system with threaded coupling
- Wide variety of products for specific installation situations
- Low reinforcement outlay
- Slender foundation geometry is possible
- Extensive range of accessories
Foundations
Connecting solutions

One thing is particularly important for the stability of frame structures: the secure connection of the load-bearing elements of the total structure. The focus is placed here in particular on the connection of columns and foundations, but also on the connection of different foundation sections.
DB Anchors for permanent fixings
- Permanent, load-bearing fixing point
- High performance through use in earthquake zones too
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Alternative for the DB Anchor:
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See product overview page 23

PH System
- High-performance reinforcement continuity system
- Reliable load transmission through screw connections
- Planned construction sections without protruding bars – no risk of accident
- Can also be used in earthquake regions
- German approval

Column Shoe System – Foundation Anchors
- Rigid, instantly load-bearing screw connection of foundation and column
- Variants without protruding bolts are available
- Thin foundations thickness are possible
- Country-specific and european (ETA) approvals
Girders
Solutions for lifting and reinforcing

Heavy girders can be lifted safely and reinforcement connections can be implemented with PFEIFER concrete inserts. For example, cast in-situ concrete beams can be connected to a girder.
Special variants of the WK and Thread System, specially qualified for heavily reinforced, linear structural elements

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Beams
Solutions for lifting, connecting and bearing

Heavy beams can be safely lifted and supported with PFEIFER concrete inserts. The assembly of beams is facilitated in terms of connection and bearing by the PFEIFER Steel Bearing PS-A or the PFEIFER Column Shoe PCC. The high degree of prefabrication and the shortened planning time result here in a considerable saving of time.
**Column Shoe System**
- Rigid, instantly load-bearing screw connection of joist and column
- Efficient assembly process without supports
- Slender structural element geometry possible through matching foundation anchor

**BS Anchor System**
- Wire rope loop lifting anchor system
- Extremely high loads can be transported (Standard anchors up to 85 t)
- No additional lifting devices necessary
- Flexibility of the rope

**Steel Bearing PS-A**
- Secure support of the beams
- Low load eccentricity
- Bearing ledges and dowels for securing the position are no longer required
- Saving of construction costs and time through high degree of prefabrication
- German approval

Special variants of the WK and Thread System, specially qualified for heavily reinforced, linear structural elements
When lifting flat/slender ceiling elements, it is important for the anchor dimensions to be as small as possible. This is also covered in the PFEIFER product portfolio through application-specific anchor variants. Apart from lifting, it is also necessary in frame construction to be able to bear the solid ceiling elements safely on joists. The qualified PFEIFER Steel Bearing PS-A is available for this.
If the lifting anchor is anchored in the web of a TT ceiling, variants of both the WK System and the BS Anchor can be used.

**Thread System**
- Lifting anchor system with threaded coupling
- Wide variety of products for specific installation situations
- Low reinforcement outlay
- Slender ceiling geometries are possible
- Extensive range of accessories

**Steel Bearing PS-A**
- Safe support of TT ceilings or trough plates
- Low load eccentricity
- Bearing ledges and dowels for securing the position are no longer required
- Saving of construction costs and time through high degree of prefabrication
- German approval

**Bent Loop**
- Wire rope loop lifting anchor system
- Especially suited for thin ceiling elements
- Low minimum plate thickness
- Simple integration in existing mesh reinforcement
- No additional lifting devices necessary
Slim floor constructions

Solutions for flush-with-the-ceiling composite joists

PFEIFER offers the innovative solution for modern slim floor constructions: the Hybridbeam®. There are different variants of the PFEIFER Hybridbeam® which are used as static load-bearing, slab-level supporting beams made of a composite of the most advanced high-performance materials. This gives both the client and the architect a clear view of the underside of the ceiling with extreme design freedom and no interfering cross-sections.
Hybridbeam®

- Economy achieved by optimized use of building
- Efficiency achieved by high carrying capacity
- Efficiency achieved by fast and support-free assembly process
- Flexibility offered by smooth slab underside and free space for installations
- Minimal deflection in the assembly phase

- Can be used in a variety of different ceiling/floor constructions
- Safety guaranteed by country-specific approvals and certificates
- High torsional and bending stiffness achieved during assembly
Product overview

Columns
Lifting solutions

WK System  Thread System  BS Anchor System

Fixing solutions

DB Anchors for permanent fixings  Anchor Bolt G1-K  Socket Dowels  Polyamide Socket

Solutions for connecting and reinforcing

VS® Systems  Column Shoe System – Column Shoe PCC  Fixing Bracket LCON
Foundations
Lifting Solutions

BS Anchor System  WK System  Thread System

Connection Solutions

DB Anchor for permanent fixings  Anchor Bolt G1-K  Column Shoe System – Foundation Anchors  PH System
**Beams and girders**
Solutions for lifting and reinforcing

BS Anchor System  
WK System  
Thread System  
PH System

**Joists**
Solutions for lifting, connecting and bearing

Column Shoe System  
BS Anchor System  
WK System  
Waved Anchor short

Steel Bearing PS-A
**Slabs**
Solutions for lifting and bearing

- Thread System
- WK System
- BS Anchor System
- Bent Loop

Steel Bearing PS-A

**Slim floor constructions**
Solutions for flush-with-the-ceiling composite joists

- Hybridbeam® BHM
- Hybridbeam® BHR
# Notes

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[www.pfeifer.info](http://www.pfeifer.info)
The contact details of our locations and sales partners can be found at

www.pfeifer.info/contacts-cls

We look forward to hearing from you!