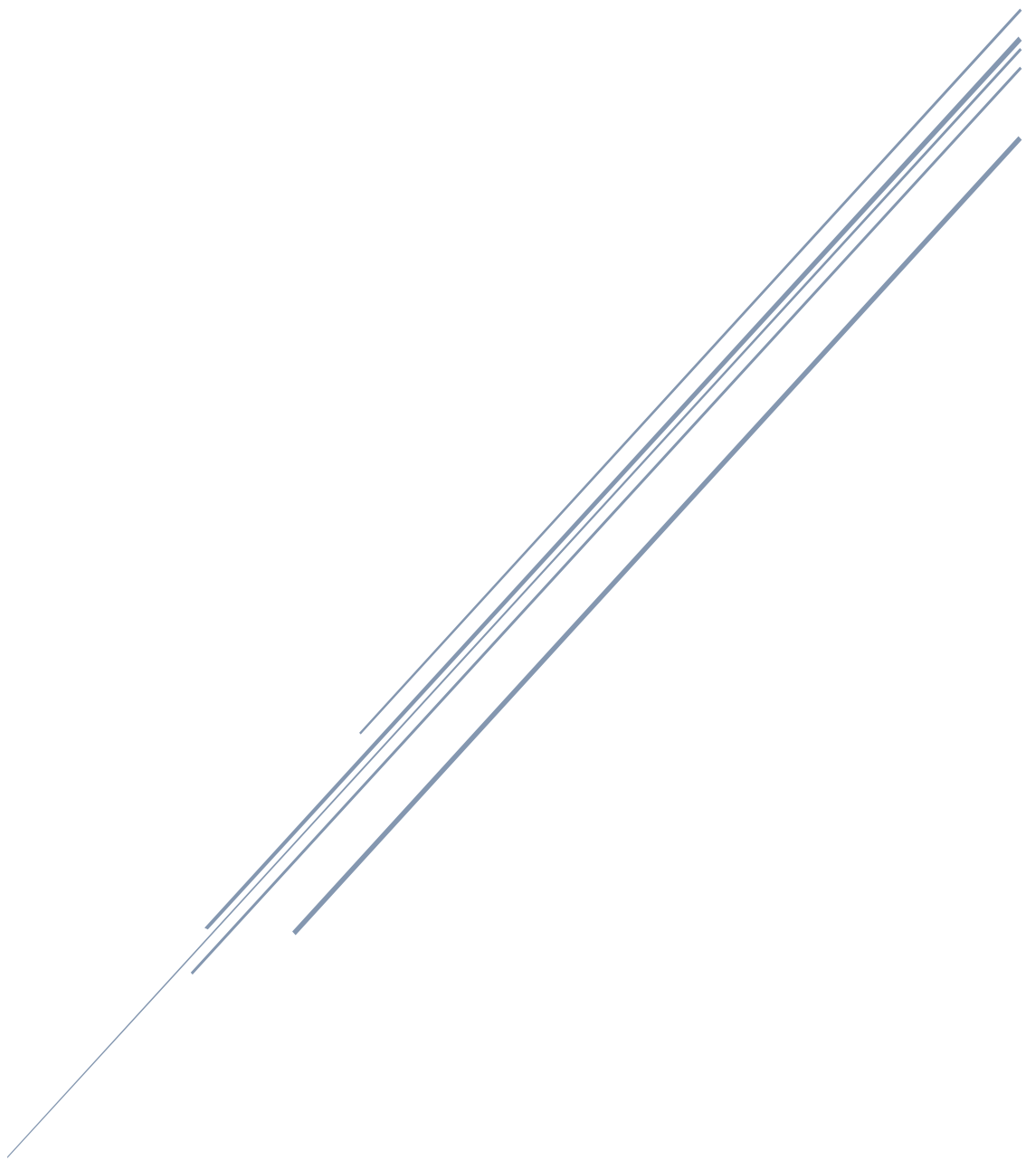


PLANNING REPORT

150 Castelnau, London, SW13 9ET



Document Control

Stage: For Planning

| | | | | |
|-------------|----------|---------------------|--------------------|---------------------|
| Rev | 0 | Prepared By: | Checked By: | Approved By: |
| Date | 01/12/24 | J. Fitzpatrick | J. Fitzpatrick | J. Fitzpatrick |

Contents

| | |
|--|---|
| Preface: | 3 |
| Site location: | 3 |
| Existing Site conditions: | 3 |
| Trees and RPZs | 3 |
| Proposed Greenhouse Location: | 3 |
| Proposed Foundation design: | 3 |
| Flat Slab Construction: | 3 |
| Screw/Mini Piles:..... | 4 |
| Drainage and Utilities | 4 |
| Impact Assessment and Mitigation Measures | 4 |
| Potential Impacts: | 4 |
| Mitigation Measures: | 4 |
| Monitoring and Compliance..... | 4 |
| Environmental and Sustainability Considerations: | 4 |
| Sustainable Materials..... | 4 |
| Waste Management..... | 4 |
| Access and Transportation..... | 5 |
| Structural Calculations and Drawings: | 5 |
| Conclusion | 5 |
| Appendices..... | 6 |
| Drawings..... | 6 |
| Specifications | 7 |

Preface:

This report has been prepared in support of a planning application for proposed works at 150 Castelnau. The works involve the demolition of an existing shed structure and construction of the proposed greenhouse and associated works. The purpose of this report is to assess the engineering considerations for the development and ensure that the proposed works adhere to structural, safety, and environmental standards.

This focuses on the safeguarding of existing trees, particularly their Root Protection Zones (RPZs), and the mitigation measures proposed to minimize any impact caused by the foundation construction.

Site location:

150 Castelnau is a large semi-detached residential property located to the west side of Castelnau. The property is accessed from a large front gate directly off Castelnau. The property consists of a three-story house with proposed works to a loft level. The surrounding area is predominantly residential, with similar detached and semi-detached houses.

The site has adequate access for construction activities, and there are no notable environmental constraints. The property has a rear garden, which provides ample space for the proposed extension.

Existing Site conditions:

Trees and RPZs: The site is occupied and surrounded by a few mature trees that contribute to the local environment and amenity value. An approximate survey suggests the works will be in and around the RPZ and therefore it is proposed to carry out works on the assumption that they will occur with RPZs as mapped in accordance with BS 5837:2012 – *Trees in Relation to Design, Demolition, and Construction*.

Proposed Greenhouse Location: As per the architect location plans, the new greenhouse is to be located to the back of the existing properties rear garden. It is to be located in the existing position of the shed structures which will be removed, and this will in part have already impacted on the surrounding trees. The new works will look to improve upon the current situation in terms of structure around mature trees.

The main existing building is in good condition, and the surrounding properties are similar in style and construction. From visual inspections, the existing construction is typical masonry load bearing walls support floor plates with larger openings incorporating steel supports. The roof is of timber construction. The foundations are assumed to be traditional brick corbels footings, but no trial pits have yet been opened to confirm this. There are no signs of settlement or major structural defects noted.

Proposed Foundation design:

To minimize impact on the existing trees and their root systems, the foundation design incorporates:

Flat Slab Construction:

This utilises the ground slab as the foundation and will be designed to span across the required areas, forming both the internal floor space but also spanning between selected support piers from screw/mini piles below. This method provided specific localised loading concentrations which can be selected to provide best protection to surrounding trees and as such tailors the foundation solution to the needs of tree protections. This method reduces the depth of excavation required, preserving the soil structure within the RPZs.

Load is distributed uniformly, minimizing localized compaction and root disturbance.

Screw/Mini Piles:

This type of piling is generally selected for their minimal vibration and disturbance during installation.

Pile locations are carefully positioned outside critical RPZs.

Drainage and Utilities

The works will require minor adjustments to the existing drainage system to accommodate alterations. These will be carried out in a similar manner to the foundation works under careful guidance and coordination with the RPZ's.

Impact Assessment and Mitigation Measures

Potential Impacts:

The key concerns associated with the construction are:

- Compaction of soil within the RPZs.
- Root severance or damage during foundation installation.
- Disturbance to soil hydrology critical for tree health.

Mitigation Measures:

To address these concerns, the following strategies will be implemented:

- Supervision: Consultants will oversee the installation of screw piles and any excavation within proximity to the RPZs.
- Protective Barriers: Temporary fencing will be installed in accordance with BS 5837:2012 to demarcate RPZs and prevent encroachment by construction activities.
- Manual Excavation: Any necessary excavation within RPZs will be conducted manually or with air spades to avoid damage to significant roots.
- Foundation Adjustments: If significant roots are encountered, the positioning of screw piles may be adjusted under engineers' supervision.
- Soil Protection Measures: Temporary ground protection (e.g., geotextile membranes, load-spreading boards) will be used to prevent soil compaction from equipment.

Monitoring and Compliance

- A pre-construction meeting with the consultants will confirm the protection measures.
- Ongoing monitoring during construction will ensure compliance with the agreed protection plan.
- Post-construction, a final inspection will confirm that the RPZs and tree health remain unaffected.

Environmental and Sustainability Considerations:

Sustainable Materials

Where possible, sustainable building materials will be used for the proposed works, including recycled materials and energy-efficient fixtures.

Waste Management

A waste management plan will be in place during construction to minimize environmental impact. This will include the proper disposal of construction waste and recycling of materials where possible.

Access and Transportation

The proposed works will not impact access to the property or surrounding roads. Construction traffic will be managed to minimize disruption to neighbours, and all deliveries will follow local guidelines

Structural Calculations and Drawings:

Detailed structural calculations, specifications and drawings will be provided as part of the building control submission. These documents will demonstrate that the design complies with British Standards for structural integrity, fire safety, and energy efficiency.

Conclusion

The proposed foundation design, incorporating flat slab construction and screw piles, minimizes disruption to the existing trees and their root systems. With the mitigation measures outlined in this report, the development complies with relevant guidelines and ensures the long-term health of the trees on site. The materials and construction methods will complement the existing structure and the local character of the neighbourhood.

The project addresses all key engineering considerations, including foundation design, structural load management, drainage, and sustainability. This report provides the necessary information to support the planning application, demonstrating that the works will be carried out to the highest standards of safety and compliance.

Appendices

Drawings

Specifications

Specifications

KRINNER

PRODUCT OVERVIEW KRINNER GROUND SCREWS



The pioneer in sustainable foundations construction

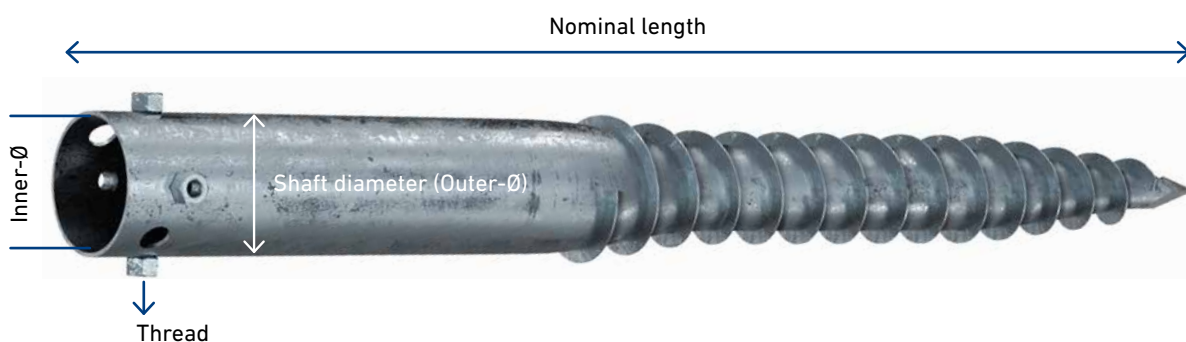
PRODUCT PORTFOLIO

The perfect solution for every application

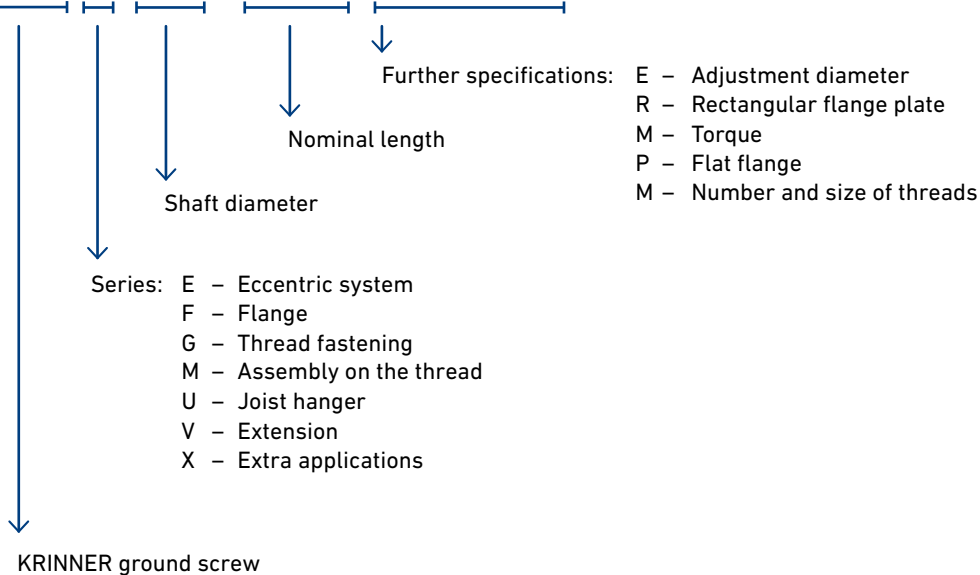
Construction products: Professional applications

DIY products: Home and hobby applications

Designation key



e.g. **KSF G 114x1300-4xM16**



DIY PRODUCTS

Suitable for private use

G-SERIES

With thread fastening



| | | | |
|----------------|-------|-------|-------|
| Article number | 21038 | 21037 | 21036 |
| Outer-Ø (mm) | 68 | 68 | 68 |
| Length (mm) | 650 | 650 | 550 |

U-SERIES

Simple wooden beam mounting



| | | | | | |
|-------|-------|-------|-------|-------|-------|
| 21035 | 21033 | 21034 | 21032 | 21031 | 21030 |
| 60 | 60 | 60 | 60 | 60 | 60 |
| 865 | 730 | 865 | 730 | 730 | 550 |

FURTHER PRODUCTS

For installing delineator posts and for building fences

X-SERIES

Delineator foundation



| | |
|----------------|-----------|
| Article number | 22044 |
| Outer-Ø (mm) | 108 x 127 |
| Length (mm) | 480 |
| Inner-Ø (mm) | 103 x 122 |

CONSTRUCTION PRODUCTS

Depending on local building regulations

E-SERIES

With horizontal leveling for exact alignment

CE



KSF E 140x1600-E76-100



KSF E 140x1300-E76-100



KSF E 89x1000-E60



KSF E 89x800-E60



KSF E 89x550-E60

| | | | | | |
|----------------|-------|-------|-------|-------|-------|
| Article number | 26160 | 25502 | 24100 | 24080 | 24055 |
| Outer-Ø (mm) | 140 | 140 | 89 | 89 | 89 |
| Inner-Ø (mm) | 133 | 133 | 82 | 82 | 82 |
| Length (mm) | 1640 | 1310 | 1000 | 800 | 550 |
| Thread | 3xM12 | 3xM12 | 3xM8 | 3xM8 | 3xM8 |

F-SERIES

With flange for flexible mounting

CE



KSF F 140x1600-P



KSF F 140x1300-P



KSF F 76x1600-R



KSF F 76x1300-R



KSF F 76x1000-R



KSF F 76x800-R

| | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|
| Article number | 25484 | 25483 | 25478 | 25477 | 25476 | 25475 |
| Outer-Ø (mm) | 140 | 140 | 76 | 76 | 76 | 76 |
| Inner-Ø (mm) | 133 | 133 | 69 | 71 | 71 | 71 |
| Length (mm) | 1592 | 1262 | 1575 | 1275 | 1045 | 815 |

CONSTRUCTION PRODUCTS

Depending on local building regulations

G-SERIES

With thread fastening

CE



| | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|
| Article number | 24209 | 24208 | 24207 | 24206 | 24205 | 24201 |
| Outer-Ø (mm) | 114 | 114 | 89 | 89 | 89 | 76 |
| Inner-Ø (mm) | 107 | 107 | 84 | 84 | 84 | 71 |
| Length (mm) | 1300 | 990 | 1280 | 1080 | 830 | 810 |
| Thread | 4xM16 | 4xM16 | 4xM12 | 4xM12 | 4xM12 | 4xM12 |

M-SERIES

With central inner thread

CE



| | | | | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Article number | 24223 | 24222 | 24219 | 24218 | 24217 | 24215 | 24214 | 24213 | 24212 | 24211 | 24210 |
| Outer-Ø (mm) | 114 | 114 | 89 | 89 | 89 | 76 | 76 | 76 | 76 | 76 | 76 |
| Inner-Ø (mm) | 107 | 107 | 82 | 82 | 82 | 69 | 69 | 69 | 71 | 71 | 71 |
| Length (mm) | 2075 | 1575 | 2080 | 1580 | 1280 | 2078 | 1578 | 1278 | 1275 | 1045 | 815 |
| Thread | M24 | M24 | M24 | M24 | M24 | M16 | M16 | M16 | M12 | M12 | M12 |

SYSTEM ADVANTAGE

Ecological - Efficient - Safe

Application: Infinite application possibilities

Use: Suitable for all soil types



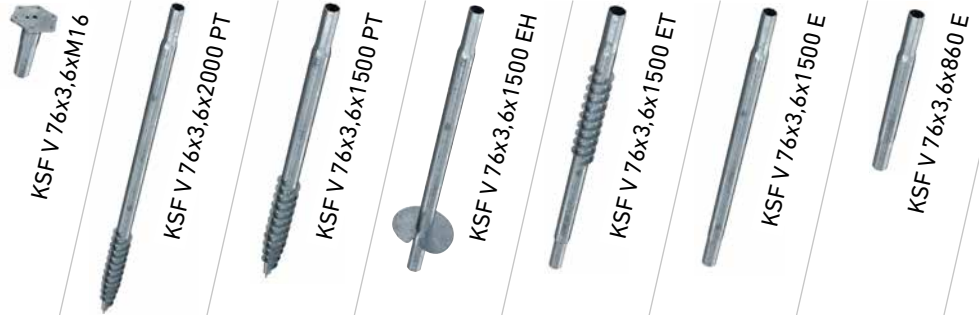
CONSTRUCTION PRODUCTS

Depending on local building regulations

V76

High load capacity

CE



| | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|
| Article number | 25672 | 25656 | 25655 | 25658 | 25657 | 25659 | 25660 |
| Outer-Ø (mm) | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| Inner-Ø (mm) | 69 | 69 | 69 | 69 | 69 | 69 | 69 |
| Length (mm) | 300 | 2000 | 1500 | 1500 | 1500 | 1500 | 860 |
| Thread | M16 | - | - | - | - | - | - |

V89

High Load capacity / with static calculations for the internal load-bearing capacity and corrosion report

CE



Deutsches Institut für Bautechnik
DIBt



| | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|
| Article number | 25771 | 25750 | 25749 | 25770 | 25758 | 25754 | 25751 |
| Outer-Ø (mm) | 89 | 89 | 89 | 89 | 89 | 89 | 89 |
| Inner-Ø (mm) | 79 | 79 | 79 | 79 | 79 | 79 | 79 |
| Length (mm) | 300 | 2000 | 1500 | 1500 | 1500 | 1500 | 860 |
| Thread | M24 | - | - | - | - | - | - |

CONSTRUCTION PRODUCTS

Depending on local building regulations

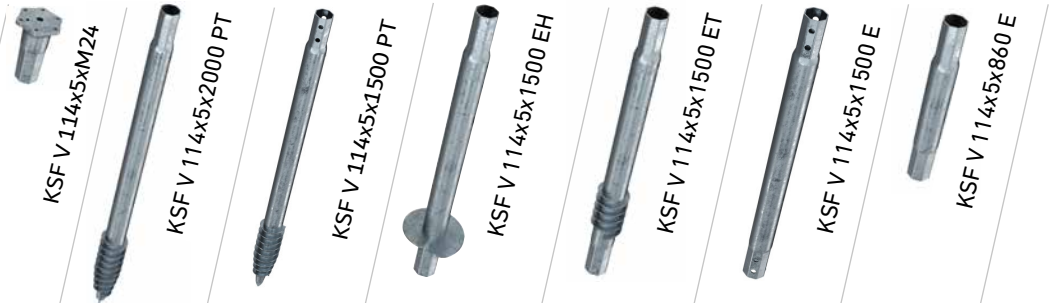
V114

High Load capacity / with static calculations for the internal load-bearing capacity and corrosion report

CE



Deutsches Institut für Bautechnik **DIBt**



| | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|
| Article number | 57822 | 25816 | 57813 | 57821 | 25817 | 57817 | 57816 |
| Outer-Ø (mm) | 114 | 114 | 114 | 114 | 114 | 114 | 114 |
| Inner-Ø (mm) | 104 | 104 | 104 | 104 | 104 | 104 | 104 |
| Length (mm) | 300 | 2000 | 1500 | 1500 | 1500 | 1500 | 860 |
| Thread | M24 | - | - | - | - | - | - |

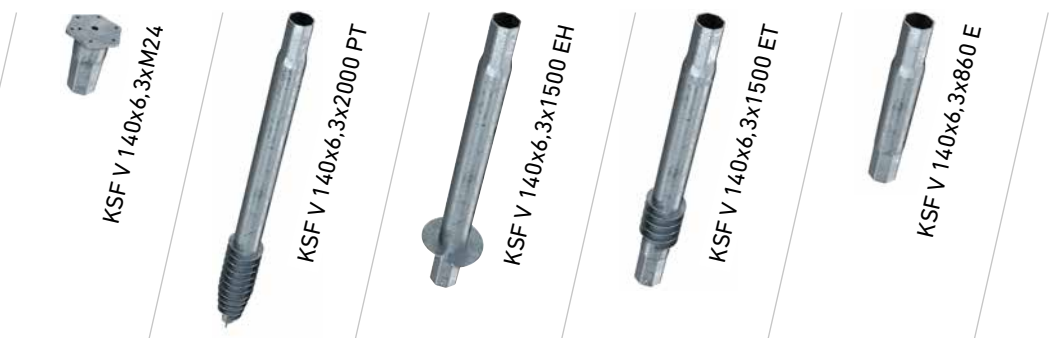
V140

High Load capacity / with static calculations for the internal load-bearing capacity and corrosion report

CE



Deutsches Institut für Bautechnik **DIBt**



| | | | | | |
|----------------|-------|-------|-------|-------|-------|
| Article number | 57832 | 57825 | 57831 | 57828 | 57826 |
| Outer-Ø (mm) | 140 | 140 | 140 | 140 | 140 |
| Inner-Ø (mm) | 127 | 127 | 127 | 127 | 127 |
| Length (mm) | 300 | 2000 | 1500 | 1500 | 860 |
| Thread | M24 | - | - | - | - |

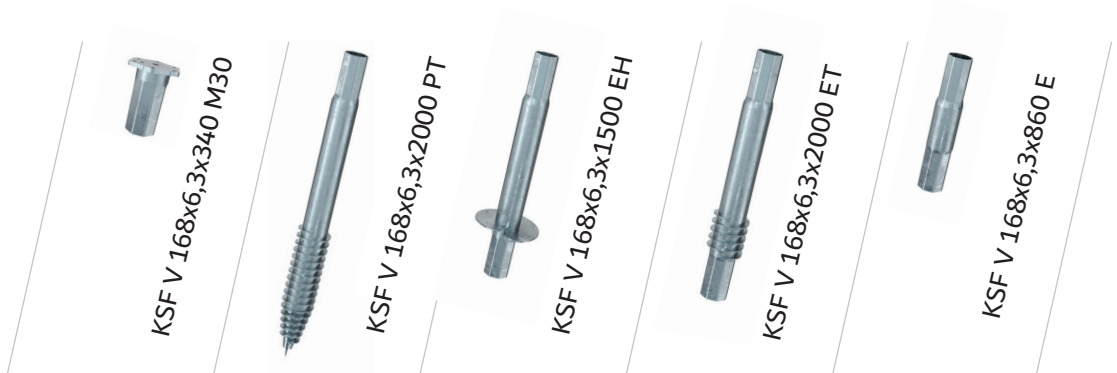
CONSTRUCTION PRODUCTS

Depending on local building regulations

V168

High Load capacity / with static calculations for the internal load-bearing capacity and corrosion report

CE



| | | | | | |
|----------------|-------|-------|-------|-------|-------|
| Article number | 25790 | 25786 | 25787 | 25795 | 25789 |
| Outer-Ø (mm) | 168 | 168 | 168 | 168 | 168 |
| Inner-Ø (mm) | 156 | 156 | 156 | 156 | 156 |
| Length (mm) | 340 | 2000 | 1500 | 2000 | 860 |
| Thread | M30 | - | - | - | - |

DATA MANAGEMENT

Data recording made easy

Thanks to in-house data management, KRINNER as a system provider makes it possible to follow the data recording in real time and thus offers the possibility of valuable project information (torque, distance measurement, embedment depth, etc.) to be communicated to partners and customers.

SMART CAP

Data recording tool

For manual KRINNER ground screw drivers KRE 20 & KRE 25

- Torque recording
- Control via KRINNER app
- Data transfer in real time with automatic report generation



DOKU KIT

Data recording tool

For all hydraulic KRINNER ground screw drivers

- Torque recording including displacement sensor
- Integrated GPS
- Control via KRINNER app
- Data transfer in real time with automatic report generation



GROUND SCREW DRIVERS

Additional equipment

KRINNER is a system provider for sustainable foundation construction, and therefore offers the right test and ground screw driver equipment for its ground screws engineered by KRINNER.

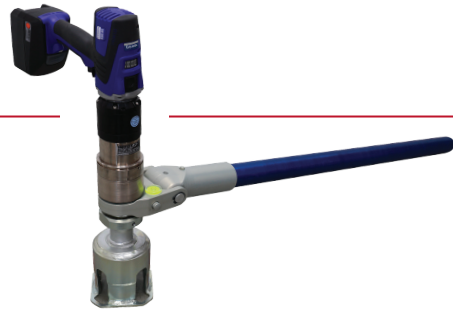
DIN



MANUAL GROUND SCREW DRIVER

KRE B2

Manual ground screw driver



The battery powered solution

- 230 Volt, Battery 18V, 5.2Ah
- Approx. 2,000 Nm torque
- Compatible with all KRINNER ground screw attachments

KRE 20

Manual ground screw driver

The classic among the manual screw drivers

- 230 Volt
- Approx. 3,500 Nm torque
- Compatible with all KRINNER ground screw attachments
- + Smart Cap



KRE 25

Manual ground screw driver

The KRINNER power machine

- 230 Volt
- Approx. 8,000 Nm torque
- Compatible with all KRINNER ground screw attachments
- + Smart Cap

CATERPILLAR

KRD 30

Self-driving caterpillar

Lightweight with high capacity

- Approx. 8,000 Nm torque
- 2.4 m drill lift
- Only about 1m broad and 1.1 t transport weight
- Precisely-defined feed force



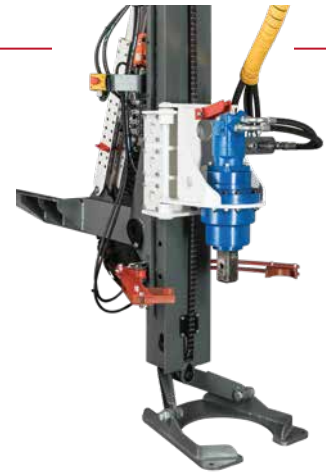
ATTACHMENTS

KRL

Hydraulic excavator attachment (drill attachment)

Combining precision and strength

- Approx. 15,000 Nm torque option /
Approx. 20,000 Nm torque option
- Quick change device
- For projects with larger foundations
(diameter up to 140 mm; wall thickness up to 6.3 mm)



KR P SYSTEM

Hydraulic excavator attachment

The starter model for larger projects

- Equipped with a 15,000 Nm or 25,000 Nm Auger torque drive
- Equipment for horizontal attaching of KRINNER ground screws
- Use with KRINNER data recording management



KRG 100

Hydraulic excavator attachment

The power solution

- Max. torque 100.000 Nm
- Approx. 364 Nm / bar
- Hydraulic ground screw installing machine
- Recommended excavator: 20-30 t
- For projects with larger foundations



SUITABLE TEST EQUIPMENT

Testing according to standards

KRINNER as a system provider of ground screws offers its own range of devices for performing tensile, compression and horizontal tests. There is a suitable test equipment for every requirement.

DIN



TP 50

Tripod

Tripod for tensile tests

- Maximum tensile force 50 kN
- Light weight of 24 kg
- Easy to transport
- Compatible with common crane scales



TP 100

Tripod

Tripod for tensile tests

- Maximum tensile force 100 kN
- Hydraulic tensile cylinder
- Delivery in transport boxes
- Compatible with common crane scales

TT 100

Test traverse

Test traverse for tensile, pressure and horizontal tests

- Suitable for static pressure, tension and horizontal tests
- Maximum tensile / compressive force 100 kN
- Compatible with all force transducers
- Distance between tested ground screw and counter bearings according to standards 1.5 m



TT 200

Test traverse

Test traverse for tensile, pressure and horizontal tests

- Suitable for static pressure, tension and horizontal tests
- Maximum tensile / compressive force 200 kN
- Compatible with all force transducers
- Distance between tested ground screw and counter bearings according to standards 2.5 m

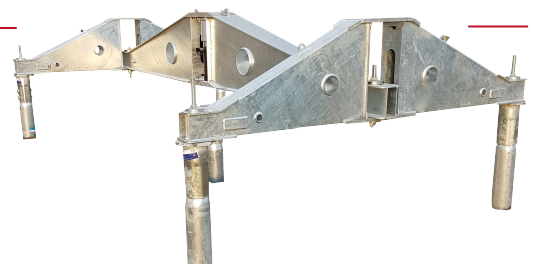


TT 500

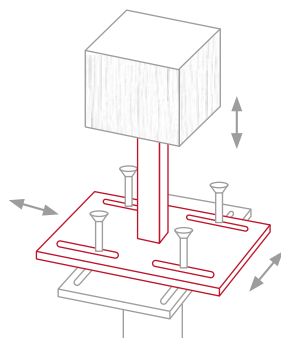
Test traverse

Test traverse for tensile, pressure and horizontal tests

- Suitable for static pressure, tension and horizontal tests
- Maximum tensile / compressive force 500 kN
- Compatible with all force transducers
- Distance between tested ground screw and counter bearings according to standards 2.5 m

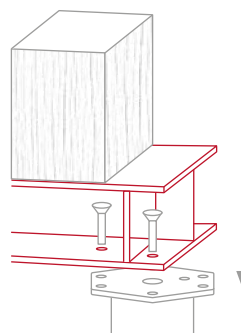


FASTENING OPTIONS



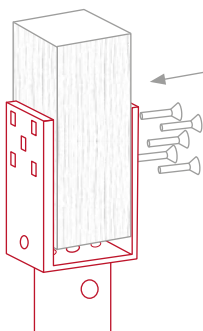
POST ANCHORS

Precise connection thanks to variable axes and height adjustment



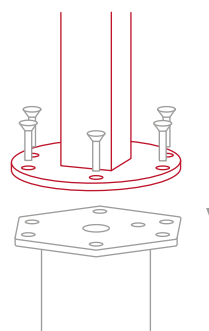
WOODEN BEAM SUPPORT

Modular when used with flange plates and matched to the given loads in each case



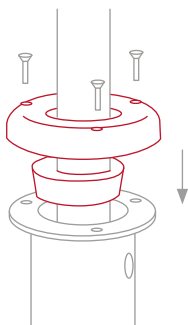
U-SHAPED BRACKET

Simple attachment with axial and height adjustment for horizontal beams or vertical posts



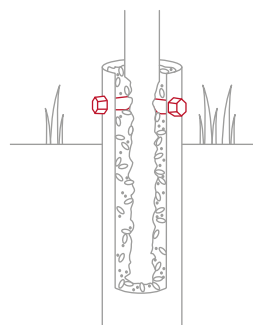
FLANGE PLATES

Modular when used with flange plates, matched to the given loads in each case



INNOVATIVE ECCENTER

Patented system for fine adjustment and vertical alignment for a resonance-free assembly



THREADED SCREWS

Three or four threaded screws for a fast and simple assembly

ACCESSORIES



ECCENTER SET

Eccenter set for various tube diameters; contains: clamp ring (screw ring for permanent fastening), eccentric, hexagonal screws (for fastening the clamp ring)

E-SERIES



ECCENTER

Eccentric for E-series ground screws (E 60) for aligning and fastening

E-SERIES



LEVEL

Spirit level to set the eccentric E 60

E-SERIES



CLAMP RING

Clamp ring for E-series ground screws (E 60)

E-SERIES



CLAMP SCREW

Clamp screw for ground screws

E-SERIES



POST ANCHORS

F-SERIES



PIVOT MANDREL

Triangle spirit level to exactly align tubes/posts in ground screws

UNIVERSAL



COVER

Inner cover for the ground screws G 68x550-1xM8 and G 68x650-1xM8 including allen screw

G-SERIES



PIVOT COVER

Pivot cover for cross struts in wire mesh fences for use with KSF G 68x550-1xM8 and KSF G 68x650-1xM8

G-SERIES



REDUCTION SLEEVE SET

5-part reduction sleeve set for ground screws KSF G 68x550-1xM8, KSF G 68x650-1xM8; reduction to 55.5 mm/ 50.0 mm/ 43.0 mm/ 38.5 mm/ 34.0 mm

G-SERIES



CONNECTION SCREWS

4-part connection screw set

V-SERIES



COVER SLEEVE

Cover sleeve for delineators and street signs

UNIVERSAL
X-SERIES



SPECIAL GRANULATE

Special granulate for fast and permanent tube fastening

UNIVERSAL
G-SERIES
K-SERIES



COVER

Cover for ground screws when not being used

E-SERIES
F-SERIES
G-SERIES



SCREWING BAR

Screwing aid for manual screwing of ground screws

UNIVERSAL
G-SERIES
U-SERIES

NOTES



Krinner Schraubfundamente GmbH
Passauer Straße 55
D-94342 Straßkirchen
Phone: +49 9424 94 01-80
www.krinner.io
service@krinner.com