S143

EASY-LOCK
INCLINOMETER CASING

INCLINOMETERS
& PENDULUMS

SISGEO®

S143_EN_05_09/2024

EASY-LOCK

INCLINOMETER CASING

The easy-lock inclinometer casing is a grooved tube machined at one end in order to have a self-aligning junction and a pre-assembled coupling at the other end. The special design of the coupling with an internal O-ring provide waterproof joint and nearly flush surface between tube and coupling.

The locking system is extremely simple, performant and cost-effective: the coupling contains a hole alligned with a groove of the next casing. A nylon wire is pushed throug the hole in the groove, covering the circumference of the casing. That's it: no need of rivets or glue.

APPLICATIONS

- Landslides
- Diaphragms and retaining walls
- Earth and rockfill dams
- Embankments
- Deep excavations
- Tunneling
- LNG and oil tanks

FEATURES

- Nearly-flush joint
- Negligible twisting (spiral)
- Suitable for T-Rex and DEX extenso-inclinometer columns
- Inert to the aggressive waters (acid waters, brackish or marine waters)
- Suitable for all inclinometer systems in the market

S143_EN_05_09/2024

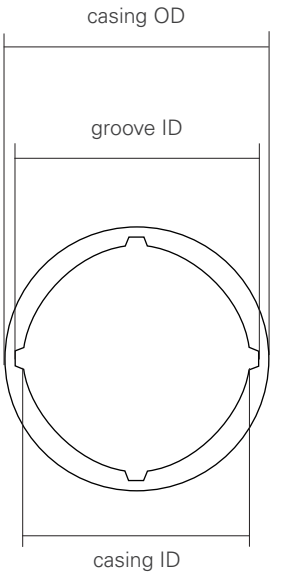
TECHNICAL SPECIFICATIONS

INCLINOMETER CASING	MODEL 0S143107000
Casing outer diameter	70 mm (2.75")
Coupling outer diameter	76 mm (3.00")
Casing Inner diameter	58 mm (2.32")
Groove inner diameter	63.5 mm (2.5")
Thickness	6 mm (0.22")
Overall section length (casing+coupling)	3055 mm (10.02')
Total section weight with coupling	3.6 kg
Spiral [1]	< 0.2° / m
Material	Shock-resistant ABS
Maximum tensioning load	200 kg
Casing tensile strength	40 MPa
Casing breacking elongation	20%
Casing elastic modulus	2700 MPa
Collapse test[2]	15 bar
ABS transition temperature	+105 °C (221 °F)
HDT test ISO 75[3]	+83°C (181 °F)
Minimum borehole drilling diameter	101 mm (4")

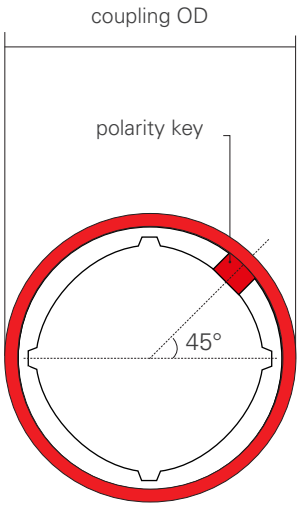
(1) During manufacturing particular attention is paid to minimise the spiral of the casing grooves and to machine the aligning key for casing junction with self aligning couplings. Spiral value is verified connecting 10 inclinometer casings of a batch and verifing the spiralling between the two ends.

(2) Test was performed in a water pressure chamber with empty casing sealed at the two ends.

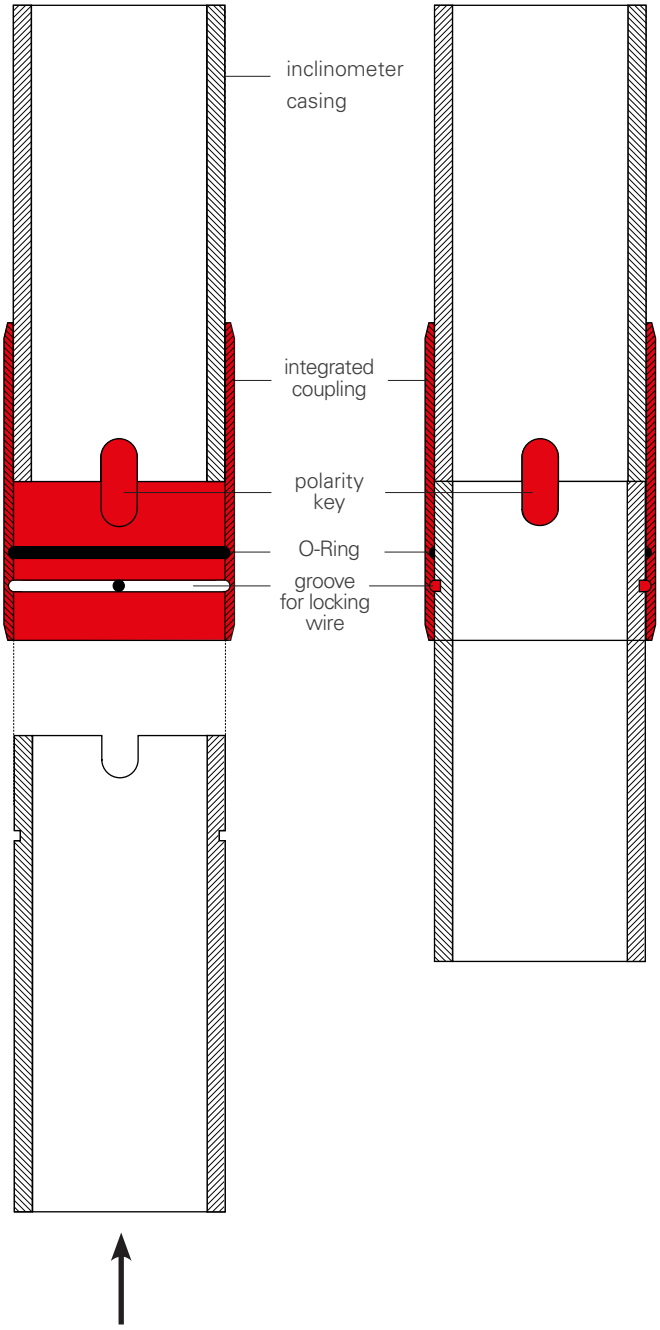
(3) Heat deflection temperature is defined as the temperature at which a standard test bar deflects a specified distance under a load of 1.80 MPa.



CAS ING SECTION



COUPLING AND CAS ING SECTION



S143_EN_05_09/2024

ACCESSORIES AND SPARE PARTS

LOCKABLE TOP CAP OS100CH1000

Lockable protective cap with survey pin permits topographical surveying in order to define and check the borehole coordinates. It also provides temporary fixing for 0S1CSU10000 pulley and cable stop during manual inclinometer measurements.

EASY-LOCK BOTTOM CAP OS143TF70EL

Bottom cap for 143 casings, made of ABS with easy-lock system for faster installation.

SIMPLE TOP/BOTTOM CAP OS143TF7000

Top/bottom cap for 143 casings, made of ABS. Need to be riveted.

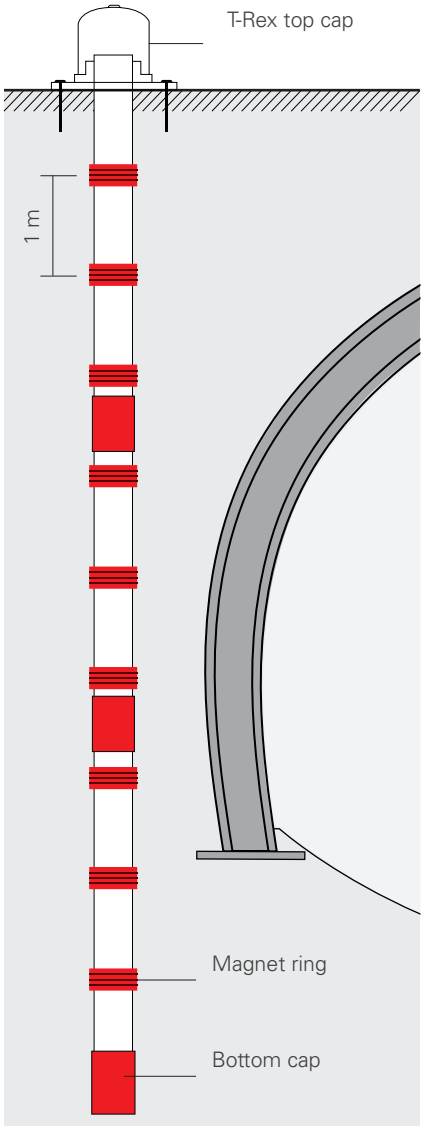
ASSEMBLING KIT FOR 100 M OS143KIT000

Assembling set composed by 5 O-rings, locking wire and Sisgeo adhesive tape. (Mandatory)

REPAIRING & ELONGATION KIT OS143KITR00

Kit for elongation of casing already cutted. It includes 5 coupling and mounting jig.

EXTENSO-INCLINOMETER COLUMN (T-REX AND DEX-S COLUMN)



S143 ABS casings are suitable to realise an extenso-inclinometer tube for high-precision measurements in borehole with T-REX or DEX-S extensometers.
Measuring targets are special magnet rings which are externally attached to ABS casing every meter.
Measurements are taken meter by meter inserting into the casing the T-REX mobile extensometer and the inclinometer probe for obtaining a detailed cumulative and accurate 3-D borehole profile.
Automatic 3-D borehole monitoring is allowed using DEX-S in-place extenso-inclinometer probes; DEX-S shall be connected to OMNIAlog datalogger for data storage, remote management and alerting.
Extenso-inclinometer colum can be read with the C121 magnetic probe to check the position of the rings after column grouting, and to take interim measurements before using T-REX or DEX.

MAGNET REFERENCE RING OREXORINGR0

Simple measuring reference ring for T-REX incremental extensometer and DEX in-place extensometers.
OD: 93 mm
ID: 71 mm
Material: PVC with permanent magnet

SPIDER REFERENCE RING OREX0AF71R0

Spider measuring reference ring for T-REX incremental extensometer and DEX in-place extensometers.
OD: 93 mm
ID: 71 mm
Max spring span: 300 mm
Material: PVC with permanent magnet

T-REX TOP CAP OREXOTS2350

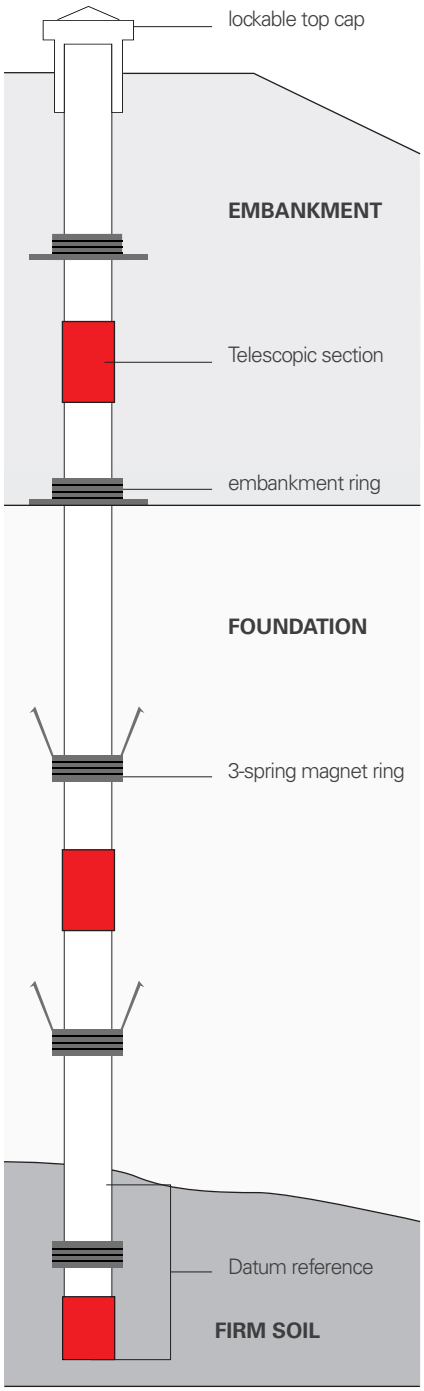
Lockable top cap ready with fixing plate for T-REX positioning system.

MAGNET RING JIG OREXODIMA00

Setting rod for positioning the rings 1 m apart.

S143_EN_05_09/2024

INCLINO-SETTLEMENT COLUMN (BRS MAGNET EXTENSOMETER COLUMN)



Inclino-settlement column is a cost-effective solution when inclinometer and settlement measurement are requested. It is composed by ABS inclinometer casing with a number of magnet rings; telescopic sections are provided for columns where big settlements are expected with consequent damage of the casings. Spider magnet rings are usually installed in borehole; embankment magnet rings with circular plate are available for installation during embankment construction.
Measurements are perfomed with removable inclinometer system and C121 portable magnet settlement probe.
The magnet rings utilized for the inclino-settlement column are not compatible with T-REX, DEX and DEX-S probes.

3-SPRING MAGNET RING OS143AF6000

BRS magnet ring with 3 nylon springs for borehole installation. Not compatible with T-REX, DEX and DEX-S.
Ring ID 71 mm
Ring OD 95 mm
Max. spring span 300 mm

6-SPRING MAGNET RING OS143AF6060

BRS magnet ring with 6 nylon springs for borehole installation. Not compatible with T-REX, DEX and DEX-S.
Ring ID 71 mm
Ring OD 95 mm
Max. spring span 300 mm

EMBANKMENT RING OS143AR6000

BRS magnet ring with circular settlement plate for embankment installation. Not compatible with T-REX, DEX and DEX-S.
Ring ID 71 mm
Ring OD 95 mm
Plate OD 300 mm

DATUM REFERENCE OS143DR7000

Bottom datum reference for S143 casing, total length 1500mm. It includes a magnet ring.

70MM TELESCOPIC SECTION OS143ST0700

Telescopic section with 75 mm gap (movement range).

150MM TELESCOPIC SECTION OS143ST1500

Telescopic section with 150 mm gap (movement range).

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TECHNICAL ASSISTANCE

SISGEO offers customers e-mail and phone assistance to ensure proper use of instruments and readout and to maximize performance of the system.

For more information, email us: **assistance@sisgeo.com**