

DIGITAL TAPE EXTENSOMETER 03.062D CONVEX-D

ROCTEST
TELEMAC 



GENERAL DESCRIPTION

The CONVEX-D is a digital tape extensometer which quickly and accurately measures changes in distance between two reference points in any orientation.

This design incorporates several improvements compared to other convergence instruments available on the market.

TECHNICAL DESCRIPTION

The CONVEX-D digital tape extensometer basically consists of a steel survey tape with punched holes, loaded on a reel fixed to the body of the instrument.

Among added features to the CONVEX-D, there is:

- A unique anti-backlash tensioning mechanism ensuring a continuous accuracy in time.
- A pivoting latch has been incorporated to lock positively the tape, thus facilitating the instrument's handling.
- A digital indicator has been added in order to accurately read the relative change between two reference points. By turning the rotary protection drum, it is easy to get quick access to the digital display function buttons through the opening provided for this purpose.
- Two hooks are provided, one at the movable end of the tape and the other on the reel frame.
- Tensioning of the tape to a predetermined load is easily done by rotating a large knurled collar until two reference lines are precisely aligned. Visual alignment is optimized by the use of two superimposed magnifying lenses.

For an actual measurement, the CONVEX-D is stretched between two reference points consisting of two stainless steel eyebolts fixed on their respective anchor.

A verification frame can be used to regularly check the repeatability of the instrument.

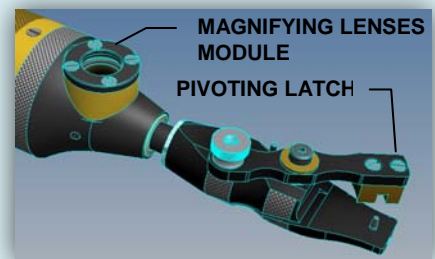
APPLICATIONS

Measurement of:

- Mine roof sag
- Tunnel convergence
- Sheet piling deformation
- Slope stability

FEATURES

- Lightweight, dust proof, robust and reliable construction
- Anti-backlash mechanism
- Pivoting latch



- Digital display and its protection drum



- Anodized aluminum construction



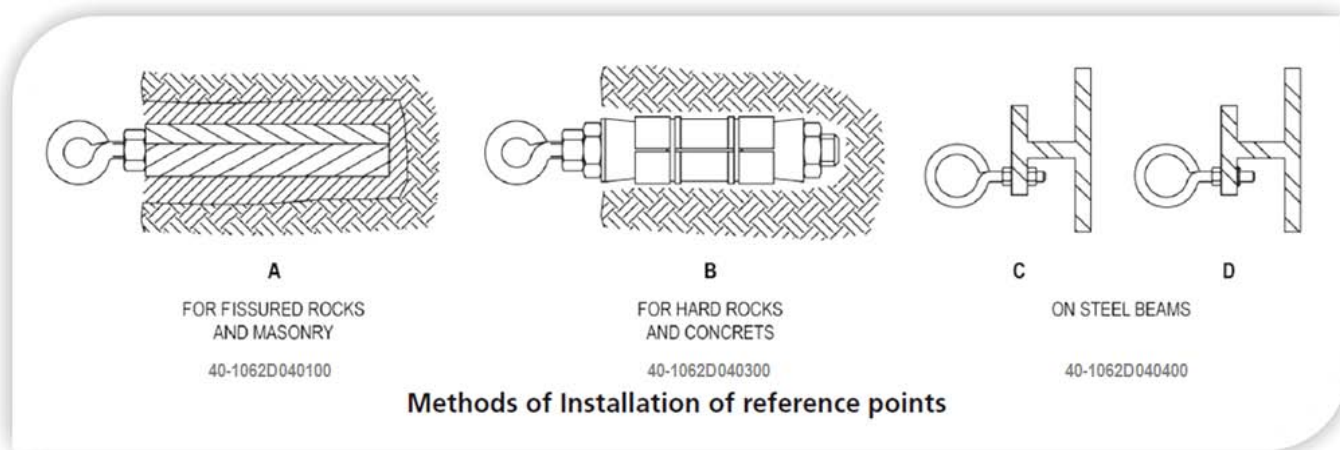
- New Austrian Tunneling Method (NATM) also compliant with a "design as you monitor" approach.

INSTALLATION AND READING

Proper anchoring of the reference points is required to complete an accurate measurement. The anchors, which must be chosen according to the conditions, are either rebars (A) to be grouted in boreholes or expansion shell anchors (B). The eyebolts can also be directly bolted (C) or welded (D) on structural steel beams.

To take a reading, the snap hook fixed on the movable end of the tape is attached to one reference point. Moving towards the opposite anchor, the tape unwinds until it is possible to fix the hook mounted on the reel onto the second reference point. The slack in the tape is then taken up by winding up the reel and the locking pin located at the front of the extensometer is then inserted into the nearest hole of the tape. The knurled collar is then rotated to tension the tape up to a predetermined value of 222 N (50 lbf) corresponding to the precise alignment of the two reference lines.

The measurement is made by adding the tape and the digital indicator readings. The optional verification frame can be used before a series of readings to verify that the instrument has not been damaged.



SPECIFICATIONS

CONVEX-D / DIGITAL TAPE EXTENSOMETER

Ranges	20 m, 30 m, 66 ft. or 100 ft.
LCD indicator resolution	0.01 mm or 0.0005 in.
Repeatability	± 0.10 mm or ± 0.005 in.
Operating temperature	0°C to 40°C

REFERENCE POINTS

Eyebolt	Stainless steel with two nuts
Diameter	6.35 mm
Length	50 mm

ANCHORS

Type A

Anchor diameter	20 mm
Anchor length	150 mm

Type B

Drilled hole diameter	13 mm
Drilled hole depth	35 mm

OPTIONAL ACCESSORIES

- Carrying case
- Reference points and anchors
- Verification frame
- Replacement Tape

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
FR-1062D50100	Aluminum basic instrument without tape
FR-1062050200	Verification frame
05-0062VALISE	Carrying case
40-1062040100	Reference point with anchor A
40-1062040300	Reference point with anchor B
40-1062040400	Reference point (eyebolt & nuts / anchor C or D)
10-1062000020M	20 m tape
10-1062000030M	30 m tape
10-1062000066F	66 ft tape
10-1062000100F	100 ft tape