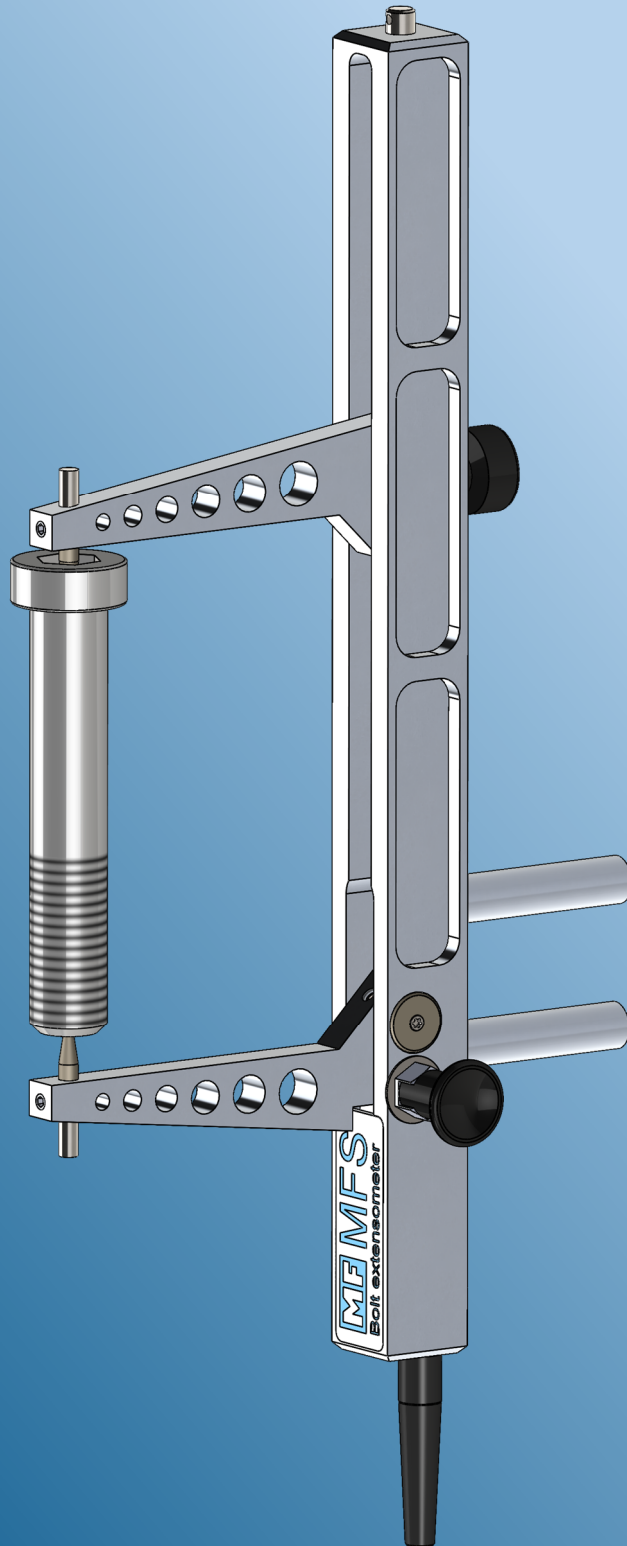




Mess- & Feinwerktechnik GmbH



MFS 150 / 220 / 300 / 500

Extensometer for screws

## Area of application

The extensometer MFS is used to measure the change in length of bolts in tensile testing. The extensometer measures the elongation of the screw test specimen between the probe tips over the entire length. The screws must be prepared with centring holes at the ends to hold the probe tips.

The screw test specimen itself is fastened in a special fixture during the tensile test, in which lateral openings are incorporated for attaching the MFS.

## Design and function

Two measuring arms are positioned in a torsion-resistant body made of high-strength aluminium. The upper measuring arm is moved in parallel after releasing a clamp to adjust the length of the test specimen.

The lower, rotatable measuring arm detects the change in elongation of the test specimen during the tensile test by means of a strain gauge-applied bending spring. A locking bolt fixes the lower measuring arm in its initial position while the length of the test specimen is adjusted by moving the upper measuring arm in parallel. For possible weight compensation of the MFS, there is a suspension eyelet for a coil spring on the upper end.

The MFS is available in 4 different lengths. These are 150, 220, 300 and 500 mm. This length refers to the maximum screw length which can be tested. Furthermore, there are also different measuring stroke versions of each length type (see Table 1 top right).

## Operation

In order to adjust the screw length, the lower measuring arm is fixed by snapping in the locking bolt located on the side. For this purpose, the locking bolt is turned into its locking position.

By slightly deflecting the lower measuring arm, the locking bolt snaps into place automatically and the lower measuring arm is now in its initial position. After loosening the fixing screw of the upper measuring arm, the test specimen is clamped by moving it parallel and with slight play between the measuring tips. The upper measuring arm is clamped again in this position. The locking bolt is then unlocked and the test specimen can be removed by opening the measuring arms (on the lower handle).

The MFS is now ready for the subsequent tensile tests on the previously set screw test specimen.

**Note: The clamping of the upper measuring arm has a disc spring. By slightly tightening the locking screw, the measuring arm can be smoothly moved parallel without tilting.**

## Calibration

Calibration of the MFS on a calibrator is only possible with special measuring inserts that allows the MFS to be clamped between its tips. Available on request.

## Scope of delivery

- 1 MFS with 5 m cable
- 2 Measuring ball tip Ø 3 x 28 mm
- 1 Storage case
- 1 Test report

Device Name	Stroke	Screw length	Body length
MFS 150-4	4	until 150	276
MFS 150-8	8		
MFS 150-12	12		
MFS 220-4	4	until 220	346
MFS 220-8	8		
MFS 220-12	12		
MFS 300-4	4	until 300	426
MFS 300-8	8		
MFS 300-12	12		
MFS 500-4	4	220 - 500	626
MFS 500-8	8		
MFS 500-12	12		

Table 1: MFS versions (all lengths in mm)

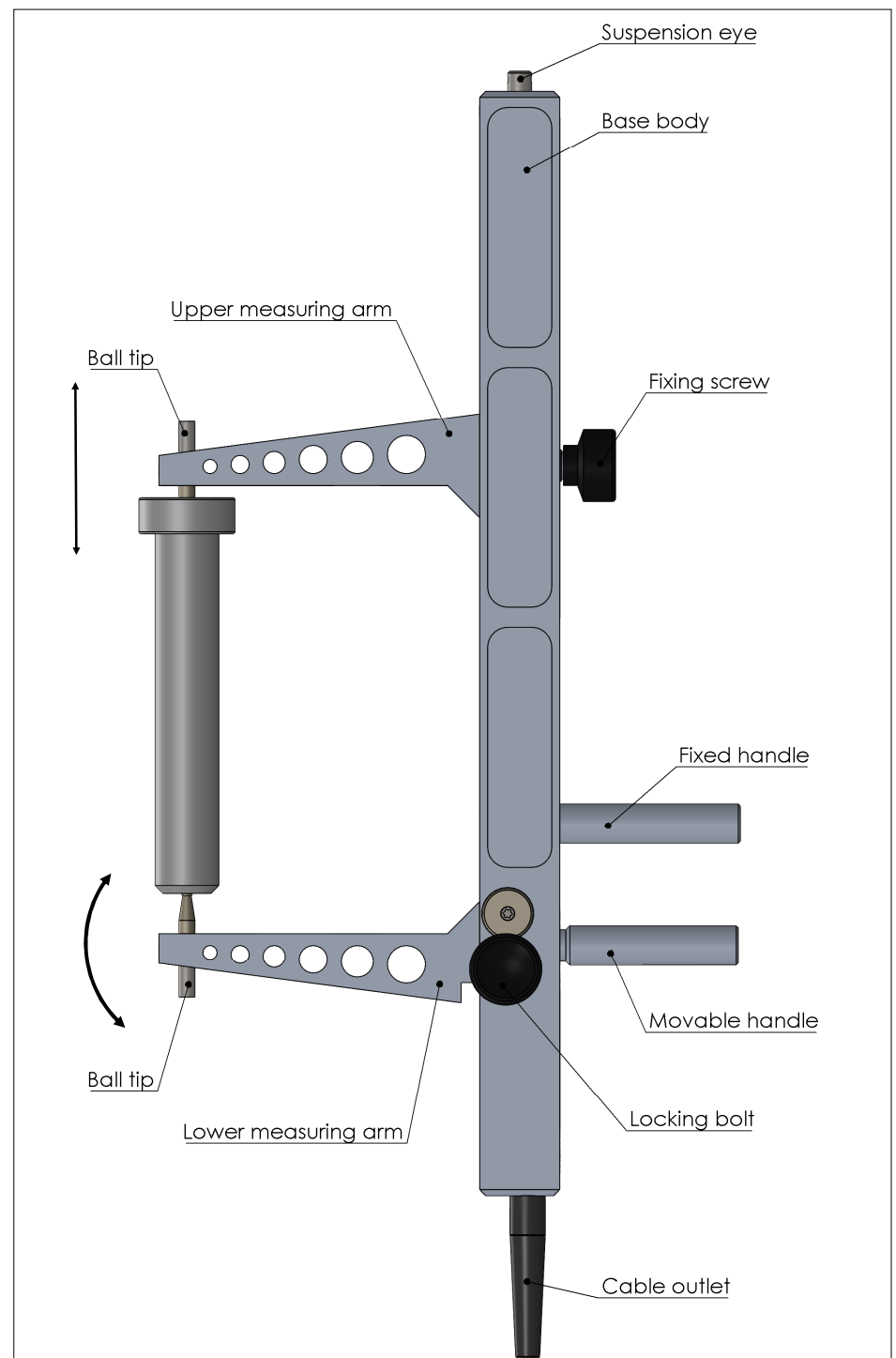
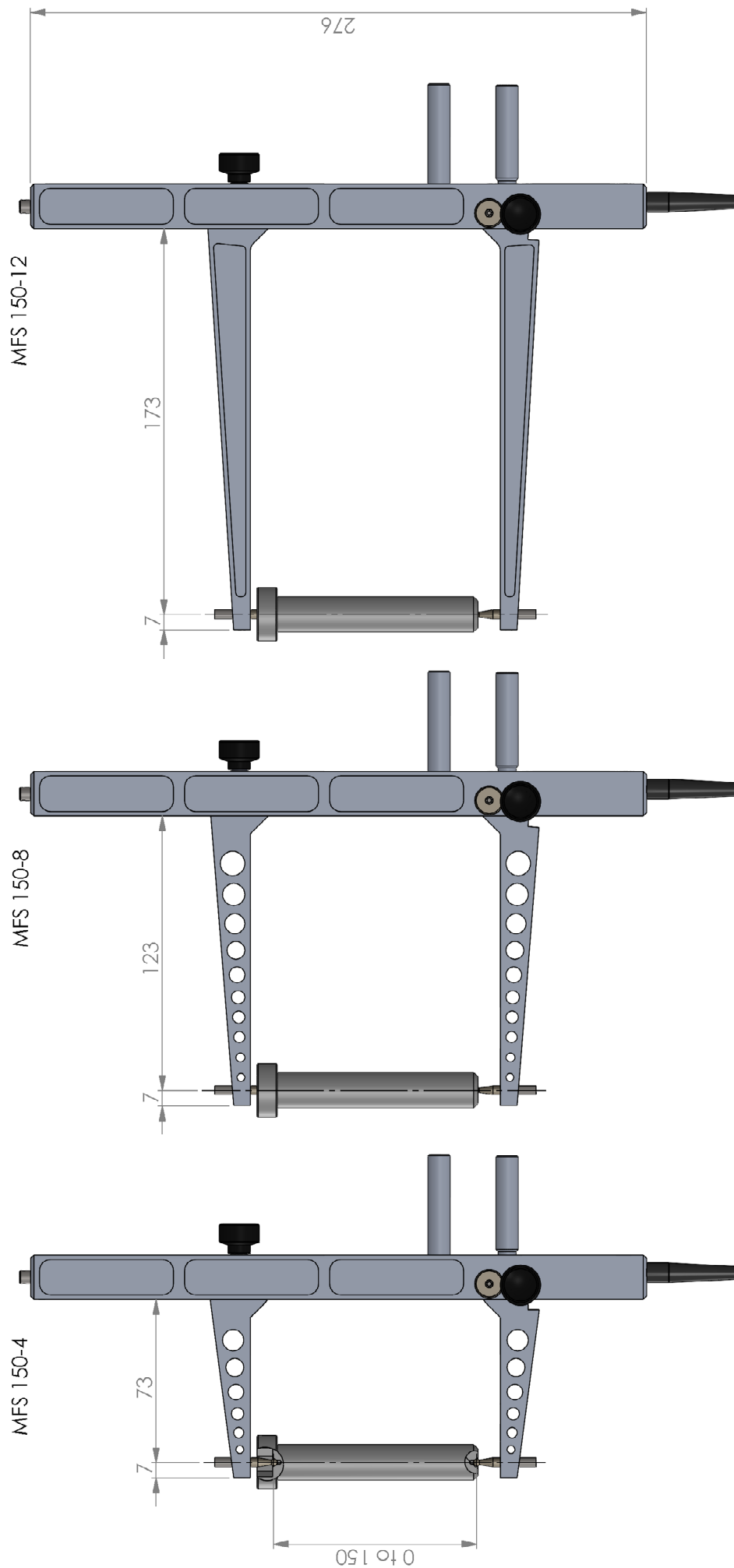


Figure 1: MFS description



Drawing 1: MFS 150 - 4 / 8 / 12 Dimensions

Technical Data	MFS
Accuracy class EN ISO 9513	0,5 ,1
Measuring principle	Strain gauge full bridge
Measuring travel (mm)	4, 8, 12
Sensitivity(mV/V)	2
Nominal bridge resistance (Ohm)	350
Clamping force (N)	8
Range of temperature (°C)	+ 1 - 60
Cable length (Metre)	5