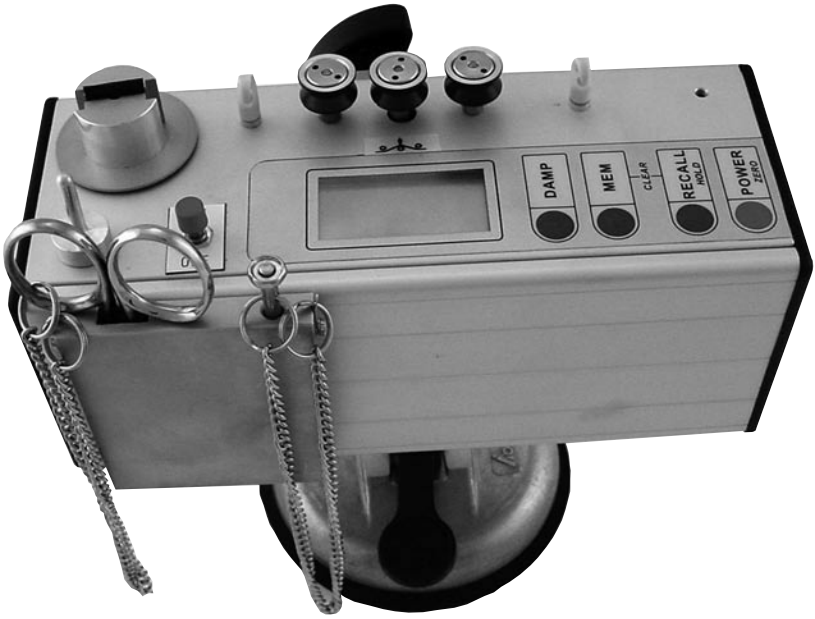
CHECK·LINE®
BY ELECTROMATIC

Operating Instructions

Valid as of*: 01.02.2006* • Please keep the manual for future reference*!*



CE

CHECK·LINE®
INSTRUMENTS

ELECTROMATIC
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Contents

1 Warranty and Liability

In principle, the supply of the device is subject to our “General Conditions of Sale and Delivery.” These have been provided to the operating company on conclusion of the contract, at the latest.

Warranty:

- SCHMIDT tension meters are warranted for 12 months.

Parts subject to wear, electronic components and measuring springs are not covered by the warranty. No warranty or liability will be accepted for bodily injury or property damage resulting from one or several of the following causes:

- Misuse or abuse of the device.
- Improper mounting, commissioning, operation and maintenance of the device (e.g. verification interval).
- Operation of the device if any safeguards are defective or if any safety and protection precautions are not properly installed or not operative.
- Failure to comply with the notices in the Operating Instructions regarding transport, storage, mounting, commissioning, operation, maintenance and setup of the device.
- Any unauthorized structural alteration of the device.
- Insufficient inspection of device components that are subject to wear.
- Opening the device or improper repair work.
- Disasters caused by the effects of foreign objects or by force majeure.

1.1 Notices within the Operating Instructions

The fundamental prerequisite for the safe handling of this device and its troublefree operation is the knowledge of the basic safety notices and safety instructions.

These Operating Instructions contain the most important notices for the safe operation of the device.

These Operating Instructions, in particular the safety notices, must be observed by any person who works with the device. In addition, the locally valid rules and regulations for the prevention of accidents must be complied with.

The representations within the Operating Instructions are not true to scale.

The dimensions given are not binding.

General indications of direction, such as FRONT, REAR, RIGHT, LEFT apply when viewing the front of the device.

1.2 Responsibilities of the Operating Company

In compliance with the EC Directive 89 / 655 / EEC, the operating company agrees to only permit persons to work with the device who:

- are familiar with the basic regulations on industrial safety and accident prevention and who have been trained in handling the device.
- have read and understood the chapter on safety and the warning notices in these Operating Instructions and have confirmed this with their signatures.
- are examined regularly on their safe and conscientious working method.

1.3 Responsibilities of the Personnel

All persons who work with the device agree to perform the following duties before starting work:

- to observe the basic regulations on industrial safety and accident prevention.
- to read the chapter on safety and the warning notices in these Operating Instructions and to confirm with their signatures that they have understood them.

1.4 Informal Safety Measures

The Operating Instructions must always be kept on hand where the device is operated. Apart from the Operating Instructions, the generally and locally valid regulations on accident prevention and environmental protection must be provided and complied with.

1.5 Training of the Personnel

Only trained and instructed personnel is permitted to work with the device. The responsibilities of the personnel must be clearly defined for mounting, commissioning, operation, setup, maintenance and repair. Trainees may only work with the device under the supervision of an experienced personnel

1.6 Intended Use

The device is intended exclusively to be used as a tension meter. Any other use or any use exceeding this intention will be regarded as misuse. Under no circumstances shall HANS SCHMIDT & Co GmbH be held liable for damage resulting from misuse.
The intended use also includes:

- Complying with all notices included in the Operating Instructions and observing all inspection and maintenance works.

1.7 Dangers in Handling the Device

The device was designed according to the state of the art and the approved safety standards. Nevertheless, its use may cause serious or fatal injury to the user or third persons, and/or an impairment of the device or of other material assets.
The device may only be applied:

- For its intended use in a faultless condition with regard to the safety requirements.
- Malfunctions that could impair safety must be remedied immediately.
- Personal protective equipment must be used according to the EC Directive 90 / 686 / EEC.

The device must not be operated in potentially explosive areas and must not come into contact with aggressive substances.

1.8 Copyright

1.9 EU - Declaration of Conformity

In compliance with the EC Directive 89 / 336 / EEC (93 / 68 /EEC)

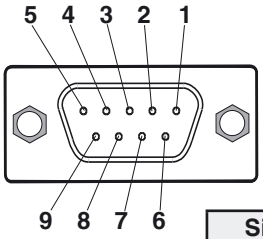
2.1 Specifications

Calibration: Acc. to SCHMIDT factory procedure with 0.2 mm Ø PA monofil
Tension Range: 1 - 500 cN
Accuracy: ± 1% FS* ± 1 digit (typically ± 0.5% FS*)
Overrange: 10% FS*, without accuracy guarantee
Overload Protection: 200% FS*
Measuring Principle: Strain gauge bridge
Meas. Roller Deflection: max. 0.5 mm
Signal Processing: Digital, 12 bit A/D converter
Damping: Adjustable electronically (averaging)
Meas. Frequency: Approx. 5 kHz internally
Display Update Rate: 2x per sec.
Display: 3-digit LCD, 11 mm high
Memory: Average, last value, maximum, minimum, MAX_{PEAK}, MIN_{PEAK}
Temperature Coefficient: Gain: less than ± 0.01% FS*/°C
Output Signal **Analog:** 0 - 2 V DC (linearized), R_{load} > 1 kW ± approx. 1%
Converter frequency 30 Hz
Digital: RS-232 (9600, 8, N, 1)
Temperature Range: 10 - 45° C
Air Humidity: 85% RH, max.
Auto Power Off: Automatically after approx. 3 min. of non-use
Power Supply: 9 V E block, e.g. long life 9 V lithium
AC adapter 12 V, 500 mA
Housing Material: Aluminium profile with plastic outer casing (PVC)
Housing Dimensions
(incl. clamping device)**:** 215 mm x 100 (140) mm x 120 mm (W x D x H)
Weight, tension meter: 1 kg
Weight, suction cup: 0.5 kg
*FS = Full Scale

Guide Rollers:

V-grooved	Line Speed m/min max.	Roller Material
Standard	2000	Hardcoated aluminium

2.2 Pin Assignment and Signals of the RS-232 Interface (9-Pin D-Sub Connector)



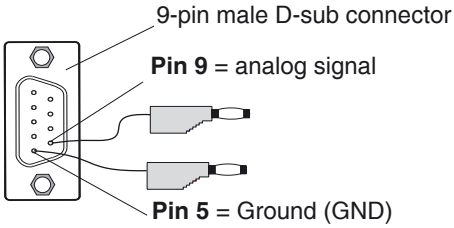
Signal	RS-232-C
Data Bit	8 bits
Stop Bit	1 bit
Parity	None
Baud Rate	9600

Pin Number	Signal	Description
1		Not assigned
2	TXD	TRANSMITTED DATA
3	RXD	RECEIVED DATA
4		Not assigned
5	GND	Ground
6		Not assigned
7	RTS	READY TO SEND
8		Not assigned
9	2 V DC	Analog signal

2.3 Optional Accessories

ET2-CA: Connecting cable for analog signal
ET2-CC: Digital connecting cable
ET2-P1: "TENSION INSPECT"
Software (Win 95 or higher) for viewing and storing the measured data on a PC.

2.3.1 Pin Assignment of the Analog Cable (Option ET2-CA)



2.4 Delivery Includes

Tension meter with 9 V long life battery
1 AC adapter 12 V, 500 mA
1 Pair of scissors
1 Screw driver (1.5 mm blade width)
1 Operating Instructions
1 Stand

2.5 Unpacking

Unpack the tension meter and inspect it for any shipping damage. Notices of defect must be filed immediately, at the latest within 10 days on receipt of the goods.

3 Notices before Starting Measurement

Have you read and understood the Operating Instructions, in particular Chapter 1 "Basic Safety Notices"? You are not permitted to operate the instrument before doing so.

Before working with the instrument you must put on your personal protective clothing, if necessary. For example, eye protectors, gloves, etc.
To avoid damage, do not move the center roller by hand.

Tensions that exceed the tension range of the instrument by more than 100% may cause permanent damage to the measuring spring and must be avoided under any circumstances.

The ID plate with the CE mark and the serial number as well as the calibration label (optional) and the SCHMIDT Quality Seal are provided at the bottom of the instrument.

3.1 Operating Elements

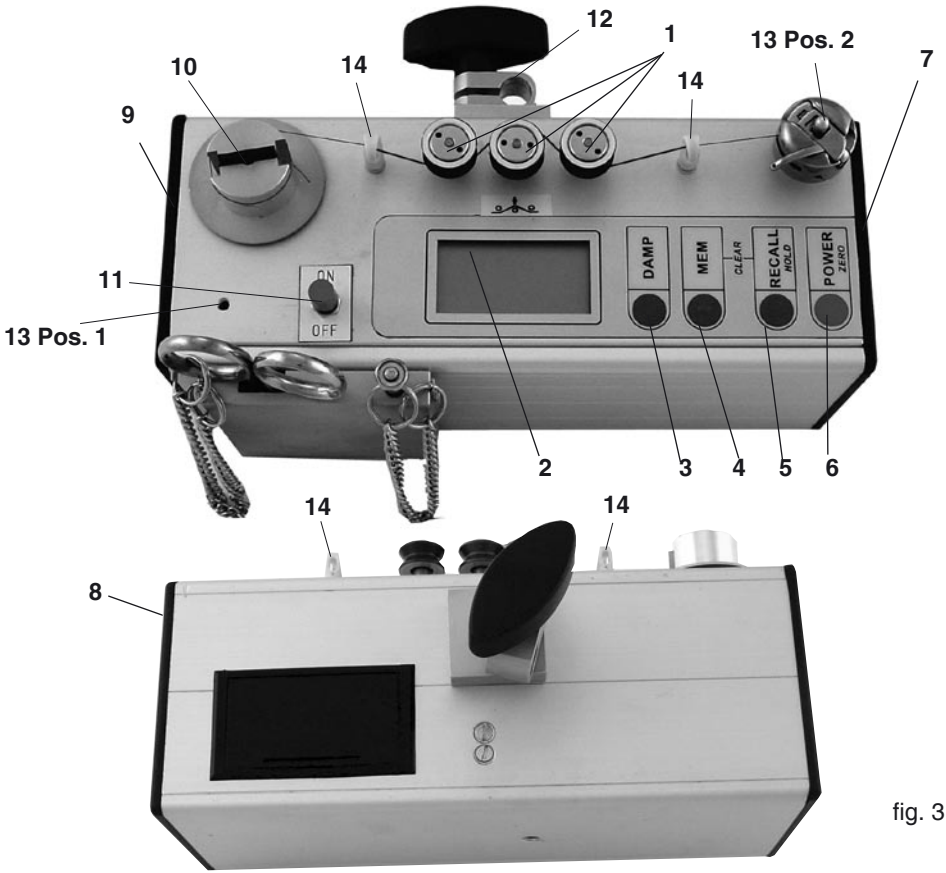
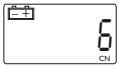


fig. 3.1b

1 ROLLERS
2 DISPLAY
3 DAMP key
4 MEM key
5 RECALL / HOLD key
6 POWER / ZERO key
7 Interface
8 Battery compartment
9 AC adapter connector
10 TAKE OFF ROLLER
11 ON / OFF button
12 Clamping device for suction cup
13 FIXTURE TO DETERMINE BOBIN CASE
14 CERAMIC EYES

3.2 Battery Insertion

Before first use of your tension meter, you need to insert the battery. If the symbol is shown on the DISPLAY  the battery is low and must be replaced immediately. Operating the tension meter with a low battery may cause measurement errors.

To insert the battery:

- Open the BATTERY COMPARTMENT which is located on the rear side of the instrument.
- Insert a 9 V battery (E block) into the BATTERY COMPARTMENT. Please ensure proper polarity.
- Close the BATTERY COMPARTMENT.

Used batteries must be disposed of in compliance with local regulations. If the instrument will not be used for a longer period of time, the battery should be removed.

3.2.1 Switch-On

Press the POWER key until all symbols are shown on the DISPLAY  .

When you release the key, the DISPLAY momentarily shows the tension range and the software version, e.g. E 1.0, followed by random values or “0”.

3.2.2 Switch-Off

Auto power off:

The tension meter switches off automatically after approx. 3 minutes of non-use.

Manual switch-off:

- Press the POWER key for five seconds.

3.2.3 Zero Adjustment of the Measuring Position (Auto Zero)

The instrument is factory calibrated for a vertical material path. Therefore, before starting measurement you need to carry out zero adjustment, as described below, each time the tension meter is switched on. This procedure is necessary to compensate for the weight of the measuring roller in the measuring position. The zero adjustment for the new measuring path only remains effective until the instrument is switched off.

Zero adjustment must be repeated whenever the material path is changed or the tension meter does not display “0”. The process material must not yet be inserted!

Requirement:

- Tension meter switched on as described in Chapter 3.2.1.

To carry out zero adjustment:

- Place the MST in the desired measuring position.
- Press the POWER key **6**.

The DISPLAY **2** momentarily shows  and then switches to  .
The MST is now adjusted for the new material path and is ready to measure.

3.3 Operating Procedure

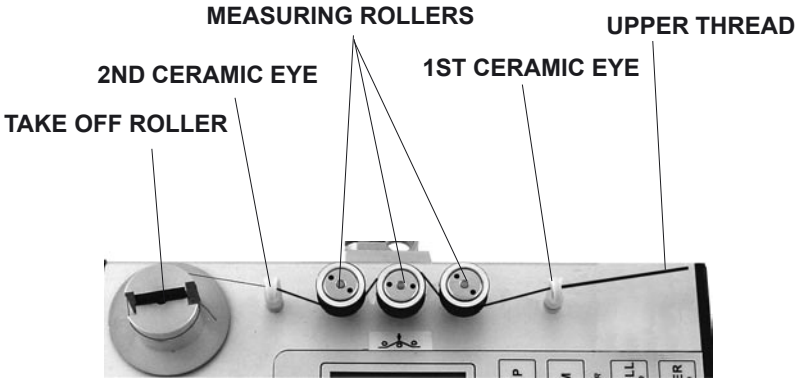
3.3.1 Measuring the Upper Tension

Requirements:

- Tension meter switched on as described in Chapter 3.2.1.
- Damping factor set, if necessary (Ch. 3.3.4)
- Zero adjustment carried out as described in Chapter 3.2.3.

To insert the process material:

- At the sewing machine, thread the upper thread all the way through to the take-up lever
- Thread the upper thread through the first CERAMIC EYE,
- and then through the MEASURING ROLLERS (see material path symbol on front side) It is important to assure that the UPPER THREAD runs smoothly between the MEASURING ROLLERS.
- Thread the upper thread through the second CERAMIC EYE,
- and clamp it in the rubber groove of the motor-driven TAKE OFF ROLLER.



To measure the process material:

- Press the ON / OFF button to switch on the motor-driven TAKE OFF ROLLER. The tension meter starts measuring.
- The DISPLAY shows the measured tension values. You can simultaneously set the desired upper tension at the corresponding setscrew of the sewing machine.

If any error messages occur during measurement, please refer to Chapter 3.5 for details.

To remove the process material:

- Press the ON / OFF button to switch off the motor-driven TAKE OFF ROLLER**.**
- Remove the UPPER THREAD from the MEASURING ROLLERS and cut it off at the TAKE OFF ROLLER with the supplied scissors.

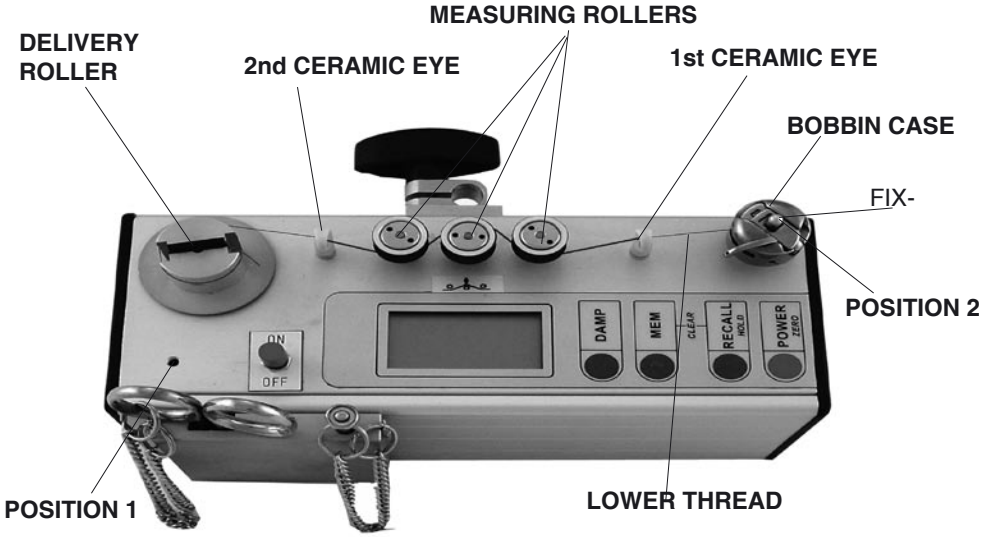
3.3.2 Measuring the Lower Tension

Requirements:

- FIXTURE TO DETERMINE BOBIN CASE removed from POSITION 1 and screwed in at POSITION 2.
- Tension meter switched on as described in Chapter 3.2.1.
- Damping factor set, if necessary (Ch. 3.3.4)
- Zero adjustment carried out as described in Chapter 3.2.3.

To insert the process material:

- Slip the BOBBIN CASE with the full lower-thread bobbin onto the FIXTURE TO DETERMINE BOBIN CASE- Properly insert the LOWER THREAD from the bobbin into the BOBBIN CASE.
- Thread the lower thread through the first ceramic eye,
- and then through the MEASURING ROLLERS (see material path symbol on front side). It is important to assure that the LOWER THREAD runs smoothly between the MEASURING ROLLERS.
- Thread the lower thread through the second CERAMIC EYE,
- and clamp it in the rubber groove of the TAKE OFF ROLLER.



To measure the process material:

- Press the ON / OFF button to switch on the motor-driven TAKE OFF ROLLER. The tension meter starts measuring.
- The DISPLAY shows the measured tension values. You can simultaneously set the desired lower tension at the corresponding setscrew of the BOBBIN CASE.

If any error messages occur during measurement, please refer to Chapter 3.5 for details.

To remove the process material:

- Press the ON / OFF button to switch off the motor-driven TAKE OFF ROLLER.
- Remove the LOWER THREAD from the MEASURING ROLLERS and cut it off at the TAKE OFF ROLLER with the supplied scissors.

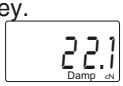
3.3.3 Switching on Damping Mode

The MST is equipped with an electronic damping which ensures steady readings when tension fluctuates. This is achieved by averaging the measured values at the set update rate. Before switching on the damping mode, it is recommended that you measure the first values without damping enabled.

Requirements:

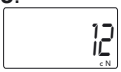
- Process material inserted as described in Chapter 3.3.
- The DISPLAY has shown the first tension values.

To switch on damping:

- Press the DAMP key.
  The display shows the set damping factor.
- Release the DAMP key.
  The DISPLAY shows 

DAMP below the current reading.

To switch off damping:

- Press the DAMP key **3**.
  The DISPLAY shows 

only the current reading.

3.3.4 Changing the Damping Factor

The tension meter is factory preset to a damping factor of 07. The tension values are thereby averaged for the display in the following way:

$$\frac{\text{7 old values + 9 new values}}{16}$$

The damping factor can be modified in 15 steps from 01 = **low damping**:

$$\frac{\text{1 old value +15 new values}}{16}$$

to 15 = **high damping**

$$\frac{\text{15 old values + 1 new value}}{16}$$

Requirement:

- Tension meter switched on as described in Chapter 3.2.1.

To change the damping factor:

- Press and hold the DAMP key.
  The display shows the set damping factor.
  You can now increase the damping factor with the MEM key and decrease it with the RECALL key.
- Release the DAMP key.
  The tension meter switches back to measuring mode.

The selected damping factor remains stored in the MST memory even after the instrument is switched off.

3.4 Storing the Tension Values

The tension meter features a data logger which stores the following data obtained during a measuring period:

Average value,		
Last value,		
Maximum value	(MAX),	
Minimum value	(MIN),	
Minimum peak value	(MIN PEAK)	(lowest single value measured),
Maximum peak value	(MAX PEAK)	(highest single value measured).

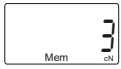
The measured data remain stored in the MST memory even after the instrument is switched off.

Requirements:

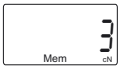
- Tension meter switched on as described in Chapter 3.2.1.
- UPPER or LOWER THREAD inserted as described in Chapter 3.3.

To store the tension values:

- Press the MEM key to start the measuring period.

  While the tension data are stored, the MEM 

indicator blinks on the DISPLAY and the currently measured value is displayed.
- When you want to end the measuring period, press the MEM key 4 once again. Data logging is stopped.

  The DISPLAY shows 

MEM and the current reading.

3.4.1 Recalling the Stored Tension Values

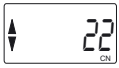
Requirement:

- Tension meter switched on as described in Chapter 3.2.1.

You can end recall any time by pressing the POWER key.

To recall the tension values:

- Press the RECALL key.

  The DISPLAY blinks, showing 

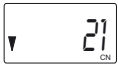
the **average value** of the measuring period and the ▲▼ symbol.
- Press the RECALL key.

  The DISPLAY blinks, showing 

the **last value** of the measuring period.
- Press the RECALL key.

  The DISPLAY blinks, showing 

the **maximum value** of the measuring period and the ▲ symbol.
- Press the RECALL key.

  The DISPLAY blinks, showing 

the **minimum value** of the measuring period and the ▼ symbol.

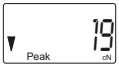
3.4.1 Recalling the Stored Tension Values (Cont.)

- Press the RECALL key.

The DISPLAY blinks, showing 

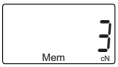
the maximum peak value of the measuring period, the PEAK indicator and the ▲ symbol.

- Press the RECALL key.

The DISPLAY blinks, showing 

the minimum peak value of the measuring period, the PEAK indicator and the ▼ symbol.

- Press the RECALL key.
  The tension meter switches back to measuring mode.

The DISPLAY shows 

MEM and the current reading.
The tension meter is ready for a new measuring period. The previously stored tension values will then be overwritten with new values.

3.4.2 Clearing the MST Memory

If values are stored in the MST memory, the

DISPLAY shows e.g. 

with the MEM indicator.

To clear the memory:

- Simultaneously press the MEM and RECALL keys.

The DISPLAY shows e.g. 

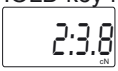
; all values stored in the memory have been deleted.

3.4.3 Memory Function HOLD

When the tension meter memory is empty, you can retain the last reading on the DISPLAY by using the memory function HOLD.

To retain the last reading:

- Press the RECALL / HOLD key for approx. one second.

The DISPLAY shows 

the last reading and the ":" colon symbol.

To switch back to measuring mode:

- Press the RECALL / HOLD key for approx. one second.
  The tension meter switches back to measuring mode.

3.5 Error Messages

Error message 1:

- The DISPLAY shows 

.

The upper limit of the tension range was exceeded by more than 10%.
Reduce the line tension

OR

AUTO ZERO is no longer possible.
Recalibrate the instrument following the directions in Chapter 3.7.1.

Error message 2:

- The DISPLAY shows 

.

The lower limit of the tension range was fallen below by more than 10%.
Properly insert the process material

OR

AUTO ZERO is no longer possible.
Recalibrate the instrument following the directions in Chapter 3.7.1.

Error message 3:

- The DISPLAY shows 

.

The battery is low and must be replaced immediately. Operating the tension meter with a low battery may cause measurement errors.

3.6 Verification of Measuring Accuracy

All tension meters are calibrated with standard materials - such as polyamide monofilament (PA) - according to the SCHMIDT factory procedure. Any difference in process material size and rigidity from the standard material may cause a deviation of the accuracy. In 95% of all industrial applications the SCHMIDT calibration has been proven to provide the best results and is used for comparative purposes.

Requirements:

- The MST is factory calibrated for a vertical material path (fig. 3.6).
  The verification of accuracy must also be carried out with a vertical material path.
  Tension meter switched on as described in Chapter 3.2.1.
- The required reference weight must be provided.
- Hang a weight which corresponds to the tension to be measured (pay attention to the correct unit of measure) from the measured material, vertically, as shown here. The weight must hang freely, therefore, place the instrument near the edge of the table, if necessary.

fig 3.6

Verification procedure:

- Clamp the process material in the rubber groove of the motor-driven DELIVERY ROLLER and thread it through the MEASURING ROLLERS.
  The correct material path is indicated by the red material path symbol on the front of the tension meter.
- The tension value shown on the DISPLAY should be equal to the value of the suspended weight (pay attention to the measuring units).

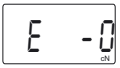
If this procedure shows a deviation, you can recalibrate the instrument following the directions in Chapter 3.7.

3.7 Calibration of the MST

Requirements:

- The MST is factory calibrated for a vertical material path (fig. 3.6.).
  Recalibration must also be carried out with a vertical material path.
- One cN weight each, corresponding to 10%, 50% and 90% of the tension range, must be provided.
- No process material inserted.
- Tension meter switched off.

To select the calibration mode:

- Press and hold the MEM and POWER keys until the DISPLAY shows 

.
- Release first the POWER key and then the MEM key.

3.7 Calibration of the MST (Cont.)

To calibrate the zero point:

- Press the MEM key.
  As long as the MEM key is depressed, the DISPLAY shows a random decimal value between 500 and 1200 e.g. 800 cN.
  This decimal value may vary from instrument to instrument.
  Write down the decimal value.
- Release the MEM key when the value shown on the DISPLAY is fairly stable (the reading might fluctuate greatly).
  The display 2 shows E -10 cN.

fig 3.6

1st calibration point:

- Hang a weight which corresponds to 10% of the tension range from the measured material, vertically, as shown in fig. 3.6.
- Clamp the process material in the rubber groove of the motor-driven DELIVERY ROLLER and thread it through the MEASURING ROLLERS.
  The correct material path is indicated by the red material path symbol on the front of the tension meter.

a) Press the MEM key.
  As long as the MEM key is depressed, the DISPLAY shows a decimal value which is higher by approx. 200 than the first decimal value, e.g. 1000 cN.
  This decimal value may vary from instrument to instrument.
  Write down the decimal value.

- Release the MEM key when the value shown on the DISPLAY is stable (the reading might fluctuate greatly).
  The DISPLAY shows E -50 cN.
  If the display shows E -10 cN again, the value was not accepted.
  Check the suspended weight and the material path between the MEASURING ROLLERS and repeat the procedure from step a.

2nd calibration point:

- Hang a weight which corresponds to 50% of the tension range from the measured material, vertically, as shown in fig. 3.6.
- Clamp the process material in the rubber groove of the motor-driven DELIVERY ROLLER and thread it through the MEASURING ROLLERS.
  The correct material path is indicated by the red material path symbol on the front of the tension meter.

3.7 Calibration of the MST (Cont.)

b) Press the MEM key **4**.
As long as the MEM key is depressed, the DISPLAY shows a decimal value which is higher by approx. 800 than the second decimal value, e.g. 1800 cN.
This decimal value may vary from instrument to instrument.
Write down the decimal value.

- Release the MEM key when the value shown on the DISPLAY is stable (the reading might fluctuate greatly).

The DISPLAY shows E -90 cN.

If the DISPLAY shows E -50 cN again, the value was not accepted. Check the suspended weight and the material path between the measuring rollers and repeat the procedure from step **b**.

fig 3.6

3rd calibration point:

- Hang a weight which corresponds to 90% of the tension range from the measured material, vertically, as shown in fig. 3.6.
- Clamp the process material in the rubber groove of the motor-driven DELIVERY ROLLER and thread it through the MEASURING ROLLERS.
  The correct material path is indicated by the red material path symbol on the front of the tension meter.

c) Press the MEM key.

- Release the MEM key.

The DISPLAY shows ---- cN.
The new calibration has been stored.

If the DISPLAY shows E -90 cN again, the value was not accepted.
Check the suspended weight and the material path between the measuring rollers and repeat the procedure from step **c**.

- Press the POWER key.
  The tension meter switches off.

Verify the new calibration, following the directions in Chapter 3.6.
If this procedure shows a deviation, you can recalibrate the tension meter again or restore the factory calibration as described in Chapter 3.7.2.
If the verification of the calibration according to Chapter 3.6 shows a deviation beyond the allowable tolerance and a reliable operation is no longer allowed, the instrument has to be returned to **Hans Schmidt & Co GmbH** for factory recalibration. Please follow the shipping instructions given in Chapter 8.

3.7.1 Error Messages During Calibration

The following error messages might be displayed during the calibration of the tension meter:

- The DISPLAY shows 

.
The weight suspended from the process material is too heavy.

- The DISPLAY shows 

.
The weight suspended from the process material is too light.

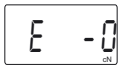
3.7.2 Restoring the Factory Calibration

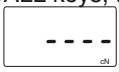
You can restore the factory calibration any time with the following procedure:

Requirement:

- Tension meter switched off.

To restore factory calibration:

- Press and hold the MEM and POWER keys until the DISPLAY shows 

.
- Release first the POWER key and then the MEM key.
- Press and hold the DAMP and RECALL keys, then additionally press and hold the MEM key until the DISPLAY shows 

.
The factory calibration is restored.
- Release the DAMP, RECALL and MEM keys
- Press the POWER key.
The instrument switches off.

4 PC Communication (RS-232-C Interface)

4.1 WINDOWS Terminal Program

The measured values and the memory contents can be transmitted over the RS-232 interface to a personal computer. You can connect the computer to the connector of the MST by using the ET2-CC special cable which is available as an accessory. The pin assignment of the connector is described in Chapter 2.2.

Requirement:
A communication program, such as Terminal or HyperTerminal (provided on MS Windows Version 3.0 or later) must be installed and configured on the computer.

Commands for communication with a PC (polling)

ASCII Code	Function	Description
D	Continuous transmission	Continuous transmission of readings. Press any key to stop transmission.
d	Send	Transmit current reading to PC once.
m	Save	Start logging of measured data. Stop data logging.
r	Output	Output the memory contents to the PC.
c	Clear memory	Delete the memory contents.
a	Damping ON / OFF	Switch damping on or off.
z	Zero	Carry out zero adjustment of the instrument.

4.2 TENSION INSPECT ET2-P1

SCHMIDT software (Win 95 or higher) for viewing and storing the measured data on a PC (optionally available).

5 Service and Maintenance

The tension meter is easy to maintain. Depending on operating time and load, the tension meter should be checked according to the locally valid regulations and conditions (as described in Chapter 3.6). The use of other test methods than the procedure described in Chapter 3.6 may cause deviating measuring results.

6 Cleaning

For cleaning the unit, do not use any

AGGRESSIVE SOLVENTS

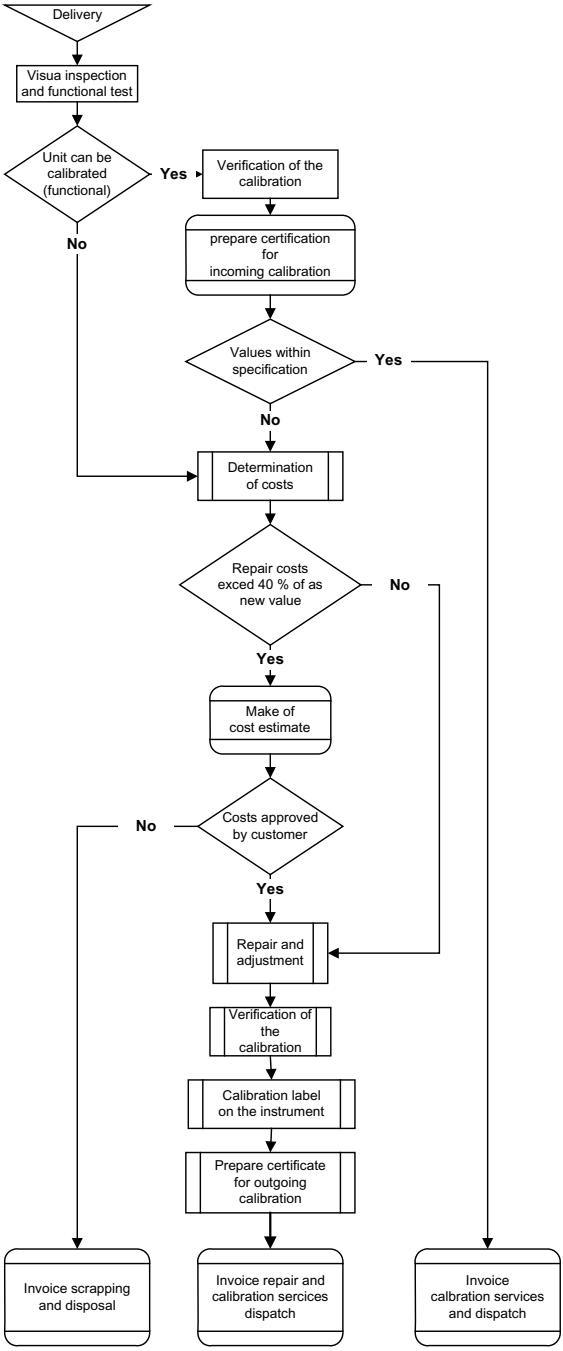
such as trichloroethylene or similar chemicals.

NO WARRANTY OR LIABILITY

shall be accepted for damage resulting from improper cleaning.

7 Verification of Calibration and Determination of Repair Costs

Flow chart for verifying the calibration of used tension meters, incoming and outgoing verification with Inspection Certificate 3.1 according to DIN EN 10204



8 Correspondence

Should you have any questions regarding the tension meter or Operating Instructions, or their use, please indicate above all the following details which are given on the ID plate:

1) The tension meter model
2) The serial number

9 Repairs

Shipping instructions:
We kindly ask for return free of charge for us, if possible by airmail parcel. All occurring charges, if any (such as freight, customs clearance, duty, etc.) will be billed to customer. For return from foreign countries, we ask you to include a proforma invoice with a low value for customs clearance only, e.g. 50 Euro, each and to advise the shipment in advance by fax or eMail.

To avoid unnecessary follow-up questions, and the resulting loss of time or possible misunderstandings, please return the tension meter with a detailed fault description to our service department. Please indicate in your order whether you require an Inspection Certificate 3.1 according to DIN EN 10204.

Service address:

Notes: