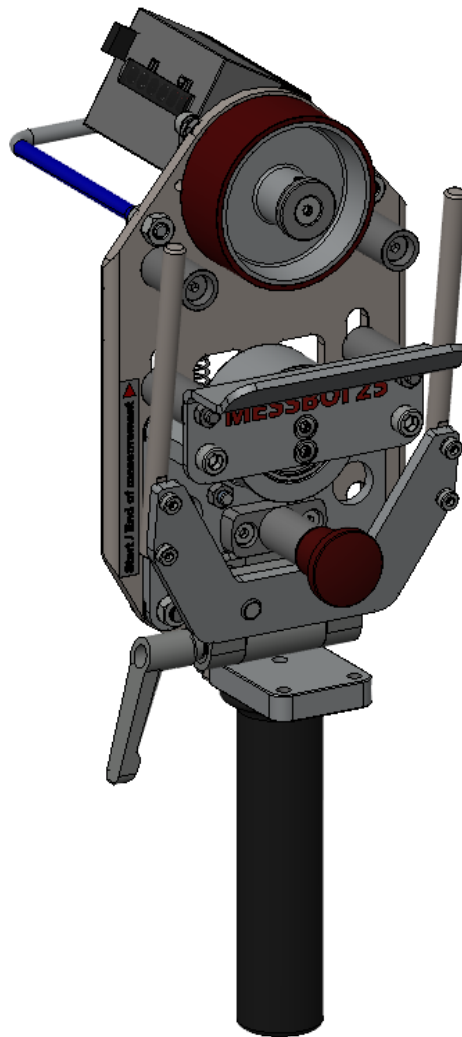


MESSBOI 25

TRANSLATION OF THE ORIGINAL
OPERATING MANUAL

Winding | Unwinding | Wrapping | Measuring | Cables | Wires | Ropes | Pipes | Hoses



Length measuring device



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This documentation is based on the knowledge at the time it was created. We cannot guarantee that the specifications are correct and complete. We reserve the right to make technical changes due to advancements.

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1 Introduction

This technical document contains detailed explanations of how to safely and properly start and monitor the product (hereinafter also called the “device”).

It also contains safety instructions and general instructions on the product.

This document is only for specially trained, authorized personnel.

1.1 Completeness

This technical document is only complete together with the other applicable documents.

The following documents are considered other applicable documents:

- Technical documentation for purchased parts

1.2 Storage location

Always store this technical document and all other applicable documents within reach and accessible for later use.

1.3 Presentation conventions


This section contains an overview of the symbols used and the methods for highlighting text.

1.3.1 Warning concept

This technical document indicates warnings as follows.

1.3.1.1 Warnings

Warnings relate to entire chapters or to sections, subsections or several paragraphs within this technical document. Warnings are structured on the following pattern:

⚠ Warning	
	<p>Type and source of hazard</p> <p>Consequences</p> <ul style="list-style-type: none"> ▶ What to do ▶ What to do



1.3.1.2 Signal words and pictographs

The following signal words are used:

Signal word	Meaning
DANGER	Indicates a dangerous situation that will lead to death or severe injury if not prevented.
WARNING	Indicates a dangerous situation that may lead to death or severe injury if not prevented.
CAUTION	Indicates a dangerous situation that may lead to injury if not prevented.
NOTE	Indicates a situation that may lead to property damage if not prevented.

Tab. 1 Signal words


The following pictographs warn of hazards:

Pictograph	Meaning
	Warns of a hazard location.
	Warns of a crushing hazard.

Tab. 2 Pictographs on hazards

1.3.2 Information concept

The following pictographs are used for important information:

Pictograph	Meaning
	Important information.

Tab. 3 Pictograph indicating important information

1.3.3 Action concept

One-step action instructions

Action instructions that consist of just one work step are structured as follows:

Purpose of action (optional)

- ▶ Instruction
 - Result of action instruction (optional)
 - ✓ Result of action (optional)

Multi-step action instructions

Action instructions that consist of more than one work step are structured as follows:

Purpose of action (optional)

- ▶ 1. Instruction
 - Result of action instruction 1 (optional)
- ▶ 2. Instruction
 - Result of action instruction 2 (optional)
 - ✓ Result of action (optional)

1.4 Notations

This technical document uses the following notations:

Notation	Use	Example
Fig. Figure number	Figure cross-reference	Fig. 1
Tab. Table number	Table cross-reference	Tab. 1
Ch. Chapter number - Chapter name	Chapter cross-reference	Chap. 4 - Technical data
p. Page number	Page cross-reference	Pg. 6

Tab. 4 Notations in use

2 Safety

This technical document contains detailed explanations of how to safely and properly connect, start, operate and monitor the product.

- Read this technical document carefully and thoroughly to get to know the product.
- This technical document is part of the product.
- Especially read and observe the safety instructions in this chapter.
- Observe the warnings in this technical document to prevent function-related hazards.
- The product is manufactured according to the state of the art. Nonetheless, when it is not used as intended, hazards can arise to the user's life and limb, or damage can occur to the product or other property.

2.1 Intended use

The product is for measuring the length of windable goods, such as cables, leads, wires, ropes, tapes, hoses or pipes. The smallest permissible bending radius according to the specifications of the material must be observed.

If a product is equipped for special applications, it is only designed to measure the material specified in the sales contract.

Any other use is considered improper use.


This product poses no hazard to people, property or the environment when it is used properly and the requirements and conditions in this technical document and the warnings posted on the product are obeyed.

The following is considered intended use:

- Operate the product according to this technical document, the agreed delivery conditions and the technical data.
- Make sure that all required work is done only by qualified personnel.
- Use the included equipment and special tools exclusively for their intended purpose and as specified in this technical document.
- Operate the product only if it is in technically perfect condition and displays no faults.

The owner bears sole responsibility for any injury or property damage occurring due to improper use of the product.

2.2 Residual risks

⚠ Caution	
	<p>Crushing hazard from closing the counter roller / guide rollers</p> <p>Mild pinching and bruising</p> <ul style="list-style-type: none">▶ Do not allow the safety bolt to loosen when the counter roller or guide rollers are closing.▶ During closing, keep fingers away from the counter roller and the guide rollers.

3 Description

The length measuring device consists of the basic version Fig. 1 with a mechanical counter. The length measuring device can be used as a hand device or with manual winding devices (see Chap. 3.3 - Accessories).

3.1 Layout

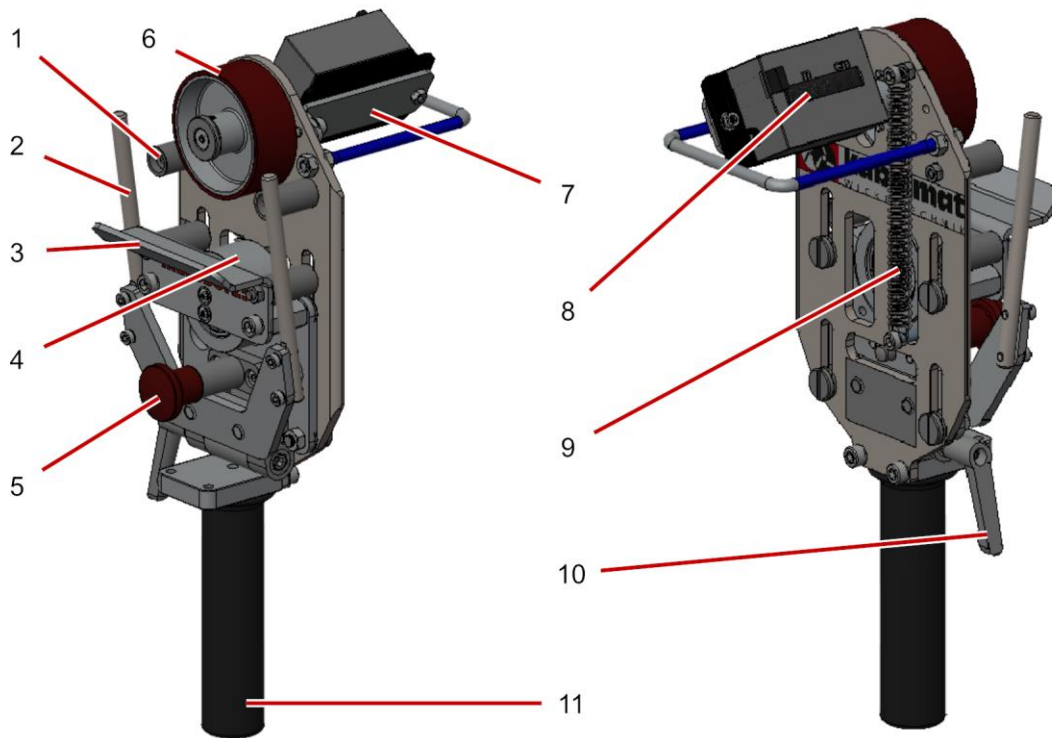


Fig. 1 Length measuring device MESSBOI 25

- | | | | |
|---|-------------------------|----|--------------------|
| 1 | Horizontal guide roller | 7 | Type plate |
| 2 | Vertical guide | 8 | Mechanical counter |
| 3 | Grip handle | 9 | Spring |
| 4 | Counter roller | 10 | Adjustment lever |
| 5 | Safety bolt | 11 | Hand grip |
| 6 | Measuring wheel | | |

3.2 Function

Measuring wheel

The measuring wheel moves the counter.

Safety bolt

The safety bolt locks the horizontal guide rollers and the counter roller during material insertion after they have been pulled down with the grip handle.

Horizontal guide rollers

The length measuring device's horizontal guide rollers guide the material. Spring tension adjusts the horizontal guide rollers automatically to the material.

Vertical guide

The length measuring device's vertical guide directs the material and folds open during material insertion. The resistance can be set using the adjustment lever.



Info

ATTENTION!

Always pull the material through the length measuring device in a straight line, because otherwise contact to the measuring wheel will be broken, which can cause inaccurate measurement results.

3.3 Accessories

3.3.1 Mount for the length measuring device

For installation on a table or winder.

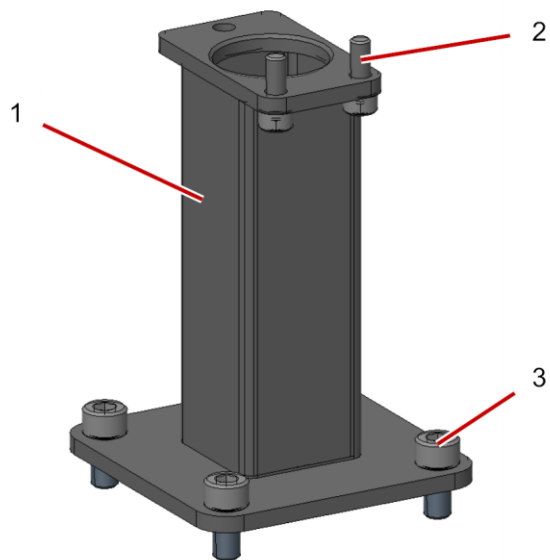


Fig. 2 Mount MESSBOI 25

- | | | | |
|---|---|---|---|
| 1 | Mount | 3 | Allen screw for fastening to a table / winder |
| 2 | Allen screws for mounting the length measuring device | | |

3.3.2 Roller cages

The roller cages can be used only in connection with the length measuring device mount or a winder. If the length measuring device is used with a winder, the roller cages are mandatory.

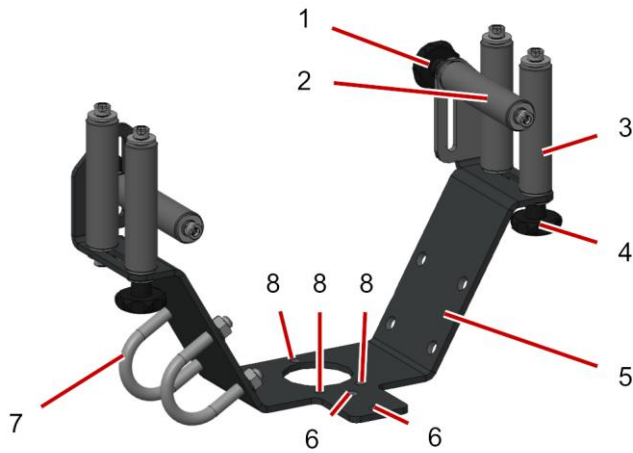


Fig. 3 Roller cages MESSBOI 25

- | | | | |
|---|---------------------------------------|---|---|
| 1 | Star grip for horizontal guide roller | 5 | Mount with roller cages |
| 2 | Horizontal guide roller | 6 | Winder fastening holes |
| 3 | Vertical guide roller | 7 | Fastener for TROMCAR |
| 4 | Star grip for vertical guide roller | 8 | Fastening holes for length measuring device mount |

4 Technical data

4.1 Length measuring device MESSBOI 25

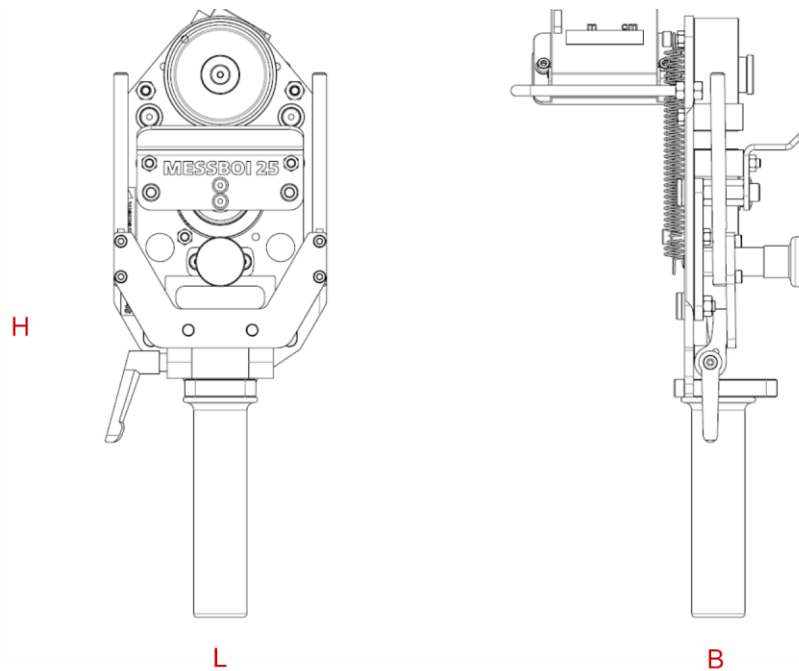


Fig. 4 Technical data – Similar to device representation

Round material diameter	2 - 25 mm
Flat material height range	2 - 5 mm
Flat material width range	5 - 25 mm
Measuring wheel circumference	0,2 m
Error limit with roller cages	+/- 0,5 %
Smallest measurable product length L_m	1 m
Temperature range	+ 5°C to + 40°C
Length (L)	approx. 120 mm
Width (W)	approx. 160 mm
Height (H)	approx. 350 mm
Weight	approx. 1,4 kg

Tab. 5 Technical data MESSBOI 25

5 Transport, set-up, storage, disposal

5.1 Transport



Info

After taking delivery, check the packaging and the product immediately for transport damage. Report damage and faults to the carrier and the supplier immediately.

5.2 Set-up

For the device's set-up location, observe the following:

- The device must be set up only indoors, mounted to a machine, or to a stable, level table.
- The device's temperature range is between + 5 °C and + 40 °C with maximum (non-condensing) air humidity of 80%.
- The owner must secure the space around the device according to applicable regulations.

5.3 Storage

Do the following work before storing:

- Spray bare metal parts with a preservative.
- Wrap the unit with a plastic sheet.
- Only store the unit in a dry place at room temperature. The storage duration is unlimited.

5.4 Disposal

Dispose of the device's parts in accordance with the national regulations. In particular, ensure that environmentally hazardous substances such as oils or electronic components are disposed of in an environmentally sound manner.

6 Operation

6.1 Setting

6.1.1 Accessories

6.1.1.1 Mount for the length measuring device

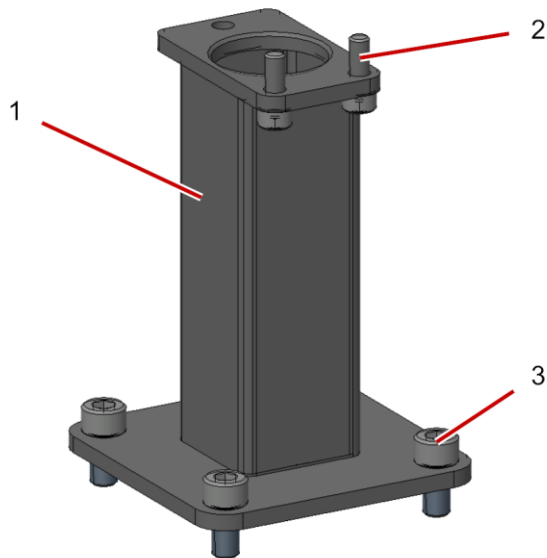


Fig. 5 Mount MESSBOI 25

- | | | | |
|---|---|---|---|
| 1 | Mount | 3 | Allen screw for fastening to a table / winder |
| 2 | Allen screws for mounting the length measuring device | | |

Fastening the mount to the table / winder

- ▶ Use Fig. 5, 3 Allen screws to screw the mount to the table or winder.
 - ✓ The mount is fastened.

Fastening the length measuring device to the mount

- ▶ Insert the length measuring device into the mount.
- ▶ Install Allen screw Fig. 5, 2 into the threaded holes in the length measuring device.
 - ✓ The length measuring device is fastened.

6.1.1.2 Roller cages

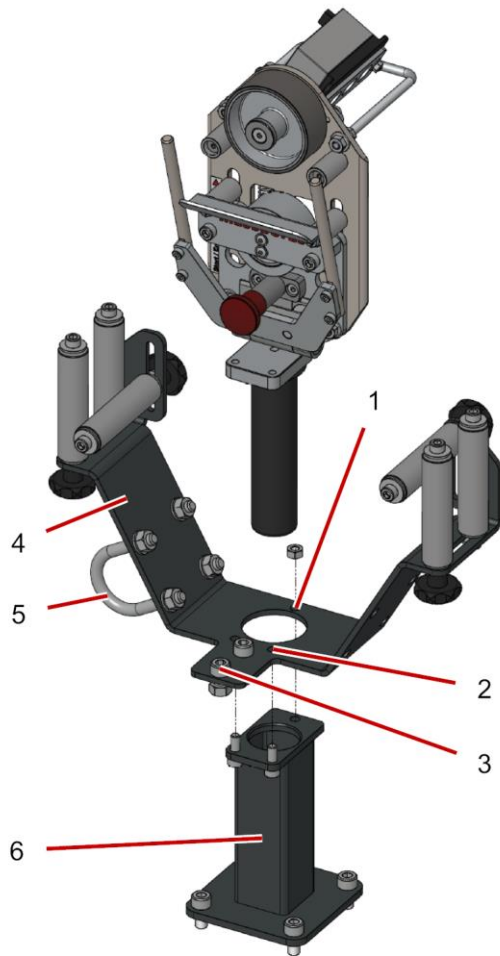


Fig. 6 Roller cages MESSBOI 25

- | | | | |
|---|--|---|--|
| 1 | Fastening holes /
length measuring device mount on
length measuring device | 4 | Mount with roller cages |
| 2 | Fastening thread /
roller cages on length measuring device | 5 | Fastening /
roller cages on TROMCAR |
| 3 | Fastening holes with screws /
roller cages on winder | 6 | Mount for the length measuring device |

Fastening the roller cages to the length measuring device

- ▶ Place the roller cage bracket onto the length measuring device mount.
- ▶ Insert the length measuring device through the roller cage bracket in the length measuring device mount.
- ▶ Through the front two fastening holes Fig. 6, 2, install the Allen screws into the threaded holes in the length measuring device.
- ▶ Through the rear fastening hole Fig. 6, 1, slide an Allen screw and secure with a nut.
 - ✓ The roller cages are fastened to the length measuring device.

Fastening the roller cages with the length measuring device to a winder


- ▶ Insert the length measuring device through the roller cage bracket.
- ▶ Through the front two fastening holes Fig. 6, 2, install the Allen screws into the threaded holes in the length measuring device.
 - The roller cages and length measuring device are attached.
- ▶ Through the fastening holes Fig. 6, 3, slide the Allen screws and fasten them with a nut to the length measuring device intake for the winder.
 - ✓ The roller cages with the length measuring device are fastened to the winder.

Fastening the roller cages with the length measuring device to TROMCAR

- ▶ Insert the length measuring device through the roller cage bracket.
- ▶ Through the front two fastening holes Fig. 6, 2, install the Allen screws into the threaded holes in the length measuring device.
 - The roller cages and length measuring device are attached.
- ▶ Undo the fastener Fig. 6, 5 on the nuts.
- ▶ Remove the fastener.
- ▶ Place the fastener on the TROMCAR grip and push the roller cage onto the fastener on the TROMCAR from the other side.
- ▶ Tighten the nuts.
 - ✓ The roller cages with the length measuring device are fastened to the TROMCAR.

6.2 Adjusting

6.2.1 Length measuring device MESSBOI 25

⚠ Caution	
	<p>Crushing hazard from closing the counter roller / guide rollers</p> <p>Mild pinching and bruising</p> <ul style="list-style-type: none"> ▶ Do not allow the safety bolt to loosen when the counter roller or guide rollers are closing. ▶ During closing, keep fingers away from the counter roller and the guide rollers.

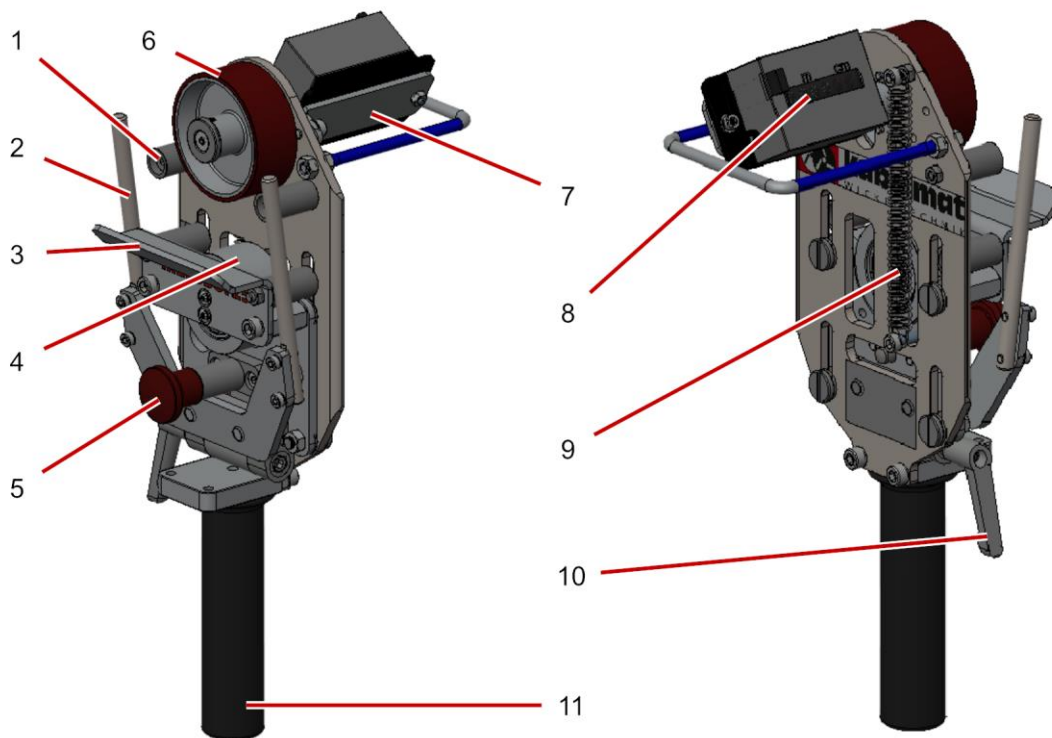


Fig. 7 Length measuring device MESSBOI 25

- | | | | |
|---|-------------------------|----|--------------------|
| 1 | Horizontal guide roller | 7 | Type plate |
| 2 | Vertical guide | 8 | Mechanical counter |
| 3 | Grip handle | 9 | Spring |
| 4 | Counter roller | 10 | Adjustment lever |
| 5 | Safety bolt | 11 | Hand grip |
| 6 | Measuring wheel | | |

Inserting material

- ▶ Pull the grip handle on the lower roller structure downward until the safety bolt clicks in.
- ▶ Fold open the vertical guide.
- ▶ Insert the material.
- ▶ Fold the vertical guide shut. If necessary, increase the resistance. To do this, pull the adjustment lever out and turn it in the desired direction.
- ▶ Gently close the roller structure. To do this, pull the safety bolt and hold it while closing.
- ▶ Set the counter to zero.
 - ✓ The material is inserted.

6.2.2 Accessories

6.2.2.1 Roller cages



Info

Never adjust the guide rollers so that the material has no clearance between the rollers or is jammed.

The material must have a clearance of about 2 mm between the rollers so that it runs smoothly through the rollers if there are tolerances in the diameter.

If the material has greater tolerances, adjust the rollers so that they have appropriate clearance.

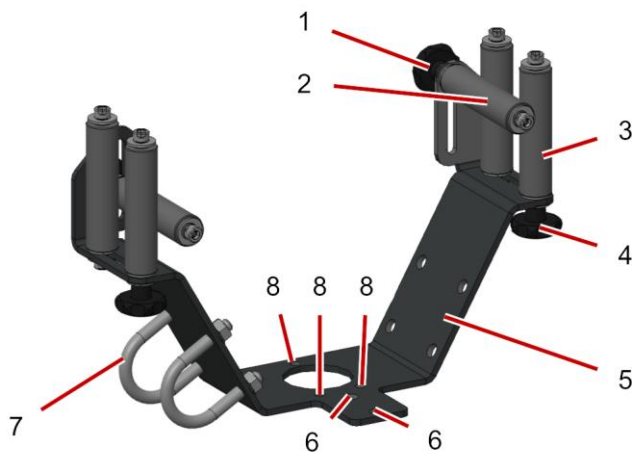


Fig. 8 Roller cages MESSBOI 25

- | | | | |
|---|---------------------------------------|---|---|
| 1 | Star grip for horizontal guide roller | 5 | Mount with roller cages |
| 2 | Horizontal guide roller | 6 | Winder fastening holes |
| 3 | Vertical guide roller | 7 | Fastener for TROMCAR |
| 4 | Star grip for vertical guide roller | 8 | Fastening holes for length measuring device mount |

Adjusting the roller cages

- ▶ Loosen the star grip for the vertical guide roller.
 - ▶ Adjust the vertical guide roller to the material.
 - ▶ Tighten the star grip.
 - ▶ Loosen the star grip for the horizontal guide roller.
 - ▶ Adjust the horizontal guide roller to the material.
 - ▶ Tighten the star grip for the horizontal guide roller.
- ✓ The roller cages have been adjusted.



Info

ATTENTION!

On the length measuring device's intake side, the horizontal guide roller must be adjusted to the direction of the material feed and the properties of the material.

That means:

If the material is fed from above, the position of the horizontal guide roller is above on the intake side, and the material is guided under the guide roller to the length measuring device.

If the material is fed from below, the position of the horizontal guide roller is below on the intake side, and the material is guided over the guide roller to the length measuring device.



Info

ATTENTION!

Always pull the material through the length measuring device in a straight line, because otherwise contact to the measuring wheel will be broken, which can cause inaccurate measurement results.

7 Service

7.1 Maintenance

Only trained technical staff are to perform maintenance. It is recommended that maintenance be done by technical personnel from Kabelmat® Wickeltechnik GmbH.

7.2 Maintenance chart

Component/assembly	Maintenance task	Maintenance interval							
		Daily	Weekly	Monthly	Quarterly	Every 6 months	Every year	Every 2 years	As required
Length measuring unit	Clean		X						X
Guide rollers	Check for ease of movement			X					
Measuring wheel	Check for wear, perform test measurement					X			
Safety bolt	Functional check			X					
Moving unit of the counter roller	Functional check			X					

Tab. 6 Maintenance table MESSBOI 25

7.3 Replacement parts

7.3.1 Basic device

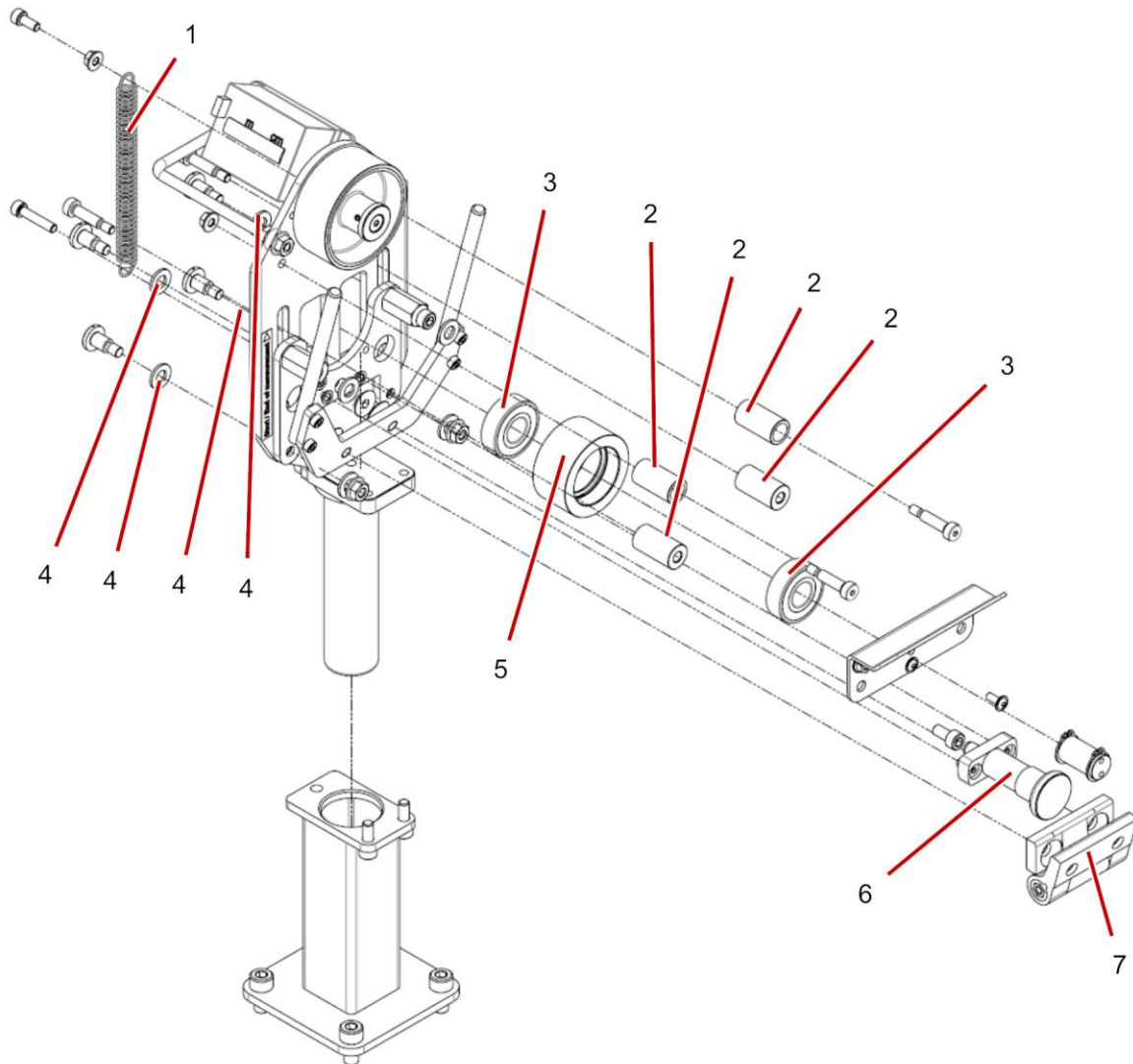


Fig. 9 Replacement parts for basic device – MESSBOI 25

Item	Designation	Item number
1	Tension spring Z109	89901923
2	Guide roller	0434.01.00.012
3	Grooved ball bearing	89952806
4	Thrust washer Ø8 x Ø15 x 1.5	89952734
5	Counter roller	0434.01.00.009
6	Locking pin with red head	89952713
7	Hinge 60x60 with clamp	89952721

Tab. 7 Replacement parts for basic device – MESSBOI 25

7.3.2 Counter

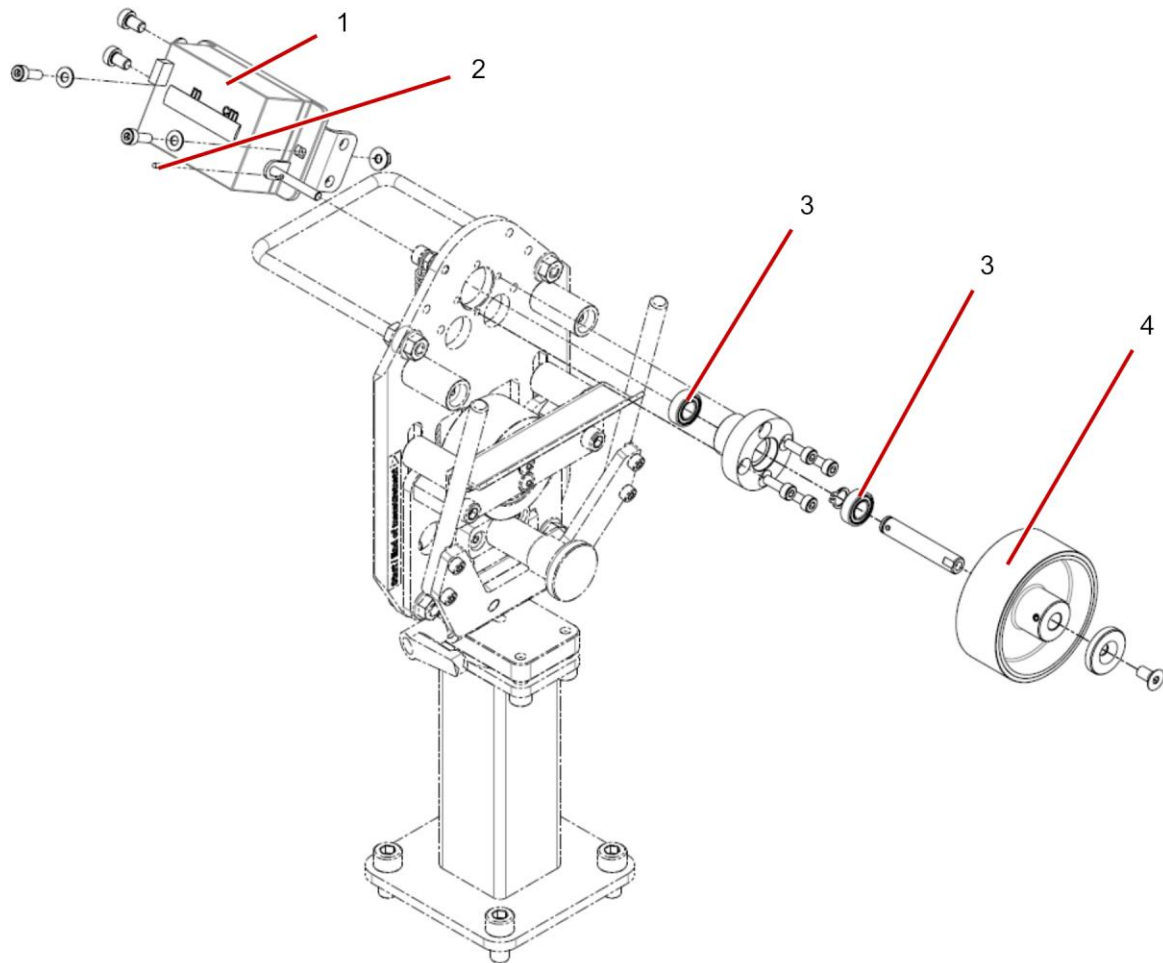


Fig. 10 Replacement parts for counter – MESSBOI 25

Item	Designation	Item number
1	Counter for MESSBOI 10/25/30	0434.17.00.11
2	Cylindrical pin	89952811
3	Grooved ball bearing	89951376
4	Measuring wheel 200 mm	0434.17.00.004

Tab. 8 Replacement parts for counter – MESSBOI 25

7.3.2.1 Replacing the counter / measuring wheel

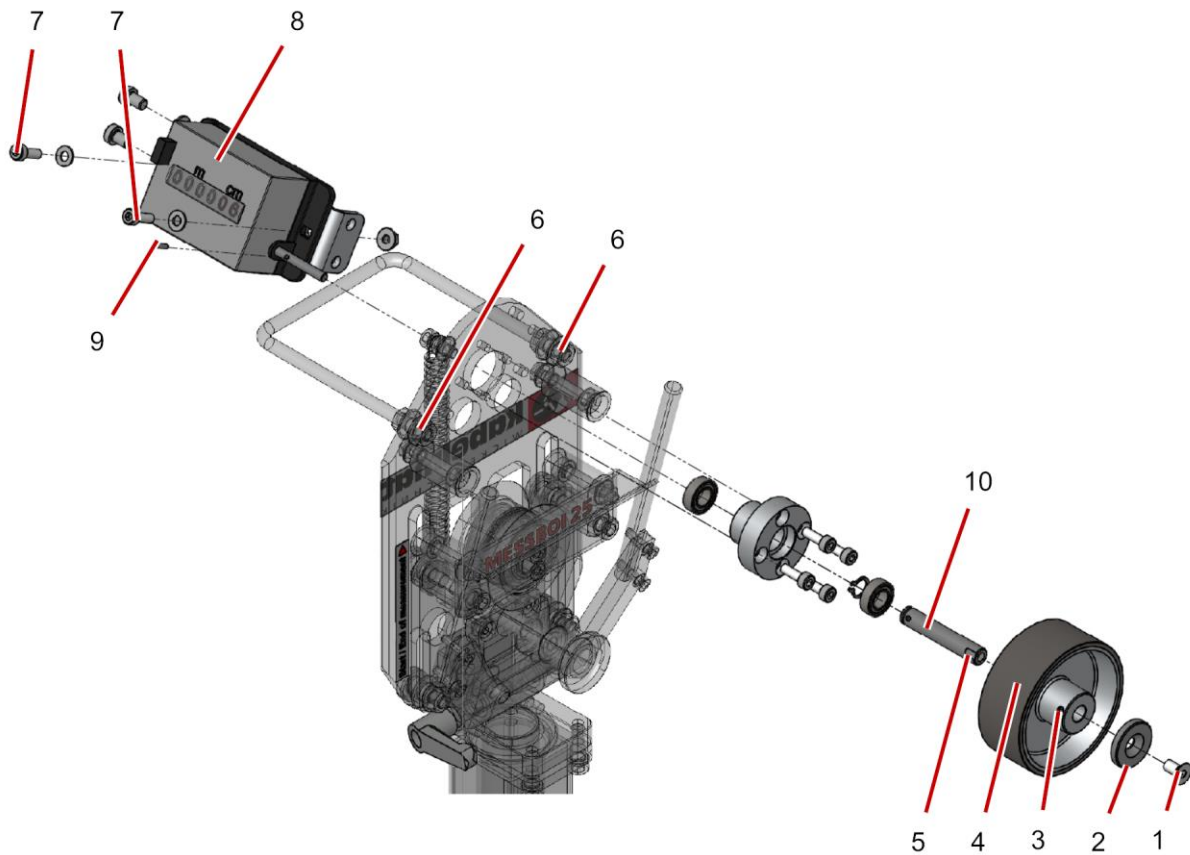


Fig. 11 Replacing the counter / measuring wheel MESSBOI 25

- | | | | |
|---|---------------------|----|-----------------|
| 1 | Countersunk screw | 6 | Nut |
| 2 | Countershaft pulley | 7 | Allen screws |
| 3 | Threaded stud | 8 | Counter |
| 4 | Measuring wheel | 9 | Cylindrical pin |
| 5 | Width flat | 10 | Shaft |

Replacing the measuring wheel

- ▶ Undo the countersunk screw Fig. 11, 1.
- ▶ Remove the countersunk screw and the countershaft pulley Fig. 11, 2.
- ▶ Undo the threaded stud Fig. 11, 3.
- ▶ Remove the measuring wheel Fig. 11, 4.
 - The measuring wheel has been removed.
- ▶ Push the new measuring wheel onto the shaft.
- ▶ Tighten the threaded stud. Ensure that the threaded stud is screwed against the width flat Fig. 11, 5.
- ▶ Use the countersunk screw to fasten the countershaft pulley.
 - ✓ The new measuring wheel is installed.

Replacing the counter

- ▶ Undo the countersunk screw Fig. 11, 1.
- ▶ Remove the countersunk screw and the countershaft pulley Fig. 11, 2.
- ▶ Undo the threaded stud Fig. 11, 3.
- ▶ Remove the measuring wheel Fig. 11, 4.
- ▶ Undo the nuts Fig. 11, 6 on the handle and lower the handle.
- ▶ Undo the Allen screws Fig. 11, 7.
- ▶ Remove the counter Fig. 11, 8.
- ▶ Pull the cylindrical pin Fig. 11, 9 out and remove the shaft Fig. 11, 10.
 - The counter has been removed.
- ▶ Push the shaft onto the new counter and use the cylindrical pin to secure.
- ▶ Position the new counter with the shaft.
- ▶ Tighten the Allen screws.
- ▶ Tighten the nuts on the handle
- ▶ Push the measuring wheel onto the shaft.
- ▶ Tighten the threaded stud. Ensure that the threaded stud is screwed against the width flat Fig. 11, 5.
- ▶ Use the countersunk screw to fasten the countershaft pulley.
 - ✓ The new counter is installed.

7.3.3 Roller cages

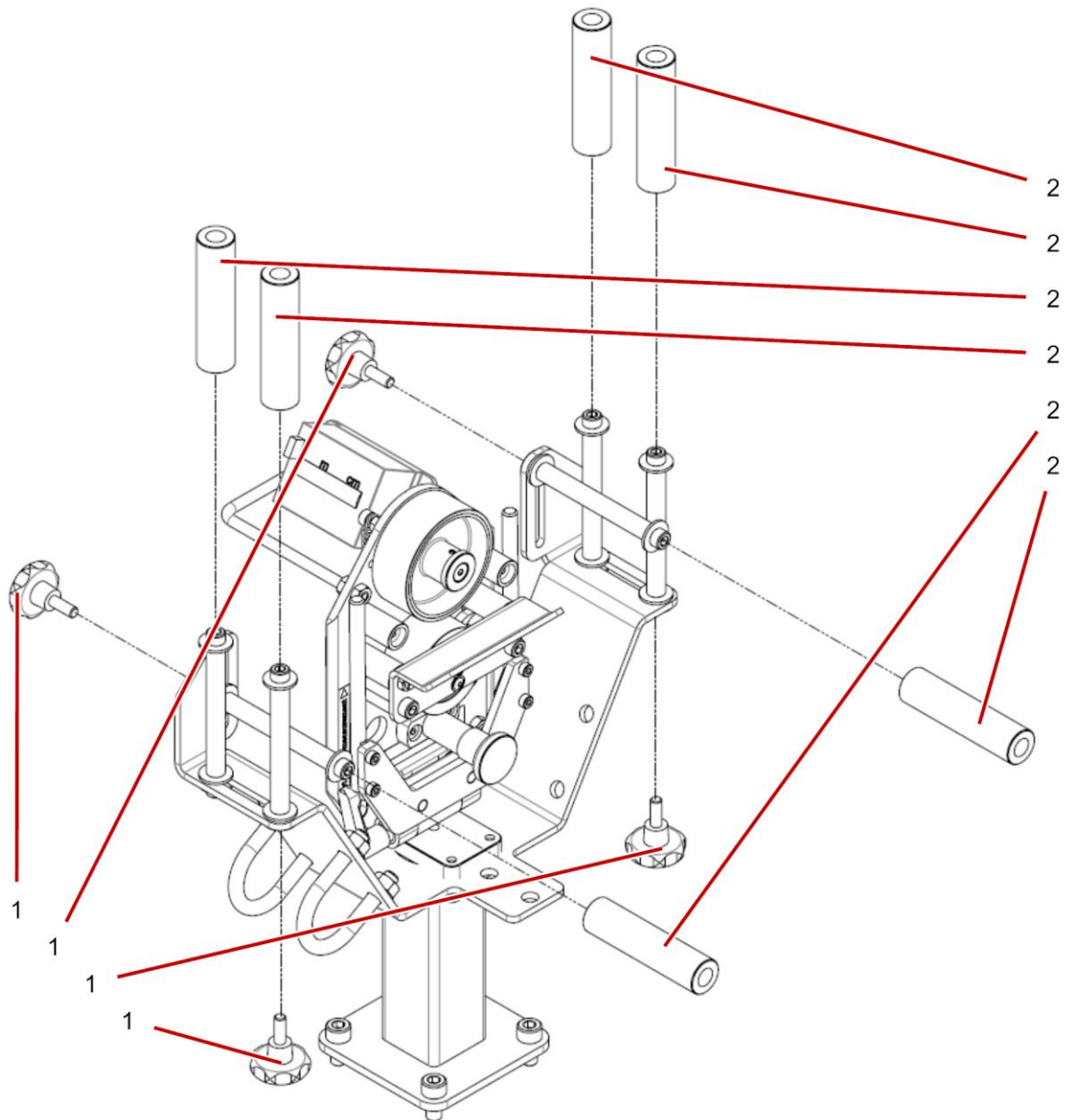


Fig. 12 Replacement parts for roller cages - MESSBOI 25

Item	Designation	Item number
1	Star grip M6 x 16 head	8910731
2	Roller	0435.01.00.003

Tab. 9 Replacement parts for roller cages – MESSBOI 25

8 Troubleshooting

8.1 Fault table

Fault	Possible cause	Remedy
No length measurement is being done	The measuring wheel sticks.	Free up the measuring wheel.
	The measuring wheel has no contact.	The measuring wheel may still be locked. Unlock.
The measurement is inaccurate	The measuring wheel is worn out.	Replace the measuring wheel.
	The vertical guide is open.	Close the vertical guide and increase resistance, if necessary.

Tab. 10 Fault table MESSBOI 25

9 Customer service

If you require customer service, please contact the following address:

Kabelmat® Wickeltechnik GmbH
Steinbuckelweg 25
D-72293 Glatten

Tel.: +49 74 43 / 96 70-0
Fax.: +49 74 43 / 96 70-39
E-mail: service@kabelmat.com

10 Change history

Change chart

This document has been changed according to the following chart.

Date	Previous version No.	Reason for change	New version No.
xx.xx.xxxx	xxxx.xxx.xx.xx.xx	Describe the reason for change in detail, providing the page number and the affected paragraph or chapter. Text content xxxx.xxx.xx.xx.xx Images xxxx.xxx.xx.xx.xx Orthography/ Appearance xxxx.xxx.xx.xx.xx	xxxx.xxx.xx.xx.xx

Tab. 11 Change chart

Change history

Date	Previous version No.	Reason for change	New version No.
13.10.2020	xxxx.xxx.xx.xx.xx	Document created.	0434.000.01.01.01
24/11/2020	0434.000.01.01.01	<ul style="list-style-type: none"> • Fig. Setting up the roller cage graphic changed • Tab. Basic device + counter spare parts changed • Fig. Spare parts graphic changed • Fig. for counter / measuring wheel spare parts installation added • Text for counter / measuring wheel spare parts installation added 	0434.000.02.02.01

Tab. 12 Change history

11 Other applicable documents

- Technical documentation for purchased parts
 - [Counter](#)

Revolution, Length, Stroke Counters

Type 225

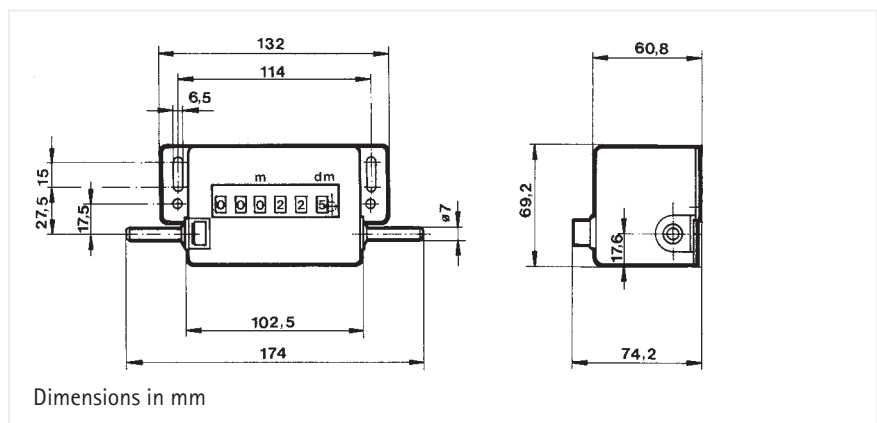


- Approved for length counting by the PTB (German Federal Institute für Physics and Technology)
- 6-digit display
- Large digits, 6.5 mm high
- Button reset
- Counter with suspension device
- Adjustable counterweight
- 6-digit display m/dm or m/cm
- Button reset

TECHNICAL DATA

Display	6-digit
Digit height	6.5 mm
Base plate	burnished sheet steel
Case	die-cast metal
Cover	plastic (ASB), grey
Weight	approx. 750 g
	Counter with suspension device and downward weight approx. 2.400 kp. Downward weight can be shifted in order to regulate contact pressure
Counting mode	+ (-), stroke counter: +
Transmission ratio	1:1, length counter 1:5 or 1:50
Max. speed	10000 digits/min, stroke counter 800 strokes/min
Torque	1.2 Ncm, stroke counter 8.0 Ncm
Actuating angle	min. 38°, max. 55° (stroke counter only)
Reset	button reset, secured against unauthorized operation
⚠	Don't push the reset pushbutton during the process

DIMENSIONS

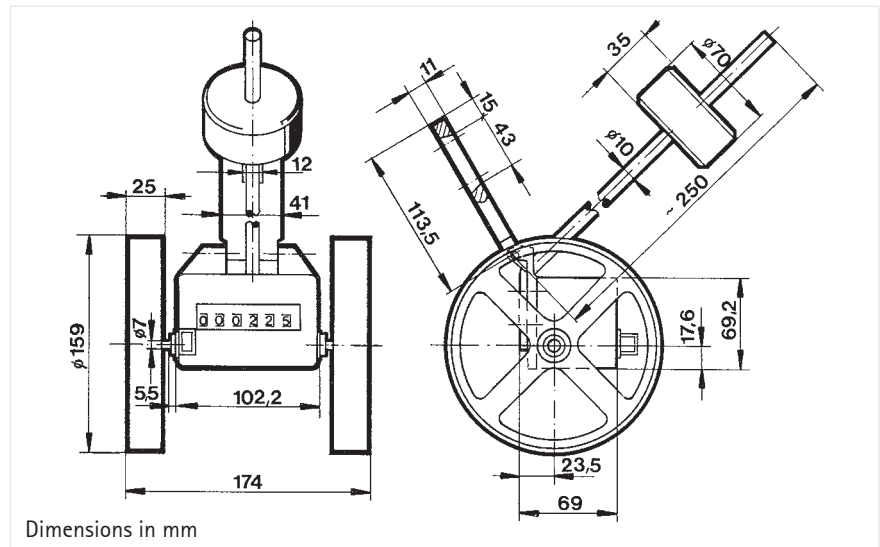


Type 225

Technical data

DIMENSIONS

Counter with suspension device



Dimensions in mm

ORDER INFORMATION

	Actuation	Sense of rotation	Indication	Transm. ratio 1:1	Transm. ratio 1:5	Transm. ratio 1:10	Transm. ratio 1:50
				Ordering code	Ordering code	Ordering code	Ordering code
Revolution counter	1	Bz	999 999	0 225 001	-	0 225 021	-
	1	Bw	999 999	0 225 002	-	0 225 022	-
Length counter	1	Bz	99 999,9 m/dm	-	0 225 003 m/dm	-	0 225 007 m/cm
	1	Bw	99 999,9 m/dm	-	0 225 004 m/dm	-	0 225 008 m/cm
Length counter with suspension device	1	Bz	99 999,9 m/dm	-	0 225 501 m/dm	-	0 225 505 m/cm
	1	Bw	99 999,9 m/dm	-	0 225 502 m/dm	-	0 225 506 m/cm
Stroke counter	1	Bz	999 999	0 225 301	-	-	-
	1	Bw	999 999	0 225 302	-	-	-

Stroke lever Ordering code 0 600 005 For other stroke levers see accessories

Panel frame Ordering code 1 250 056 See accessories for description

* on request

For measuring wheel see accessories, they are not included in normal delivery