

Flexible specimen holder

LaboForce-100, Tegramin-25, Tegramin-30

Instruction Manual

Original Instructions



Doc. no.: 17067026_A_en
Date of release: 2022.10.13

Copyright

The contents of this manual are the property of Struers ApS. Reproduction of any part of this manual without the written permission of Struers ApS is not allowed.

All rights reserved. © Struers ApS 2022.10.13.

Table of Contents

1	Safety	5
1.1	Intended use	5
1.2	Safety messages	5
1.3	Safety messages in this manual	6
2	Getting started	7
2.1	Device description	7
2.2	Overview	8
2.3	Checking the packing list	8
3	Transport and storage	8
3.1	Long-term storage or shipping	9
4	Instructions for use	9
4.1	Specimen size and processing	9
4.2	Placing the specimens	12
4.3	Handling a flexible specimen holder	13
4.4	Adjusting the height of the flexible specimen holder ...	15
4.5	Adjusting the horizontal position of the flexible specimen holder	16
5	Maintenance	17
6	Technical data	18
7	Troubleshooting	19
8	Disposal	20
9	Manufacturer	21
	Declaration of Incorporation of Partly Completed Machinery	23

1 Safety

1.1 Intended use

The device is intended to be used as a specimen holder to secure the specimen during a semi-automatic materialographic preparation process.

The device is intended to be used in combination with Struers equipment for grinding/polishing:

- Tegramin-25: 140 mm diameter flexible specimen holder
- Tegramin-30: 160 mm diameter flexible specimen holder
- LaboForce-100: 140 and 160 mm diameter flexible specimen holder

**Note**

The software installed in all machines produced before November 2023 must be updated before the flexible specimen holder can be used.

**Note**

If you have an older version of the Instructions Manuals for the following machines you may have to download an updated version containing instructions on how to use the flexible specimen holder:

- Tegramin-25
- Tegramin-30
- LaboForce-100

Visit the Struers web page for the latest manual version, or contact your sales representative.

Do not use the device for the following

Any other equipment than stated in this section.

1.2 Safety messages

Signs used in safety messages

Struers uses the following signs to indicate potential hazards.



ELECTRICAL HAZARD

This sign indicates an electrical hazard which, if not avoided, will result in death or serious injury.



DANGER

This sign indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



WARNING

This sign indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.



CAUTION

This sign indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.



CRUSHING HAZARD

This sign indicates a crushing hazard which, if not avoided, could result in minor, moderate or serious injury.

General messages



Note

This sign indicates that there is a risk of damage to property, or a need to proceed with special care.



Hint

This sign indicates that additional information and hints are available.

1.3

Safety messages in this manual



CAUTION

Ignoring this information and mishandling of the equipment can lead to severe bodily injuries and material damage.



WARNING

Struers equipment must only be used in connection with and as described in the Instruction Manual supplied with the equipment.

**CAUTION**

Read this Instruction Manual, as well as the Instruction Manual for the machine with which you are going to use this accessory.

**CRUSHING HAZARD**

Keep your hands clear of the flexible specimen holder when lowering the specimen mover.

**CAUTION**

To ensure that the machine with which you are using the flexible specimen holder can fixate the specimen securely, the following software version must be installed on the machine.

- Tegramin-25, Tegramin-30: V. 1.33 or later
- LaboForce-100: V. 3.03 or later

Failure to do so can result in specimens being ejected from the machine.

**CAUTION**

To prevent specimens from detaching from the specimen holder, make sure that the specimen or specimens are covered completely by the flexible specimen holder.

**CAUTION**

Use only specimens that are within the recommended dimensions. If they are not within the recommended dimensions, they can detach from the flexible specimen holder and drop.

2 Getting started

2.1 Device description

The device is a specimen holder with spring-loaded pins that secures the specimen during the preparation process.

The operator secures the specimen in the device, and makes sure that the specimen does not protrude from the specimen holder.

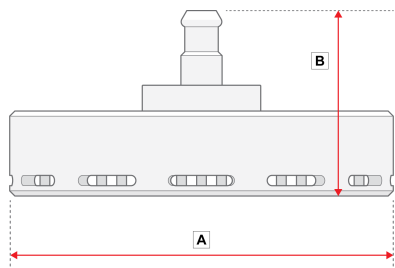
The operator places the device in the machine.

The operator places the specimen on the preparation surface and starts the machine by pressing the Start button.

The machine stops automatically when the process is completed.

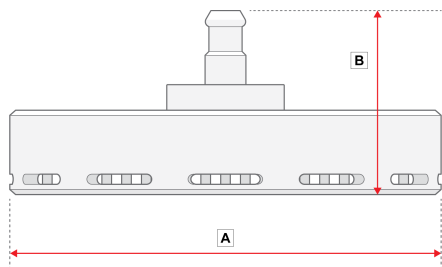
The operator cleans the specimen before the next preparation step or inspection.

2.2 Overview



A: 149 mm (5.86")

B: 72 mm (3")



A: 169 mm (6.65")

B: 72 mm (3")

2.3 Checking the packing list

Optional accessories may be included in the packing box.

The packing box contains the following items:

Pcs.	Description
1	Flexible specimen holder
1	Instruction Manual set

3 Transport and storage

If, at any time after the installation, you have to move the unit or place it in storage, there is a number of guidelines we recommend that you follow.

- Package the unit securely before transportation.
Insufficient packaging could cause damage to the unit and will void the warranty. Contact Struers Service.

- Struers recommends that all original packaging and fittings are kept for future use.

3.1 Long-term storage or shipping

- Before storage or shipping, place the device in its original packaging.

4 Instructions for use



CRUSHING HAZARD

Keep your hands clear of the flexible specimen holder when lowering the specimen mover.



CAUTION

Read this Instruction Manual, as well as the Instruction Manual for the machine with which you are going to use this accessory.



CAUTION

To ensure that the machine with which you are using the flexible specimen holder can fixate the specimen securely, the following software version must be installed on the machine.

- Tegramin-25, Tegramin-30: V. 1.33 or later
- LaboForce-100: V. 3.03 or later

Failure to do so can result in specimens being ejected from the machine.

4.1 Specimen size and processing



Note

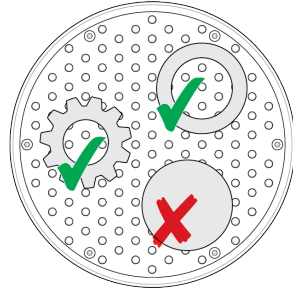
Remove burrs and sharp edges from the specimen before preparation.



Note

Do not use the flexible specimen holder for preparing round, solid specimens with a uniform surface.

You can use the flexible specimen holder for preparing round, hollow specimens.



Specimen sizes



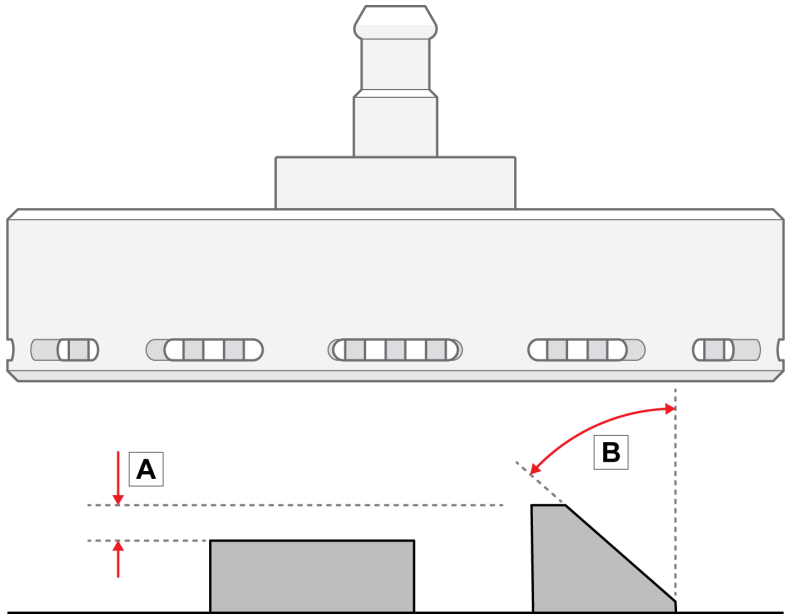
CAUTION

Use only specimens that are within the recommended dimensions. If they are not within the recommended dimensions, they can detach from the flexible specimen holder and drop.

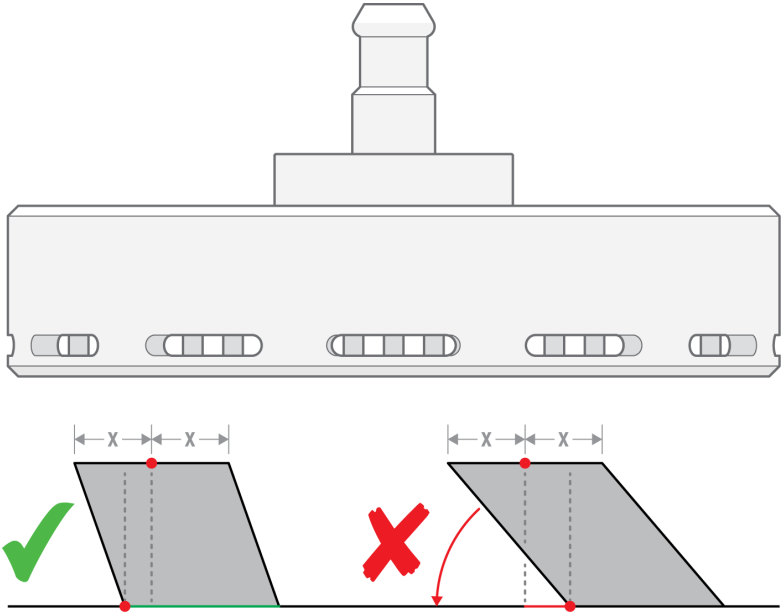
Flexible specimen holder size		
140 mm (5.5")	Height	Min.: 10 mm (0.4") Max.: 20 mm (0.8")
	Area	Min.: 20 x 40 mm (0.8 x 1.8") Max.: 90 x 90 mm (4 x 4")
160 mm (6.3")	Height	Min.: 10 mm (0.4") Max.: 20 mm (0.8")
	Area	Min.: 20 x 40 mm (0.8 x 1.8") Max.: 100 x 100 mm (4.3 x 4.3")

Specimen shape

- A** The height of the specimens must not vary more than 6 mm (0.23"). Holes, cavities, etc. must not exceed 50 % of the total specimen area.
- B** The angle of the edge of the specimen must not be greater than 50°. If the angle is greater, the specimen can fall out of the flexible specimen holder.

**Note**

Do not use the flexible specimen holder to prepare specimens where the top part of the specimen is not supported by the bottom part of the specimen. If you do, the specimen will tilt.



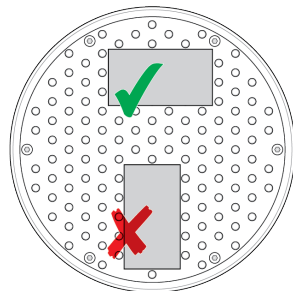
4.2 Placing the specimens



Note

Place the specimens so that they do not extend beyond the MD-disc.

Always place the longest side of the specimen so that it is parallel with the rotational direction.



4.3 Handling a flexible specimen holder

Procedure

1. From the **Main menu** screen select **Flexible specimen holder methods**.
2. If the menu item **Flexible specimen holder methods** is not available in the main menu, you must activate it in the software:
Select **Configuration -> Options** and set **Flexible specimen holder** to **Yes**.

Procedure

1. From the **Main menu** screen select **Flexible specimen holder methods**.
2. If the menu item **Flexible specimen holder methods** is not available in the main menu, you must activate it in the software:
Select **Configuration -> Options** and set **Flexible specimen holder** to **Yes**.

Inserting a flexible specimen holder



CAUTION

To prevent specimens from detaching from the specimen holder, make sure that the specimen or specimens are covered completely by the flexible specimen holder.



CRUSHING HAZARD

Keep your hands clear of the flexible specimen holder when lowering the specimen mover.

Procedure



Hint

Make sure that you use sufficient force according to the specimen size and Struers recommendations.

The Struers Metalog Guide methods are based on a specimen with an area of 7 cm².

Adjust the method according to your specific specimen area.

Procedure



Hint

Make sure that the preparation surface is sufficiently wet before you start the preparation process.

1. Press the **Lower/Raise** button to make sure that the specimen mover head is fully raised.
2. Press the black button on the specimen mover head.
3. Insert the flexible specimen holder and rotate it until the three pins are aligned with the holes in the specimen mover.
4. Push the flexible specimen holder upwards until it locks into position.
5. Release the black button on the specimen mover head. Make sure that the flexible specimen holder is securely fixed.



Using the flexible specimen holder

1. Place the specimen or specimens on the preparation surface.
2. Press the **Lower/Raise** button to lower the flexible specimen holder.
3. Make sure that no specimens protrude from the flexible specimen holder. If they do, adjust the specimens.
 - Press the **Lower/Raise** button to raise the flexible specimen holder.
 - Adjust the specimens.
4. Repeat until all specimens are placed correctly.
5. Start the preparation process.

The preparation process stops automatically when the set preparation time has expired.
6. Clean the flexible specimen holder before the next preparation step.



Adjusting the height of the flexible specimen holder



Note

This procedure applies only to Tegramin-25 and Tegramin-30.

To prevent the flexible specimen holder from coming into contact with the preparation surface, you can adjust the height between the flexible specimen holder and the preparation surface.

1. Select **Configuration > Miscellaneous > Min. distance flexible holder - surface**. The lower the value, the closer the flexible specimen holder can move towards the preparation surface before the software stops it from moving further downwards.

Adjusting the height of the flexible specimen holder



Note

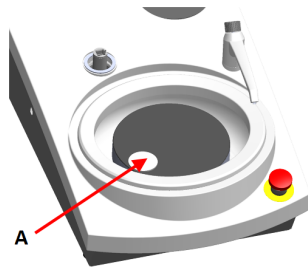
This procedure applies only to LaboForce-100.

Adjust the height of the ring to be able to use the flexible specimen holder with LaboForce-100. See the manual supplied with the specific equipment.

4.4 Adjusting the height of the flexible specimen holder

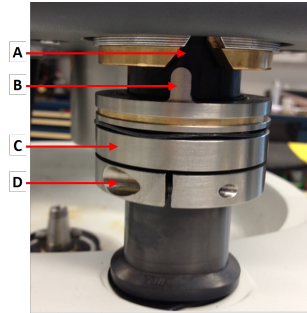
The following applies only when a flexible specimen holder is used.

1. With a flexible specimen holder mounted, place a preparation surface on the preparation disc.
2. Select the 'thickest' preparation surface to be used and place it on the preparation disc. Usually, this will be SiC Foil on an MD-Gekko disc, or SiC Paper on an MD-Fuga disc, or an MD-Alto.
3. Place a spacing disc at a height of 20 mm on the preparation surface so that it is below the edge of the flexible specimen holder.



A Spacing disc

4. Support the LaboForce-100 head and loosen the screw in the adjustment ring.



- A V-shaped groove
- B Pin
- C Adjustment ring
- D Fastening screw

5. Press the **Lower/Raise** button to lower the specimen mover head. An error message will appear as the specimen mover head is not in contact with the adjustment ring.



6. Move the adjustment ring up until the pin fits into the V-shaped groove on the cabinet of the control panel.
7. Tighten the adjustment ring to fix it in this position.
8. Press the **Turn/push knob** to clear the error message.

9. Press the **Lower/Raise** button to raise the specimen mover head.



4.5 Adjusting the horizontal position of the flexible specimen holder

With a flexible specimen holder:

1. Press the **Lower/Raise** button to lower the specimen mover head.
2. Loosen the 2 fastening screws holding the column of the control panel.
3. Place the flexible specimen holder in a position that does not allow the specimen to run more than 1 mm over the edge of the preparation disc.



5 Maintenance

Proper maintenance is required to achieve the maximum up-time and operating lifetime of the device.

Cleaning

**Note**

Do not use acetone, benzol or similar solvents.

Frequency

- Clean the device between each preparation step or every day.

Procedure

- To clean the device, use either Lavamin, or a dish brush and a common household detergent.
If you have prepared specimens using a large amount of resin, clean the device with a dish brush.
- Dry the device with the pins facing downwards.
- Store the device with the pins facing downwards.

6 Technical data

Subject	Specifications	
Safety standards	CE-labeled according to EU directives	
REACH	For information about REACH, contact your local Struers office.	
Noise level	See the noise level stated for the specific machine using this device.	
Operating environment	Surrounding temperature	0 – 40°C (41 – 104°F)
	Humidity	N/A
Storage and transport conditions	Surrounding temperature	-30 – 60°C (32 – 140°F)
	Humidity	Non-condensing
Dimensions and weight	Diameter	140 mm dia.: 149 mm (5.86") 160 mm dia.: 169 mm (6.65")
	Height	140 mm dia.: 72 mm (3") 160 mm dia.: 72 mm (3")
	Weight	140 mm dia.: 1.3 kg (2.86 lbs) 160 mm dia.: 1.7 kg (3.74 lbs)

7 Troubleshooting

Problem	Possible cause	Solution
<p>The process cannot be started. See error messages for the machine.</p>	<p>The flexible specimen holder is too close to the surface. This can be caused by incorrect configuration or height adjustment, i.e. the specimen is too low, or the force is too high.</p>	<p>Change the force. Use higher specimens. Change the configuration. See the Instruction Manual for the machine you are using.</p>
<p>The pins on the flexible specimen holder are touching the preparation surface.</p>	<p>The force setting is too high, or the specimens are too low. The value in the software indicating how close to the turntable the holder can go are set to a too low value.</p>	<p>Decrease the force. See the Instruction Manual for the machine you are using. Increase the specimen height.</p>
<p>The specimens fall out of the flexible specimen holder.</p>	<p>The specimens have not been placed correctly. Insufficient force is applied.</p>	<p>See Placing the specimens ► 12. Increase the force.</p>
<p>The pins on the flexible specimen holder get stuck to the bottom plate.</p>	<p>The flexible specimen holder is dirty.</p>	<p>Clean the flexible specimen holder. See Maintenance ► 17.</p>

Problem	Possible cause	Solution
The specimens develop a pencil shape.	The specimens have not been placed correctly. The sample area is too small. The specimen is too high. The specimen geometry is round and solid.	See Placing the specimens ► 12. Turn the specimen and repeat the step.
It is difficult to insert the flexible specimen holder in the machine.	The coupling is worn out.	Check the coupling. Contact Struers Service.
The surfaces are being damaged.	The specimen has burrs. The specimen has sharp edges. Too high force is applied to the specimen. The specimen area is too small.	Remove burrs. Remove sharp edges. Lower the force.
Short lifetime of the polishing cloth	The polishing cloth is too soft.	Use a harder polishing cloth. Download the brochure "Polishing cloth guide" on the Struers website.

8 Disposal

Contact your local authorities for information on the correct method of disposal in accordance with national legislation.

Specimen holders are made of stainless steel and plastic and do not contain any components classified as hazardous.

Flexible specimen holders can be disposed of as metal waste.

9 Manufacturer

Struers ApS
Pederstrupvej 84
DK-2750 Ballerup, Denmark
Telephone: +45 44 600 800
Fax: +45 44 600 801
www.struers.com

Responsibility of the manufacturer

The following restrictions should be observed, as violation of the restrictions may cause cancellation of Struers legal obligations.

The manufacturer assumes no responsibility for errors in the text and/or illustrations in this manual. The information in this manual is subject to change without notice. The manual may mention accessories or parts not included in the supplied version of the equipment.

The manufacturer is to be considered responsible for effects on safety, reliability, and performance of the equipment only if the equipment is used, serviced, and maintained in accordance with the instructions for use.

Declaration of Incorporation of Partly Completed Machinery

Manufacturer	Struers ApS • Pederstrupvej 84 • DK-2750 Ballerup • Denmark
Name	Flexible specimen holder
Model	N/A
Function	Specimen holder for LaboForce-100, Tegramin-25 and Tegramin-30
Type	07066941 and 07066961
The above listed machinery is only intended to be used with: And shall not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with this regulation, where appropriate.	
Serial no.	LaboForce-100, Tegramin-25 and Tegramin- 30



Module [Module], according to global approach

EU

We declare that the product mentioned is in conformity with the following legislation, directives and standards:

2006/42/EC

Authorized to compile technical file/
Authorized signatory

Stig Nygaard Quist
VP Business Development

Date: [Release date]

en For translations see
bg За преводи вижте
cs Překlady viz
da Se oversættelser på
de Übersetzungen finden Sie unter
el Για μεταφράσεις, ανατρέξτε στη διεύθυνση
es Para ver las traducciones consulte
et Tõlked leiata aadressilt
fi Katso käännökset osoitteesta
fr Pour les traductions, voir
hr Za prijevode idite na
hu A fordítások itt érhetők el
it Per le traduzioni consultare
ja 翻訳については、
lt Vertimai patalpinti
lv Tulkojumus skatīt
nl Voor vertalingen zie
no For oversettelser se
pl Aby znaleźć tłumaczenia, sprawdź
pt Consulte as traduções disponíveis em
ro Pentru traduceri, consultați
se För översättningar besök
sk Preklady sú dostupné na stránke
sl Za prevode si oglejte
tr Çeviriler için bkz
zh 翻译见

www.struers.com/Library