

# Flexible specimen holder

AbraPol-30, LaboForce-100,  
Tegramin-25, Tegramin-30

## Instruction Manual

Original Instructions



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# 1 Safety



## 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
- AbraPol-30

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

## 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:

- AbraPol-30: 160 mm diameter flexible specimen holder
- Tegramin-25: 140 mm diameter flexible specimen holder
- Tegramin-30: 160 mm diameter flexible specimen holder
- LaboForce-100:  
140 mm diameter flexible specimen holder if you have a 250 mm MD disc  
160 mm diameter flexible specimen holder if you have a 300 mm MD disc

**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:

- AbraPol-30: V. 1.12 or later
- LaboForce-100: V. 3.03 or later
- Tegramin-25, Tegramin-30: V. 1.33 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 Get 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.

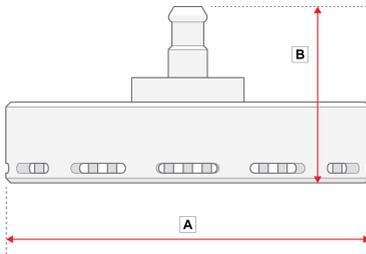
The operator places the device in the machine.

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.

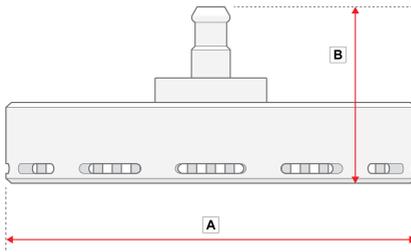
The operator cleans the specimen before the next preparation step or inspection.

## 2.2 Overview



**A:** 149 mm (5.86")

**B:** 72 mm (3")



**A:** 169 mm (6.65")

**B:** 72 mm (3")

## 2.3 Check 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.
- We recommend that you use the original packaging and fittings.

### 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:

- AbraPol-30: V. 1.12 or later
- LaboForce-100: V. 3.03 or later
- Tegramin-25, Tegramin-30: V. 1.33 or later

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

### 4.1 Specimen size and shape



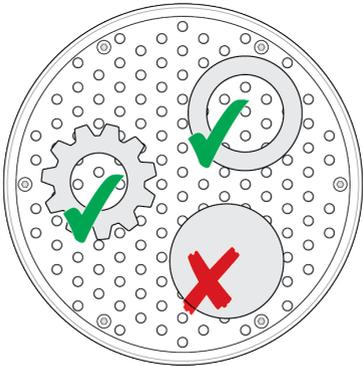
### CAUTION

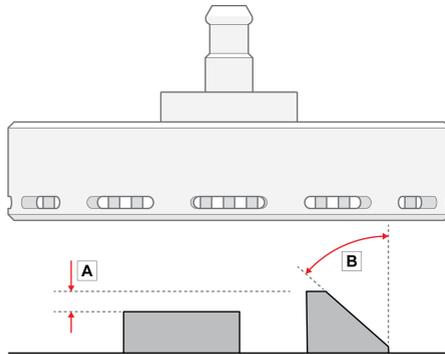
Use only specimens that are within the recommended dimensions. If they are not within the recommended dimensions, they can detach from the flexible specimen holder and drop.

Flexible specimen holder		Recommended size of the specimen
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 (3.5 x 3.5")

Flexible specimen holder		Recommended size of the specimen
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 (3.9 x 3.9")

**Note**  
Do not use the flexible specimen holder for preparing solid, round specimens.



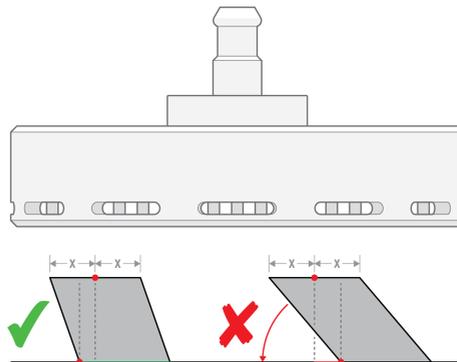


- A The height of the specimens must not vary more than 6 mm (0.23"). Holes, cavities, etc. must not exceed 50 % of the total specimen area.
- B The angle of the edge of the specimen must not be greater than 50°. If the angle is greater, the specimen can fall out of the flexible specimen holder.



**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.



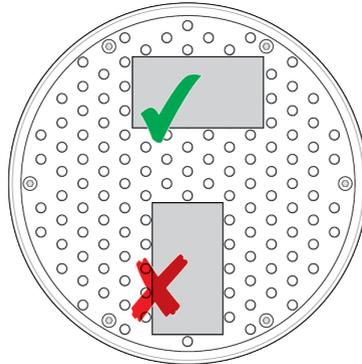
## 4.2 Place the specimens



### Note

Place the specimens so that they do not extend beyond the MD-disc while rotating the polishing head.

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



## 4.3 Use the flexible specimen holder on AbraPol-30

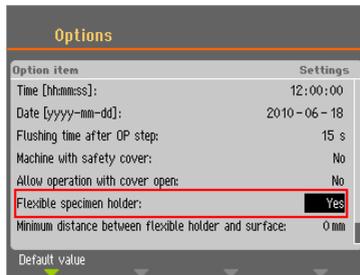


### Note

Remove burrs and sharp edges from the specimen before preparation.

### The display

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



### Insert the flexible specimen holder



#### CRUSHING HAZARD

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



#### 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.

1. Place the flexible specimen holder under the quick coupling and support it with your fingers.
2. Press and hold down the flange of the column while you guide the pressure tap of the flexible specimen holder into the coupling.
3. Release the flange carefully.
4. Rotate the flexible specimen holder until the three pins engage with the corresponding holes.
5. Make sure that the flexible specimen holder is securely fixed in the coupling.

### Remove the flexible specimen holder

1. Support the flexible specimen holder with your fingers.
2. Press and hold down the flange while you press the flexible specimen holder slightly upwards. At the same time, use the heel of your hand to press and hold down the flange.
3. Support the flexible specimen holder with one hand while you lower it to release it from the coupling.
4. Release the flange and remove the flexible specimen holder.

**Procedure for use****Hint**

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

**Hint**

The Struers Metalog Guide methods are based on a specimen with an area of 7 cm<sup>2</sup>. Adjust the method according to your specific specimen area.

**Hint**

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

1. Place the specimen or specimens on the preparation surface.
2. Close the cover.
3. Press the **Start** button once to lower the flexible specimen holder.
4. Make sure that no specimens protrude from the flexible specimen holder. If they do, adjust the specimens.
  - Press the **Stop** button to raise the flexible specimen holder.
  - Adjust the specimens.
5. Repeat until all specimens are placed correctly.
6. Start the preparation process by pressing **Start** with the flexible specimen holder lowered.
 

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



## 4.4 Use the flexible specimen holder on LaboForce-100, Tegramin-25, or Tegramin-30

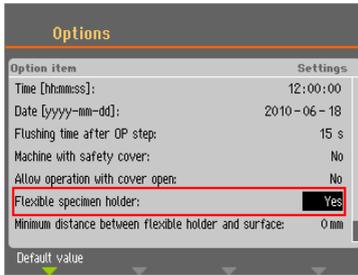


### Note

Remove burrs and sharp edges from the specimen before preparation.

### The display

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:
  - In the **Configuration** menu, select **Options**.
  - Set **Flexible specimen holder** to **Yes**.



### Insert the flexible specimen holder



### CRUSHING HAZARD

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



### Hint

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



### Hint

The Struers Metalog Guide methods are based on a specimen with an area of 7 cm<sup>2</sup>. Adjust the method according to your specific specimen area.



### 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.



### Procedure for use

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.



#### 4.4.1 Adjust the height of the flexible specimen holder

##### On AbraPol-30, Tegramin-25 and Tegramin-30

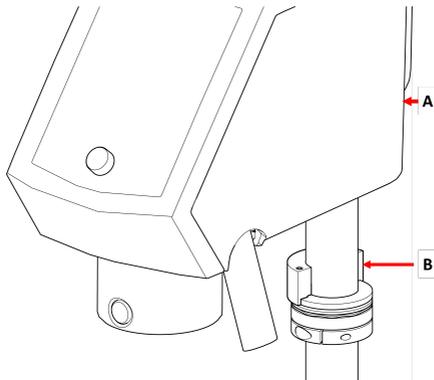
To prevent the flexible specimen holder from coming into contact with the preparation surface, you can adjust the height between the flexible specimen holder and the preparation surface.

1. Select **Configuration > Options > 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.

##### On LaboForce-100

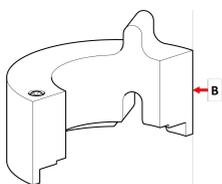
Adjust the height of the ring to be able to use the flexible specimen holder with LaboForce-100.

1. Attach the distance piece as shown in the illustration below.



**A** LaboForce-100

**B** Distance piece



**B** Distance piece



**Note**

Make sure to remove the distance piece if you are going to work with mover plates or regular specimen holders again.

#### 4.4.2 Adjust the horizontal position of the flexible specimen holder

See the manual supplied with the specific equipment.

## 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	
<b>Safety Standards</b>	Safety standards CE-labeled according to EU directives	
<b>REACH</b>	For information about REACH, contact your local Struers office.	
<b>Noise level</b>	See the noise level stated for the specific machine using this device.	
<b>Operating environment</b>	Surrounding temperature	0 – 40°C (41 – 104°F)
	Humidity	N/A
<b>Storage and transport conditions</b>	Surrounding temperature	-30 – 60°C (32 – 140°F)
	Humidity	Non-condensing
<b>Dimensions and weight</b>	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
The process cannot be started. See error messages for the machine.	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.	Change the force. Use higher specimens. Change the configuration. See the Instruction Manual for the machine you are using.
The pins on the flexible specimen holder are touching the preparation surface.	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.	Decrease the force. See the Instruction Manual for the machine you are using. Increase the specimen height.
The specimens fall out of the flexible specimen holder.	The specimens have not been placed correctly. Insufficient force is applied.	See <a href="#">Place the specimens ► 11</a> . Increase the force.
The pins on the flexible specimen holder get stuck to the bottom plate.	The flexible specimen holder is dirty.	Clean the flexible specimen holder. See <a href="#">Maintenance ► 17</a> .

Problem	Possible cause	Solution
The specimens develop a pencil shape.	<p>The specimens have not been placed correctly.</p> <p>The sample area is too small.</p> <p>The specimen is too high.</p> <p>The specimen geometry is round and solid, and your surface is not plane.</p>	<p>See <a href="#">Place the specimens ► 11</a>.</p> <p>Turn the specimen and repeat the step.</p> <p>Change your surface.</p>
It is difficult to insert the flexible specimen holder in the machine.	The coupling is worn out.	<p>Check the coupling.</p> <p>Contact Struers Service.</p>
The surfaces are being damaged.	<p>The specimen has burrs.</p> <p>The specimen has sharp edges.</p> <p>To high force is applied to the specimen.</p> <p>The specimen area is too small.</p>	<p>Remove burrs.</p> <p>Remove sharp edges.</p> <p>Lower the force.</p>
Short lifetime of the polishing cloth	The polishing cloth is too soft.	<p>Use a harder polishing cloth.</p> <p>Download the brochure "Polishing cloth guide" on the Struers website.</p>

## 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](http://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 AbraPol-30, LaboForce-100, Tegramin-25 and Tegramin-30
Type	07066941 and 07066961

The above listed machinery is only intended to be used with: AbraPol-30, LaboForce-100, Tegramin-25 and Tegramin-30

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.



Module H, 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

\_\_\_\_\_  
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

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