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HL-AH AMALGAMATOR INSTRUCTION

HL-AHG5 ✓



HL-AHG6



HL-AHG7



HL-AHG8



Hangzhou ZhongRun Medical Instrument Co., LTD.

Dear customers,

Thanks for purchasing HL-AH Amalgamator produced by Hangzhou ZhongRun Medical Instrument Co., LTD. You must read the instruction carefully before using the device on the safe and right side and make sure to keep it near the device so as to be read at any time.

When run the device, you must observe the rules strictly and preserve correctly and regularly.

On the other hand, our company has the right to reserve an extra notice of the improvement of the device.

The product agrees to EN ISO13485: 2003+AC 2009 standard, which is approved by the system authentication of TÜV Rheinland LTD, and also gained the CE certificate.

The product gained national patent: patent No.: ZL 2005 2 00149421.1(counterfeiting not allowed).

I. Notes of the Medical appliances

1. The device must be used by specific persons instead of nonprofessional ones.

2. Notes on placing the device:

- 1) It must be put in the place which is not connected with water or any other liquid.
- 2) It must be kept and used in the place where there is no adverse air caused by air pressure, temperature, humidity, ventilation, insolation, dust, and salt, ion etc.
- 3) It must be placed steadily and stably without any tilt, quake or the possibility of impact.
- 4) It must be far away from chemicals and chemical gas.
- 5) Power socket must apply with the required voltage and current of the device. Make sure to set the socket and lines correctly and the device requires separate socket with safety grounding.

3. Notes before using

- 1) Check is a must before using. Make sure there is no abnormal phenomenon on the appearance, esp. no water, the electrical lines of the socket is integrated without any crack or breakage, the switch and indicator are normal.
- 2) Make sure the safety grounding correctly and stably.
- 3) Make sure the supplying voltage and frequency agrees with the requirement.
§Before using, the screws which are used for fastening under the device must be removed. §
- 4) Because of the damping system of amalgamator, it can reduce noise. On the transportation, red screws(3 HL-AHG5 , HL-AHG6 and 1 HL-AHG7, HL-AHG8) are fixed under the device in the case of safety. Before using the device, please remove the red screws and put them aside.

4. Notes while using it

- 1) The device must be used in stomatology dept, it uses for blending dental restorative materials amalgam capsules and glass ionomer capsules.
- 2) Monitor whether there is any abnormal phenomena strictly. Once something is abnormal, turn off the switch and pull out the socket.
- 3) The patient mustn't contact the device.

5. Notes after using

- 1) Check must be made according to the requirement strictly and turn off the switch.
- 2) After turning off the switch, the socket must be held down instead of pulling down.
- 3) Keep requirement about discontinued devices:
 1. It must be put in the place which is not connected with water or any other liquid.
 2. It must be kept and used in the place where there is no adverse air caused by air pressure, temperature, humidity, ventilation, insolation, dust, and salt, ion etc.
 3. It must be placed steadily and stably without any tilt, quake or the possibility of impact.
 4. It must be far away from chemicals and chemical gas.
 - 4) To guarantee the normal use of the device, the device and its accessories must be kept properly after cleaning.
 - 5) If another transportation needed, the screws must be fixed under the device.

6. You mustn't dismantle, or repair the device by yourself when met problem, must contact distributors, and repair by specific persons.

7. You mustn't remake the device, or you have to be responsible for the consequences and lose the warranty at last.

8. Regular check and maintenance

- 1) Under normal circumstances, it is suggested that check once before using and make maintenance weekly.
- 2) If it is in idle for a while, the check on the safety and function is needed before resetting. You can use it when you make sure it is normal.
- 3) Maintenance period: the device should be maintained after one year of normal use, especially the tense and fastness of clips and springs, if they are loosen and broken, please change them timely.

9. Other important notes

If you don't use the device according to the instruction, there will be something wrong with it or some danger and accident, so be on the alert.

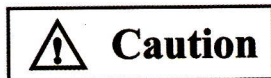
II . To guarantee the safety of using the device, the rules must be observed.

1. Because there may occur induction electric or leakage, the device must be far away from pond or moist places.
2. The device should be cleaned and placed in dry and ventilated room without corrosive gas in case of safety.
3. To prevent the metal parts from rusting, the device mustn't be kept in the high heat and moist places.
4. The instruction explains the safe use of the device specifically, please be sure to put it near the device and read it carefully and frequently.

***Our company is not responsible for the following problems:**

1. Mechanical damage and personal accident caused because the staff out of company reform, detach and repair the device.
2. Mechanical damage and personal accident caused due to using the parts out of our recognition.
3. Mechanical damage and personal accident caused because of not obeying the above rules properly.
4. Mechanical damage and personal accident caused due to violating the required voltage, grounding and placed environment.
5. Mechanical damage and personal accident caused because detach the fixing screws under the device before using it.
6. Mechanical damage caused because of not spinning the fixing screws during transportation after using the device.
7. Mechanical damage and personal accident caused by natural disasters such as earthquake, fire, and flood.
8. Clips and springs are easy to be damaged, the fee on renewing and changing them should be dealt by yourself.

Marks on the introduction:



Mechanical damage and personal accident will be caused if you violate it.



Mechanical damage and personal accident will be caused if you violate it.

III.Type and Specifications

1.Product name: Dental Amalgamator

2.Specifications: HL-AH G5 ✓

HL-AH G6

HL-AH G7

HL-AH G8

3.Power: AC 110V, 60 Hz

AC 120V, 60 Hz

AC 220V, 50 Hz

AC 230V, 50 Hz

AC 240V, 50 Hz

4.Motor power : 40W

5.Noise: ≤ 65 dB (A);

6.Comprehensive performance comparison:

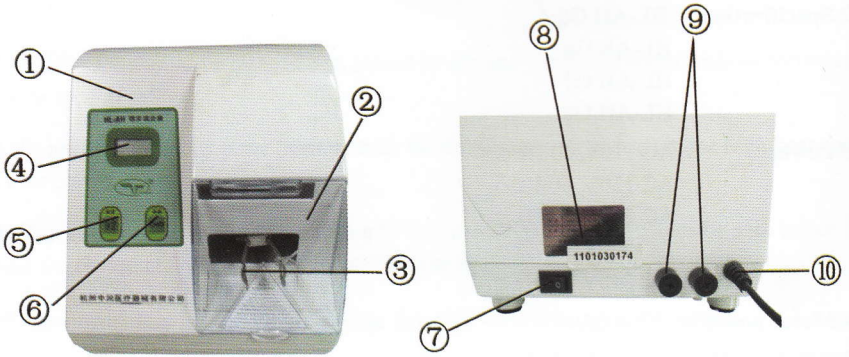
Specification	Speed	Timing Range (s)	Whole weight (g)	Size (mm)
HL-AH G5	≥ 4200 RPM	4~60	2600	285*245*225
HL-AHG6	High speed ≥ 4200 RPM Low speed: 2800RPM	4~60	2600	285*245*225
HL-AH G7	2800~4700RPM	3~60	2000	260*220*190
HL-AH G8	2800~5000RPM	1~99	2000	260*220*190

7.Classification of the devices: I : Medical devices; II -B: Electrical devices, common devices, non -AP or non-APG devices, can run continuously.

8.Service life: 5 years.

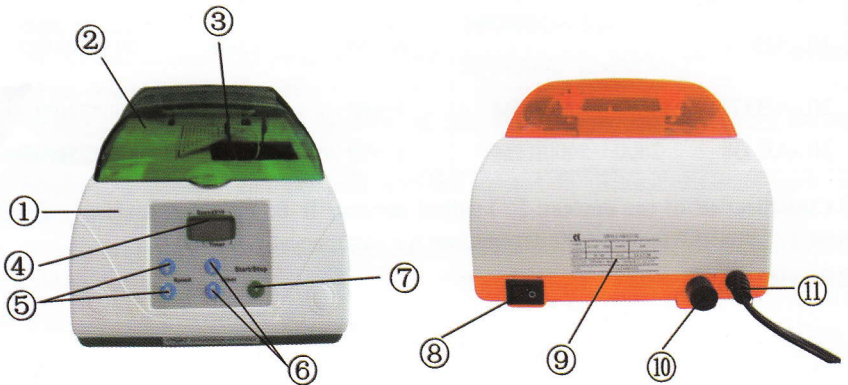
IV. Names of parts and their operations:

1. Parts of HL-AH G5 and HL-AH G6 (their appearances are similar):



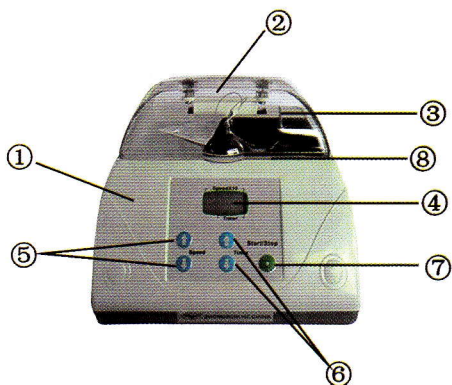
1. Shell 2. Mask 3. Clip 4. Screen 5. Timer 6. Start/Stop button 7. Switch
8. Nameplate 9. Fuse 10. Power wire

2. Parts of HL-AH G7:



1. Shell 2. Mask 3. Clip 4. Screen 5. Revolving speed-setting 6. Timer
7. Start/Stop button 8. Switch 9. Nameplate 10. Fuse 11. Power wire

3.Parts of HL-AH G8

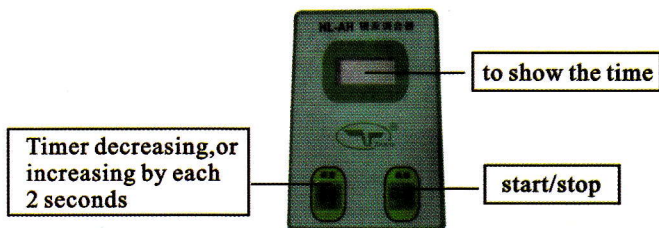


1. Shell 2. Mask 3.Clip 4.Screen 5. Revolving speed-setting 6.Timer
7. Start/Stop button 8. Rubber tray (avoid liquid, dust, capsule, and others fall into machine)

Note: The back parts of HL-AH G8 are the same as that of HL-AH G7

4.Operation parts:

1) HL-AH G5:



1) Switch:

Connect the power line of the device to power, the switch is a black one with the form of ship and lies in the back left hand corner of the device. Turn on the switch, the screen becomes light, then the power is on. The number shown on the screen is setting time.

2) Digital time controller:

It is used for controlling the operation time correctly. And is composed of screen, timer, start/stop buttons. The screen shows setting time; timer button is on the left of panel and it is used to set the operation time randomly from 4 to 60 seconds with increasing by 2 seconds; start/stop button is on the right of panel, press it once, the device operates once, if pause needed, you can press it too.

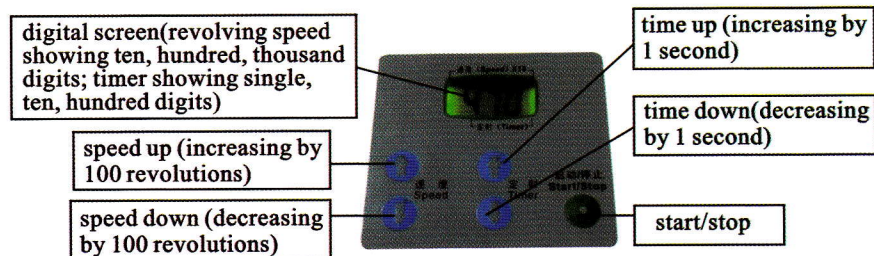
3) Mask and clip:

Mask should be opened if operation needed, so it must be turned off safely. The clip inside is used for holding the amalgam capsule.

2) HL-AH G6:

Specification: The operation of HL-AH G6 is similar with that of HL-AH G5, except changing revolving speed. Transformation method of revolving speed of HL-AHG6: Please press both timer and start/stop buttons together to shift high and low speed.

3) HL-AH G7:



1) Switch:

The switch is a black one with the form of ship and lies in the back left hand corner of the device. Turn on the switch, the screen becomes light, then the power is on. The number shown on the screen is revolving speed.

2) Digital controller of both time and speed: it is in the front panel.

3) Start/stop: it lies in the bottom right hand corner of the panel. Start the device once, it works once. If pause needed, press the button too.

4) Mask and capsule clip: open the safety mask, put the teeth-repairing materials into the clip, while working, the mask must be closed.

4) HL-AH G8:

The operation of HL-AH G8 is the same as that of HL-AH G7

Suggestions on the time of blending capsule.

Brand	To take GK amalgam capsule for an example (Ag43% Sn32% Cu25%)			
	Specifications of amalgam capsule	GK alloy powders 200mg	GK alloy powders 400mg	GK alloy powders 600mg
Recommended time	12S~16S	12S~16S	12S~18S	16S~20S

V. Usage:

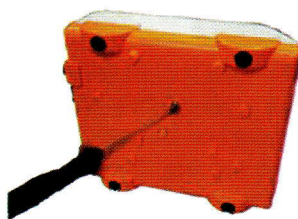
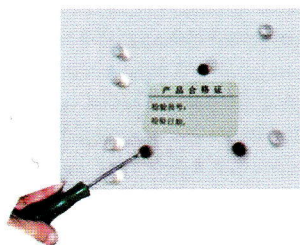


Use a screwdriver counterclockwise to remove the red fixed screws under the device.

(As shown in figure)

3 HL-AHG5, HL-AHG6

1 HL-AHG7 HL-AHG8





Attention

For the first use, please use high speed idling for 60 seconds, which is favorable to the site adjustment and prolong service life.

1.Usage of HL-AH G5:

- 1) Turn on the switch and press the black switch at rear device, the screen is light.
- 2) Set the working time. Press the setting button shortly, the time increases 2 seconds; press it for a long time, the time increases to needed time quickly.(the highest time is 60 seconds, then it recycles to 4 seconds)and the timer is memorable.(eg. 004 stands for 4 seconds and 060 stands for 60 seconds).
- 3) Open the mask, put the capsule into the clip and then close the mask.(To ensure safety, the device will beep on error instead of working while the mask is open ,)this setup has applied for national patent successfully, the number is ZL 2005 2 00149421.1.
- 4) Press start/stop, the device runs, meanwhile, the screen shows the time which is decreasing accordingly until the time is over with beeping and the device stop working automatically.
- 5) Turn off the device and detach the capsule, the blending is ok.

2.Usage of HL-AH G6:

- 1) Turn on the switch and press the black switch at rear device, the screen is light.
- 2) Choose high and low speed according to the specific capsule. Steps of switching the two kinds of speed: press start and time-setting buttons together, when the screen shows "H", it means high speed (amalgam capsule corresponds with high speed); press the two buttons again; it changed into "L" which stands for low speed.
- 3) Set the working time. Press the setting button shortly, the time increases 2 seconds; press it for a long time, the time increases to needed time quickly.(the highest time is 60 seconds, then it recycles to 4 seconds)and the timer is memorable.(eg. 004 stands for 4 seconds and 060 stands for 60 seconds).
- 4) Open the mask, put the capsule into the clip and then close the mask. (To ensure safety, the device will beep on error instead of working while the mask is open,) this setup has applied for national patent successfully, the number is ZL 2005 2 00149421.1.
- 5) Press start/stop, the device runs, meanwhile, the screen shows the time which is decreasing accordingly until the time is over with beeping and the device stop working automatically.
- 6) Turn off the device and detach the capsule, the blending is ok.

3.Usage of HL-AH G7:

- 1) Turn on the switch and press the black switch at rear device, the screen is light.
- 2) Set the working time. Press time up/time down button, the screen shows time; press the time-setting button, the time increases/decreases by 1 second. If you press the

time-setting button for a long time, the time will increase/decrease to demand. (Setting time ranges from 3 to 60 seconds) and the timer is memorable.(eg. 036 stands for 36 seconds . Press time-up by one second, it becomes 037; press time-down by one second, it becomes 036.).

3) Set the working speed. Press speed-up/speed-down button, the screen shows time. Press speed-up shortly, the speed increases 100 revolutions; press speed-down shortly, the speed decreases 100 revolutions. If you press the speed-up/speed-down button for a long time, the speed will increase/decrease quickly. (Setting speed ranges from 2,800 to 4,700 revolutions).(eg. 3200 stands for 320 revolutions . Press speed-up by 100 revolutions, it becomes 330; press speed-down by 100 revolutions, it becomes 310.).

4) Open the mask, put the capsule into the clip and then close the mask.(To ensure safety, the device will beep on error instead of working while the mask is open ,)this setup has applied for national patent successfully, the number is ZL 2005 2 00149421.1

5) Press start/stop, the device runs, meanwhile, the screen shows the time which is decreasing accordingly until the time is over with beeping and the device stop working automatically.

6) Turn off the device and detach the capsule, the concocting is ok.

4.Usage of HL-AH G8:

1) Turn on the switch and press the black switch at rear device, the screen is light.

2) Set the working time. Press time up/time down button, the screen shows time; press the time-setting button, the time increases/decreases by 1 second. If you press the time-setting button for a long time, the time will increase/decrease to demand. (Setting time ranges from 1 to 99 seconds) and the timer is memorable.(eg. 036 stands for 36 seconds . Press time-up by one second, it becomes 037; press time-down by one second, it becomes 036.).

3) Set the working speed. Press speed-up/speed-down button, the screen shows time. Press speed-up shortly, the speed increases 100 revolutions; press speed-down shortly, the speed decreases 100 revolutions. If you press the speed-up/speed-down button for a long time, the speed will increase/decrease quickly. (Setting speed ranges from 2,800 to 5,000 revolutions).(eg. 3200 stands for 320 revolutions . Press speed-up by 100 revolutions, it becomes 330; press speed-down by 100 revolutions, it becomes 310.).

4) Open the mask, put the capsule into the clip and then close the mask.(To ensure safety, the device will beep on error instead of working while the mask is open ,)this setup has applied for national patent successfully, the number is ZL 2005 2 00149421.1.

5) Press start/stop, the device runs, meanwhile, the screen shows the time which is decreasing accordingly until the time is over with beeping and the device stop working automatically.

6) Turn off the device and detach the capsule, the concocting is ok.



Attention

- ① While using the device please press the buttons and use the mask properly.
- ② The place of amalgam capsule and glass ionomer capsule is shown in the figures enclosed.

VI. Daily inspection and maintenance

1. Turn off the switch. Keep the shell and clip clean by antibacterial surface cleaner in case of the dirties.



Caution

- 1) The inspection and maintenance must be done after complete cooling.
 - 2) The plug must be pulled down.
- 2. Wipe away the dust on surface.**



Attention

Chemical cleaner mustn't be used for cleaning the device.

3. Maintenance cycle: After one year of normal use, the device should be maintained, especially the tense of the clip. If the clip comes loose, the matching parts should be change timely.

VII. Answers to common problems

- 1) The device doesn't work at all: check whether the fuse is broken, if it is, please change a proper cartridge fuse; the way to change a fuse: use the one of F2A Φ 5 \times 20f, spin the screws on fuse block with a "cross" screw driver, put the cartridge fuse in, and spin the screws again.
- 2) Solutions on broken mask: if you press the start/stop button, the device doesn't work, it's probably that the hall part of the mask falls off. Solution: In the shutdown state, press the start/stop and the bear switch together, the screen shows "O"/"U", then slacken the start/stop button, and press speed-up to switch from "O" and "U", when finished, turn off the rear switch. Turn on the switch again, while it is on "O", open the mask, the device will stop working, while it is on "U" with the mask closed, the device can work continually. However, the solution is only for emergency use, please sent to the maintenance department of medical device and manufacturers.

3) Nonuniform of amalgam capsule and glass ionomer capsule:

- See whether the speed and time is proper.

① If the amalgam capsule is so dry as to be powder, the speed is too slow and the time is too short. So reset the speed and time again.

② If the amalgam capsule is too sparse, the speed is too fast and the time is too long, then reset again.

● Consider whether the internal properties of materials have degraded. Change new amalgam capsule and glass ionomer capsule and operate again.

4) Problems of time-setting and other: Please send to the maintenance department of medical device and manufacturers instead of repairing it by yourself.



- If the problems can not be solved according to the above suggestions, don't detach and repair the device by yourself. It is a must to keep a connection with the distributor and we will supply our specialized staff to resolve them for you.

VIII. After service:

Three Guarantees including 1 year warranty

IX. Storage conditions:

-10~40°C, relative humidity ≤80%, no corrosive gas and ventilated places.

X. Shapes and marks:



(II-B)

HL-AH G5/HL-AH G6 shapes, marks:



(timer)

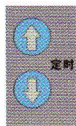


(start/stop)

HL-AH G7/HL-AH G8 shapes, marks:



revolting speed



timer



start/stop

XI. Installed sheet:

No.	Name	quantity
1	Amalgamator	1
2	Springs	2
4	Fuse 0.5A $\Phi 5 \times 20$	2
5	Instruction	1
6	Certificate (under the device)	1
7	Warranty card	1

Steps of Operating HL-AH G5、HL-AHG6 (Metal Clip)



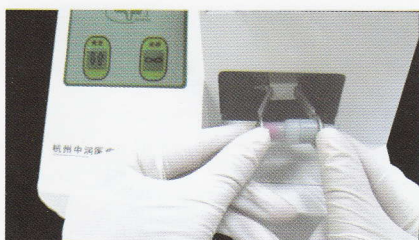
(1)



(2)



(3)

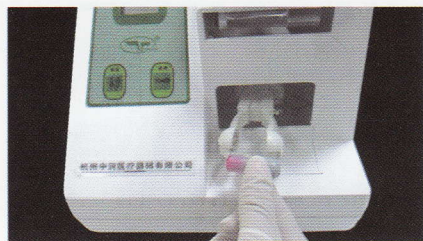


(4)



(5)

Steps of Operating HL-AH G5、HL-AHG6 (Plastic Clip)



(1)



(2)



(3)

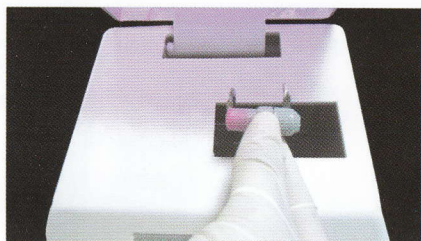


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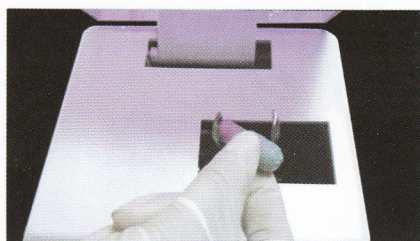


(5)

Steps of Operating HL-AH G7、HL-AHG8 (Metal Clip)



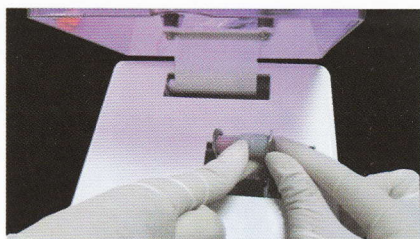
(1)



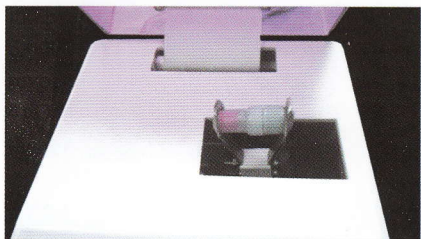
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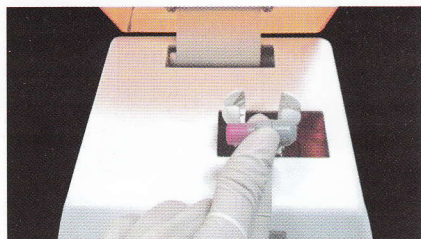


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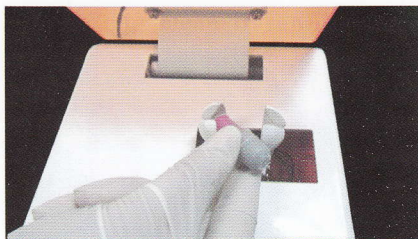


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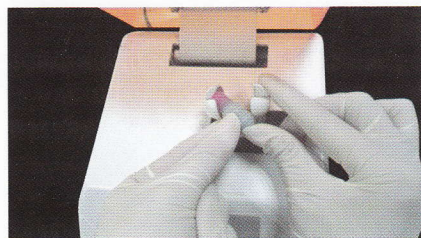
Steps of Operating HL-AH G7、HL-AHG8 (Plastic Clip)



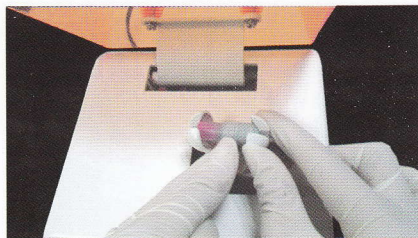
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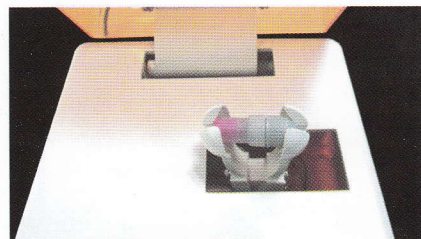
(2)



(3)



(4)



(5)