

## Element DC Periodic Maintenance

**NOTE:** For access to the full user manual for this product, please visit [www.heska.com/productmanuals](http://www.heska.com/productmanuals).

In order to keep the Element DC® Veterinary Chemistry Analyzer performance at its best, perform the periodic maintenance by users and the specific maintenance by technical support (dealer).

According to the following table, please perform daily/periodic maintenance and replacement of parts by users.

Check Points	Cleaning Interval
Air filter	Once per month.
Incubator	Once every 3 months or if inaccurate test results occur.
ISE unit	Once every 3 months or if inaccurate test results occur.
Spotting part	Once every 3 months along with the incubator and ISE unit or if slide transfer error or contamination with sample occurs.
Slide reader	Once every 3 months or if frequent reading errors occur.
Recording paper	Replace the recording paper when red lines appear.
Light source lamp	Replace when a lamp replacement error occurs or the lamp's cumulative illumination time exceeds 1,000 hours.
Sampler o-ring	Perform leak check procedure every three months.

## Monthly Maintenance

### Cleaning the Air Filter

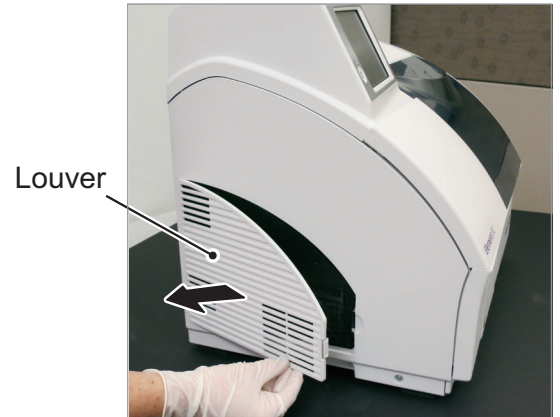
The air filter should be checked and cleaned at least once a month.

#### **i** IMPORTANT

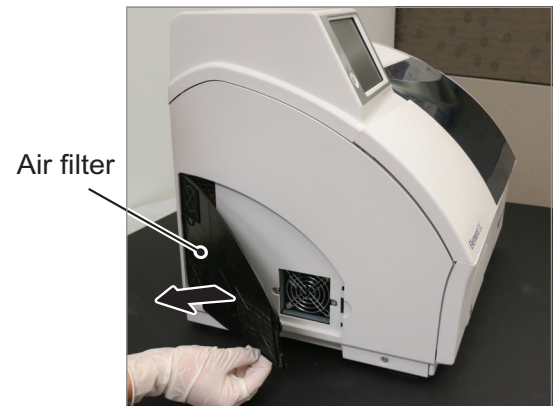
If the air filter is not cleaned, the temperature inside the analyzer will increase resulting in adverse effects on test results.

#### Cleaning procedures

1. Turn OFF the power.
2. Remove the louver, and then take out the air filter.



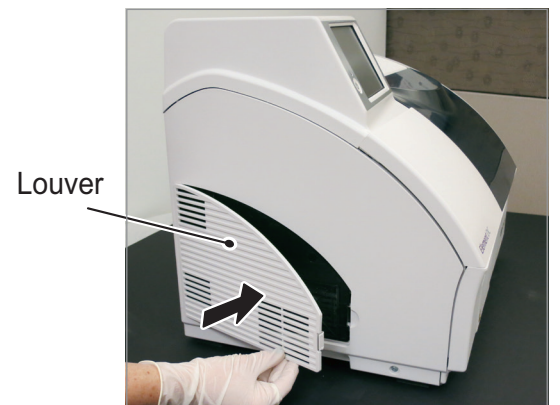
3. Remove dust adhering to the filter with a vacuum cleaner or running water.  
If washing the filter with running water, make sure it is dried well before putting it back.



4. Set the filter in the louver and close cover.

#### **i** IMPORTANT

If the analyzer is used without setting the filter, adverse effects on test results may occur.



## Quarterly Maintenance

### Cleaning the Incubator, Spotting Part and ISE Unit

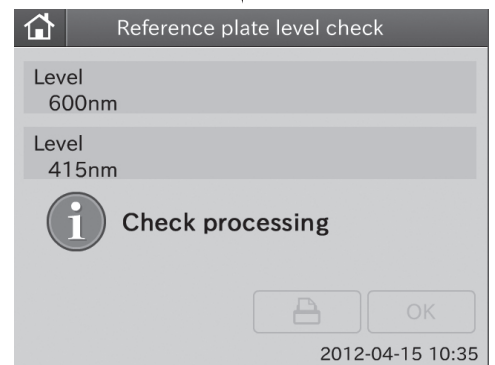
Test results are affected by stains (e.g., blood sample) inside of the incubator and ISE unit. These parts should be checked and cleaned at least once every three months.


When a slide transfer error or a tip ejecting error occurs, clean the spotting part.

#### IMPORTANT

If the incubator, spotting part and ISE unit are dirty with specimens such as blood, adverse effects on test results may occur.

1. Execute the Reference plate level check.
  - a. Touch the home button then mode function.
  - b. Touch maintenance.
  - c. Touch Reference plate level check. After the check is complete, the check result dialogue is displayed.

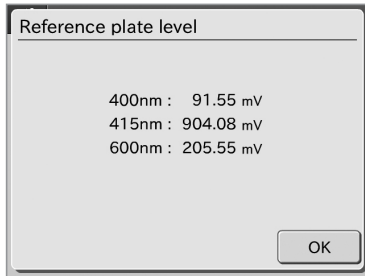


2. Confirm the results displayed in the Reference plate level check dialogue.
  - a. If the result is [1 (0%) OK], cleaning is not needed. Touch  to return to the TOP dialogue.
  - b. If the result is [2(50%) OK] or [3(80%) NG], cleaning is needed. Touch **OK** to return to the maintenance menu dialogue.


**i IMPORTANT**

Perform cleaning according to the procedures starting with step 3 below.

**NOTE:** When touching **RESULT DETAILS**, the check result details dialogue is displayed.



By touching **OK**, the check result details dialogue disappears.

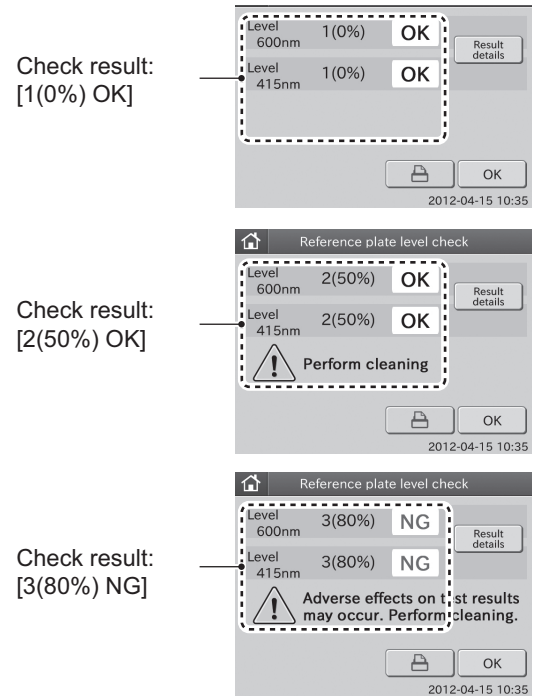
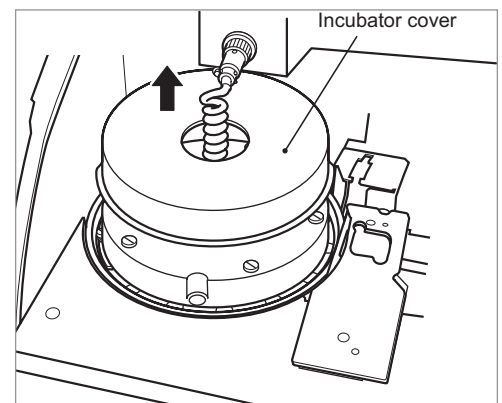
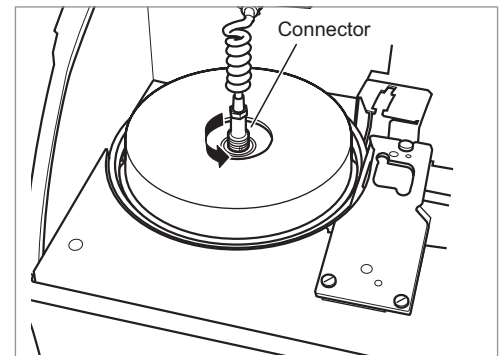
**NOTE:** By touching , the check results are printed out.

3. Cleaning the incubator.

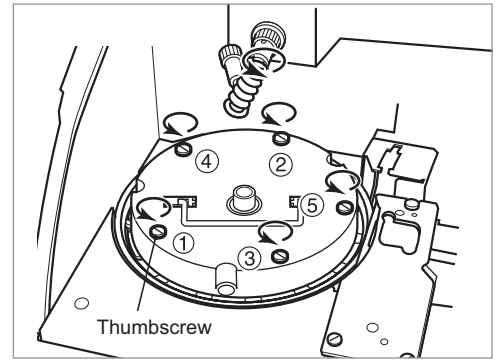
**⚠ WARNING**

Before cleaning the following parts, always be sure to turn the power switch off and unplug the AC power cable.

- a. Unplug the connector of the incubator cable by turning it counterclockwise.
- b. Remove the incubator cover.

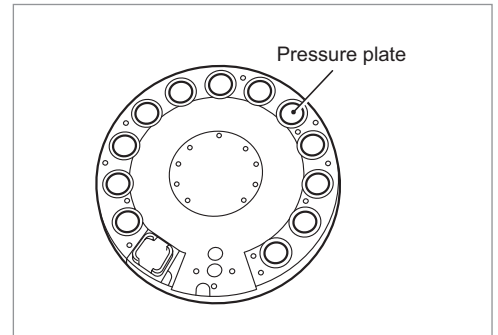


c. Unscrew 5 screws on upper incubator and remove the incubator.



d. Wipe off 13 pressure plates on the underside of the incubator with soft cloth or cotton swab moistened and tightly wrung out with sterilizing ethyl alcohol or isopropyl alcohol.

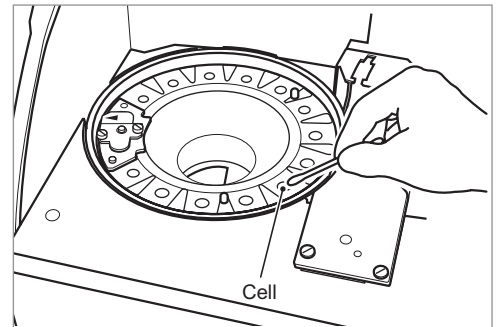
e. Dry the pressure plates by facing the incubator backside (pressure plate surface) up.



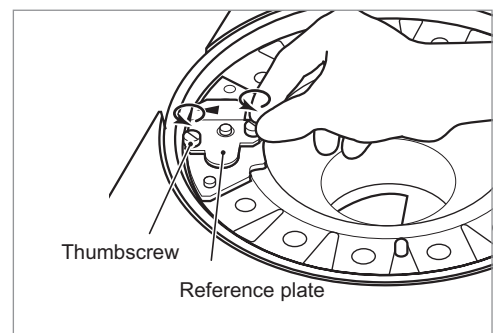
**i** IMPORTANT

Do not touch the surface of the pressure plates with bare hands. Otherwise, adverse effects on test results may occur.

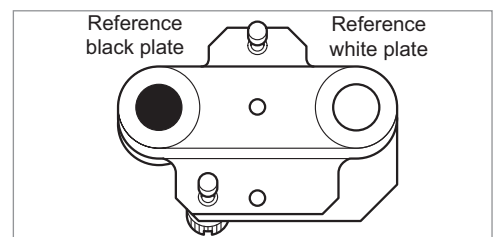
f. Clean the incubator cells in the same way.



g. Unscrew 2 screws fixing the reference plate and remove the plate from the body.



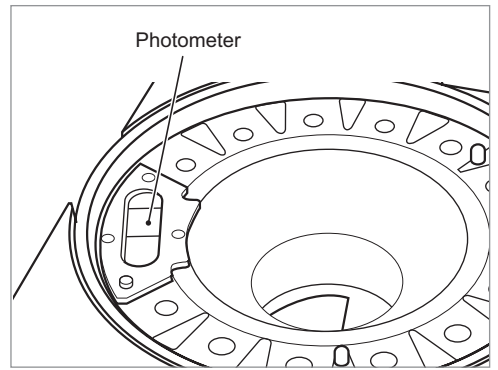
h. Turn over the reference plate and clean the white plate and the black plate with a dry cotton swab or using a swab moistened with ethyl or isopropyl alcohol and then dry with a new cotton swab.



**i** IMPORTANT

Do not touch the surface of the black plate and the white plate with bare hands. Otherwise, adverse effects on test results may occur.

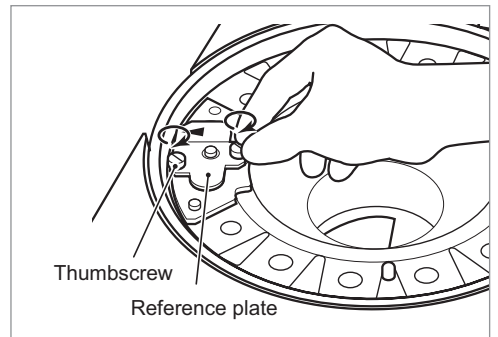
- i. Clean the photometer head with a dry cotton swab or using a swab moistened with ethyl or isopropyl alcohol and then dry with a new cotton swab.



- j. Remount the reference plate.  
The arrow mark on the reference plate should point away from the center. Screw the 2 thumbscrews evenly.

**i** IMPORTANT

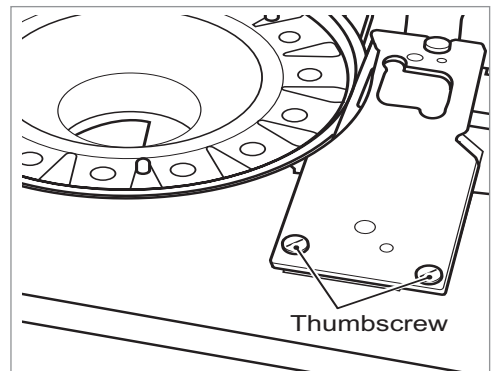
Tighten the two thumbscrews securely. Otherwise, adverse effects on test results may occur.



4. Cleaning the spotting part.

- a. Unscrew 2 thumbscrews and pull the spotting part cover forward to remove.

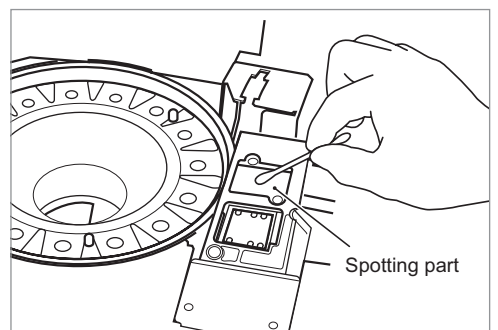
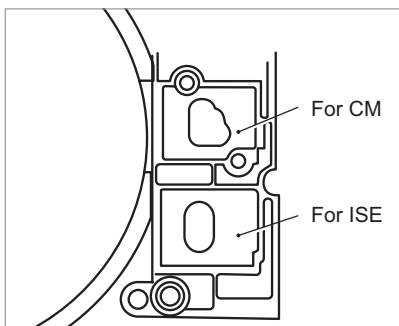
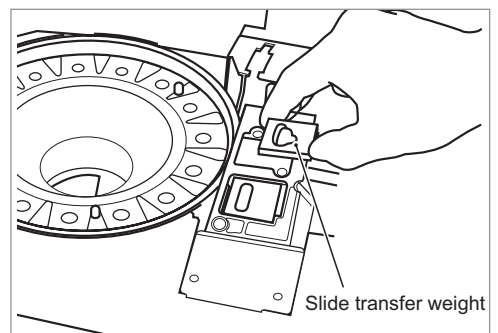
**NOTE:** There may be an additional thumbscrew at the back of the spotting part cover. If present, loosen this thumbscrew.



- b. Remove 2 slide transfer weights of the spotting part.  
Wipe off the slide transfer weights with soft cloth or cotton swab moistened with water.

**NOTE:** There are 2 types of the slide transfer weight (for CM/ISE).  
Make sure to set properly when reassembling.

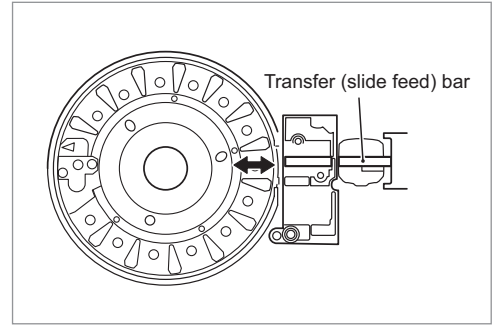
- c. Wipe off the spotting part with soft cloth or cotton swab moistened with water or using a swab moistened with ethyl or isopropyl alcohol and then dry with a new cotton swab.



5. Cleaning the slide transfer bar.

Wipe off the slide transfer bar with soft cloth or cotton swab moistened with water or using a swab moistened with ethyl or isopropyl alcohol and then dry with a new cotton swab.

**NOTE:** For the slide transfer bar left edge, move the slide transfer bar to the right.



6. Cleaning the ISE probe unit.

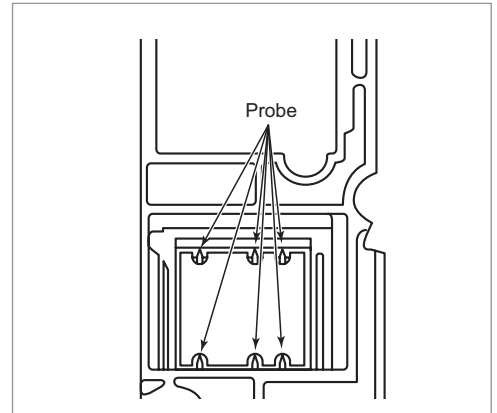
Press on the black plastic piece to make probes accessible.

Make sure there is no dust on the six ISE probes. When cleaning the ISE probes, wipe off the dust using a dry cotton swab.

**NOTE:** Do not use solvents, such as methyl alcohol or isopropyl alcohol.

**⚠ CAUTION**

ISE probes are needle-shaped parts. Do not touch directly by hands. Be careful not to bend the probes.



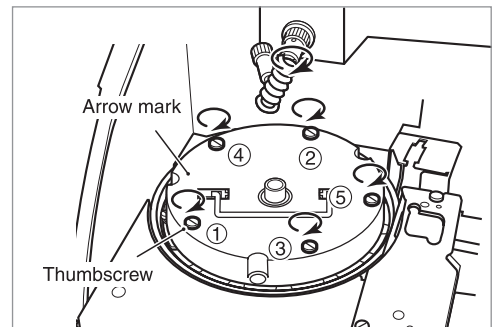
7. Reassembly

a. Reassemble the upper incubator.

Align the arrow mark on the upper incubator with the arrow mark on the analyzer. Screw 5 thumbscrews in the order (1 to 5) evenly.

**i IMPORTANT**

Tighten the five thumbscrews securely. Otherwise, adverse effects on test results may occur.



b. Reassemble each part as shown in the figure to the right.

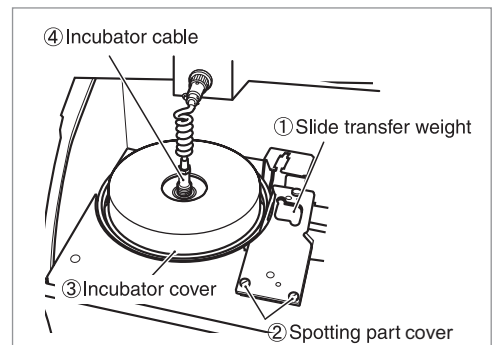
- ① Set the slide transfer weights.
- ② Set the spotting part cover and screw the thumbscrews.
- ③ Set the incubator cover.
- ④ Positioning the connector of the incubator cable in the groove, plug it into the incubator, turn it to the right and tighten securely.

**i IMPORTANT**

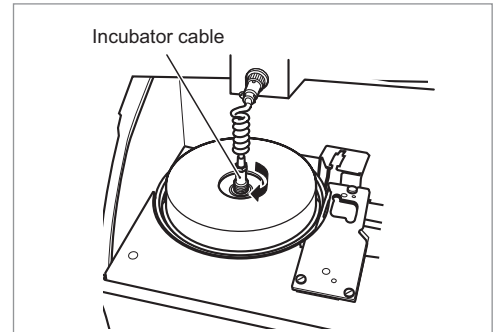
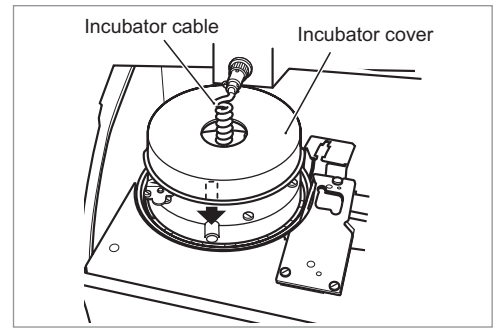
Tighten the thumbscrews securely. Otherwise, adverse effects on the test results may occur.

**i IMPORTANT**

Be sure to set incubator cover. If the analyzer is used without setting the cover, adverse effects on test results may occur.



**NOTE:** To avoid stressing the cable, ensure that the incubator cable is not twisted. Otherwise, the cable will be damaged in a short time.



## Cleaning the Slide Reader

When the slide reader is dirty, reading errors may occur frequently. Perform cleaning to avoid these errors.

### **i** IMPORTANT

If the analyzer is used without cleaning the slide reader, adverse effects on test results may occur.

### Cleaning Procedure

1. Remove the slide cartridge.
2. Shift the slide transfer bar to the right under the 2 set position cover. The slide transfer bar will not need to be reset. The analyzer will reset slide transfer bar when powered back on.
3. Clean the slide reader.

Clean the glass window of the slide reader with a cotton swab moistened with water, ethyl alcohol or isopropyl alcohol for disinfection.

Immediately dry the window with a clean cotton swab.

Ensure there are no streaks present by inspecting the lens using a flashlight or other light source.

4. Replace the slide cartridge, power the analyzer back on.





## Inspecting and Replacing the Sampler O-ring

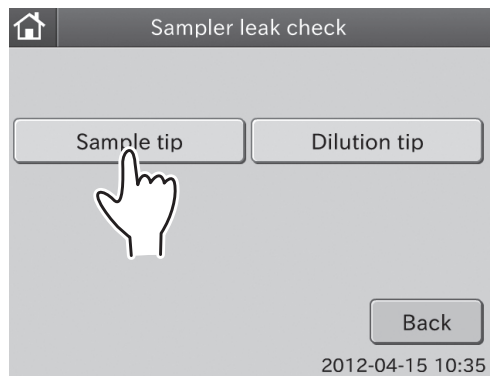
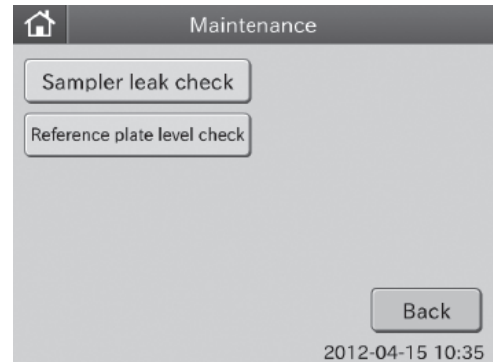
The sampler nozzle o-rings wear with use. Periodic inspection is necessary.

### IMPORTANT

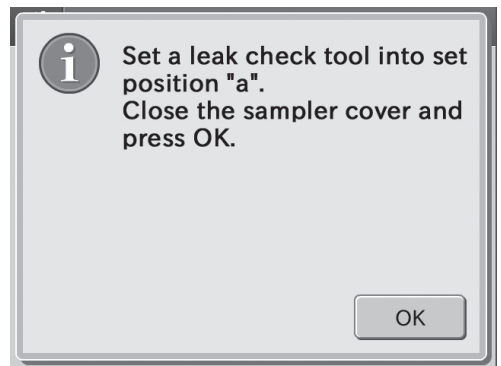
If the analyzer is used without inspecting and replacing the sampler o-ring, spotting volume may be inaccurate to cause adverse effects on test results.

### Inspecting the Sampler O-ring

1. Execute the Sampler Leak Check.
  - a. Touch the home button then mode function.
  - b. Touch maintenance.
  - c. Touch Sampler Leak check (this procedure can be done while the analyzer is warming up).
  
2. Perform the leak check for the sample tip.
  - a. Touch **SAMPLE TIP**.



The dialogue that prompts the setting of a leak check tool appears.



- b. Put the sampler leak check tool into hole "a" on the sample rack.
- c. Close the sampler cover.

**⚠ WARNING**

During sample processing, ensure the LCD under cover and sampler cover are closed to prevent injuries and biohazard. When the display reads [Ready to test], the sampler cover can be opened.

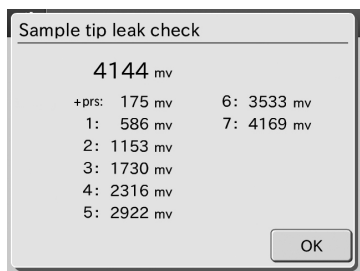
- d. Touch **OK**.

The sampler leak check is executed, and the leak check proceeding dialogue is displayed.

After the leak check is complete, the leak check result dialogue is displayed.

**NOTE:** By touching , the check results are printed out.

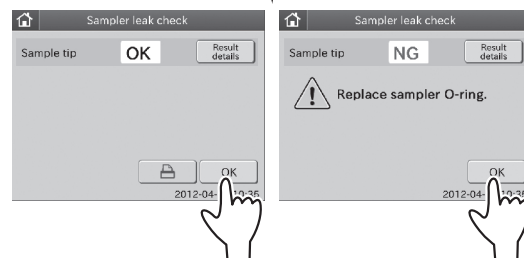
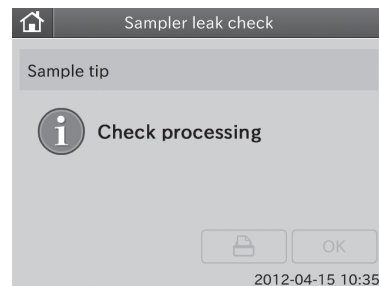
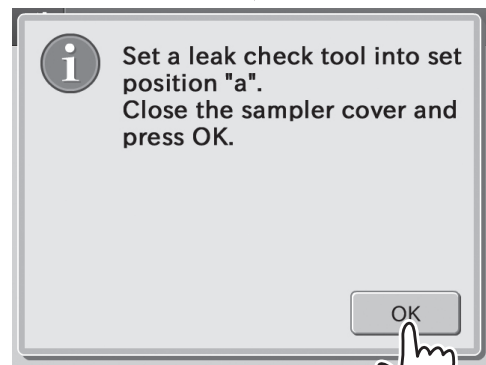
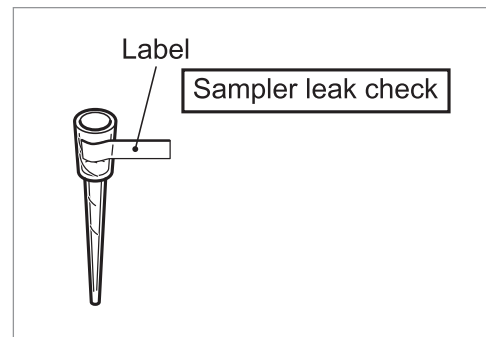
**NOTE:** When touching **Result details**, the check result details dialogue is displayed.



By touching **OK**, the check result details dialogue disappears.

- e. Remove the leak check tool from the nozzle by hand.

**NOTE:** Touch **OK** to return to sampler leak check dialogue.



- 3. Perform leak check for the dilution tip by following steps 1 and 2 above but touch **DILUTION TIP**.
- 4. If leak check fails (NG) on sample or dilution tip, contact Heska's Technical Support Services.

## Replacing the Sampler O-ring

Replace the sampler o-ring as needed.

### Replacement procedure

1. Open the sampler cover.
2. Turn the sampler nozzle toward you.
3. Cut off the used o-ring to remove.

Cut off the used o-ring (bring the razor blade knife into contact with the vertical notch on the end of the nozzle).

4. Mount a new o-ring.

Mount a new o-ring in the groove around the nozzle by sliding it from the end of the nozzle.

5. Perform leak check for o-ring.

After completing the replacement, perform leak check.

**NOTE:** After cleaning, recheck the reference plate levels. Refer to instructions on page 3, step 1.

