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SEMI-AUTOMATED URINE ANALYZER

**AUTION ELEVEN™**  
AE-4022

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# Quick Reference Guide



SEMI-AUTOMATED URINE ANALYZER

# AUTION ELEVEN™

AE-4022

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This Quick Reference Guide is a brief summary of the operation and routine maintenance of the AUTION ELEVEN Semi-Automated Urine Analyzer.

Read the Operating Manual before using the instrument.



Wear protective gloves to prevent exposure to pathogenic microbes.

# System Overview

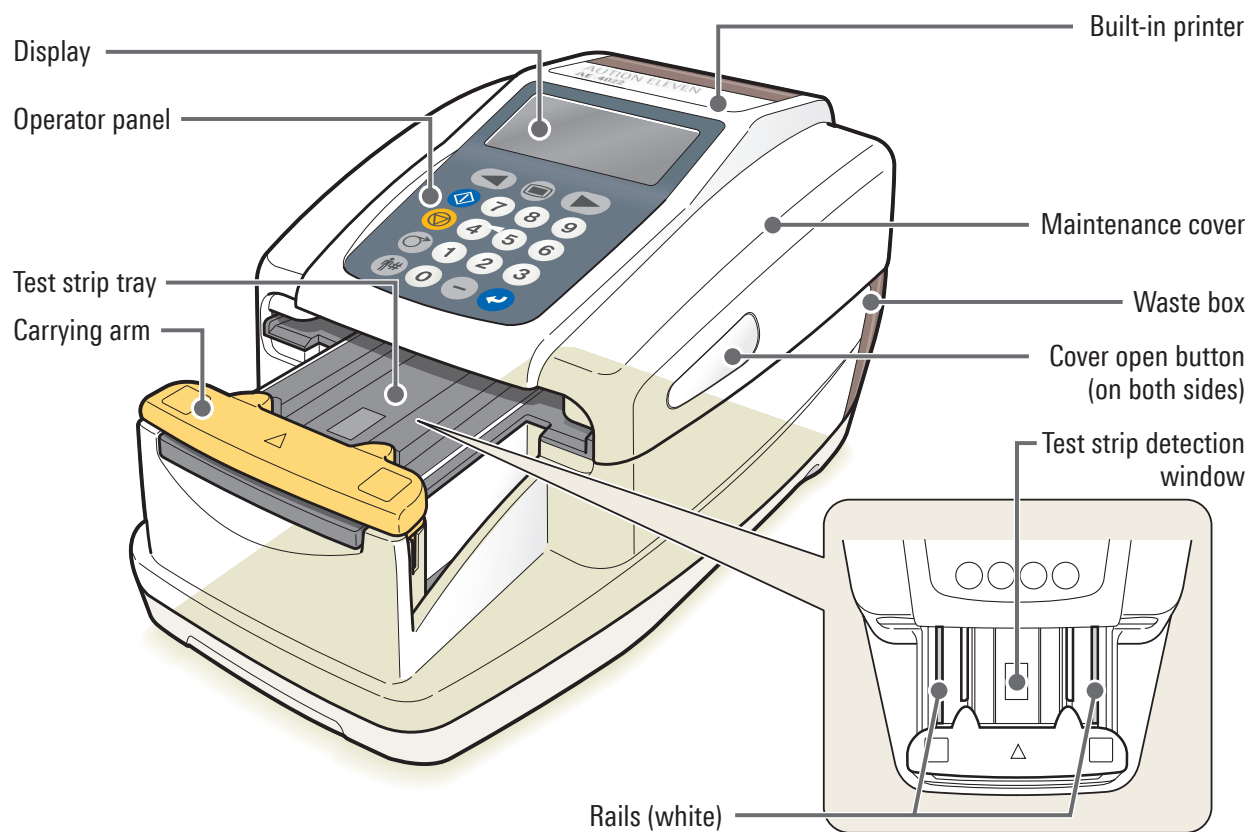
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# System Overview



# Sample Preparation

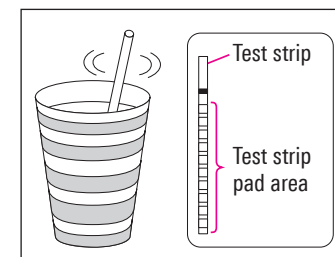
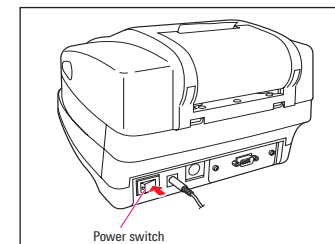
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## Sample Preparation

1. Turn on power switch at back of instrument.
2. After a 20 second warm up the standby screen will appear.
3. Prepare sufficient volume of sample in urine collection cup so entire test strip pad area can be dipped in a single movement.
4. Mix well.



### IMPORTANT:

**Do not** centrifuge samples.

Centrifugal force may cause undesirable sedimentation of blood cells and/or other sample contents, thus causing several measurement items to have incorrect results.








# Sample Measurement

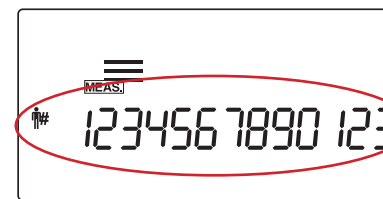
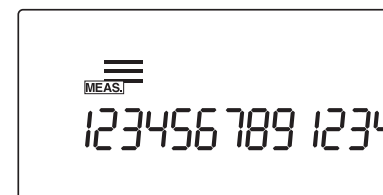
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## Sample Measurement

1. Enter operator ID number (if function is ON).
  - From the Standby Screen, press and hold  for 3 seconds.
  - Enter operator ID number using numeric and [-] keys or using barcode reader.
  - Press  to confirm entry.
2. Confirm display shows 10EA as test strip type.
3. Set measurement number (optional).
  - If using 0001 for first measurement number, go to step 4.
  - Enter new number using keypad  ~  (up to 4 digits).
  - Press  to confirm entry.
4. Set patient ID.
  - Press .
  - Enter up to 13 digits using numeric and [-] keys or scan barcoded sample with barcode reader.
  - Press  to confirm entry.
  - The measurement number and patient ID number will display alternately on screen.



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## Sample Measurement

5. Confirm normal measurement icon  appears on standby screen.

6. Enter Clarity Value (If feature is ON).

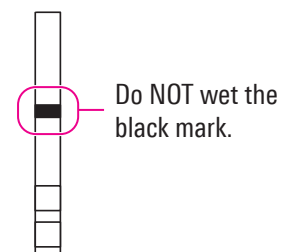
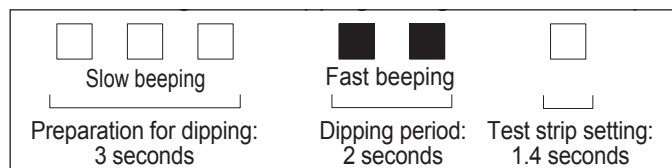
- Press and hold  for about 2 seconds.
  - Enter the clarity value of sample using numeric keys
  - Enter a number between 1 and 5 using table below:

1	2	3	4	5
Clear	Slightly Cloudy	Cloudy	Turbid	Other

- Press  to confirm entry.

7. Dip entire test strip pad area in sample for two (2) seconds.

- If buzzer setting is ON follow the timing chart below:



### IMPORTANT:

- Do NOT wet the black mark on test strip.
- After dipping test strip in sample, gently remove excess urine by drawing the entire length of strip against the rim of the collection cup.

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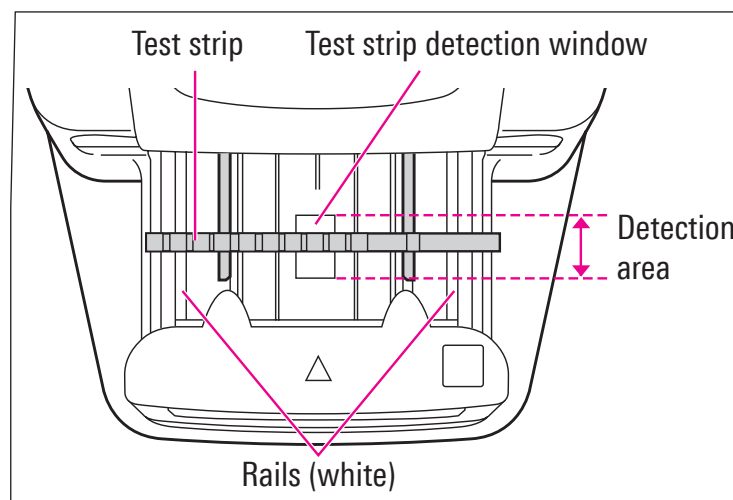
## Sample Measurement

8. Place test strip on test strip tray.
  - Place strip in the detection area of the test strip detection window with the black marker on right or left.
  - The carrying arm sends the test strip into the analyzer and measurement starts automatically.

9. When buzzer setting is ON, the beeper sounds for two seconds to signal the timing for dipping the next test strip. Dip the test strip while you hear the beep.

When measuring continuously, repeat steps 2 to 4.  
Set measurement numbers and patient IDs as necessary.

10. Read test results from printout.
11. Turn off instrument after completing all measurement procedures.




# Control Measurement

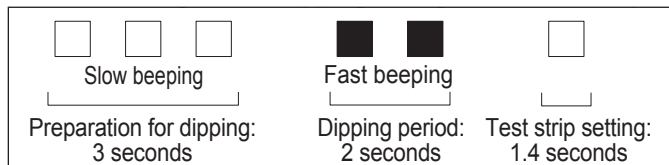
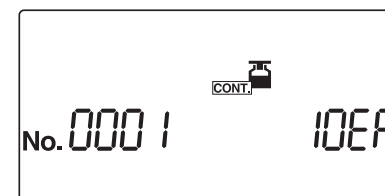
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## Control Measurement

1. Change measurement mode.
  - From the [standby screen] press ◀ or ▶ until the  icon is displayed.
2. Enter measurement number to identify control level.
3. Dip entire test strip pad area in sample for two (2) seconds.
  - If buzzer setting is ON follow the timing chart below:



4. Place test strip on test strip tray.
  - Place strip in the detection area of the test strip detection window with the black marker on right or left.
  - The carrying arm sends the test strip into the analyzer and measurement starts automatically.
5. When buzzer setting is ON, the beeper sounds for two seconds to signal the timing for dipping the next test strip. Dip the test strip while you hear the beep.  
 When measuring continuously, repeat steps 2 to 4.  
 Set measurement numbers as necessary.
6. Read test results from printout.
7. Turn off instrument after completing all measurement procedures.


# Check Measurement

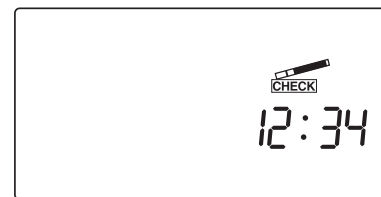
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# Check Measurement

1. Clean the feeder and waste box to prevent check strips from becoming soiled.
2. Change measurement mode.
  - From the [standby screen] press ◀ or ▶ until the  icon is displayed.
3. Place white check strip on test strip tray and perform measurement.
4. Place gray check strip on test strip tray and perform measurement.
5. Remove check strips from waste box and return to check strip bottle.
6. Evaluate results
  - Compare the reflectance values on the test result printout to the ranges on the reflectance label on the check strip bottle.
  - If any of the measurement results are outside of the specified ranges, repeat check measurement using the other set of check strips.
  - If any of the measurement results are still outside the ranges, contact ARKRAY Technical Support at 1.855.646.3108.



# Maintenance

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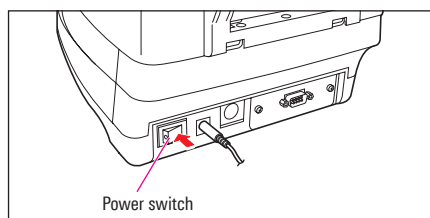


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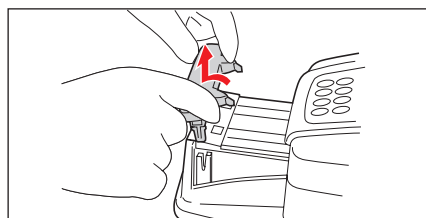
## Maintenance – Daily

### Clean the Feeder

1. Turn off instrument.



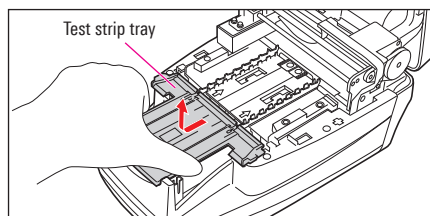
2. Detach carrying arm.  
• Pull towards you and lift up to remove.



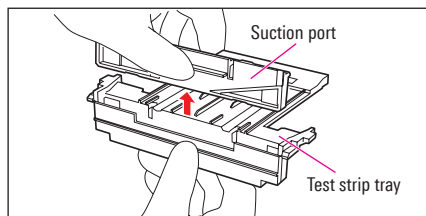
3. Open maintenance cover.  
• Press and hold the two open buttons on either side of instrument and lift up to open.



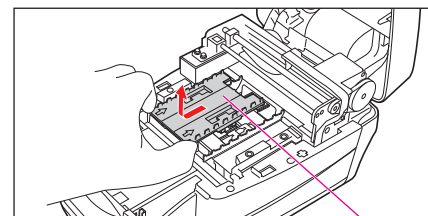
4. Detach test strip tray.  
• Slide the test strip tray to the front and lift up to detach.



5. Detach suction port.  
• Pull suction port straight up to detach.



6. Detach test strip feed tray.  
• Slide to front and lift up to detach.



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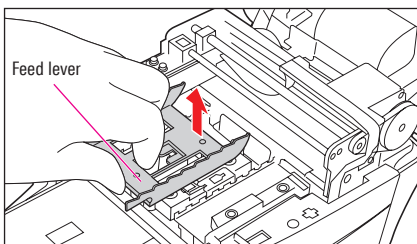
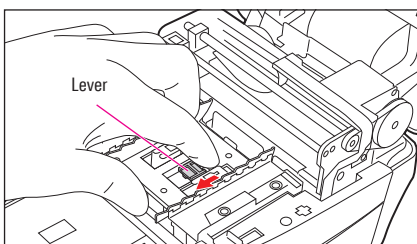


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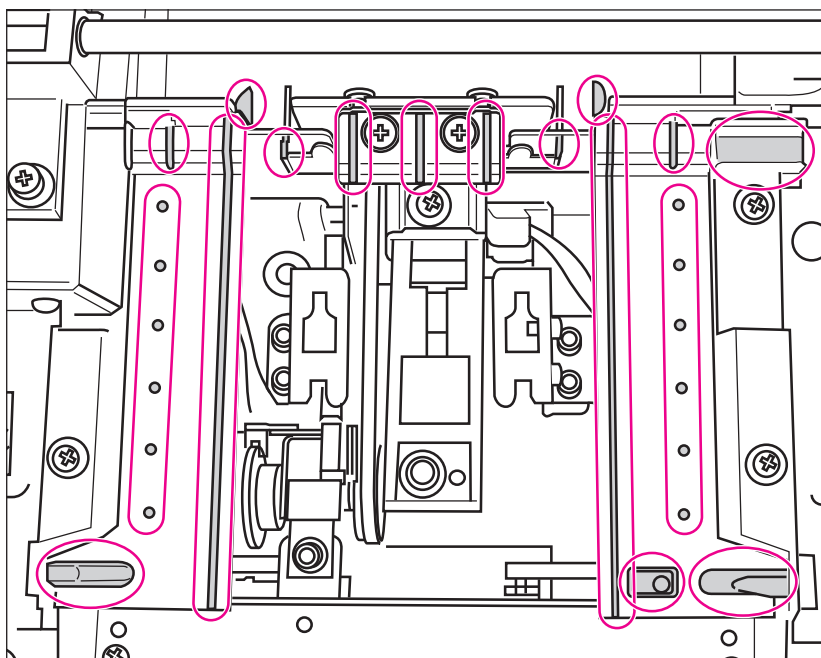
## Maintenance – Daily

### Clean the Feeder

7. Detach feed lever by sliding the white lever in the center towards you.



8. Clean the table.
  - Clean the areas circled in red below with water.



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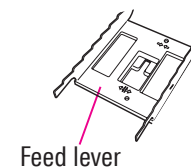
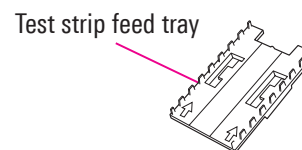
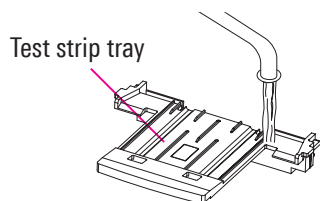


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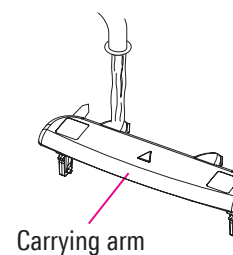
## Maintenance – Daily

### Clean the Feeder

9. Wash detached test strip tray, suction port, test strip feed tray and feed lever with water.



10. Sterilize the carrying arm using alcohol. Then wash with water.



11. Wipe the parts with a cloth and dry completely before reattaching to instrument.

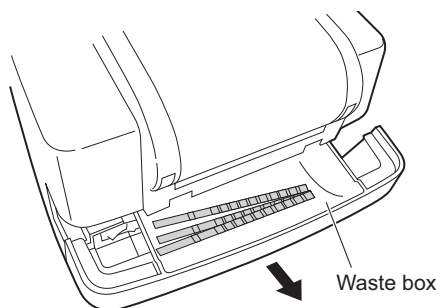


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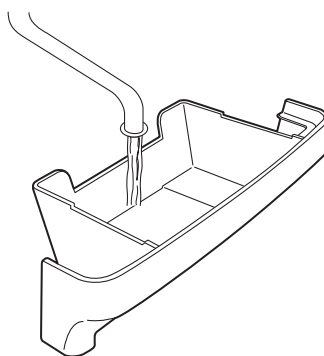
## Maintenance – Daily

### Clean the Waste Box

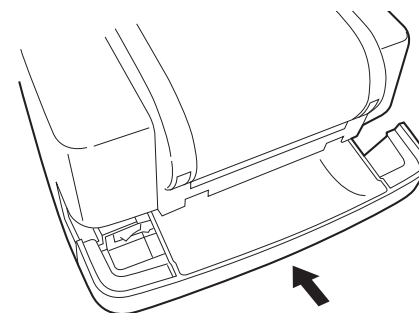
1. Remove waste box and discard used test strips.



2. Sterilize and clean waste box.
  - Sterilize with alcohol then wash with water and wipe dry.



3. Attach waste box.







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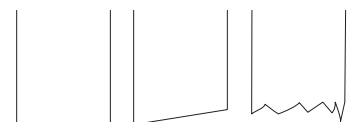
## Maintenance – As Needed

### Replacing thermal recording paper

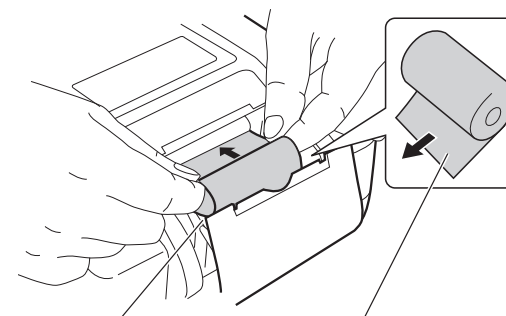
1. Check that the [Standby screen] is displayed, then open the printer cover.
2. Press  to remove any remaining paper in the printer.
3. Cut the first (outermost) layer of a new paper roll and trim the end to make it straight. A skewed or odd-shaped end may cause the paper to jam.
4. Place new roll of thermal recording paper in paper holder so that paper feeds from the bottom. Guide the trimmed end of the thermal recording paper into and through the slot that receives the recording paper. The thermal recording paper is automatically wound forward and fed into the unit.
5. Close printer cover.

**NOTE:**

When paper is removed from printer, error message E004 appears and a beep sounds for 1 minute. The alarm can be stopped by pressing .



Correct Incorrect Incorrect



Paper Holder

Set the new roll of thermal recording paper in the paper holder in the proper orientation so that the end feeds from the bottom.

# Warnings

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## Warnings

A warning message appears when a normal measurement result is not obtained.

When a problem occurs during measurement, the system continues measurement and prints warning messages with the measurement results.

The table below explains the meaning of and measures (corrective action) to be taken for each warning message.

Warning number

```
MEAS  No. 0007
ID# 1234567890123
2004-06-20 12:34 10EA 28°C
*****
COM: W002
```

Message	Error	Possible cause	Measures (Corrective Action)
W001	Drift	The ambient light level around the instrument changed rapidly, due to a photoflash or other reasons.	Maintain a constant level of illumination around the instrument during measurement.
W002	Abnormally high reflectance	An abnormal sample (e.g. a sample containing medicine) was measured.	Check if the tested sample is abnormal or not. If the sample is normal, test it again.
W003	Incorrect test strip position	<ul style="list-style-type: none"> <li>The test strip was displaced from its correct position due to vibration.</li> <li>The test strips were incorrectly placed.</li> </ul>	<ul style="list-style-type: none"> <li>Do not expose the instrument to any vibration during measurement.</li> <li>Place the test strips correctly on the test strip tray.</li> </ul>
W004	No dipping	The entire pad section of the test strip was not dipped.	Dip a new test strip in the sample correctly and test again.
W005	Wrong test strip	A test strip other than that specified was used.	Only use ARKRAY's test strips designed for the AUTION ELEVEN.
W006	Transport error	The test strip may not have been transported properly.	<ul style="list-style-type: none"> <li>Clean the test strip tray and suction ports.</li> <li>Attach the suction ports properly.</li> <li>Clean the incoming strip sensor window.</li> </ul>
W007	Number of registered operator ID numbers	150 operator ID numbers have been registered.	Delete unnecessary operator ID numbers before registering new ones.
W008	Eclipse of QC deadline	The QC deadline has elapsed.	Perform control measurements.

# Errors


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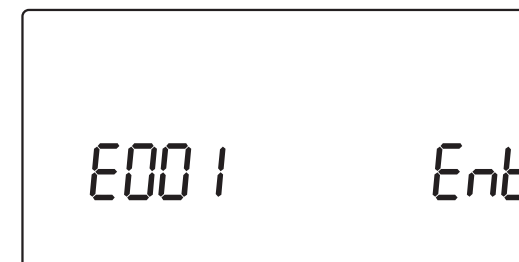
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## Errors

Errors may occur when you operate the instrument incorrectly or make a mistake during normal operation. When an error occurs, an error message appears on the screen and an alarm sounds for approximately 1 minute.

Press  to cancel the error notice. The display returns to the [Standby screen].

To prevent the error from recurring, take appropriate measures (corrective action), referring to the table below. If unable to clear the error, note error code and call ARKRAY Technical Support at 1.855.646.3108.



Message	Error	Possible cause	Measures (Corrective Action)
E001	Power down	The instrument was suddenly turned OFF during measurement.	Retest the sample(s) currently being measured.
E002	Backup memory error	As the instrument was unused for a long period, the memory backup battery was exhausted and the measurement result stored in the memory were lost.	Keep the instrument powered for at least 11 hours to charge the backup battery. After charging the instrument, set the date and time.
E004	No paper in the printer	<ul style="list-style-type: none"> <li>• The thermal recording paper has run out.</li> <li>• The thermal recording paper roll was not properly installed.</li> </ul>	<ul style="list-style-type: none"> <li>• Install a new roll of thermal recording paper.</li> <li>• Make sure the thermal recording paper is installed correctly.</li> </ul>
E005	Waste box is full	At the end of the measurement, the test strip waste counter exceeded 90.	Cancel the error notice by pressing  . Empty the used test strips from the waste box, and press  .
E006	Surplus urine is full	At the end of the measurement, the total number of measurements since turning ON the instrument exceeded 190.	Turn OFF the instrument and discard any surplus urine from the suction port.





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## Errors

Message	Error	Possible cause	Measures (Corrective Action)
E007	Data not found	No data was found in the specified range.	Verify that the specified range for re-printing, re-sending, or list printing is appropriate.
E008	Auto start sensor error	<ul style="list-style-type: none"> <li>• A test strip was placed while the carrying arm was moving to the suction ports.</li> <li>• The detection section of the auto start sensor was soiled with urine.</li> <li>• The auto start sensor is faulty.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove the test strip.</li> <li>• Clean the detection section.</li> <li>• If you find no abnormality and the error recurs, contact your local distributor.</li> </ul>
E009	No test strip on the feeder	<ul style="list-style-type: none"> <li>• The feed lever is not attached.</li> <li>• The incoming strip sensor is faulty.</li> <li>• The sensor failed to detect a test strip.</li> </ul>	<ul style="list-style-type: none"> <li>• Turn OFF the instrument and open the maintenance cover.</li> <li>• Mount the feed lever.</li> <li>• If you find any obstacles or scattered test strips inside, remove them.</li> <li>• If you find no abnormality and the error recurs, contact your local distributor.</li> </ul>
E011	Elapse of QC deadline	The QC deadline elapsed while the instrument was OFF or on standby.	Perform control measurements.

Situation	Error	Possible cause	Measures
Buttons will not respond and/or testing does not start when strip is placed.	Elapse of operator ID effective time.	The operator ID effective time elapsed.	Enter operator ID.



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