

Disclaimer: Please refer to the complete USG-400 IFU Chapter 8, which is supplied with each item of equipment and should be thoroughly read and understood prior to use of the equipment.

WARNING

- Never use the ultrasonic generator on a patient when any irregularity is observed with the equipment. Otherwise, the system may not work properly and serious injury to the patient, surgical staff and/or surgeon may result.
- When withdrawing the instruments from the body cavity due to irregular observation, gently hold the control handle and make sure that the grasping section is closed. Otherwise, the probe tip may break and drop inside the body cavity.
- If the grasping section or probe tip detaches, stop using the instruments immediately and retrieve by appropriate means.

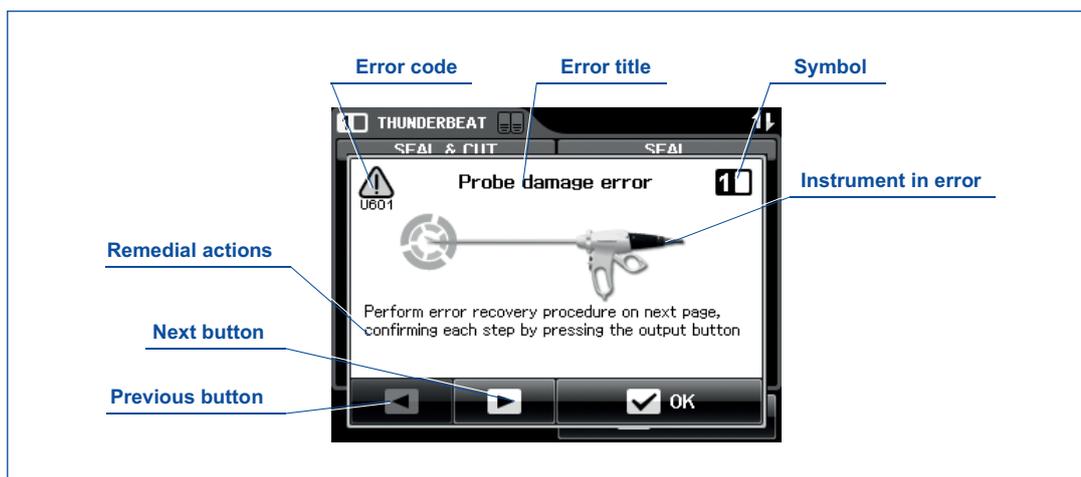
If any irregularity is observed with the equipment, follow the below steps.

8.1 Troubleshooting

- 1 Immediately stop the procedure and withdraw any instrument from inside the body cavity.
- 2 Check that the probe tip and the grasping section are intact.
- 3 Check if any error window is displayed.
- 4 If an error window is displayed, first read Section 8.2, "Error screen" and Section 8.3, "Troubleshooting guide" and take proper remedial actions according to "What to do when an error code is displayed" on page 140.
- 5 If no error window is displayed, take proper remedial actions according to "What to do when no error code is displayed" on page 134.

8.2 Error screen

The error window is configured as shown below in Figure 8.1 USG-400 IFU chapter 8.

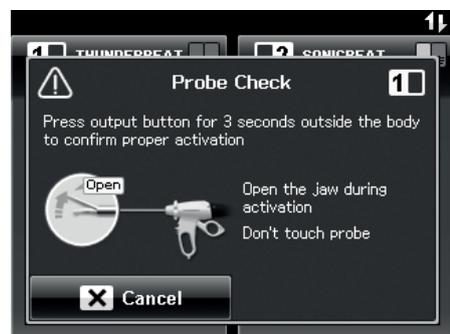
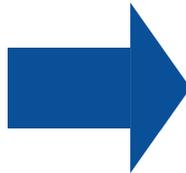


Replace instrument: USG-400 IFU page 128-129

- 1 Without turning off the ultrasonic generator or disconnecting the transducer plug from the transducer socket of the ultrasonic generator, disconnect the handle from the transducer and replace it with a new THUNDERBEAT or SONICBEAT handle.
- 2 Probe check push button
Press the "PROBE CHECK" push button on the right side of the front panel.
The confirmation window (Probe Check) is displayed.



**Error window
(U504: Probe damage error)**

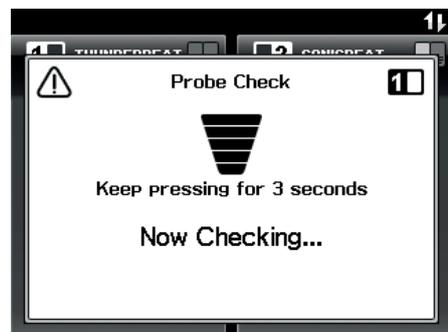
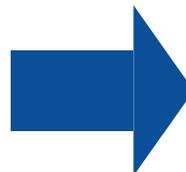


**Confirmation window
(Probe Check)**

- 3 Executing the probe check
With the grasping section open, press and hold the handswitch or footswitch pedal for three seconds and then release it.
 - The probe check starts.
 - The information window (Checking) is displayed.
 - When the check is completed, the information window (Checking) disappears and the probe check result is displayed.



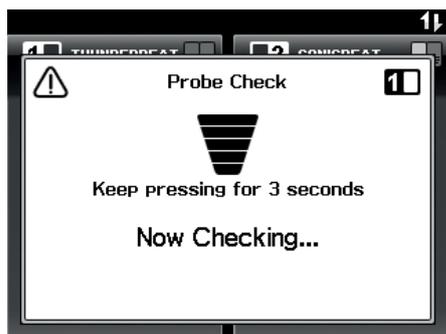
Confirmation window (Probe Check)



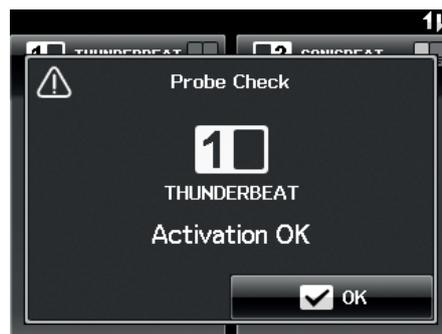
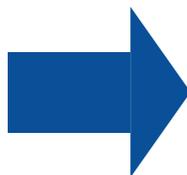
Information window (Checking)

- 4 Probe check result
When the confirmation window (Activation OK) is displayed, tap the "OK" button.

When the activation is completed:

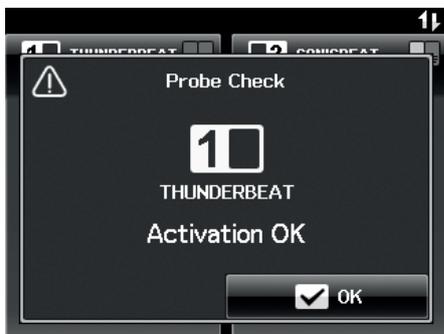


Information window (Checking)

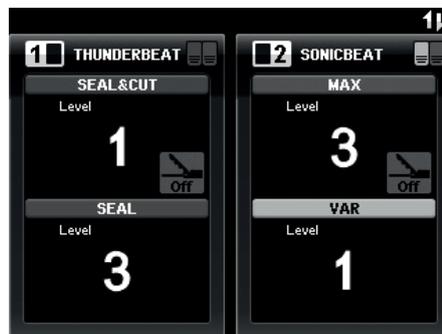
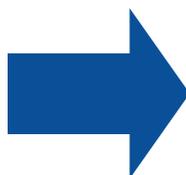


Confirmation window (Activation OK)

The confirmation window (Activation OK) disappears and the "All" screen or "Set" screen is displayed.



Confirmation window (Activation OK)



All screen or Set screen

Error Code	Irregularity Description	Possible Causes	Remedial Actions
U509	Ultrasonic level error	Excessive load is applied to the distal end.	<ol style="list-style-type: none"> 1 Reduce the force applied to the distal end or to the probe tip. 2 Withdraw body fluid and tissue on the grasping section, probe tip, and shaft surface.
		Connection of the transducer with THUNDERBEAT or SONICBEAT instrument is loose.	<ol style="list-style-type: none"> 3 Check if the THUNDERBEAT or SONICBEAT instrument and transducer are connected firmly. If not, connect them firmly.
		Transducer plug is not connected to the THUNDERBEAT or SONICBEAT socket properly.	<ol style="list-style-type: none"> 4 Confirm that the transducer plug is connected to the THUNDERBEAT or SONICBEAT socket on the front panel of the ultrasonic generator. If not, connect it properly.
		Probe damage or malfunction.	<ol style="list-style-type: none"> 5 Replace the THUNDERBEAT or SONICBEAT instrument.
		Transducer malfunction.	<ol style="list-style-type: none"> 6 Replace the transducer.
		Ultrasonic generator malfunction.	<ol style="list-style-type: none"> 7 Contact Olympus.
		U510	Ultrasonic frequency error (which is detected during surgery)
Excessive load is applied to the distal end.	<ol style="list-style-type: none"> 2 Reduce the force applied to the distal end or to the probe tip. 		
Transducer plug is not connected to the THUNDERBEAT or SONICBEAT socket properly.	<ol style="list-style-type: none"> 3 Withdraw body fluid and tissue on the grasping section, probe tip, and shaft surface. 		
Transducer temperature is too high due to use immediately after autoclaving.	<ol style="list-style-type: none"> 4 Confirm that the transducer plug is connected to the THUNDERBEAT or SONICBEAT socket on the front panel of the ultrasonic generator. If not, connect it properly. 		
Transducer temperature is too high due to continuous output.	<ol style="list-style-type: none"> 5 Stop output until the temperature cools down. 		
Transducer malfunction.	<ol style="list-style-type: none"> 6 Replace the transducer. 		
Probe damage or malfunction.	<ol style="list-style-type: none"> 7 Replace the THUNDERBEAT or SONICBEAT instrument. 		
Ultrasonic generator malfunction.	<ol style="list-style-type: none"> 8 Contact Olympus. 		

Error Code	Irregularity Description	Possible Causes	Remedial Actions
U511	SEAL short circuit error	Output is generated while a metallic object is touched.	1 Make sure that no metallic object is grasped.
		Output in body fluids.	2 Withdraw excess fluids in the body.
		Grasping section wear.	3 If the error window is still displayed, replace the THUNDERBEAT or SONICBEAT instrument.
U512	Open circuit error	The fully assembly instrument is activated without holding tissue.	1 Re-grasp tissue and confirm activation.
		Transducer and THUNDERBEAT instrument are not connected properly.	2 Check if the THUNDERBEAT instrument and transducer are connected. If not, connect them properly.
		Transducer plug is not connected to the THUNDERBEAT socket properly.	3 Confirm that the transducer plug is connected to the THUNDERBEAT socket on the front panel of the ultrasonic generator. If not, connect it properly.
		Transducer malfunction.	4 Replace the transducer.
		The THUNDERBEAT instrument malfunction.	5 Replace the THUNDERBEAT instrument.
		Ultrasonic generator malfunction.	6 Contact Olympus.
U513	Time out error (SEAL & CUT, MAX, VAR)	Output time period is longer than allowable by the system (maximum output time: 60 s).	The maximum output time period has been expired. Re-grasp the tissue and confirm activation.
U514	Time out error (SEAL incomplete)	The specified output time period has expired (maximum output time: 15 s).	Withdraw tissue or fluids from jaw and probe tip. Re-grasp tissue and confirm activation.
U601	Probe damage error (which is detected through PROBE CHECK)	The THUNDERBEAT or SONICBEAT instrument has not been replaced.	1 Replace the THUNDERBEAT or SONICBEAT instrument.
		Transducer plug is not connected to the THUNDERBEAT or SONICBEAT socket properly.	2 Confirm that the transducer plug is connected to the THUNDERBEAT or SONICBEAT socket on the front panel of the ultrasonic generator. If not, connect it properly.
		Transducer temperature is too high due to use immediately after autoclaving.	3 Stop output until the temperature cools down.
		Transducer temperature is too high due to continuous output.	
		Transducer plug is not connected to the THUNDERBEAT or SONICBEAT socket properly.	4 Replace the transducer.
		Transducer plug is not connected to the THUNDERBEAT or SONICBEAT socket properly.	5 Replace the THUNDERBEAT or SONICBEAT instrument.
Transducer plug is not connected to the THUNDERBEAT or SONICBEAT socket properly.	6 Contact Olympus.		

Specifications, design, and accessories are subject to change without any notice or obligation on the part of the manufacturer.