Chapter 6 When You Are in Trouble

1. Troubleshooting

Symptom	Probable cause	Remedy
The power does not come on.	**1** Is the power cable connected?	The power cable is not connected. ➡ Connect the power cable. The power cable is connected. ➡ Go to 2.
	2 Is there a break or damage in the power cable?	There is a break or damage in the power cable. ➡ Replace the power cable (ask us). There is no break or damage in the power cable. ➡ Go to 3.
	3 Is a fuse blown? (See "2. Fuse" in "3. Periodic Maintenance" in "Chapter 5 Inspection and Maintenance".)	A fuse is blown. ➡ There may be a poor ground (earth). Check the grounding. ➡ Replace the fuse. ➡ If a fuse blows again after fuse replacement, ask us. A fuse is not blown. ➡ Contact us.
The amplitude is weak.	**4** Is the oscillation volume set to a minimum?	The oscillation volume is set to a minimum. ➡ Turn up the oscillation volume. The oscillation volume is turned up. ➡ Failure of the oscillator is a possible cause. Contact us.
Failure to oscillate The amplitude indicator does not light up (AMPLITUDE).	**5** Does oscillation occur by the test switch?	Oscillation occurs. ➡ Go to 6. Oscillation does not occur. ➡ Failure of the oscillator is a possible cause. Contact us.
	6 Is the external device faulty? Or, is its connection bad?	Failure or bad connection of the external device ➡ Take action. There is nothing wrong with the external device. ➡ Failure of the oscillator or transducer is a possible cause. Contact us.
The cable at the external connection plug is damaged or disconnected.	**7** ➡ Repair the external connection plug, or ask us about repair and replacement.	

Symptom	Probable cause	Remedy
The transducer connecting cable is damaged or disconnected.	**8** ➡ Stop use immediately, and ask us about repair and replacement.	
Indicators of the oscillator do not light up. They blink.	**9** ➡ There may be something wrong with the oscillator or transducer. Stop use immediately, and ask us.	
The oscillator or transducer is emitting smoke.		
The transducer got submerged in water or oil.		
The transducer came into contact. It was dropped. The transducer case is warped.	**10** Are there backlash, abnormal axial accuracy, an unusual sound, heat or fire, or other operational abnormalities (as a result of operation check)?	There is nothing unusual. ➡ Use the transducer while paying attention to the condition. There is something wrong. ➡ If there is backlash, go to 11. ➡ If you cannot correct the abnormality, ask us.
The tip of the transducer chatters. There is an unusual sound when oscillation is turned ON.	**11** Isn't the abnormality corrected even if you clean and retighten the transducer with a proper torque? (See "Maintenance of the transducer" in "3. Periodic Maintenance" in "Chapter 5 Inspection and Maintenance".)	Corrected. ➡ Conduct inspection and maintenance periodically. Not corrected. ➡ Deterioration or wear in the flange in the transducer is a possible cause. ➡ Contact us.
It is impossible to cut an object. It became impossible to cut an object.	**12** Has it been possible so far to cut an object?	You have been able to cut an object. ➡ Wear on the blade is a possible cause. Replace the blade. ➡ If the problem persists, ask us. You have been unable to cut an object. ➡ Try again in the optimum conditions with reference to "4. Cutting Test" in "Chapter 3 Installation and Preparation for Use".
There is discoloration or a burn on the holder surface. The holder was cracked or broken.	**13** Was cooling air always fed during oscillation?	The cooling air was normal. ➡ Replace parts that need to be replaced with reference to "Maintenance of the transducer" in "3. Periodic Maintenance" in "Chapter 5 Inspection and Maintenance". ➡ If the same phenomenon occurs again, ask us. Cooling may have been insufficient. ➡ Increase the discharge of cooling air, or add a means for cooling.

Symptom	Probable cause	Remedy
The blade fixing screw is broken.	**14** Was a torque screwdriver used when the blade fixing screw was tightened?	Used. ➡ The thread may have already deteriorated. The blade fixing screw was a consumable. Replace it periodically. ➡ If the blade fixing screw was new, it may have been tightened with a force stronger than specified because of adhesion of foreign matter such as oil, or the thread on the holder may have been damaged. ➡ If there is no improvement, ask us. Not used. ➡ It is recommended to tighten screws with a torque screwdriver to ensure accurate installation.
The blade broke when used.	**15** Is the blade new?	Not new ➡ The blade broke possibly due to installation or deterioration (wear) of the blade. ➡ Replace parts that need to be replaced with reference to "Maintenance of the transducer" in "3. Periodic Maintenance" in "Chapter 5 Inspection and Maintenance". New ➡ Check whether the work piece is fixed properly. ➡ Reconsider the teaching and cutting method. ➡ If a new blade breaks, check the work piece material and the situation of use, and then ask us.
A work piece is emitting smoke.	**16** ➡ After checking the situation of use, perform cutting suitable for the purpose with reference to "4. Cutting Test" in "Chapter 3 Installation and Preparation for Use".	
You want to recover from an error	**17** ➡ Recover from the error with reference to "6. Error Recovery" in "Chapter 4 Control by an External Device".	

2. Dealing with an Error

If this device stops with the error indicator lighting up, check the error part indicators and remove the error cause following the table below.
Error recovery is necessary to resume operation.

Error part indicator	Error cause	Remedy
O/L	Large load is applied to the blade.	➡ Address the cause of overload with reference to "Major Causes of Stopping Due to Overload and Action to Take" in "Chapter 6 When You Are in Trouble".
O/H OSC	Excessive heating of the oscillator	➡ 1. Turn OFF the power. 2. Check if the surrounding space of the oscillator is obstructed and if the intake fan operates properly. ➡ If heating subsides, resume operation. ➡ In the case where operation with high load (load indicator level 8 or more) continued and caused heating, lower the cutting speed or take other action so that the number of lights illuminated is less than 8. ➡ If the cause of heating is unknown, ask us.
O/H TRD	Error in the temperature sensor of the transducer, or failure of detection	➡ If the transducer was not connected, connect it and resume operation after error recovery. ➡ If the transducer generates excessive heat, follow the following steps: 1. Turn OFF the power. 2. Check whether the cooling air for the transducer works normally. ➡ If heating subsides, resume operation. ➡ If the cause of heating is unknown, ask us. ➡ If an error is given even though there is no heating in the transducer, disconnection is a possible cause. Replace the cable (sold separately).
EXT IN	Error stop by an external input	➡ An error stop occurred because of receiving an error signal from an external device. Check the device connected to the external connection C receptacle.

Major causes of stopping due to overload and action to take (O/L indicator lights up)

Examine the cause of overload following the table below.
If there is no relevant cause, or if the problem persists after you take remedial action, ask us.

Probable cause	Remedy
Inspect the blade and tip parts to see whether any of the following conditions applies: ● There is foreign matter (such as work piece chips) adhered to the blade. ● There is chipping, cracking, or wear on the blade. ● There is cracking or wear on the tip parts. ● There is foreign matter (such as work piece chips) adhered to the tip parts. ● Installation and tightening of the blade or tip parts are bad.	Perform maintenance of the blade and tip parts with reference to "Maintenance of the transducer" in "3. Periodic Maintenance" in "Chapter 5 Inspection and Maintenance". If an overload error is still detected after maintenance, ask us.

Probable cause	Remedy
Have you used a blade, tool, or parts that are different in type from those included at the time of purchase?	Installing a different type of product or a product offered by an outside company results in failure of proper operation. Use the same type of products as the accessories included at the time of purchase. We can produce custom-ordered parts and blades that are tailored to specific needs. Ask us.
Have you used a transducer cable other than that included at the time of purchase?	Use of a cable whose length is different from that of the product included at the time of purchase may result in failure of proper operation even if it is a genuine product. If you want to change the cable length, ask us to readjust it. If readjustment was previously made by us, the cable length given in the specification pages of this manual may be different. Confirm it with us.
Was oscillation turned ON with the blade remaining in contact with or brought into contact with a work piece?	A high load may be caused as a work piece moves together with the blade. Before use, turn ON oscillation with nothing in contact with the tip parts (vibrating in the air).
Isn't the blade in contact with an object (such as a jig and frame) other than the work piece?	Use this device so that the blade does not come into contact with an object other than the work piece.
Isn't the holder or the blade fixing screw in contact with the work piece?	Check to see if there is looseness or damage in the tip parts due to rubbing with work pieces, and use this device so that an object other than the blade does not come into contact with the work piece. If the tip parts are damaged, replace the parts.
Haven't you tried to cut material (e.g., metal and glass) that is hard to cut even with a normal blade such as a cutter knife?	If it is difficult to perform work without causing an overload error, adopt another cutting method.
Is it possible to cut a work piece without an overload error being detected if you reduce the feed speed?	If it is possible to cut a work piece without an overload error, the feed speed and amplitude are considered to be optimum for the work piece and blade.
Does the blade edge orientation match the direction of travel (feed direction)?	If the blade edge orientation does not match the direction of travel, it may result in improper cutting or higher load. Ensure that the orientation always matches the direction of travel.
Have you tested cutting by changing not only the feed speed but also the amount of amplitude?	If cutting has succeeded after change, the feed speed and amplitude are considered to be optimum for the work piece and blade.