How to resolve the error message

This is the list of error messages displayed in md-gear screen and their answers.　If an error is not resolved even if you do the corrective action described, or if the error message is not described below, please contact the Customer Support & Service Center. These code types (NC, F, S, T, H, X, Y, Z, G, M, O, L, A, and B) are displayed in "%" in the message.

Error code	Error message	Page
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2304	A axis: Stopped by counterclockwise limit sensor	
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A001	Resume sequence stopped	7
C000	Manual operation sequence failed	20
C001	Manual operation sequence stopped	20
FFFF	Undefined error	19

「0002」 Safety door open

The safety door is open.

Solution

If the safety door is open, close it. If it is closed, confirm it is completely closed.

The machine never run homing or automatic milling if the door is open.

During the homing, wait until the operation is completed.

「3000」 Automatic milling sequence failed

This error occurs when…

- Milling
- Pausing
- Resuming

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

Homing will start.

During the homing, wait until it is completed.

「3002」 Automatic milling canceled

「3003」 Automatic milling stopped

These errors occur if it is *stopping during milling or pausing.

*You can stop the milling with "STOP" button of md-gear or start / stop switch of the machine.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

Homing will start.

During the homing, wait until it is completed.

「4000」 Milling tool replacement sequence failed

「5000」 Milling tool length measurement sequence failed

These errors occur during replacing or measuring the milling bur.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

If it occurs in the process of milling, re-register the milling data after homing, and start over from the beginning.

「4008」 Milling tool replacement sequence stopped

「5004」 Milling tool length measurement sequence stopped

These errors occur if it is *stopping during replacing or measuring the milling bur.

*You can stop the milling with "STOP" button of md-gear or start / stop switch of the machine.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

If it occurs in the process of milling, re-register the milling data after homing, and start over from the beginning.

「6000」 Homing sequence failed

This error occurs during homing.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

Homing will start.

「6002」 Homing sequence stopped

This error occurs if it is *stopping during homing.

*You can stop the milling with "STOP" button of md-gear or start / stop switch of the machine.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

Homing will start.

「9000」 Cancel sequence failed

「A000」 Resume sequence failed

These errors occur during the processing interruption or restart processing.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

If it occurs in the process of milling, re-register the milling data after homing, and start over from the beginning.

「9001」 Cancel sequence stopped

「A001」 Resume sequence stopped

These errors occur if it is *stopping during the processing interruption or restart processing.

*You can stop the milling with "STOP" button of md-gear or start / stop switch of the machine.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

If it occurs in the process of milling, re-register the milling data after homing, and start over from the beginning.

「2003, 2103, 2203, 2303, 2403, 2A03」 % axis: Stopped by clockwise limit sensor

「2004, 2104, 2204, 2304, 2404, 2A04」 % axis: Stopped by counterclockwise limit sensor

「2005, 2105, 2205, 2305, 2405, 2A05」 % axis: Stopped by clockwise soft limit

「2006, 2106, 2206, 2306, 2406, 2A06」 % axis: Stopped by counterclockwise soft limit

"%" means one of the axes (X, Y, Z, A, B, or Linear interpolation).

One of the axes X, Y, Z, A, B has reached a position beyond the movable range.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

If it occurs in the process of milling, check its milling data (template settings, part placement, etc.).

Still the error happened, please contact our Customer Support & Service Center.

「3551」 Milling tool breakage detected

This error occurs when "Tool breakage detection" is enabled.

It is detected that the milling bur was broken.

Solution

Check the number of the milling bur displayed on the Error Details window of md-gear.

Replace the broken milling bur with a new one and store it in the ATC magazine.

Click the "Reset button" on the Error Details window of md-gear to reset the error.

After that, replace the bur on the maintenance screen of md-gear to complete the reset / tool length measurement.

For details, refer to "2.8 Fixing and Removing Milling Burs" and "4.4 Replacing Milling Burs" in the instruction manual.

「3702」Milling tool selection error

When the smart ATC works, the milling bur is not set to the specified position in the magazine. Or the milling bur is broken.

Solution

Check the milling bur again. If it's broken, replace it with a new one.

Set the milling bur at the slot of the ATC magazine specified in the milling data.

After that, Click the "Reset button" on the Error Details window of md-gear to reset the error.

If you have replaced the bur, set the menu of "Replace Tool" on the maintenance screen of md-gear to complete the reset / tool length measurement.

If it is in the process of milling, re-register the milling data and start over from the beginning.

「5007」 Milling tool protrusion length measurement range error

It was detected that the protruding length of the milling bur was out of the range (range: 25 mm to 35 mm) in the bur length measurement.

Solution

Check the number of the milling bur displayed on the Error Details window of md-gear, and click the "Reset" to reset the error.

Adjust the protrusion length of the milling bur within 25 to 35 mm, and re-measure it with the bar length measurement button on the main screen of md-gear.

For details, refer to "2.8 Fixing and Removing Milling burs" in the instruction manual.

「000A」 Insufficient air pressure (spindle)

「4011」 Spindle chuck sensor error

「6003」 Air pressure confirmation error

These errors occur when…
- Air pressure is insufficient
- Having pressed stop button during recovering air pressure
- Spindle chuck cannot be opened or closed

Solution
1. Check the filter regulator is supplied with an air pressure of 0.6 to 0.7 MPa.
   (If using the optional pressure booster unit, the required air pressure will be 0.35-0.4MPa.).
   For the air pressure adjustment method, refer to "2.2 Adjusting the Air Pressure" in the instruction manual.
2. Check for any sounds of air leaking from the milling machine while it is stopped.
3. Check for operating noises from the optional pressure booster unit if used.
4. Check that the compressor is turned on and that the specifications and settings are correct
   (0.6MPa, flow rate 60L or more).
   The compressor's air pressure may drop if MD-500 is used in tandem with an air gun or other milling machines. If the above checks do not improve, or if you have any questions, please contact our Customer Support & Service Center.

# 「3703」 Chips on the spindle taper surface detected

This error occurs when "Chips on the spindle taper surface detected" is enabled.

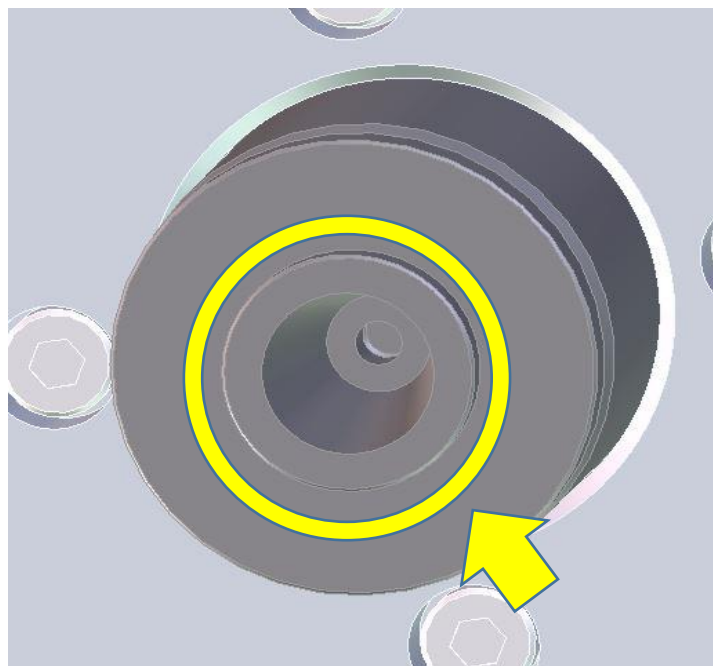It is that chips stuck onto the collet holder or spindle taper have been trapped when the spindle pick up a tool.

Solution

Remove any chips on the collet holder taper or in the spindle's taper.

For details, refer to "2 Cleaning the Inner surface of the spindle" in the Cleaning Guide.
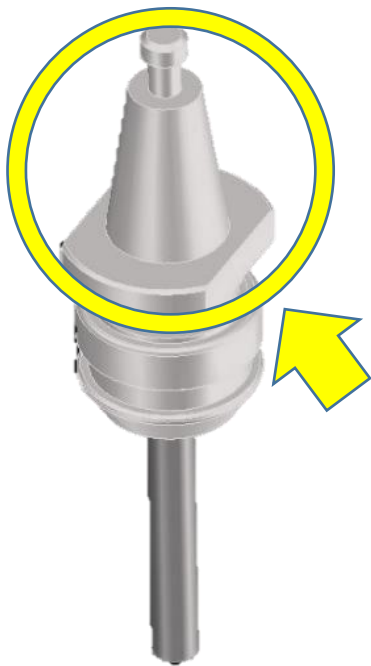
↑ collet holder of milling tool   ↑ spindle (underside)

「4014」 Milling tool storage error

「6009」 Stuck milling tool detected

The machine has attempted to store a milling tool in the ATC magazine, but the tool (and its holder) will not come out of the spindle even when the chuck is opened.

Milling chips or other foreign substances may be trapped in the spindle.

Solution

1. Insert a flat head screwdriver (about 2 mm in diameter) between the spindle end face and the flange of the collet holder (see "●" in the figure below) and lever the milling tool out.
   Check for the spindle's taper and the collet holder taper if there are caught any foreign such as chips, grease, etc.
   If it is caught them on, clean them out.
   For details, refer to "2 Cleaning the Inner surface of the spindle" in the Cleaning Guide.
2. Replace the collet holder and try the operation again.
3. If the error still occurs, find out its cause as following below.
   I. Set your smartphone's camera to front camera and place it on the Swivel table.
   II. Look at the inner surface of the spindle on the screen of your smartphone and check if there are any foreign substances on the spindle.
   III. If there are any foreign substances, remove them with a soft cloth.
   If the error still happened, please contact our Customer Support & Service Center.

↑ Spindle and Collet holder
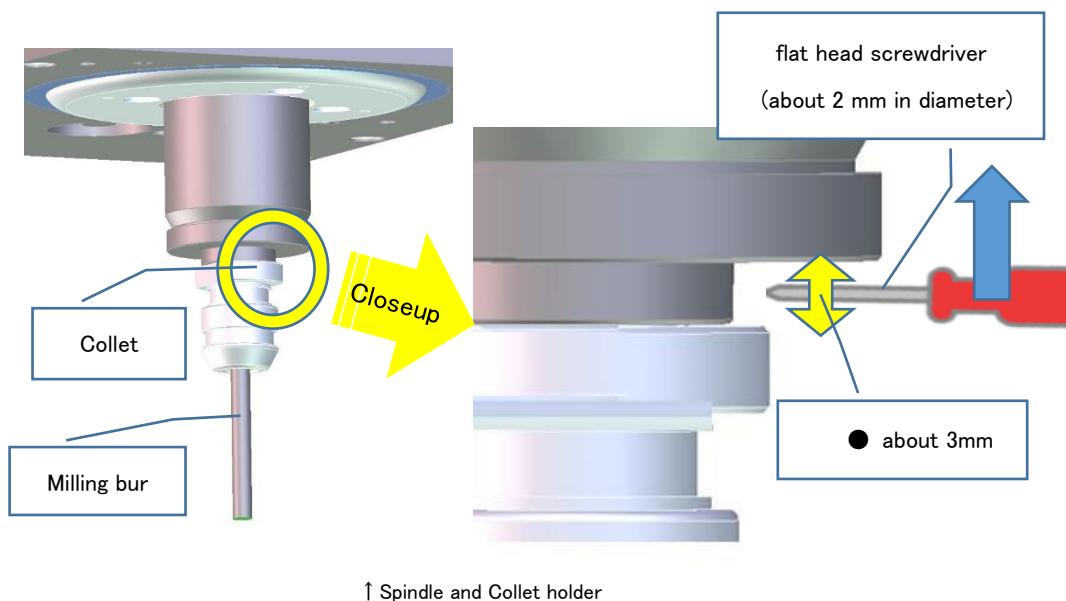
「4001」 Milling tool sensor error

This error occurs when judged that a milling bur has not set in the ATC magazine specified in the processing data. Although the milling bur was tried to be taken out in the tool length measurement / tool replacement operation.

Or, when judged that the milling bur is set in the number of the magazine even if it is tried to store the milling bur. In the latter case, chips may have accumulated around the sensor that judges the presence of the milling bur.

Alternatively, the milling bur may stuck to the spindle chuck when returning it to the ATC magazine.

Solution

1. Move the tool holder detection lever in the ATC magazine up and down with your finger to check if it is stuck. Also, clean the Magazine.

2. If the milling bur is still stuck to the spindle chuck, remove the bur.

   (Refer to " 「6009」 Stuck milling tool detected (P.12)" in this Manual.)

   Check the milling tool again, and set the milling bur at the position of the ATC magazine specified in the milling data.

   If it occurs in the process of milling, re-register the milling data after homing, and start over from the beginning.

   If the error still happened, please contact our Customer Support & Service Center.

「4015」 Milling tool removal error

This error occurs when the milling bur is removed from the ATC magazine is not in its specified slot.

Solution

Make sure you have set the milling tool in the correct position of the ATC magazine and start over.

After that, click the "Reset button" on the Error Details window of md-gear to reset the error.

「4016」 Milling tool duplicate storage detection

During automatic milling and homing, the machine attempts to return an attached milling tool to the ATC magazine but another tool is already stored in the specified slot.

Solution

Remove the other tool from the specified slot and then click the "Reset button" on the Error Details window of md-gear to reset the error.

「6008」 ATC magazine full

「600A」 Milling tool return error

In bur measurement during homing, it is judged that the milling bur is already stored in the specified slot of the ATC magazine.

If the bur is not in the specified slot of the ATC magazine, but the milling bur has not store, then chips may have accumulated around the sensor that judges the presence of the milling bur.

Solution

1. Check the milling tool again, and set the milling bur at the position of the ATC magazine specified in the milling data.

   If it occurs in the process of milling, re-register the milling data after homing, and start over from the beginning.

2. Move the tool holder detection lever in the ATC magazine up and down with your finger to check if it is stuck. Then clean the Magazine.

   If the error still happened, please contact our Customer Support & Service Center.

「3510」 Execution failed M03

Spindle rotation could not be started. The Z-axis may be oscillating.

Solution

1. Check whether the milling bur holder is properly attached to the spindle.

2. Check whether the milling bur is properly inserted in the milling bur holder.

   For details, refer to "2.8 Fixing and Removing Milling Burs" and "4.4 Replacing Milling Burs" in the Instruction Manual.

3. Check the stability of the table where MD-500 is placed.

   If the error still happened, please contact our Customer Support & Service Center

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「3101～3115」 % code interpretation failed

「3210～321E,3260～326F」 G* interpretation failed

「321F」 Incompatible G code

「3220～325A」 M* interpretation failed

「3270」 Incompatible M code

「3301～3313」 Bad % code range

「3401～340C」 % Missing specification

「3501～3504」 % code execution failed

「3511～3532,3535～3536」 Execution failed M*

「3610」 Arc terminal position error

"*" is the number and "%" is the alphabet (NC, F, S, T, H, X, Y, Z, G, M, O, L, A, or B).

There may be inappropriate descriptions in the milling data, such as codes that are not compatible with the MD-500 or values that are outside the operating range.
There is a possibility that the milling data was created by using a template for another company's machine.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.

Revise the milling data (particularly locations identified by the error code, such as G code, T code, or M code).

Also check that the correct template has been selected in your CAM software.

After correcting the code, operate the automatic milling from the beginning again.

If the error still happened, please contact your CAM software support desk.

「5001」 Cutting head detection sensor error

This is an error with the touch sensor used for tool length measurements. The touch sensor may have been pushed by milling chips or it may have a bad contact.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.
And clean the area around the touch sensor. For details, refer to "5 Cleaning the ATC magazine" in the Cleaning Guide. After checking the operation of the touch sensor, check the operation of the tool length measurement by manually.
If the error still happened, please contact our Customer Support & Service Center.

「0012~0016」 Motor driver malfunction (% axis)

「0018~001C」 Motor torque limit (% axis)

「2081, 2181, 2281, 2381, 2481」 % axis: Irregular response: Servo alarm

"%" is the alphabet (X, Y, Z, A, or B).

There is an excessive load on the corresponding motor. The milling conditions may be too taxing for the milling machine, or chips may have stuck around the axis.

Solution

Click the "Reset button" on the Error Details window of md-gear to reset the error.
Revise the conditions on the template used with the milling data as well as override and feed rate settings.
Or remove chips from around the axis with a brush or similar tool. (Y, Z, A, or B)
If the error still happened, please contact our Customer Support & Service Center.

「2320」 A axis: Motor timeout

Milled chips may have adhered to the origin sensor of the A-axis.

Solution

Please contact our Customer Support & Service Center.

「0009」 Error signal (spindle)

The spindle's controller has detected an error.

Solutions

Click the "Reset button" on the Error Details window of md-gear to reset the error.

If the error persists, turn the main power switch off and then on again.

Still the error happened, please contact our Customer Support & Service Center.

「000B」 Motor connection error (spindle)

「000C」 Motor malfunction (spindle)

「000D」 Unit power supply (spindle)

The spindle motor is not properly connected to the spindle controller, the mode setting of the spindle controller is not set to AUTO, or the spindle controller power supply is not turned on.

Solutions

Turn the main power switch OFF and then ON again.

If the error still happens, please contact our Customer Support & Service Center.

「000F」 Motor circuit board communication malfunction

A communication fault between the main control circuit board and a servo amp has been detected.

Solutions

Turn the main power switch off and then on again.

If the error still happens, please contact our Customer Support & Service Center.

「0010」 NC watchdog timer reset

「0011」 NC command buffer error

「001E」 RTEX command error

「0020」 IO circuit board communication error

「0021」 HIF communication error

「0022」 MAIN watchdog timer reset

The control circuit board has been reset, or an error in the control software or servo amplifier has been detected.

Solutions

Turn the main power switch off and then on again.

If the error still happened, please contact our Customer Support & Service Center.

「2000~2002,2007~2080,2082~20FF」 X axis: (error details)

「2100~2102,2107~2180,2182~21FF」 Y axis: (error details)

「2200~2202,2207~2280,2282~22FF」 Z axis: (error details)

「2300~2302,2307~2319,2321~2380,2382~23FF」 A axis: (error details)

「2400~2402,2407~2480,2482~24FF」 B axis: (error details)

「2A00~2A02,2A07~2AFF」 Linear interpolation axis: (error details)

One of the axes X, Y, Z, A, B or Linear interpolation has detected an error.

Solutions

Click the "Reset button" on the Error Details window of md-gear to reset the error.

If the error cannot be reset or the situation does not improve, turn the power off and then on again to restore the normal state.

「220D」 Z axis: Stopped by latch operation error

A fault in the Z axis has been detected during a cutting head detection operation for a Milling tool length measurement.

A milling bur stuck to the spindle may have fallen onto the touch sensor during the measurement.

Solutions

Place the milling bur back into the ATC magazine.

Check for the spindle if there is caught any foreign such as chips, grease, etc.

If it is caught on the spindle, clean them out.

And replace the collet holder and try the operation again.

(Refer to "2 Cleaning the Inner surface of the spindle" in the Cleaning Guide, " 「6009」 Stuck milling tool detected (2 on P.12)" in this Manual.)

Click the "Reset button" on the Error Details window of md-gear to reset the error.

「2FFF」 Undefined motor error

「FFFF」 Undefined error

An undefined error has been detected.

Solutions

Click the "Reset button" on the Error Details window of md-gear to reset the error.

And turn the main power switch off and then on again.

If the error still happened, please contact our Customer Support & Service Center.

「3640」 Bad spindle rotation count

The spindle does not rotate the set number of times.

Solutions

Click the "Reset button" on the Error Details window of md-gear to reset the error.

After checking the spindle operation, operate the automatic milling from the beginning again.

「C000」 Manual operation sequence failed

It detects an error during the manual operation sequence.

Solutions

Click the "Reset button" on the Error Details window of md-gear to reset the error.

「C001」 Manual operation sequence stopped

This error occurs if it is *stopping during the manual operation sequence.

*You can stop the milling with "STOP" button of md-gear or start / stop switch of the machine.

Solutions

Click the "Reset button" on the Error Details window of md-gear to reset the error.

Version	Date	Revision Details
01	2022/02/22	First issue

• How to Contact Us

Please contact us at the address below if you have questions or inquiries.

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