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# **INSTRUCTION MANUAL**

Turbo Molecular Pump  
Monitor software

MODEL

**UTM-MI Series**

<p>Before using this product, be sure to read this operation manual. Keep this manual with care to use at any time</p>
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ULVAC, Inc.

Components Division

<http://www.ulvac.co.jp/>

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## Introduction

Thank you for choosing the ULVAC Turbo Molecular Pump.

This instruction manual is written for customers who use this product and our service personnel.

Before using this pump and this power supply unit, please read the instruction manual thoroughly and use it properly according to the contents.

Also, please keep it in a place where you can retrieve the instruction manual immediately after reading.

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## 1. Overview and specifications

### 1.1 Overview

This application is software to collect and save pump information via turbo molecular pump and RS-232C.

This application has the following functions.

- Collection and preservation of pump information

- Operation mode

- Model identification number

- Run time

- Maintenance call time

- Last Maintenance time

- Number of start-ups

- Rotational speed

- Low speed value (0.1% unit)

- RY1(relay output 1)operation setting

- RY2(relay output 2)operation setting

- DO1 setting

- DO2 setting

- Analog output setting

- Acceleration overtime setting

- Power limit setting

- Normal speed setting

- Venting valve operation time setting

- RS-485 Network ID \*1

- RS-485 Multidrop setting \*1

- RS-485 Terminator ON/OFF \*1

- 1 second period logging of status information

- Rotational speed

- Rotational speed (0.1% unit)

- Motor current

- Rated rotational speed

- Bearing temperature

- Motor temperature

- Start / Stop / Alarm reset operation
- Collection and preservation of Alarm history

\*1 It is displayed only when RS – 485 communication.

## 1.2 Standard specification

Model	UTMTool
Compatible models	UTM1200A、UTM1600A、UTM2300A、UTM3400A、UTM4300A
Operating OS	Microsoft Windows 7 Professional in English (SP1、32bit) Microsoft Windows 7 Professional in English (SP1、64bit) Microsoft Windows 10 Professional in English (SP1、64bit)
CPU	Core2 Duo Processor or more
Memory	2GB or more
HDD	16MB or more
Free space on HDD	1GB or more
optical drive	Software will be provided on CD-ROM.
RS-232C Port	One port is required for communication with the pump.
Screen resolution	1024 × 768 or more

**\* It is necessary for Microsoft .Net Framework 4 to be installed for operation.**



## 2. Install

### 2.1 Installation method

1. Insert the product's CD-ROM into the CD drive of the computer.

2. Please open the CD-ROM drive in Explorer.

Setup.exe is in the "Software" folder. Double click on setup.exe and execute it.

3. The user account control is displayed.

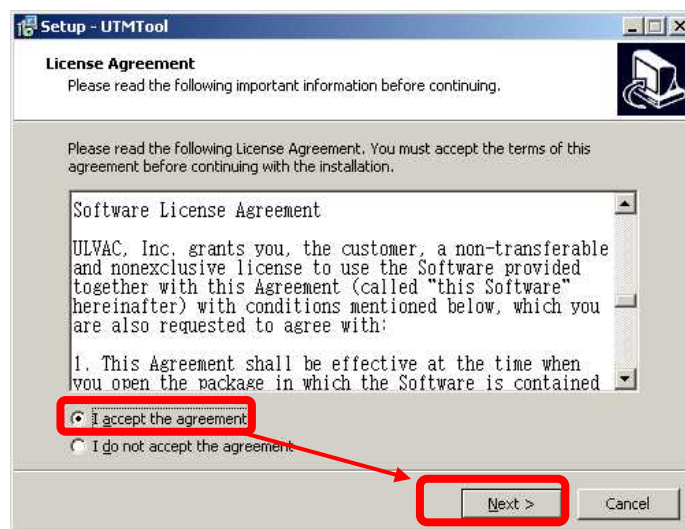
Please select "Yes".

4. The language selection screen is displayed.



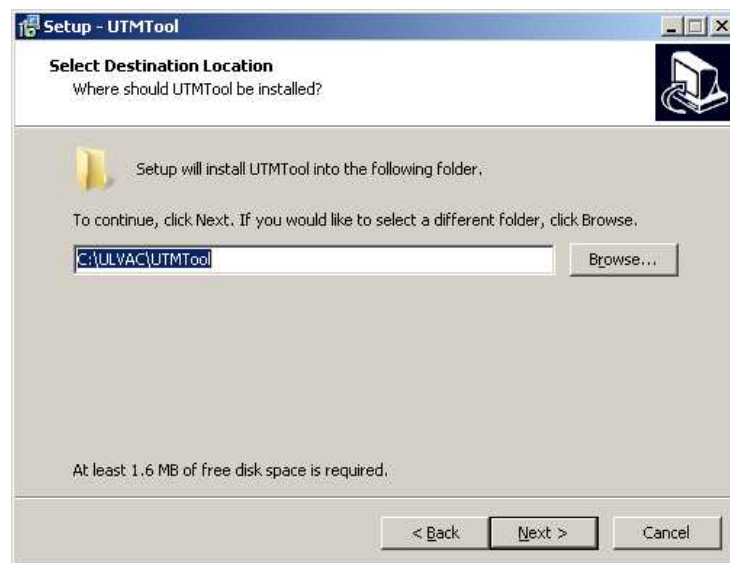
Please select the language you want to install and press the OK button.

5. The agreement screen of the license agreement is displayed.



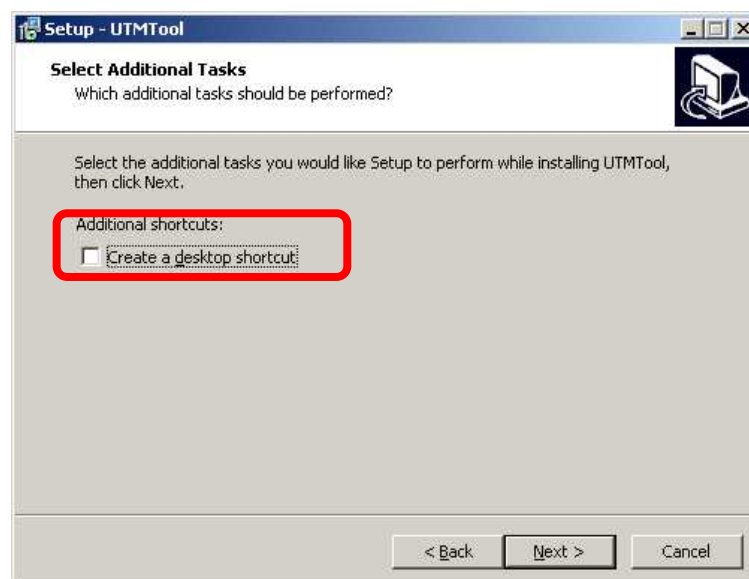
Please read the agreement, select "I agree" and click the "next" button.

6. The installation destination specification is displayed.



If you do not want to change the installation location, please press the "Next" button

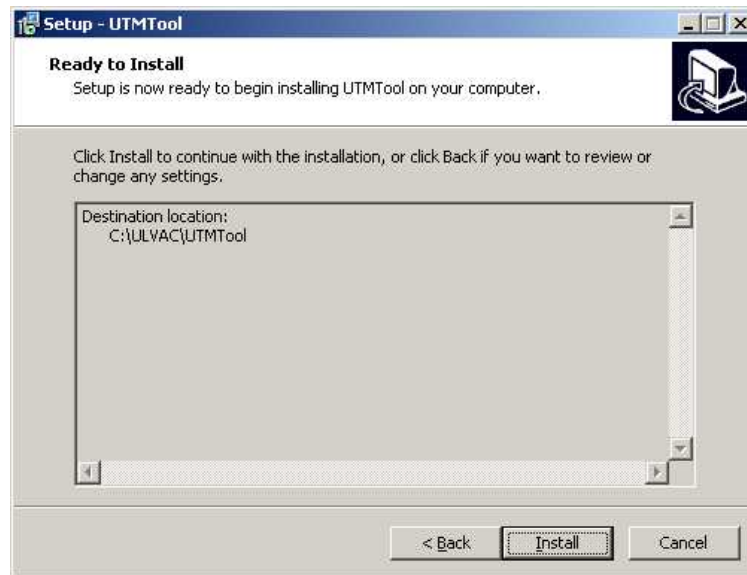
7. The screen to add the icon appears.



Please check if you create an icon on the desktop.

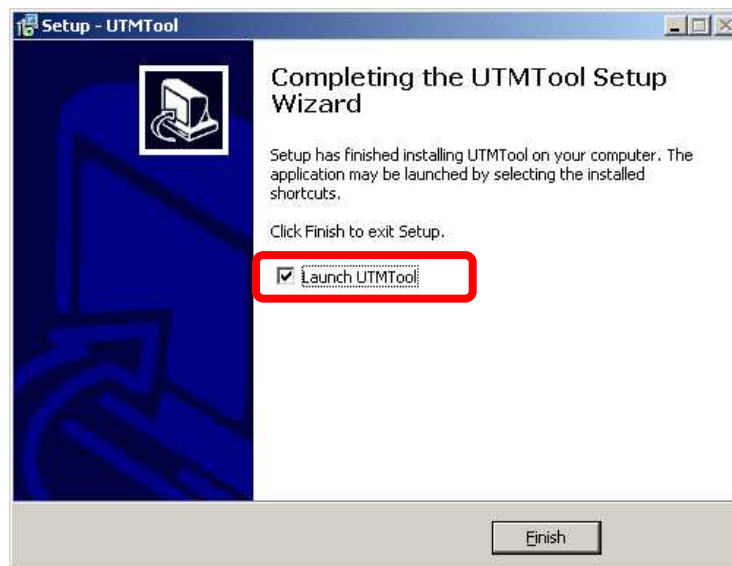
Please press the "Next" button.

8. Ready to install is displayed.



Please press "Install" button. Installation will start.

9. The completion screen of the setup wizard is displayed.



Please press "Finish" button.

UTMTTool starts when "Run UTMTTool" is checked on this screen.

## 2.2 How to uninstall

To delete applications, please do in the following order.

1. Click "Start" → "Control Panel".
2. "Control panel" is displayed.  
Click "Uninstall a program".
3. "Program and function" is displayed.  
From the list of applications, click UTMTool.
4. The user account control is displayed.  
Please select "Yes". The uninstallation will be executed.

## 3. Operation

### 3.1 Starting method



Double-click the UTMTool icon on the desktop,

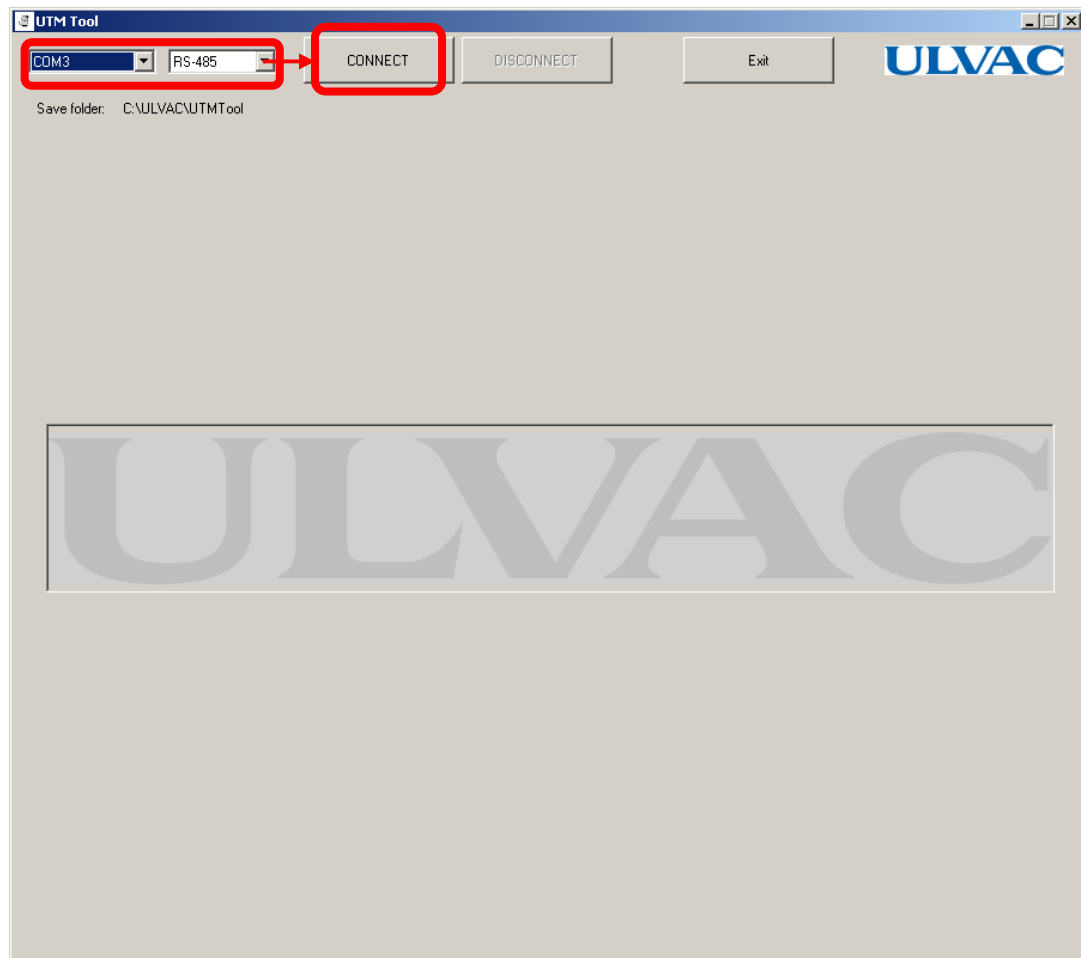
Please select UTMTool of "Start" → "ULVAC" → "UTMTool".

UTMTool starts up.



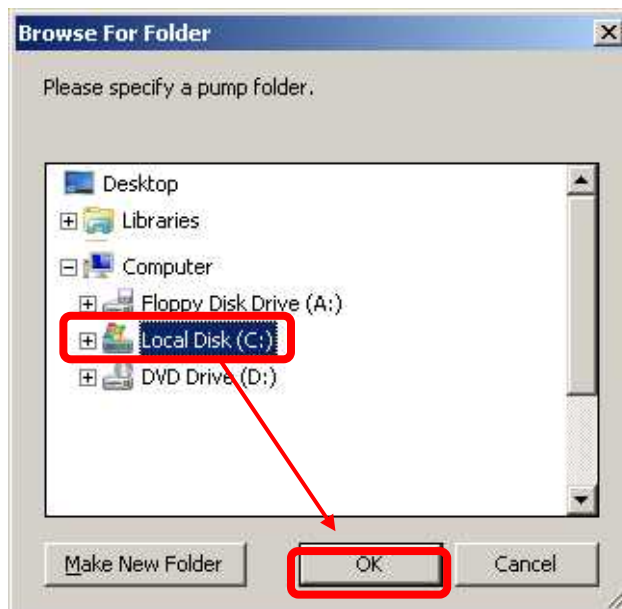
### 3.2 Connection method

1. Connect the serial port of the PC and the serial connector of the turbo molecular pump.
2. Select the serial port name from the dropdown and press the "Connect" button.



3. The folder reference screen is displayed.

Please select the storage location of the data collected from the pump,



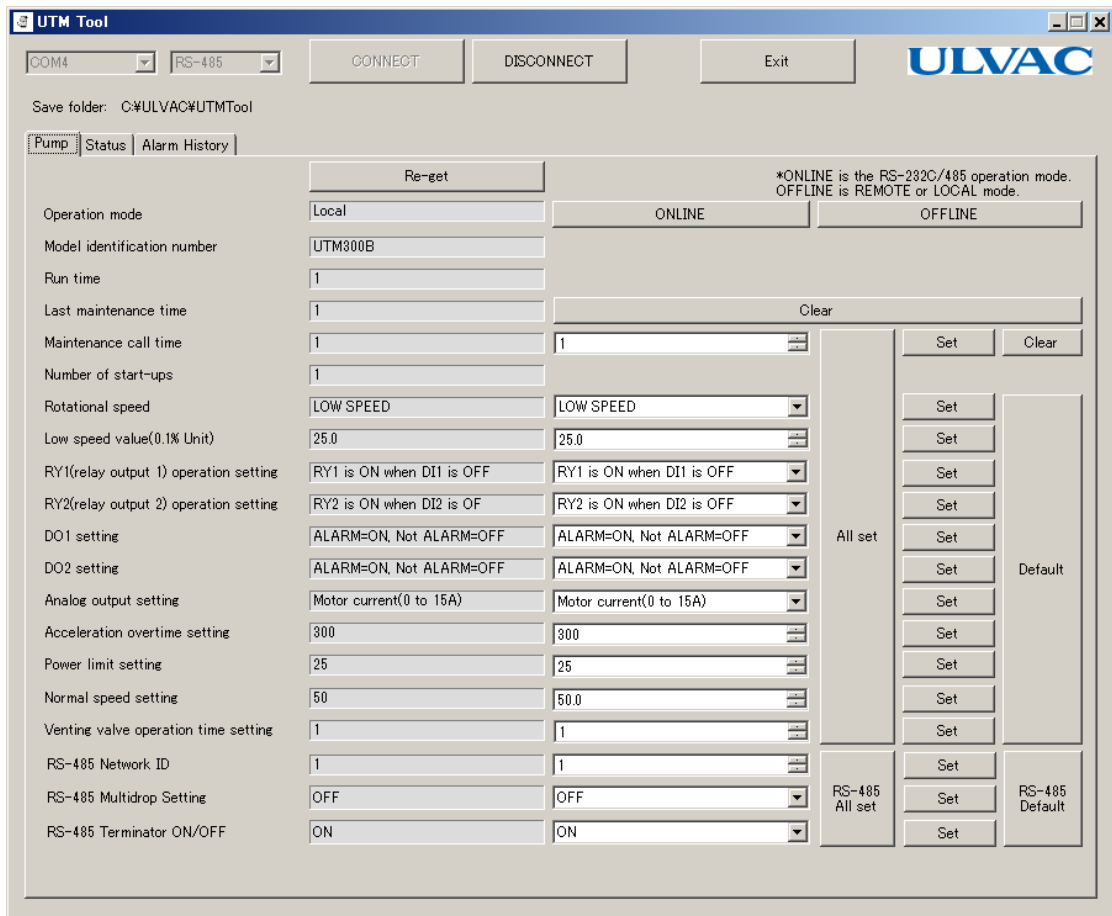
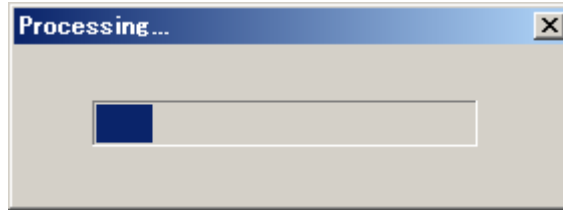
Please press "OK" button.

\* When connecting with RS-485 communication, communication can not be performed if the multidrop setting of the pump side is ON. Therefore, a confirmation message to turn off the multidrop setting is displayed.



If "Yes" is selected here, change the multidrop setting to OFF and continue the connection processing. If "No" is selected, the connection process will be aborted.

4. Pump status is collected and displayed.

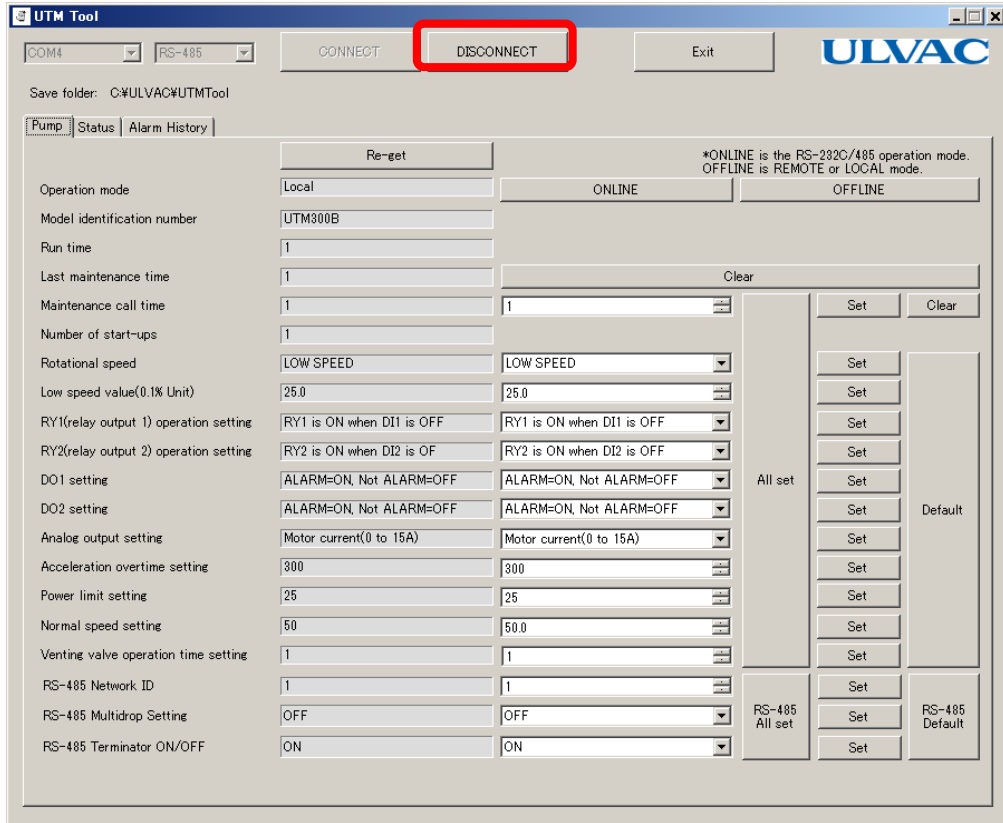


When the connection is established, each operation button becomes effective.



## 3.3 End method

1. are in the connected state please press "Disconnect" button.

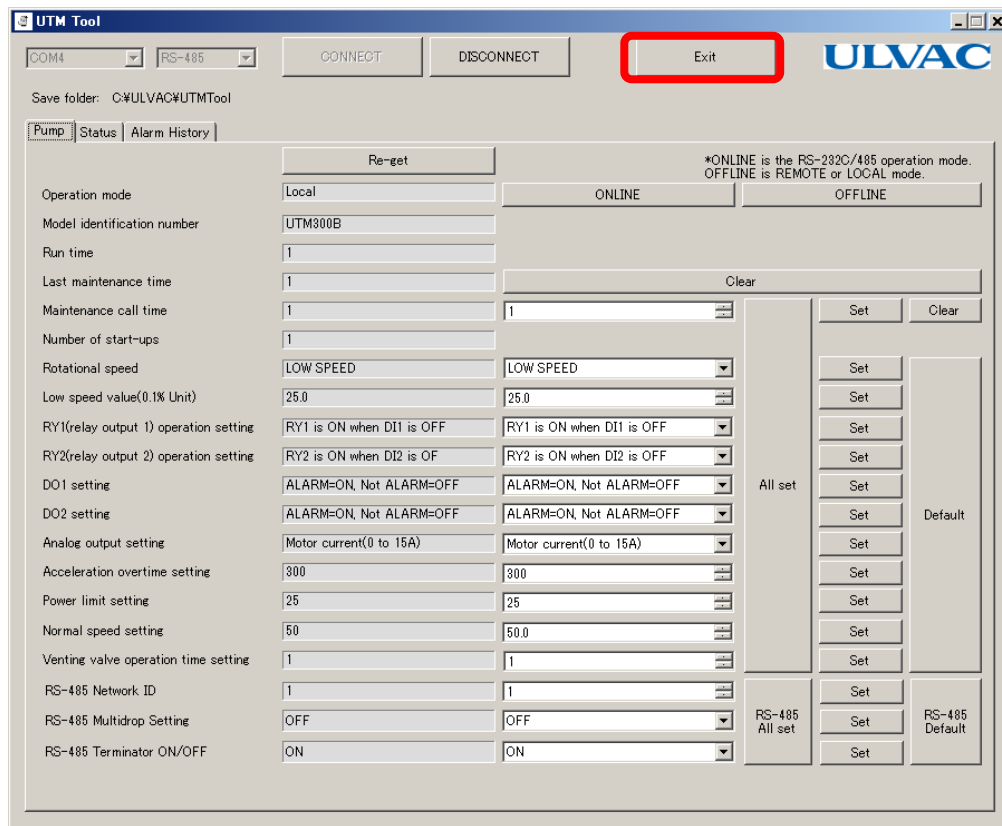


\* If you wish to change the multidrop setting from ON to OFF when connecting via RS-485 communication, a confirmation message will be displayed asking whether to return the multidrop setting to ON.



If "Yes" is selected, communication will be disconnected after returning the multi drop setting to ON. If you select "No", communication will be disconnected with multi drop setting as it is.

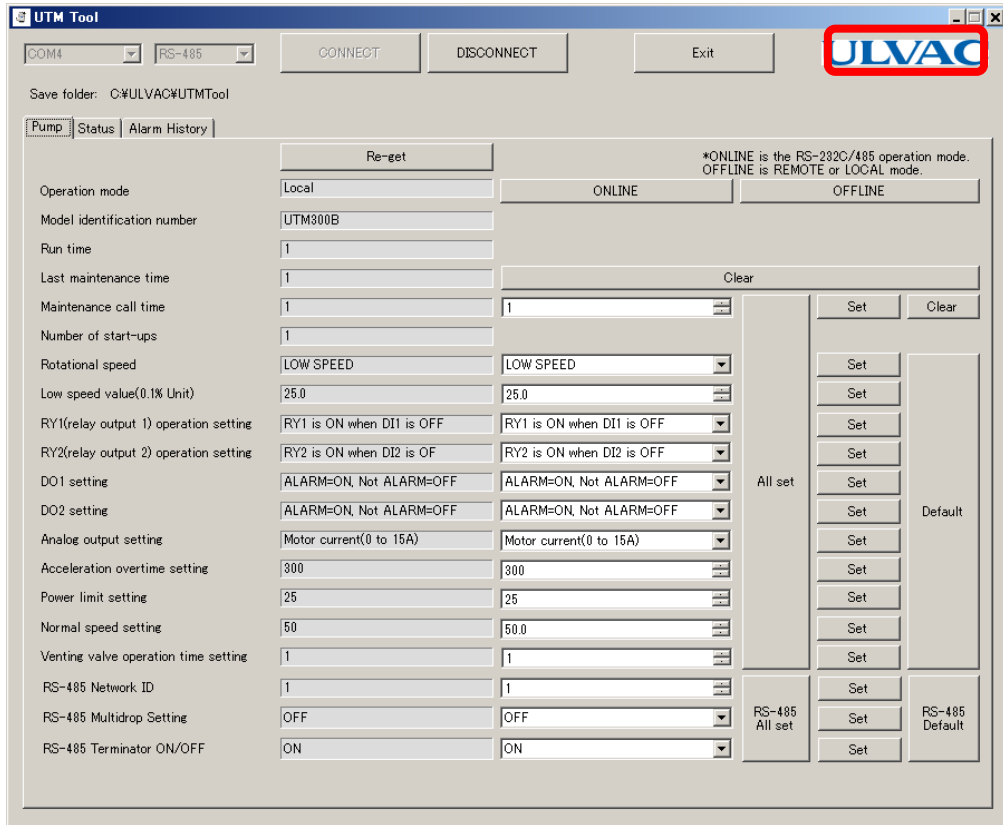
2. Please press "Exit" button.



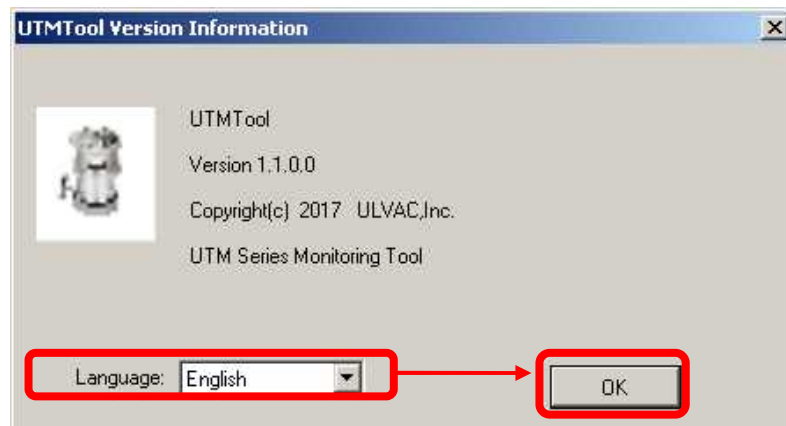
The UTMTTool screen disappears and the application ends.

## 3.4 How to change display language

1. Please click the ULVAC logo.



2. Version information of UTMTTool is displayed.

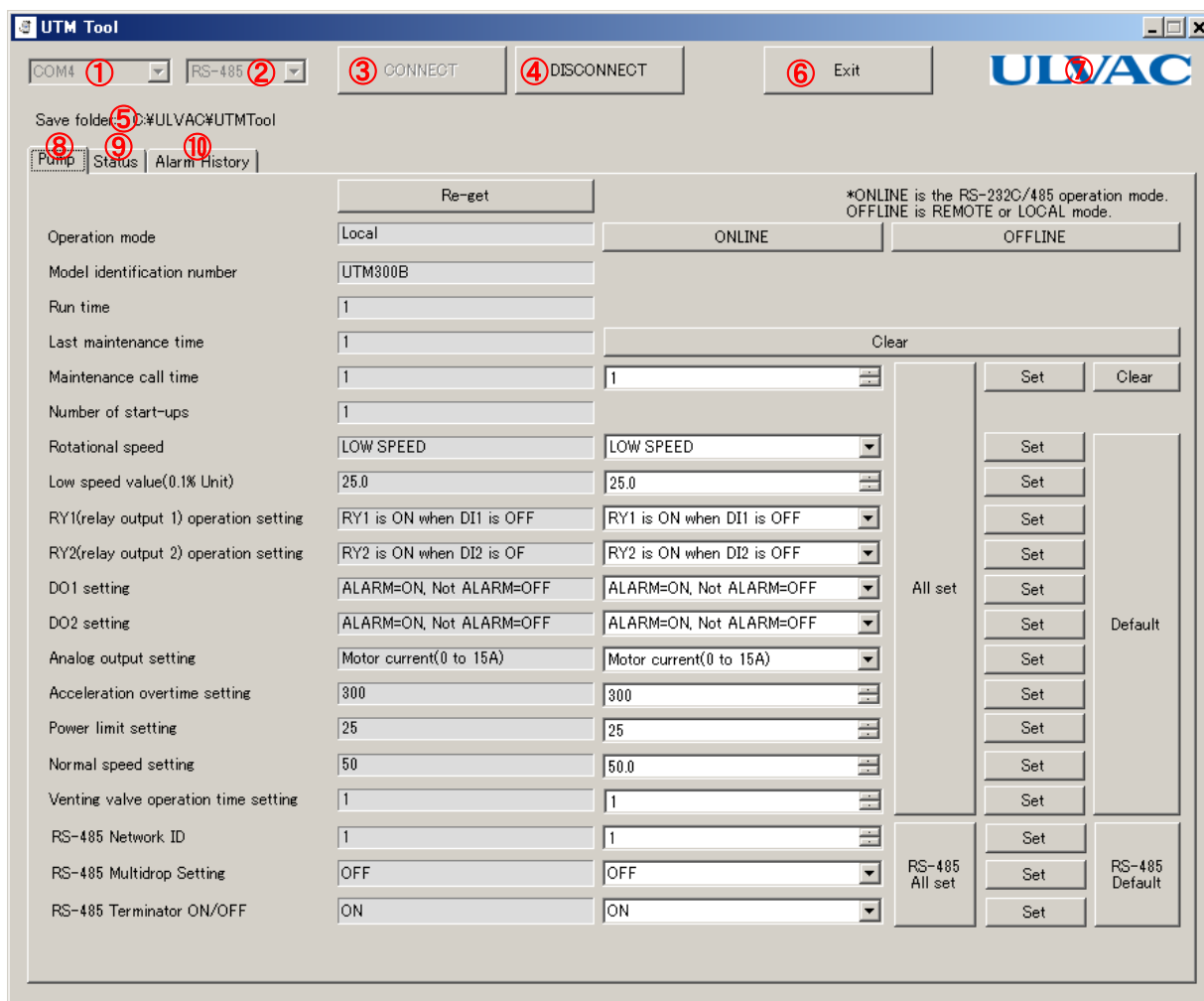


Select the language you want to display from the drop down list and press the "OK" button.

The screen of the application is changed to the display of the specified language.

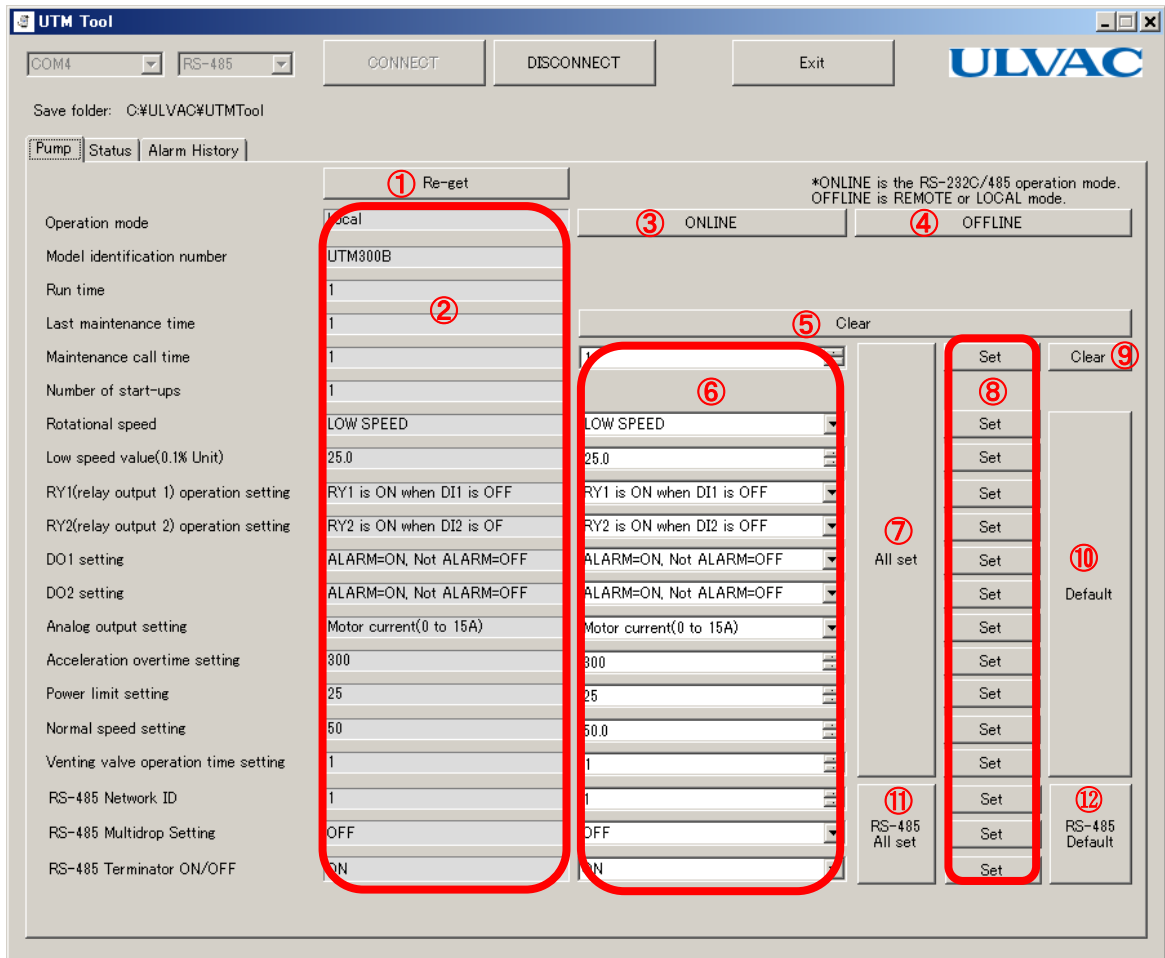
## 4. Display

### 4.1 Main display



#	Contents	Description
1	Serial port selection	Select the serial port name to be connected with the pump.
2	Communication type	Select RS-232C or RS-485.
3	Connect button	Establish a connection with the pump.
4	Disconnect button	Disconnect communication with the pump.
5	Exit button	Quit the application.
6	Save folder display	The save destination of each log file is displayed.
7	ULVAC logo	The version information screen is displayed.
8	Pump tab	This is a tab for displaying / changing pump setting.
9	Status tab	This is a tab for displaying and operating various statuses of the pump.
10	Alarm history tab	This tab is used to display / acquire alarm history.

## 4.2 Pump tab display



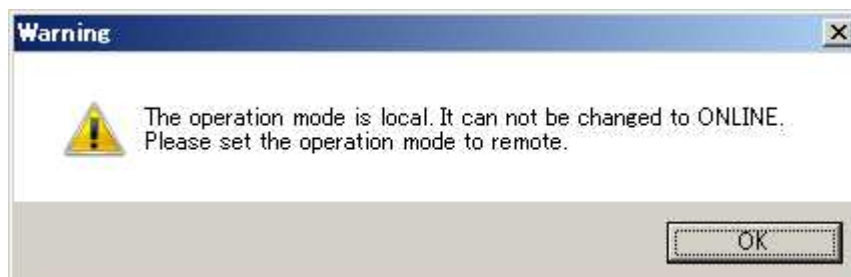
#	Contents	Description
1	Retry	We will reacquire pump data.
2	Data display section	Displays the current data of the pump.
3	ONLINE button	Switch the operation mode to ONLINE.
4	OFFLINE button	Switch the operation mode to OFFLINE.
5	Clear button	Clear the maintenance call time to 0.
6	Data setting section	Enter the change value of each set value.
7	All settings button	Set values to the pump in batch. * 1
8	Setting button part	Set the setting values of the left side item individually to the pump.
9	Clear button	Clear the maintenance call time setting to 0.
10	Initial setting	The setting value is returned to the factory shipment state. * 1
11	RS-485 All settings	Set all RS-485 setting items as pump. *2
12	RS-485 Initial setting	Return the setting values of RS-485 to factory default. *2

\* 1 A confirmation message is displayed. To execute, please click "Yes" button.

\* 2 These are displayed only when the communication type is set to RS-485 and connected.

#### 4.2.1 About ONLINE button operation

When the operation mode is Local, you can not switch to the mode to perform the RS-232C/RS-485 operation. When you operate the ONLINE button in Local mode, the following warning screen will be displayed.



To perform RS-232C or RS-485 operation, set the pump unit setting to Remote mode.

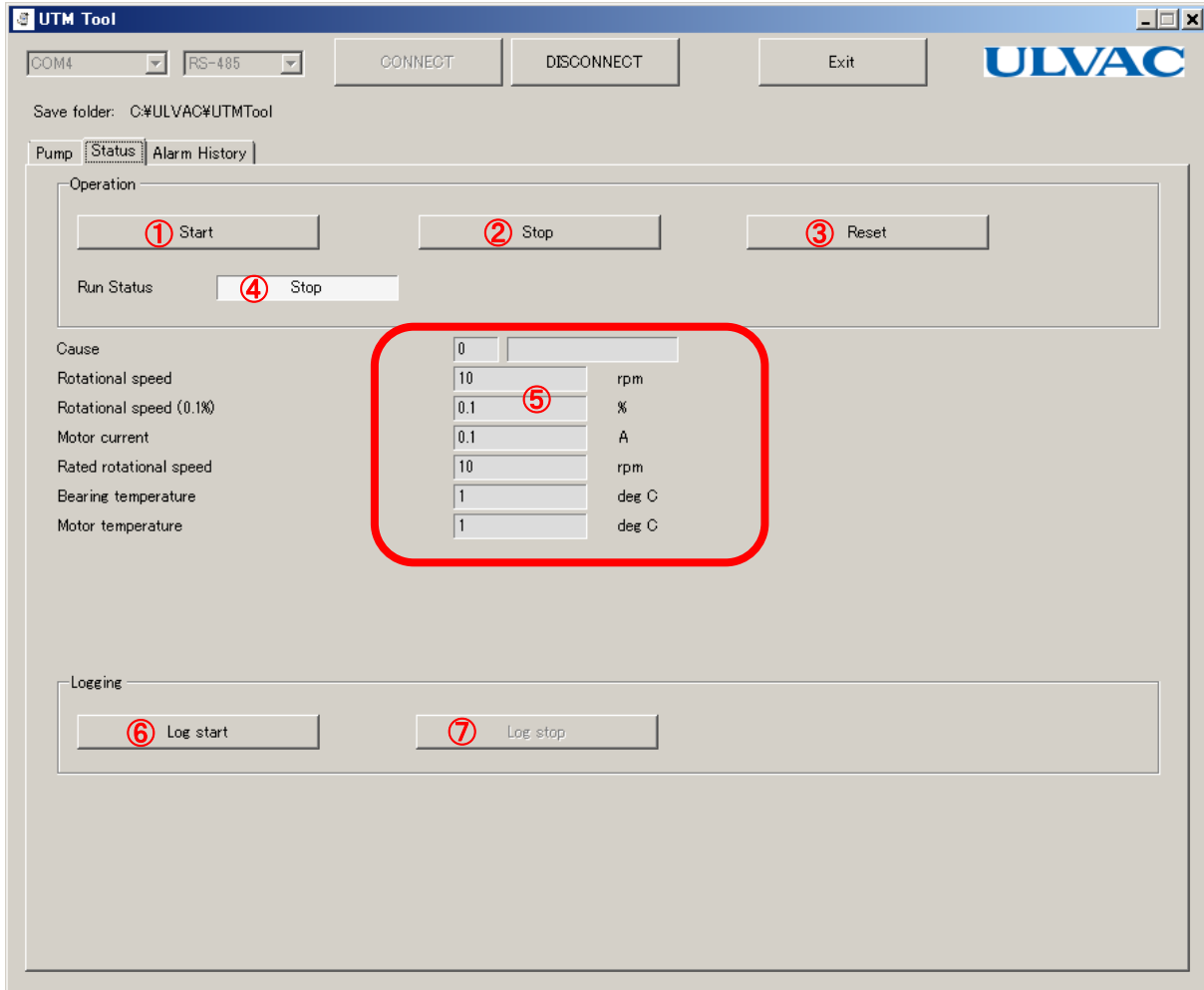
#### 4.2.2 About RS-485 multidrop setting

If RS-485 multidrop setting is set to ON, communication can not be performed normally. Therefore, when setting the RS-485 multidrop setting to ON, the following confirmation message will be displayed.



If "Yes" is selected, change the RS - 485 multidrop setting to ON. Please be aware that it may be impossible to communicate with the pump with this software after change. If you select "No", the setting will not be changed.

## 4.3 Status tab display



#	Contents	Description
1	Start button	Perform start operation on the pump.
2	Stop button	Perform stop operation on the pump.
3	Reset	Perform an alarm reset operation on the pump.
4	Operation status indication	Displays the operation status. * 1
5	Status display section	Displays various status information of the pump.
6	Log start button	Start acquiring 1 second log.
7	Log stop button	Stop acquiring 1 second log.

\* 1. Detailed display of operation status

#	State	Display	color	Flashing
1	Static levitation	Stop	White	Nothing
2	Accelerating	Acceleration	Yellow	Fast
3	During rated rotation	Normal	Green	Nothing
4	Deceleration	Deceleration	Yellow	Slow
5	Alarm static levitation	Stop/Alarm	Red / Orange * 2	Nothing
6	Alarm free run	Free/Alarm	Red / Orange * 2	Nothing
7	Alarm Regenerative braking	Deceleration/Alarm	Red / Orange * 2	Slow
8	Alarm Deceleration	Deceleration/Alarm	Red / Orange * 2	Slow

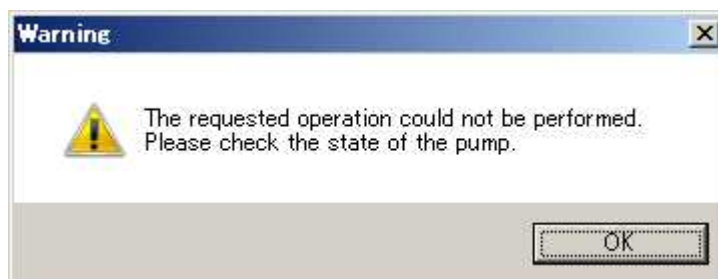
\* 2. The display color changes depending on the abnormality level. At alarm level, it becomes red, and at warning level, it becomes orange.

#### 4.3.1 About operation buttons

Start, Stop, Reset operation buttons can not be used in OFFLINE mode. When the pump unit setting is OFFLINE mode, the following confirmation message will be displayed. Press "Yes" to switch to ONLINE mode and the requested operation will be executed.



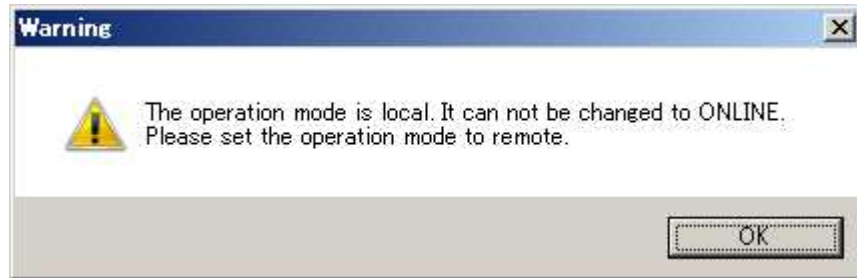
When an invalid response is returned when each operation button is executed, the following message will be displayed.



Stop operation at stop and reset operation at normal time are invalid operation.

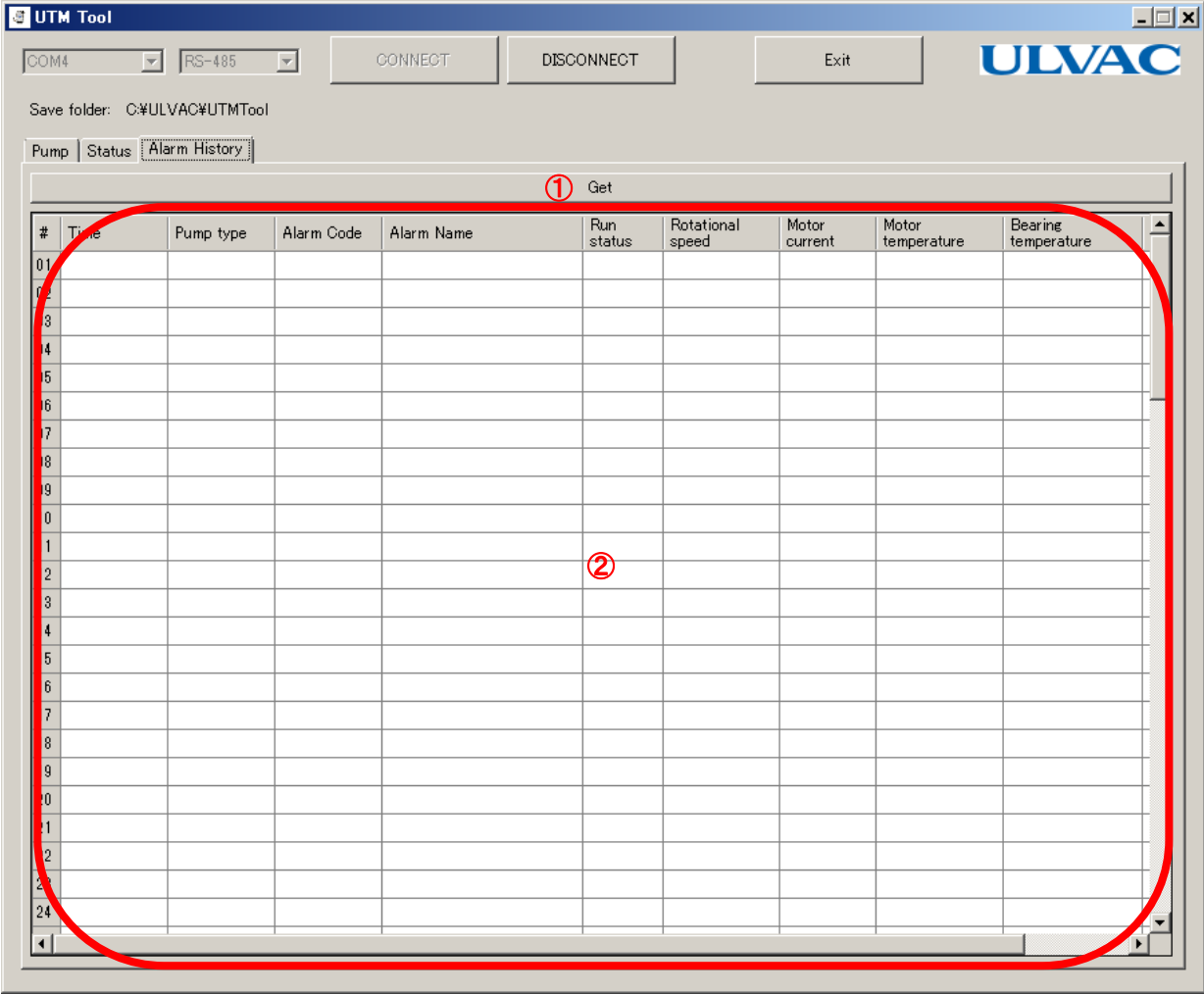


When each operation button is pressed when the pump unit setting is Local, the following warning message is displayed.



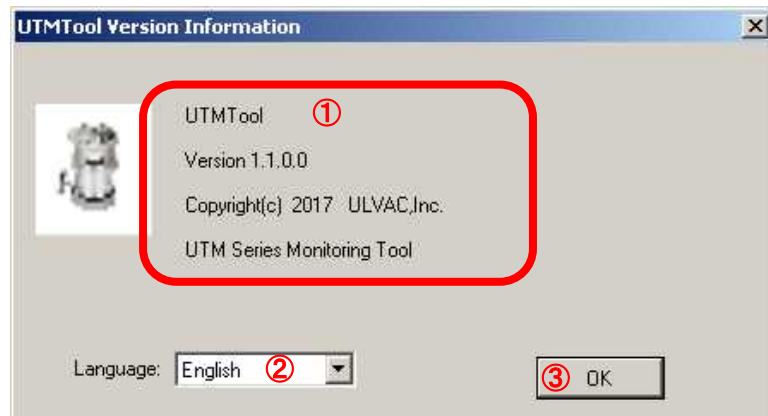
To perform each operation, set the pump unit setting to Remote mode.

4.4 Alarm history tab display



#	Contents	Description
1	Get button	Acquire Alarm history from pump.
2	History display	Displays 99 error logs.

## 4.5 Version information display



#	Contents	Description
1	Version information display	Version number and copyright notice
2	language choice	Select the language you want to display.
3	OK Button	Close the screen.

## 5. logfile

### 5.1 Pump log

It is created when connecting and reacquiring the pump tab screen.

PumpLog\_YYMMDDHHmm.csv

YYMMDDHHmm is the 2 digits of the last 2 digits of the year, month, day, hour, minute.

In the case of 7:06 on September 8, 2017,

PumpLog – 1709080706.csv

### 5.2 Status log

It is created at the start of the log on the status tab screen.

Write the status to the file at 1 second intervals. The file is updated every day.

StatusLog\_YYMMDDHHmm.csv

YYMMDDHHmm is the 2 digits of the last 2 digits of the year, month, day, hour, minute.

In the case of 7:06 on September 8, 2017,

StatusLog\_1709080706.csv

### 5.3 Alarm history log

It is created when acquiring the Alarm history tab screen.

AlarmLog\_YYMMDDHHmm.csv

YYMMDDHHmm is the 2 digits of the last 2 digits of the year, month, day, hour, minute.

In the case of 7:06 on September 8, 2017,

AlarmLog\_1709080706.csv

Display times of various logs are displayed in Greenwich Mean Time (GMT).

## 6. trouble shooting

### 6.1 Communication error

If communication with the pump can not be performed, the message “~ Communication Error.” Will be displayed.



Check the connection cable to the pump and the serial port of the PC for any abnormality.

### 6.2 Save folder error



Make sure that the set save folder exists on the hard disk of the computer. If it does not exist, disconnect it once and set it as the correct folder

### 6.3 Connection error



It is displayed when the specified communication port can not be used from this software. Make sure that the specified port is not used for other purposes.

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