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# 1 Basic operation

## 1.1 File operation

Use <open><save> to deal with the file.

In the files used by servo software, different suffixes of file names are used to distinguish different functional files. Please do not change the suffix name.

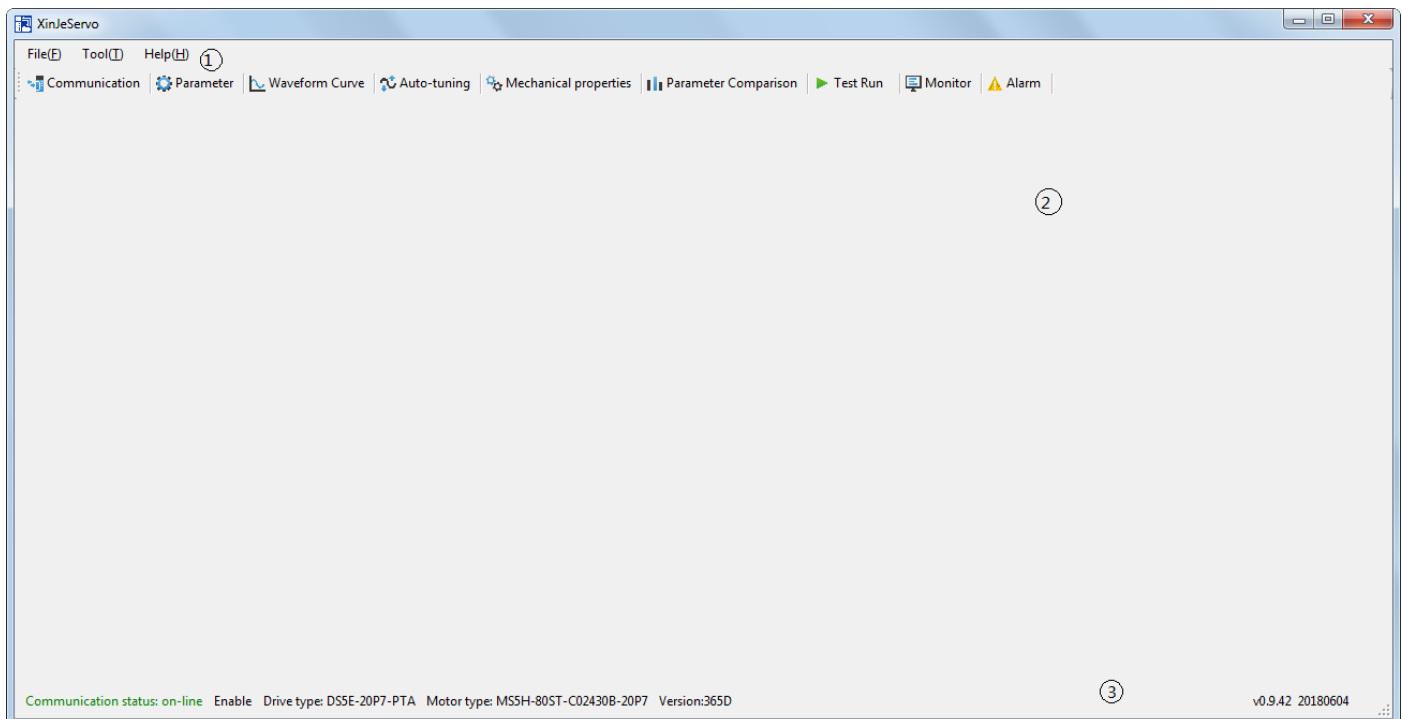
It will also make the servo software unreadable.

Project file	File name.SPRO
Parameter setting-parameter file	File name.SVO
Curve collection-data file	File name.CSV
Curve collection-picture file	File name.emf/.png/.gif/.jpg/.tif/.bmp
Curve collection-export data	File name.csv (Excel open)
Real-time monitor-recording file	File name.RSVM
Real-time monitor-picture file	File name.emf/.png/.gif/.jpg/.tif/.bmp
Mechanical features-data file	File name.SVP
Mechanical features-picture file	File name.emf/.png/.gif/.jpg/.tif/.bmp

## 1.2 Main interface

Start XinjeServo (run as administrator), it displays the main interface. Functional windows can be opened in this window.

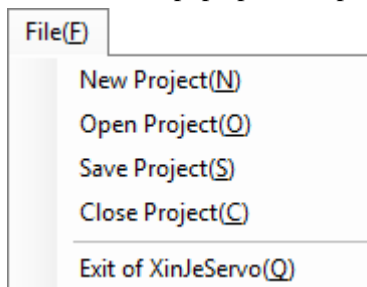
### 1.2.1 Main interface window



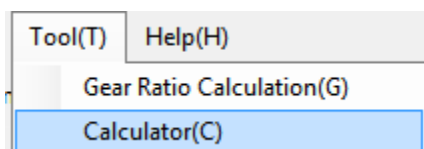
### 1.2.2 Composition of Main Interface

Area 1: Menu

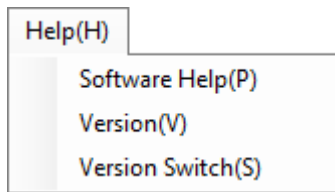
- A. File: click it to pop up the drop-down menu.



- B. Tool: click it to pop up the drop-down menu.



- C. Help: click it to pop up the drop-down menu.



Area 2: function display area (When offline, the functions of parameter setting, test run, auto-tuning, monitor and alarm are not available. When On-line, all functions are open).

Area 3: Display the connection status, enabling status, driver model, motor model, firmware version and version information of current servo software. Communication status is offline, showing "communication status: offline"; communication status is online, showing "communication status: online", while showing the driver model and firmware version of the connected servo; if the servo is connected to the motor, showing the motor model.

Area 4: display the current status of servo driver.

Note:

- (1) The main interface can be connected to the driver by clicking on "Servo Communication" or double-clicking on "Communication Status: Offline" in Area 3.
- (2) Double-click "Communication Status: On-line", the software disconnects from the servo, and the communication status changes to "Communication Status: Off-line"
- (3) When "communication status: on-line" is displayed, area 3 will display "enabling" and "servo enabling status".
- (4) Display "Enabling": Servo is not in the enabling state; Display "Enabling", Servo is in the enabling state (regardless of the value of P-03 [Servo Enabling Mode], as long as the servo is in the enabling state, show "Enabling".
- (5) When the servo is in the software enabling state (P 0-03 [Servo Enabling Mode] is 2 (Software Enabling), double-click "Enabling", Servo Enabling; Double-click "Enabling", Servo Exit Enabling. In other enabling modes, double-click function fails, but still can show the current enabling state.
- (6) When the "Communication with Driver" interface clicks OK, area 3 displays a progress bar indicating the progress of data reading.
- (7) Select Open Project to Open Project Documents. The file path is displayed at the top of the interface, indicating that the user is currently in the situation of opening Project Documents.
- (8) Letter explanation in servo status display: bb: idle state; run: running; P-OT: forbidden forward drive state; N-OT: forbidden reverse drive state

Drop-down menu:

(a) File menu

New Project: Pop-up interface [Select Servo Model].

Open Project: Open the saved file.

Note:

- (1) The open engineering file (SPRO), parameter file (SVO) are different from the current servo driver type, or the motor type is inconsistent. The software prompts and automatically disconnects the connection with the servo.
- (2) After opening the file, the file path is displayed above area 1.
- (3) If the driver model is the same as the motor model and the firmware version is different, there will be [version conversion]; if the driver model and the motor model are the same as the firmware version, open the file directly; if the current servo software is offline, open the project file directly.
- (4) Open Project file format: SPRO, SVO, SVM, SVP.

Save project: Save the data files (if there is data) in [parameter setting], [curve collection], [mechanical characteristics] as engineering files with the suffix of. SPPO.

Close Project: Close all current interfaces, software offline, exit.

Exit: exit the software.

(b) Tool menu

Calculator: pop up the calculator.

Electronic Gear Ratio Conversion: pop up [Electronic Gear Ratio Conversion Tool]

(C) Help menu

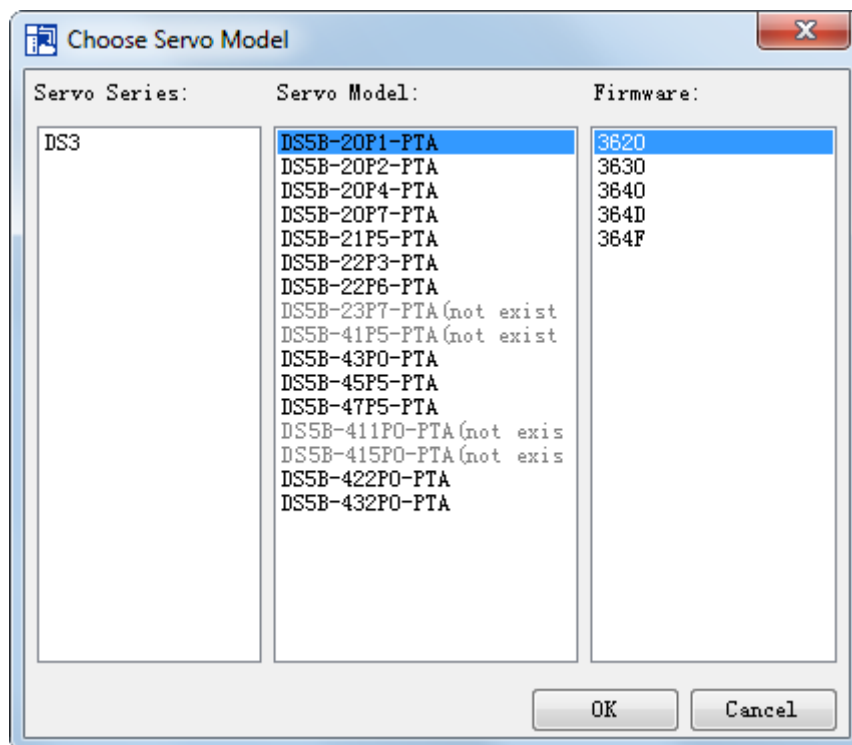
Help: Pop up user manual.

Version information: Pop up the interface.

Version Switching: Version Updating Interface for Pop-up Servo Software.

## **1.3 Subfunction modules**

### **1.3.1 Select servo model**



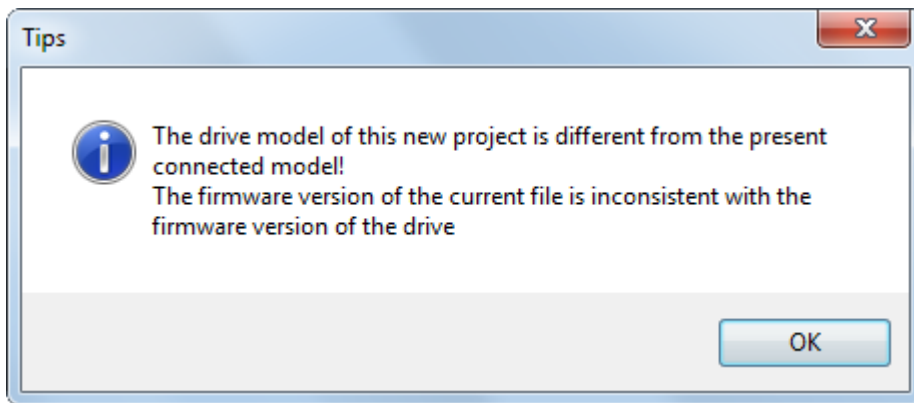
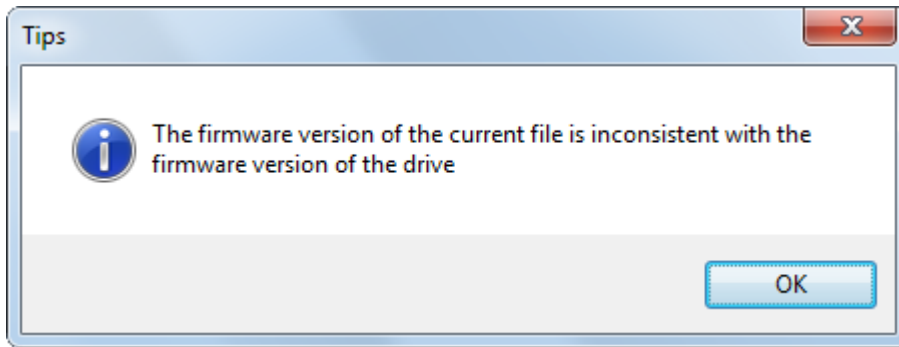
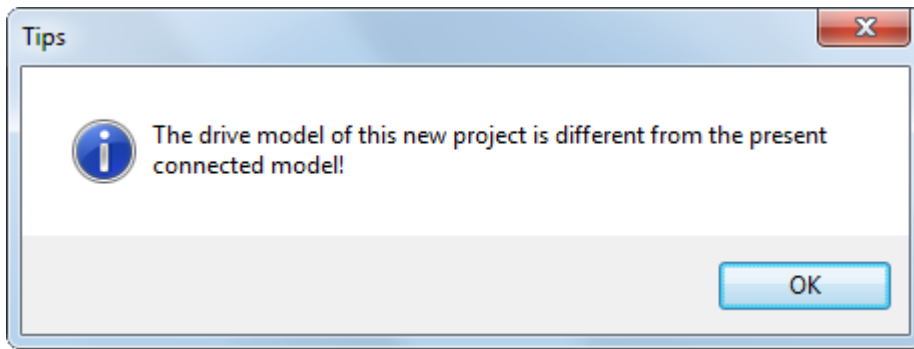
Servo type gray font: At present, it is not supported to create new engineering documents for this type.

Servo model black font: currently support the new model of Engineering documents, select the corresponding firmware version for new construction.

New engineering documents are created according to servo series, servo models and firmware versions.

Note:

(1) If the current software is connected to the servo, the new project file is different from the current servo driver model, or the same model but different firmware version, the software will prompt and automatically disconnect the connection with the servo. If the user wants to operate the servo, please reconnect.



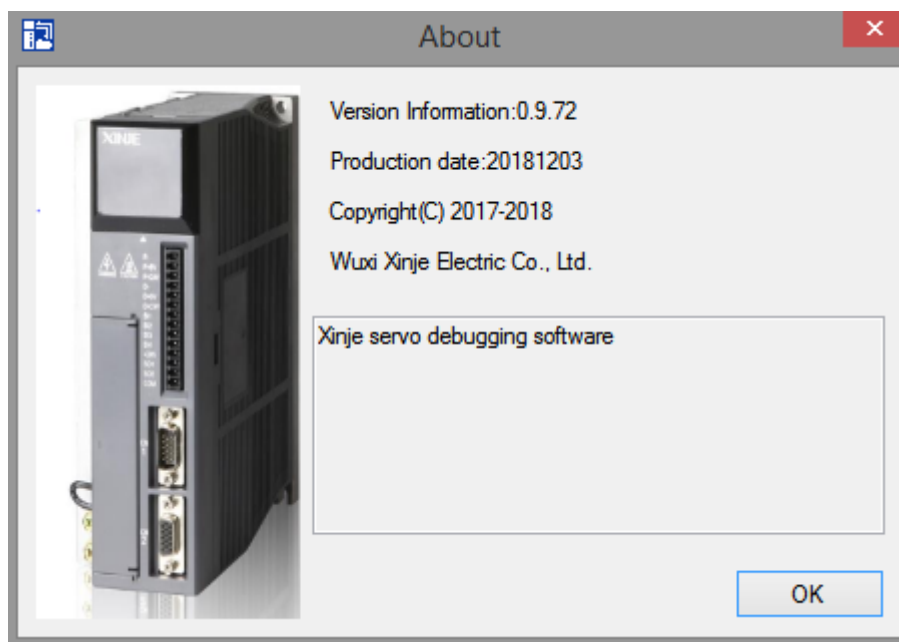
(2) If the communication status is offline, new engineering documents can be built directly.

Note:

If the selected servo model has only one firmware version, you can directly double-click the servo model or click OK to create engineering documents; if the selected servo model has multiple firmware versions, double-click the required firmware version or select the required firmware version, click OK to create engineering documents.

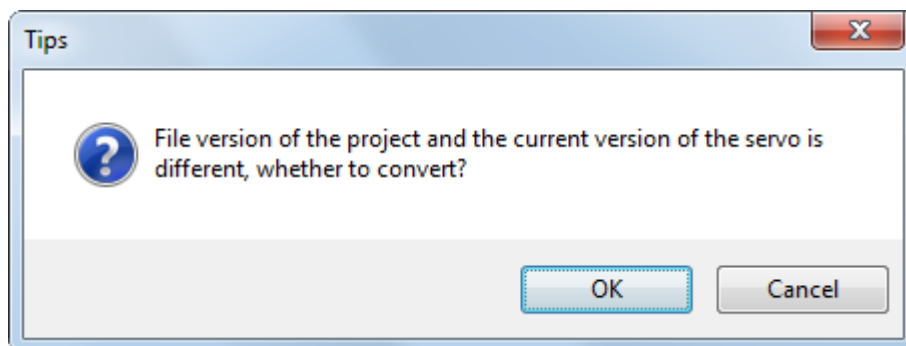
## **1.4 About**





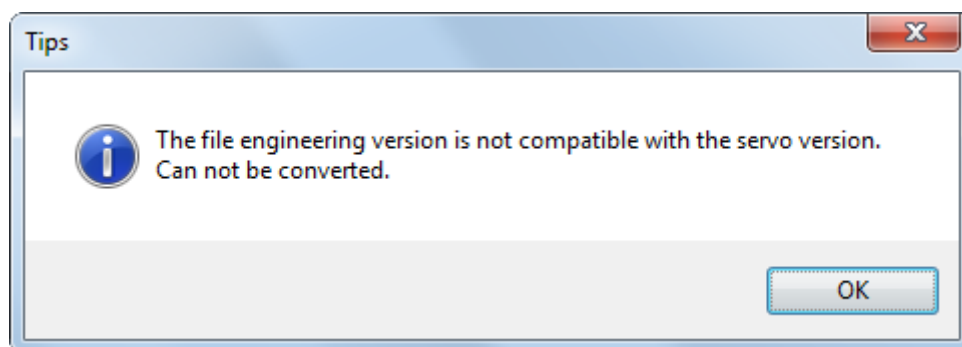
## 1.5 Version conversion

When the user opens the historical saved engineering file (PRO) or parameter file (SVO), the driver model of the parameter file (SVO) is the same as that of the current connected servo, but the firmware version is different. The following dialog box appears to prompt the user whether to make version conversion or not.



If the user clicks OK, the software starts version conversion; if the user clicks cancel, the software exits version conversion and automatically goes offline.

If the version cannot be converted, the following prompt box appears to prompt.



If the existing parameters need to be manually modified during version conversion, the following interface is displayed.

版本转化 ( 3640->3700 )

序号	含义变化	设定值
P2-04.0	有	0
P2-04.1	有	0
P2-04.2	有	0 ①
P2-04.3	有	0
P2-47.0	有	0
P2-47.1	有	0
P2-47.3	有	0
P2-60.0	有	0
P2-60.1	有	1
P2-68.0	有	1
P2-68.1	有	1
P2-69.0	有	0
P2-69.1	有	0

属性

3640序号	P2-47
版本	3640
单位	- ②
最小值	0
最大值	f
预设值	0
3700相关参数	P2-47.0
说明	P2-47 注释: 保留参数

3700相关参数及其属性

序号	版本	在线值	最小值	最大值	单位	描述
P2-47.0	3700	0	0	f ③	-	注释: 模型环开关0 - ...

该界面参数如果不进行设定，将使用目标版本的在线数值 ④

⑤ 确认

Zone 1: Display parameters that users need to manually modify during version conversion

Zone 2: Display properties of parameters in engineering files that need version conversion. Note: The display parameters are related to the selected parameters in Area 1

Zone 3: Display the properties of the selected parameters in Zone 1 for easy modification of the set values

Zone 4: Prompt users

Zone 5: Confirm the modification of parameters and complete version conversion. Save prompts are also displayed.

Note:

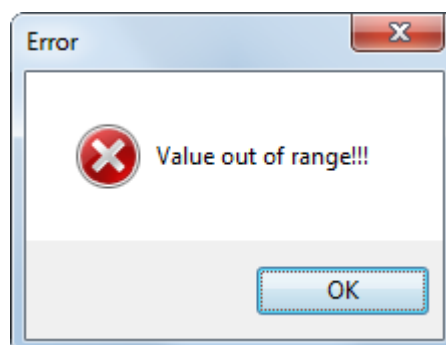
(1) The title of the interface shows which two versions of the current version conversion are.

(2) The parameter serial number shown in Area 1 is the parameter serial number of the current servo version.

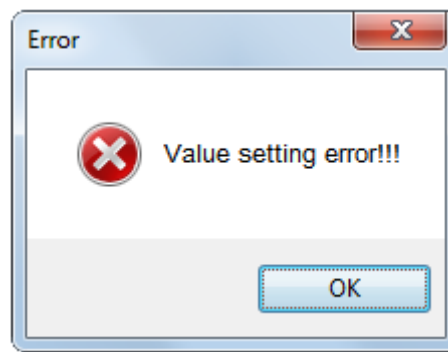
(3) The setting value shown in area 1 is the setting value of the relevant parameters in the engineering file that needs version conversion, not the setting value of the current servo.

(4) Settings in Area 1 can be modified

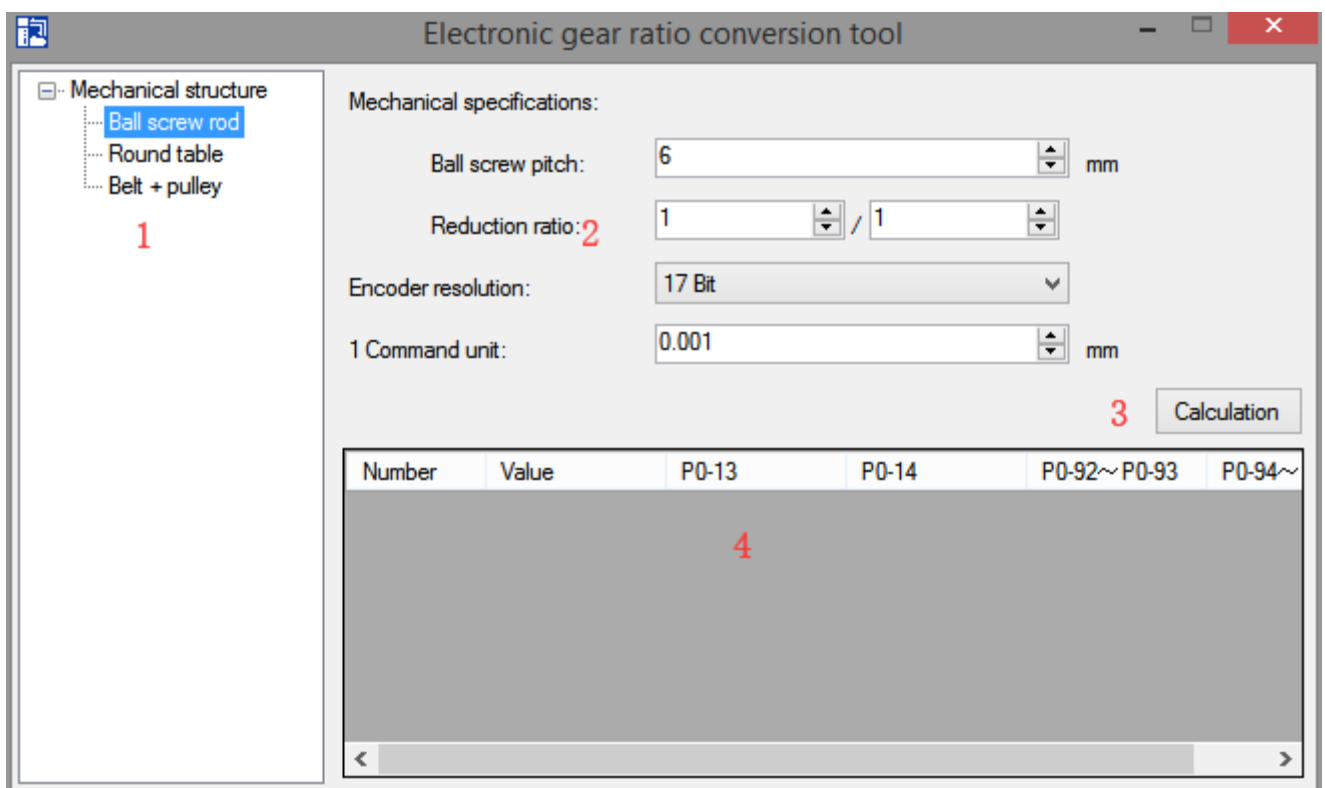
(5) If the modification value exceeds the range, the following dialog box appears, and the original setting value also appears.



- (6) If the setting of the modified value is wrong, the following prompt box will appear, and the original setting value will also appear.



## 1.6 Electronic Gear Ratio Conversion



Zone 1: Display all optional mechanical structures

Zone 2: Relevant parameters to be set for calculating the ratio of electronic gears

Area 3: Click to calculate

Zone 4: Display all configuration combinations of electronic gear ratio parameters that meet configuration requirements

Note:

- (1) If the settings are not suitable, it will show “please check the settings” window.
- (2) The parameters (mechanical specifications) required for calculating the ratio of electronic gears with different mechanical structures are different.

## 2 Communication interface with driver

Communication mode between software and driver interface: wired communication.

Realization:

1. You can communicate with the driver by clicking on the main interface function menu communication.
2. Double-click "Communication Status: Off-line" in the main interface area 3 to communicate with the driver.

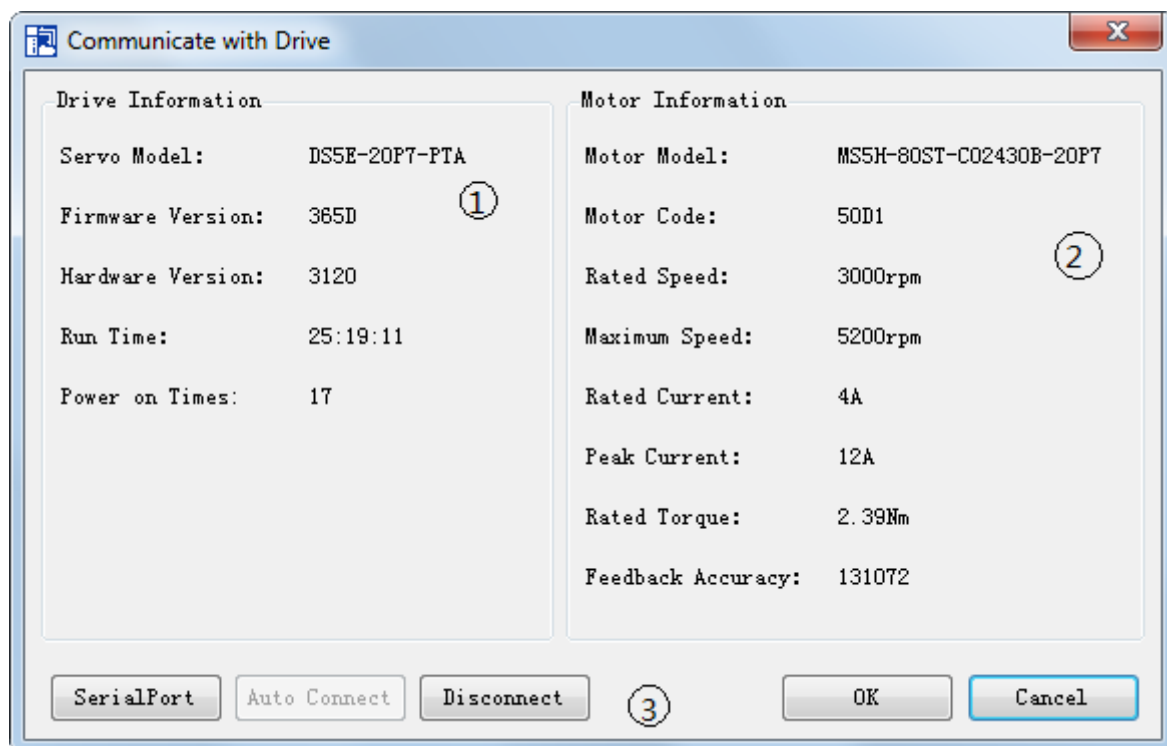
### 2.1 Start 【communicate with the driver】

1. Open XinjeServo software (run as administrator).
2. Click the communication button on the main interface.
3. Display the communication window.

### 2.2 Close 【communicate with the driver】

Click the 

### 2.3 Communication window



## 2.4 Composition of Driver Communication Interface

Area 1: Display driver information.

Area 2: Display motor information.

Note:

- (1) If the servo is not connected to the motor, the information displayed in Area 2 will be incomplete and the motor model and code will not be displayed. If this phenomenon occurs, please contact us.

Area 3:

Auto Connect: Automatic search for serial ports that can communicate with the servo, read driver and motor information.

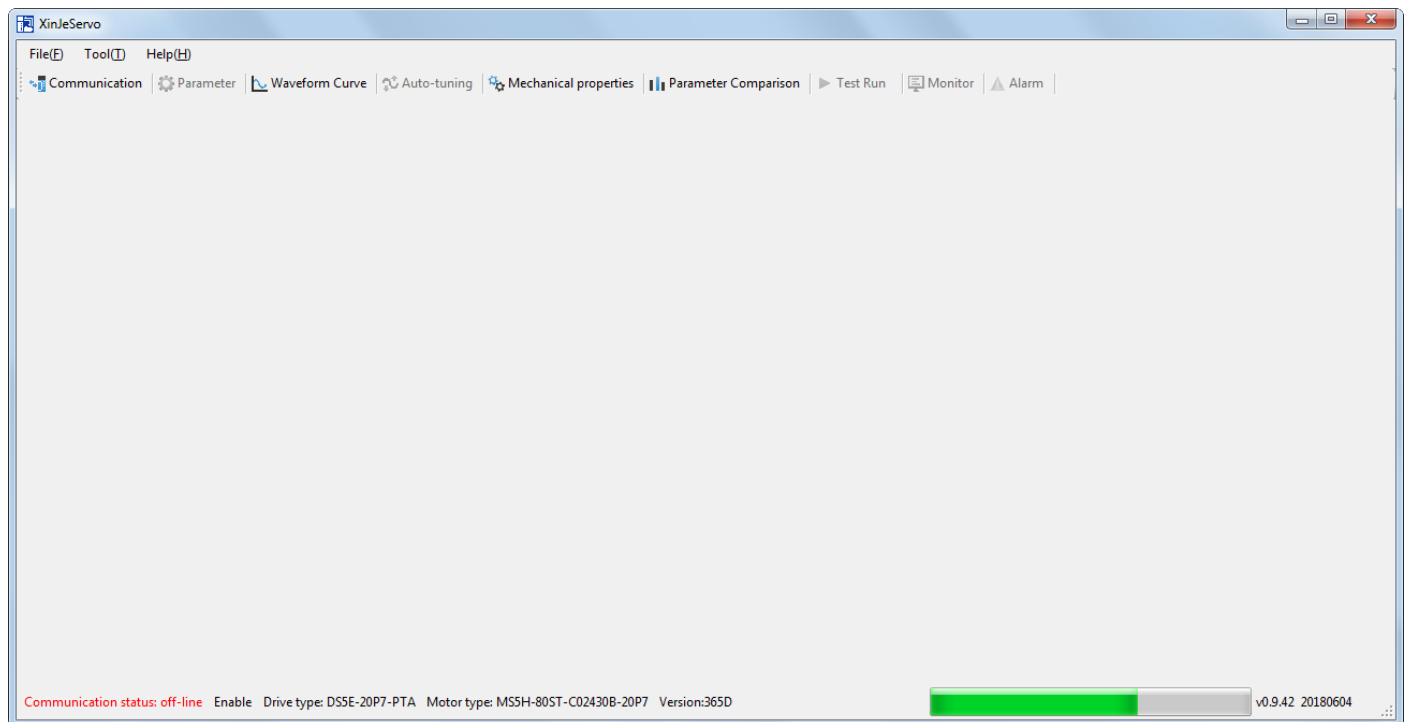
Serial port: Pop-up connection servo window. By clicking the drop-down box, you can manually set serial passwords, baud rate, data bits and other data related to the serial port.

Note:

If the serial port is configured correctly, area 1 and area 2 display information; If the configuration is wrong or the serial port is occupied, area 3 displays the following text:

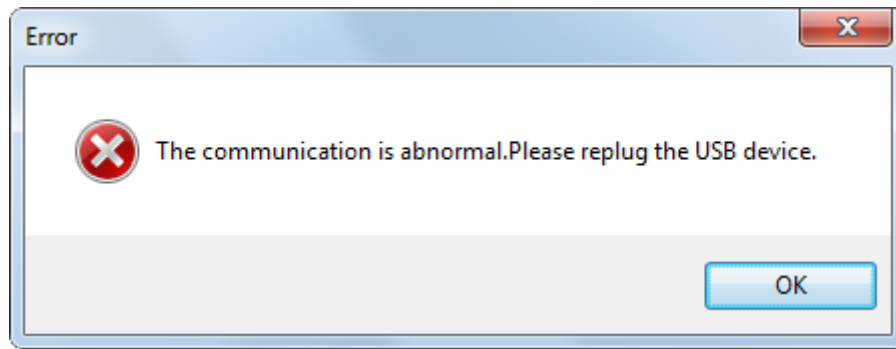
The current serial port is not available. Please recheck and configure the serial port

When area 1 and area 2 display information, area 3 does not display a prompt, click OK, exit "communicate with the driver" and start reading data. As shown in the figure, in the process of data reading, the progress bar (data reading progress) is displayed in the lower right corner of the interface.

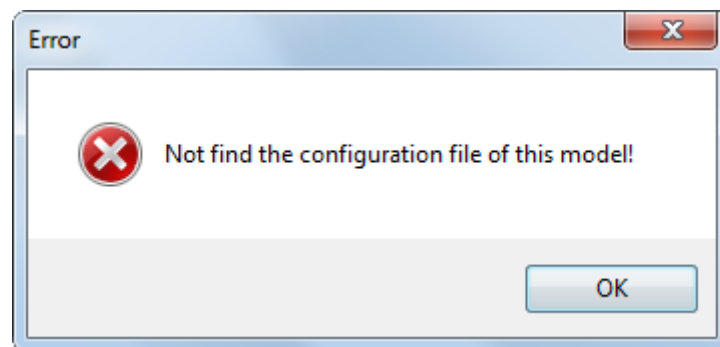


Note:

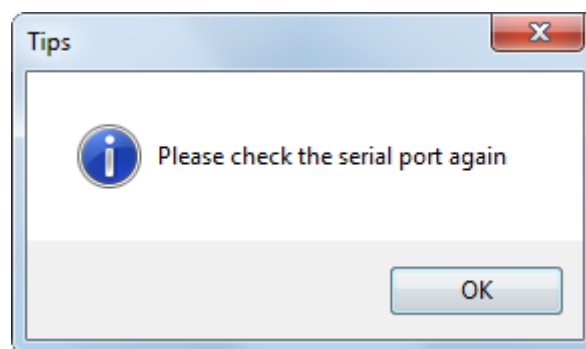
- (1) If communication abnormality occurs during data reading, the following dialog box is displayed to prompt the user. Users need to re-plug in USB devices to connect



- (2) If the software does not find the relevant configuration file of the current connected servo, the following dialog box is displayed. The software company should be informed to update the file to generate a new version of the software.



- (3) If area 1 and area 2 do not display information or area 3 displays red prompts, click OK to display the following dialog box prompts.



- (4) If the software is in the manual adjustment state, prompt the user whether to quit, if click confirmation, turn off the enabler.



Disconnect: software disconnect with the servo driver.

Note:

- (1) When the interface of "communication with driver" is opened, the software will communicate with the servo automatically. If the communication succeeds, area 1 and area 2 display information; If there is a problem with the serial port, area 3 displays the following text

The current serial port is not available. Please recheck and configure the serial port

- (2) If the servo is not connected or the servo is not powered on, area 3 displays the following text

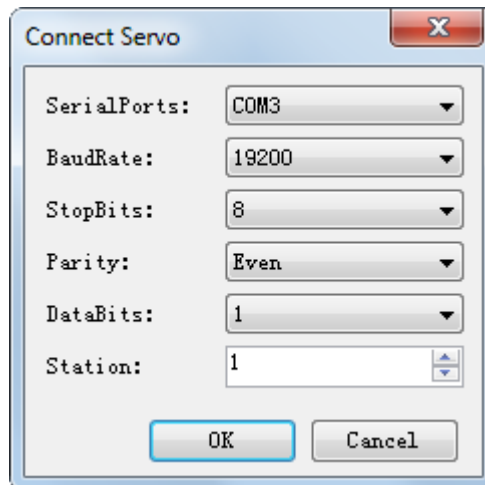
Not connect servo or servo not power on.

(3) If area 3 displays **The current serial port is not available. Please recheck and configure the serial port**

or **Not connect servo or servo not power on.**, even if area 1 and area 2 display information, the current servo software is not connected to the servo driver.

## **2.5 Subfunction module**

### **2.5.1 Connect servo**



Set the parameters of the serial port.

**OK**

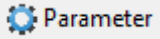
: The serial port is initialized according to the configuration information, and the servo is attempted to connect.

1


configure the station no.

# 3 Parameter setting interface

## 3.1 Start 【parameter】

1. Open XinjeServo software (run as administrator).
2. Click the  in the main interface.
3. The parameter window displayed.

## 3.2 Close 【parameter】

Click the 

## 3.3 Parameter setting window

Parameter

Open(O) Save(S) ①

Read Write Search: Reset ③

Overview

- Overview of P group ②
  - Function selection P0
  - Control parameter P1
  - Advanced tuning parameter
  - Speed control parameter
  - Internal position param
  - Signal parameter settir
  - P2 correlation control
  - Communication parameter
  - Sampling configuration
  - Drive Parameters
- U group monitors state con
  - U0 group
  - U1 group
  - U2 group
  - U3 group
  - U4 group

Serial Number	Name	Set Value	Unit	Min	Max	Default Value
P0-00	Reserved parameter	0	-	0	0	0
P0-01	Control mode 1	6	-	1	10	6
P0-02	Control mode 2	6	-	1	10	6
P0-03	Enable mode	1	-	0	3	1
P0-04	Rigid level	15	-	0	63	15
P0-05	Rotation direction definition	0	-	0	1	0
P0-06	The load type	0	-	0	10	0
P0-07	First inertia ratio	200	1%	0	50000	200
P0-08	Second inertia ratio	200	-	0	50000	200
P0-09	Input pulse instruction positive dire...	0	-	0	1	0
P0-10.0	Pulse instruction form	2	-	0	2	2
P0-10.1	Signal valid edge	0	-	0	1	0
P0-11~P0-12	pulses per rotate	10000	1 pul	0	99999999	10000
P0-13	Electronic gear molecules	1	-	0	65535	1
P0-14	Electronic gear denominator	1	-	0	65535	1
P0-15	Pulse frequency corresponding to rate...	1000	100Hz	1	10000	1000
P0-16	Speed command pulse filtering time	100	0.01ms	0	10000	100
P0-17	Pulse frequency division output direc...	0	-	0	1	0
P0-18~P0-19	encoder feedback pulses per rotate	2500	1	0	99999999	2500
P0-20	Encoder pulse frequency division (mol...	1	-	1	65535	1

Notes: Reserved parameter

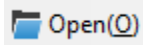
⑤

Effective when the power is off Effective when the servo is off Effective immediately Modify the setting value ⑥

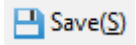


### **3.4 Composition of parameter setting window**

Area 1:



Open the saved engineering document, if the servo model, motor model and firmware version of the engineering document are not consistent with the current connected servo, the software will automatically switch to offline mode, and display a prompt box to inform the user.



Save current servo model, motor model, firmware version and all P group parameters

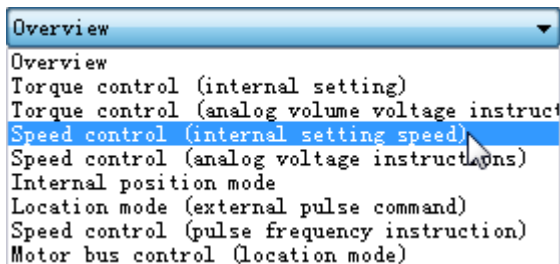
Note:

(1) If the servo model, motor model and firmware version of the engineering document are identical with the current servo, the parameter setting interface shows the difference between the engineering document and the servo parameter (different parameter setting values are shown in bright blue). Click write to write the values of file engineering of different parameters to the servo to realize the parameter injection operation.

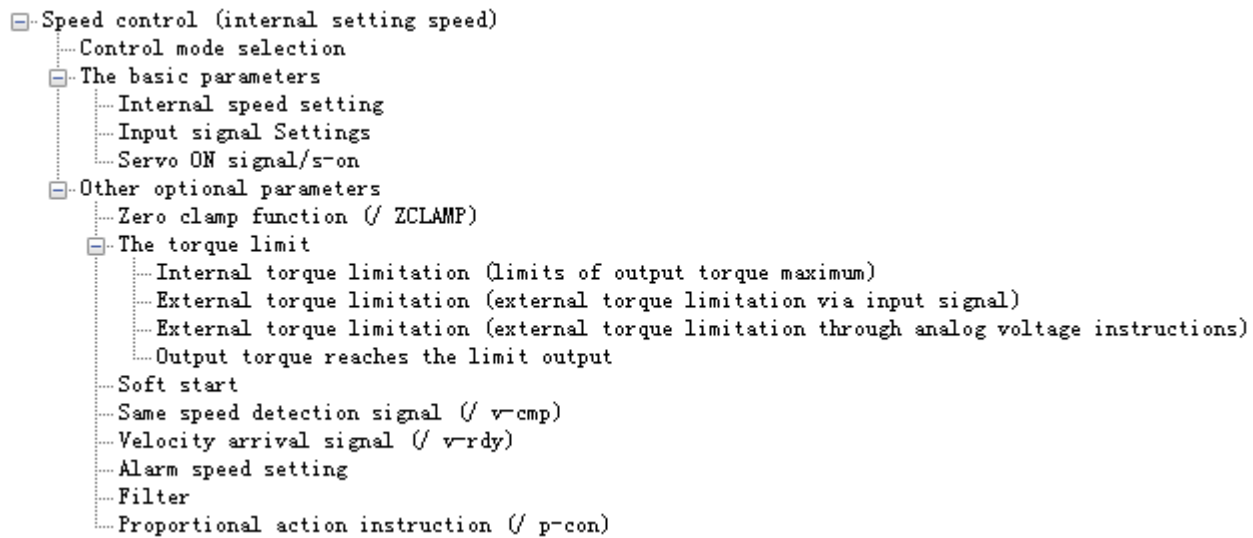
(2) Complete the parameter injection, and the parameter setting interface displays the parameter information of the current servo.

(3) File name suffix is. SVO.

Area 2: Servo parameters are grouped into functional groups, and the corresponding functional parameters are selected by clicking the drop-down box.



Tree graph: Functional parameters are grouped into tree graphs for display. For example, the drop-down box selects the speed control (internal setting speed) and displays the following tree chart.




After clicking on the tree, area 4 shows the corresponding parameters, such as selecting "Settings of Input Signal" and area 4 shows.

Serial Number	Name	Set Value	Unit	Min	Max	Default Value
P5-27	/SPD-D internal speed direction	0000	-	0000	ffff	0000
P5-28	/SPD-A internal setting speed	0000	-	0000	ffff	0000
P5-29	/SPD-B internal setting speed	0000	-	0000	ffff	0000


Note:



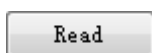
- (1) Click the right side of area , area 2 will hide.



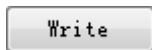
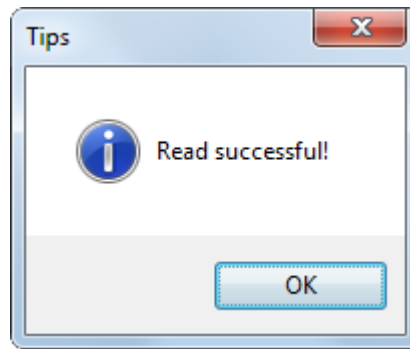
After hiding, click the left side of parameter interface , area 2 will show again.

- (2) When the mouse is between area 2 and 3, it will become , you can drag by holding down the mouse at this time.

Area 3:



Read the current data of the servo and display the following dialog box to prompt the user to complete the data reading.



When the parameter settings are changed, click write to pop up the write interface.

Note:

- (1) When in the mode of opening the file project, click read/write to exit the file status and display the data of the current connected servo.



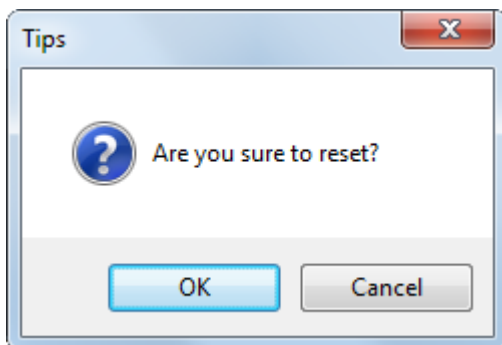
to search the parameter serial number and name in area 4, support accurate search and

fuzzy search, press ENTER to search. The search parameters are displayed in the first row of the table, and the next parameter of the current search is displayed by pressing ENTER. Search results are displayed circularly.

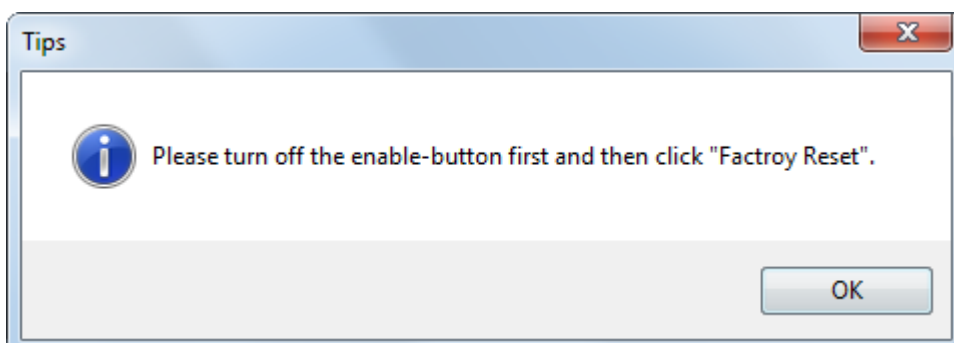
Read	Write	Search: <input type="text" value="SP"/>
Serial Number	Name	
P5-27	/SPD-D internal speed direction	



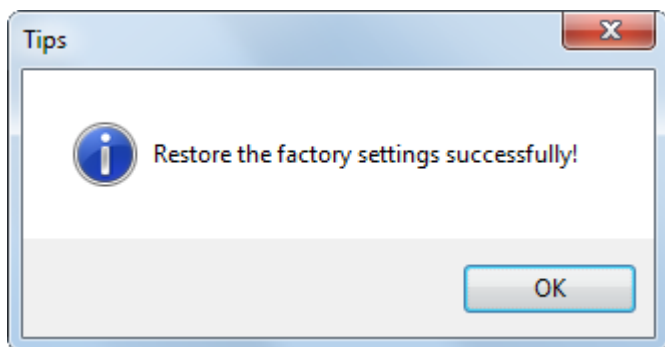
Servo restore factory settings. Click reset and the following prompt box will appear to prevent users from making mistakes.



If the current servo is enabled, click on the following dialog box to prompt users; users need to turn off enablement before they can restore the factory settings.



After recovery, the servo software will read the servo data in the current state. After reading, the following dialog box will appear to prompt the user data to read.

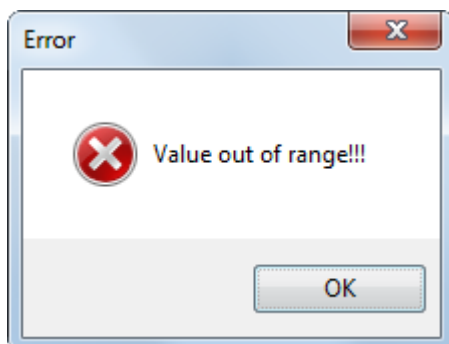


Note:

If the prompt box shows the words "operation timeout" after clicking, it means that the servo driver has been restored to the factory, and the parameters related to communication have changed, which is inconsistent with the current configuration of communication parameters. Users need to reconfigure the serial port and connect the servo.

Area 4: Parameter display includes: serial number, name, minimum value, maximum value, factory value, setting value and unit; edit parameter setting value, click write of area 3, and write to servo.

(1) When editing the setting value of a parameter, a prompt will appear if it exceeds the maximum and minimum value of the parameter.



(2) When the parameter settings change, the cell will turn bright blue, specifying the modified parameters.



(3) If the parameter setting value is changed to the original value, the bright blue will disappear and change to the color of the cell before modification.



Number display explanation:

For example: P1-00, P-14 and other serial number display parameters, parameter setting value is the value of a single register.

For example: P1-10.1, P2-01.0, P7-01.0~1 and other serial number display parameters, parameter setting value is the value of the number of values in a single register. 1 denotes the value on the first bit of the register value, 0 denotes the value on the 0th bit of the register value, and .0~1 denotes the value on the 0th and 1st bit of the register value (the value displayed on the digital tube from right to left is the value on the 0th, 1st, 2nd and 3rd bit of the register value,).

For example, the serial numbers of P-11~P-12 and P4-10~P4-11 show the parameters. The set values of the parameters are the values of the two registers merged according to certain rules.

Area 5: When you click on a cell in area 4, a comment on the cell's parameters is displayed.

Area 6:

Pink: The parameters can only be written in the state of servo OFF, and the parameters need to be re-energized to take effect after writing.

Lavender: It can be written at any time, and the parameters need to be re-energized to take effect after writing.

Pale yellow: parameters can only be written in the state of servo OFF, which will take effect immediately after writing.

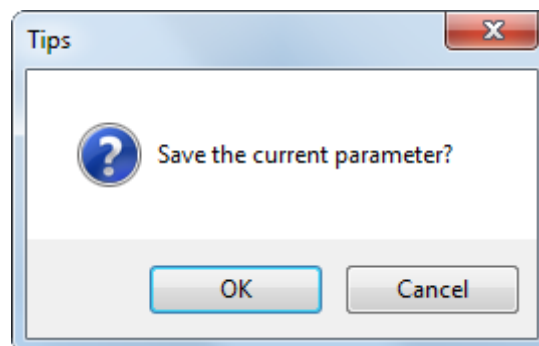
White: It can be written at any time and takes effect immediately after writing.

Bright Blue: When the parameter setting is changed, it becomes bright blue.

Effective when the power is off	Effective when the servo is off	Effective immediately	Modify the setting value
---------------------------------	---------------------------------	-----------------------	--------------------------

Note:

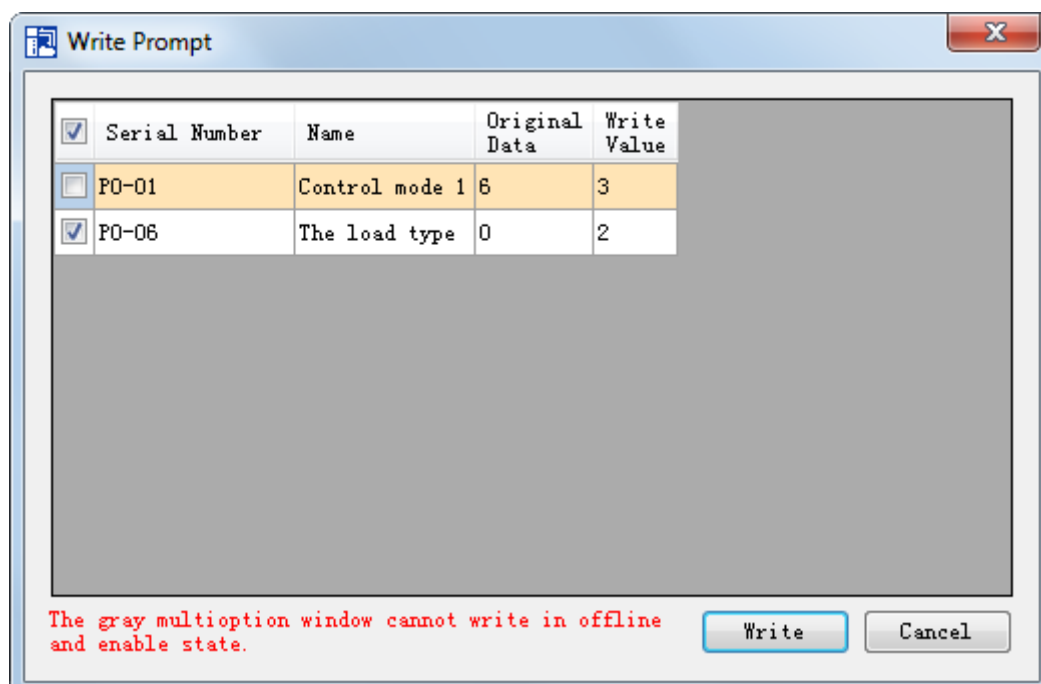
- (1) The parameters of the current background project are displayed. If the operation of the new project is needed and the current project has been modified, the following dialog box will appear to prompt the user whether to save the current project file.



Some of the parameters are read-only, and users cannot edit them. (Among them, because the change of RS232 parameters in P7 group will lead to communication disconnection, the software can not be modified, and can be modified through the servo panel.)

## **3.5 Subfunction module**

### **3.5.1 Write prompt**




The interface displays the serial number, name, original data and write value of the modified parameters.

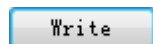


selection button (to select which parameter needed to write, the first one is select all button).

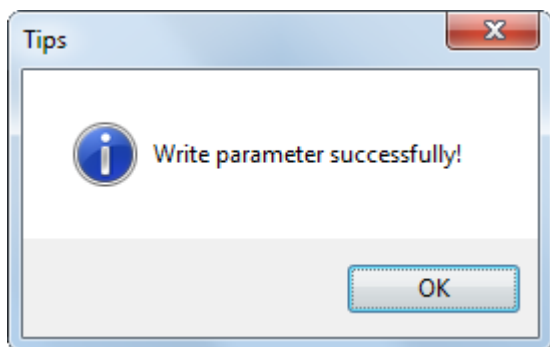
Note:

(1) The gray check box  indicates the parameters that cannot be written in the current state, and the user can not select it.

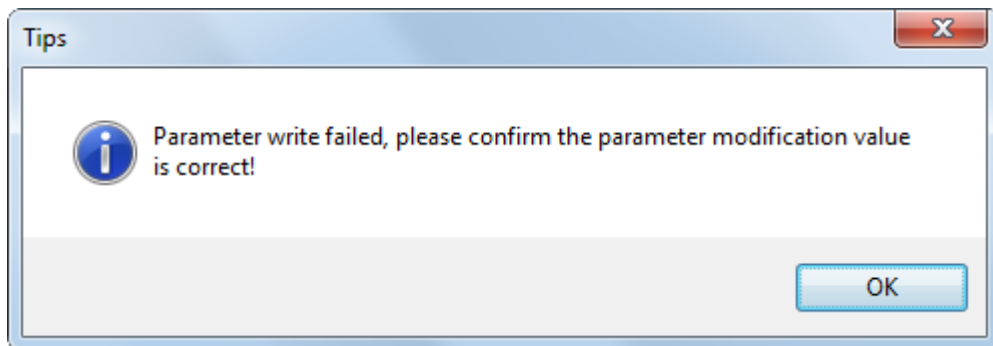
(2) The check box position at the top of the check box list is the select all box (default is selected, off-line is not selected), and the select all will not affect the gray check box.



Click to write the parameter modification value to the servo, and display the following dialog box to prompt the user to write the parameter successfully.



If the write fails, the following dialog box prompts the user. Users need to exit the write prompt interface and re-modify the parameter write value.



Note:

(1) Some parameters are not writable when the servo is enabled. If the servo is enabled, when the table shows the modified parameters, the check box of the rows in which the unwritable parameters are located will become grey, and the "grey check box is not writable in the offline/enabled state".

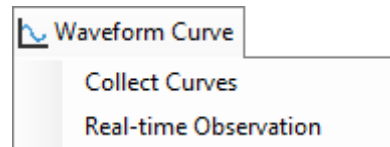
(2) After clicking Write, the default cell color of the successfully written parameter changes from bright blue to white, and the default cell color of the failed parameter maintains bright blue.


## 4 Waveform curve

The waveform results can be shown in the figure when the motor's action is measured. These conditions, results and parameters can be saved as waveform data files.

### 4.1 Start 【waveform curve】

1. Open XinjeServo software (run as administrator).

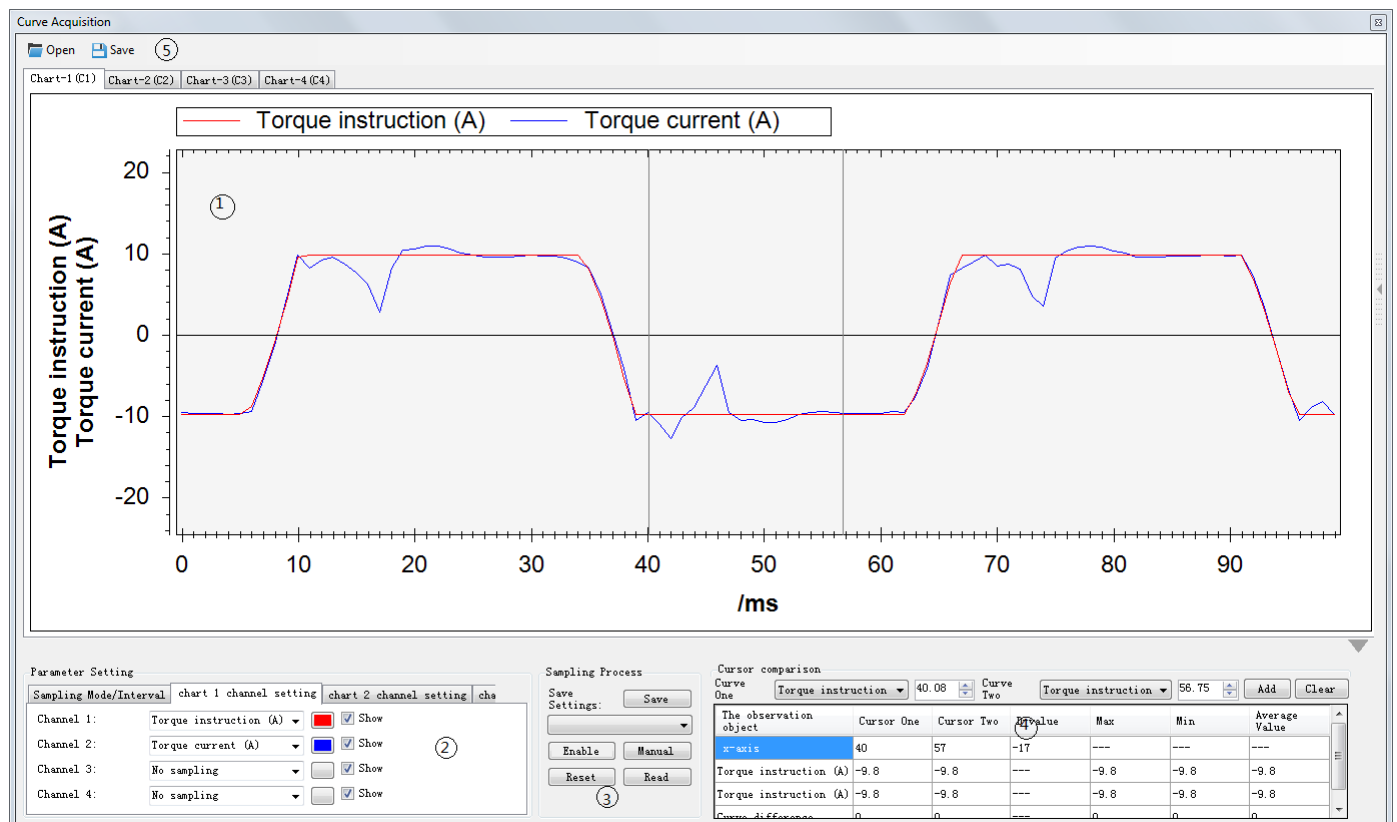


2. Click  Waveform Curve in the main interface, it will show
3. Select function, it will show related window.

### 4.2 Close 【waveform curve】

Click 

### 4.3 Waveform curve-curve acquisition window





### 4.4 Composition of waveform curve-curve acquisition interface

Area 1: Display the waveform displayed by the sampled data.

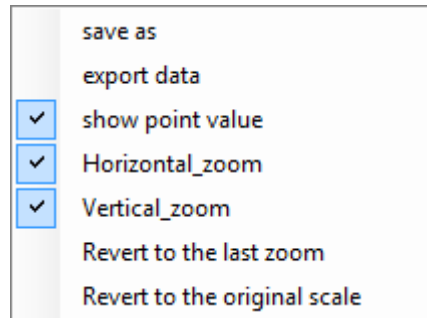
Note:

(1) If the mouse has a roller, holding the roller can drag the image; holding the Ctrl key + left mouse key can also drag the image.



(2) After click , put the mouse between area 1 and 6, it will become , user can press it to drag.

(3) Right-click in Area 1, and the following function selection box will be displayed to facilitate the user to operate the image.



(3) Double-click the ordinate display area to display the axis properties interface.

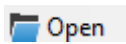
(4) Double-click the abscissa display area, and the X-axis unit is switched between '/' times' (sampling frequency) and '/' ms' (single sampling time).

Area 2: [Parameter Settings] Interface

Area 3: [Sampling process] Interface

Area 4: [Cursor comparsion] Function modules.

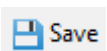
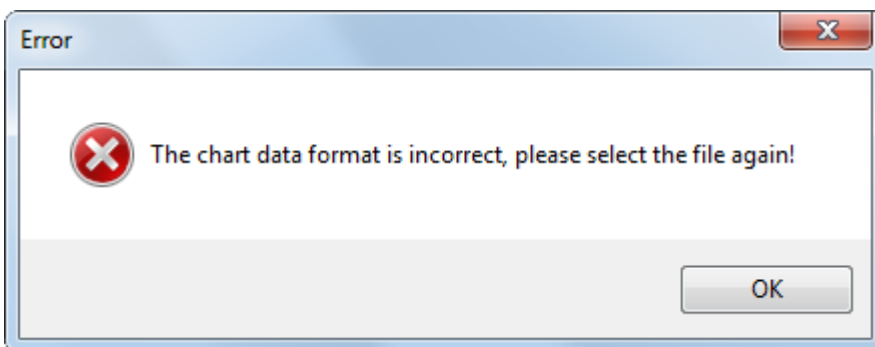
Area 5:



: Open the historically saved chart data file and display the image (file path is displayed at the top of the software).


Note:

If the open chart data file is incorrect, the following dialog box is displayed to prompt the user.




Save the collected data information to the local file.

Note:

(1) Here the  will save the sampling data and sampling configuration information (saved format is svm),

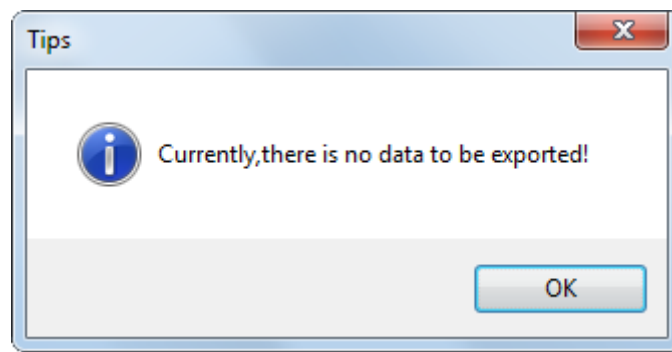
right click to show the **save as**, it only saves the sampling data image (file name .emf/.png/.gif/.jpg/.tif/.bmp),

right click to show the **export data**, it only saves the chart data (file name is .csv, can be opened in Excel).

(2) Click area 3 , exit file status.



(3) If it has not measured right now, right click to show **export data**, it will show below window:



Area 6: zoom in/out mode selection



Click to zoom out the image, put the mouse at the right side of the chart, drage the icon.

Click to zoom in the image.

Area 7: display/hide button in the operation area.

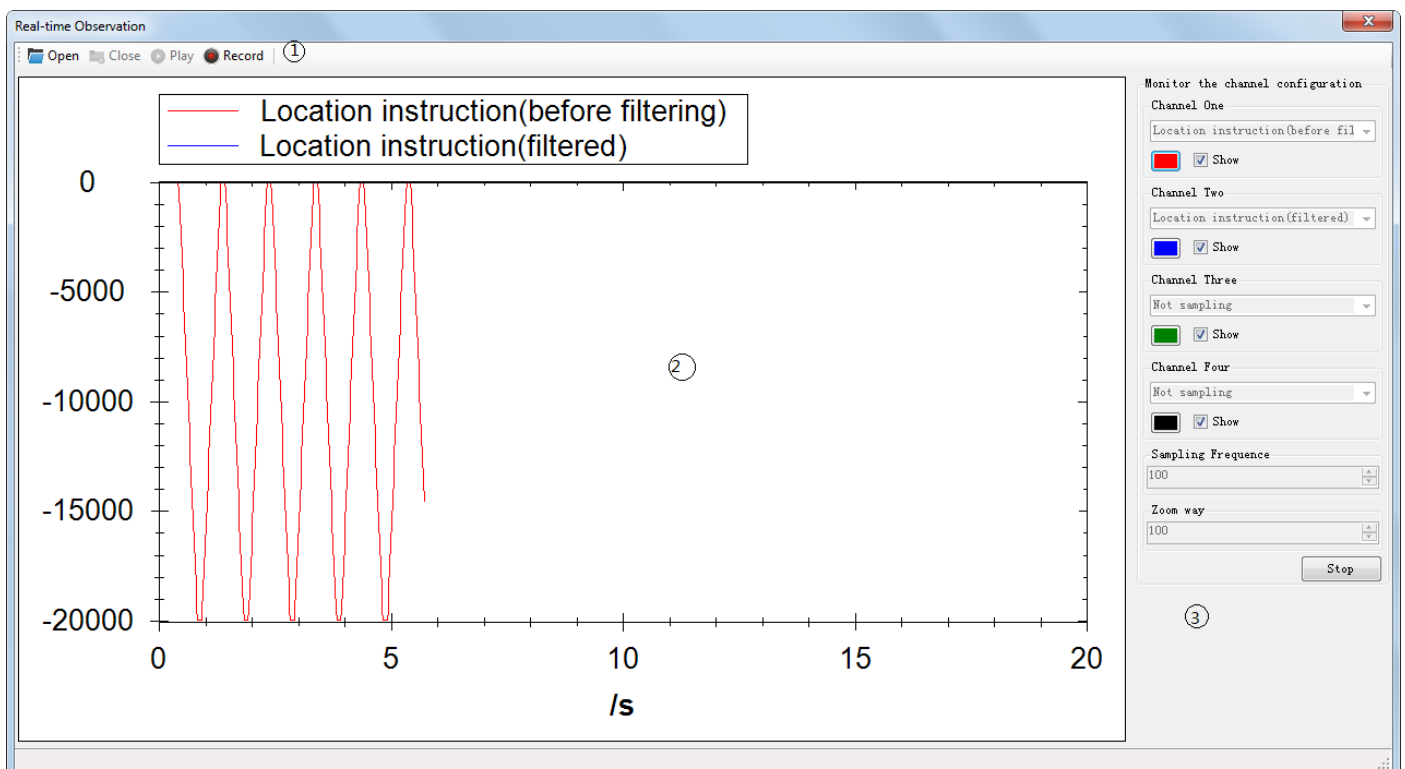


click this to zoom in area 1, hide area 2, 3, 4.

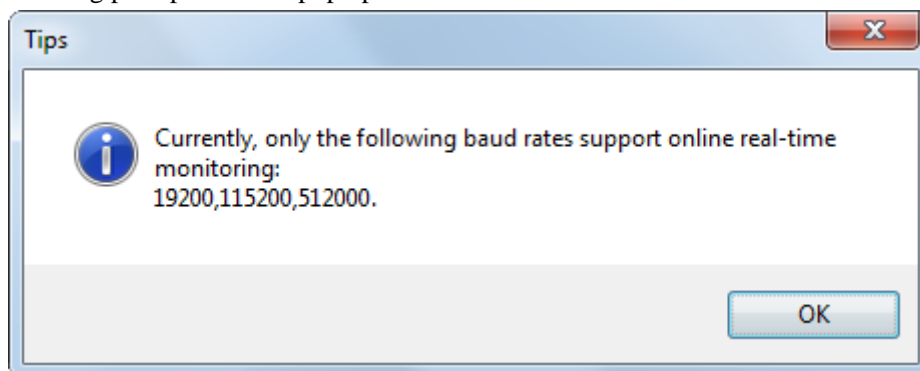


click this to zoom out area 1, display area 2, 3, 4.

## 4.5 Waveform Curve-Real-time Observation Window

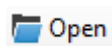


Note: Real-time monitoring can be opened offline. On-line, only when the baud rate is 19200, 115200, 512000 can it be opened, otherwise the following prompt box will pop up:



## **4.6 Composition of Waveform Curve-Real-time Observation Interface**

Area 1: menu



Open the historical recording data file and display the directory and recording date of the file in the status bar after opening the file. The style is as follows:

文件路径 : D:\1403.rsvm 2018-01-31 14:4:16



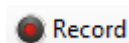
Close the open history data and clear the interface curve.



Play Historical Recorded Data Files



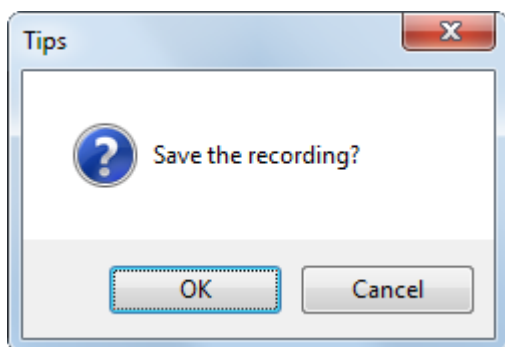
pause



record the real-time monitoring data



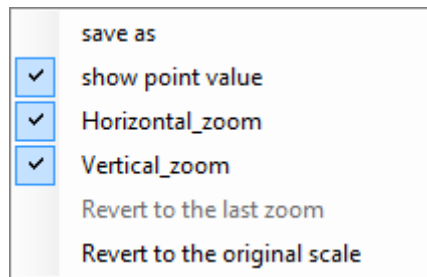
stop the recording, at the same time, the user is prompted whether to save or not.



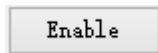
Area 2: Real-time display of data images

The X-axis of the graphical display interface represents the time unit (S), and the Y-axis represents the numerical range of real-time monitoring.

Right-clicking in the image area will display the prompt bar. As shown in the following figure, you can customize the image zooming mode (the function is similar to that of right-clicking in the curve acquisition interface).



Area 3: Configure the data to be observed



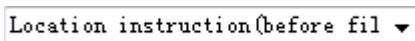
Displays the enabling status of the current connected servo.

Note:

- 1) Servo is in the enabling state, showing green; in the non-enabling state, no color change.
- 2) Only when the servo is software enabled, click enable to make the servo exit enabled state; click enable to make the servo enter enabled state.



Start the observation according to the observation configuration, and the button shows stop. Click stop, the observation ends, and the button changes to start.



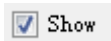
Choose the data that need to be observed to configure the channel.

Note:

- (1) When it is in the observation state, it is impossible to modify the test items.
- (2) When in the observation state, it is impossible to scale the chart and right-click the menu.



Corresponding to the color displayed on the channel curve.




Select whether the corresponding channel curve is displayed.

Note:

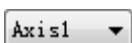
(1) When stop is displayed, the color and display selection box cannot be changed; click stop to display as start, and the user can change the color and display status of the curve.

(2) When the observation is stopped and the observation is started anew, the image of area 1 will be reset.

(3) When the real-time observation interface is in the observation state, opening the other functional interfaces will lead to errors in the real-time observation image. Users need to click stop, restart observation or click  to exit the real-time observation interface and open it again.

(4) Real-time monitoring and display of the curve will only show the current interface curve, the previous curve will be empty. When the user stops monitoring and drags the image, there is no curve beyond the current interface.

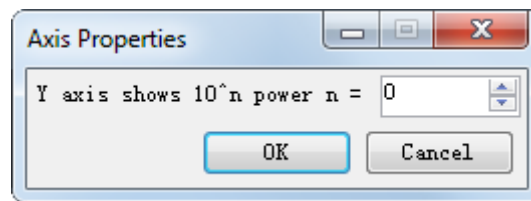
(5) When the servo is in the special mode, the user can only configure and monitor the location when it is in the trial-run enabling state (whether the software is in the state or the servo panel is in the state), and the configuration of other monitoring options will show errors.



the displayed axis corresponding to channel curve

## 4.7 Subfunction modules

### 4.7.1 Axis properties



Set the power value of the ordinate.

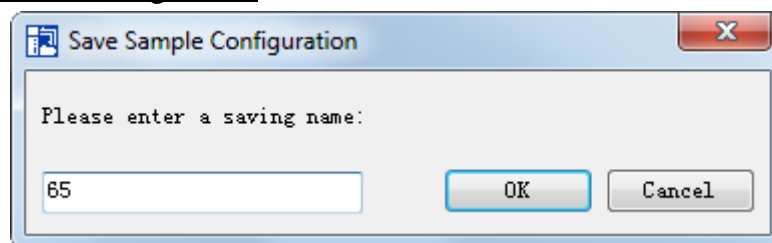


confirm the modification.



exit the interface.

### 4.7.2 Save Sampling Related Configuration



sampling configuration file name



Save the sample-related configuration, exit the interface, and add the save name to the drop-down box of area

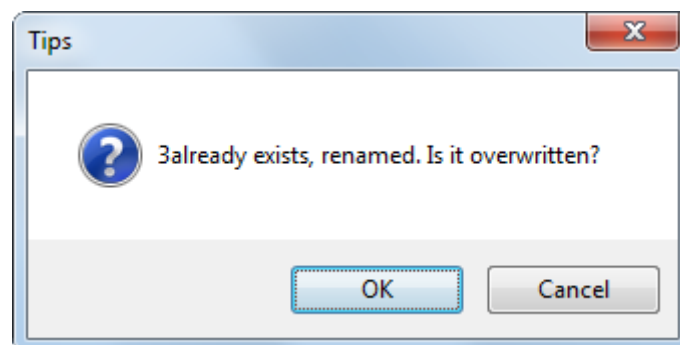
3.



exit the interface.

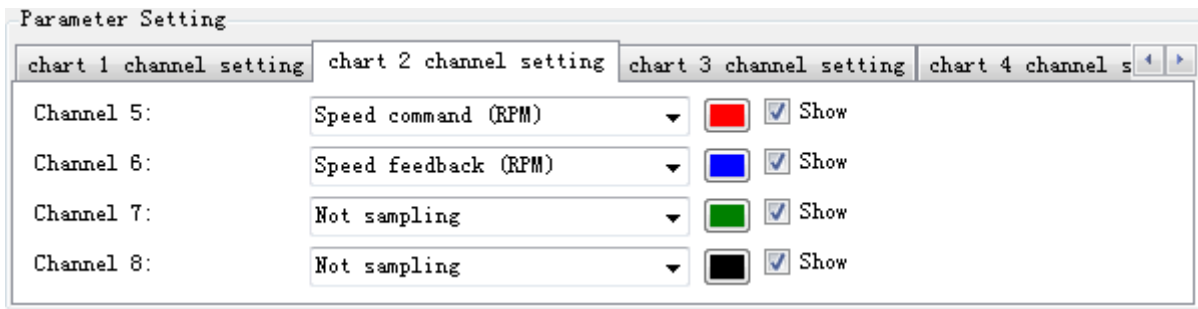
Note:

- (1) When more than 20 files are saved, the earliest saved files will be deleted.
- (2) If the file name is the same, the following dialog box prompts the user (example: "3" is the renamed name):



If the user clicks OK to overwrite and save the sample settings after overwriting; if the user clicks Cancel and does not save, the user needs to rename.

### 4.7.3 Sampling setting



Configure sampling mode, sampling frequency, sampling period and trigger sampling proportion.

Configuration of sampling channels, drop-down menu select channels to be sampled, while supporting manual input of sampling channels to configure the data to be sampled.

configure the sampling mode.

Common modes:

- 1) Motion trigger: After the upper computer software configures this mode, the motor rotates by sending pulse instructions through PLC. The software detects the existence of data in the servo data area and turns green (collectible).
- 2) Manual trigger: After the host computer software configures this mode, the servo will always collect data when it is powered on. When the servo is not enabled, manual trigger can also acquire data.
- 3) Alarm trigger: After the upper computer software configures this mode, the servo alarm occurs, and the software detects the data in the servo data area and turns green (collectible).
- 4) Enabling trigger: After the host computer software configures this mode, the servo enabler, the software detects the data in the servo data area and turns green (collectible).

set the sampling frequency.

set the sampling period and sampling proportion.

Sampling channel configuration (support drop-down box selection, but also support manual input (manual input can only enter values).



Corresponding color displayed on the channel curve.

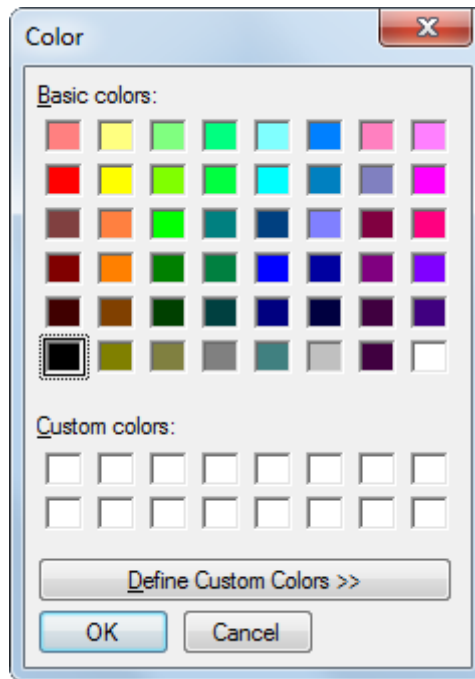
☒ Show

Select whether the corresponding channel curve is displayed.

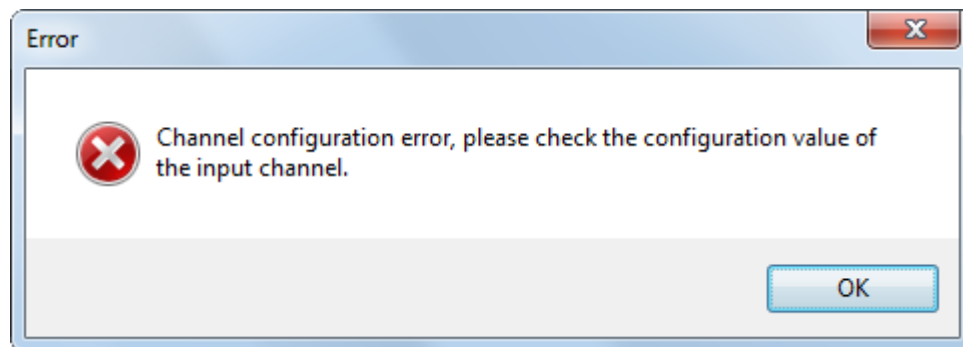
displayed axis corresponding to the channel curve

Note:

- (1) The curve is displayed according to the color of the color block corresponding to the drop-down box of the configuration channel. Clicking on the color block can select the color displayed by the corresponding channel curve.

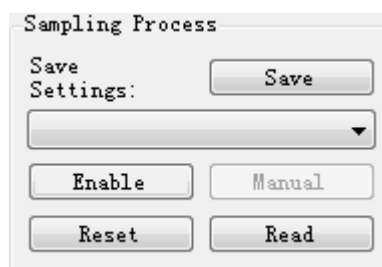


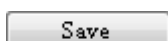
(2) If the user configures the channel by manual input, if the configuration is successful without any display; if the configuration fails, the following dialog box is displayed to prompt the user for the channel configuration error.



(3)The display of curve is controlled by the check box of channel configuration. In check state, the corresponding curve is displayed (if the channel is not set to sampling, it will not be displayed in check state in time); in non-check state, the corresponding curve is not displayed.)

#### 4.7.4 Sampling operation



 save the sampling configuration.



The saved name of the sample setting information saved by the user is displayed, which is convenient for the user to choose. After the user clicks on the selection, the sample configuration information corresponding to the save name is displayed in Zone 2, and the user does not need to configure the sample settings one by one.

Enable

Displays the enabling status of the current connected servo.

Note:

- 1) Servo is in the enabling state, showing green; in the non-enabling state, no color change.
- 2) Only when the servo is software enabled, click enable to make the servo exit enabled state; click enable to make the servo enter enabled state.

Manual

The button is triggered manually in sampling mode.

Note:

When the servo is powered on, the data will be collected all the time. When the servo is not enabled, the data can also be obtained by manual triggering.

Read

After data acquisition, the button becomes clickable. Click read to read the data from the driver and display the data in Area 1.

Note:

- 1) Display the progress bar when the software is in the data reading state.
- 2) When the software is in the data reading state, the software is in the non-operational state.
- 3) When the software is in the data reading state, area 4 will be emptied and quit the cursor setting state if there is data in it.

Reset

Reset the sampling settings and empty the sample data in the buffer.

Note:

The curve displayed on the interface will not be cleared.

#### 4.7.5 Cursor comparison

Cursor comparison						
Curve One	Torque instruction (A)	71.09	Curve Two	Torque current (A)	25.53	Add Clear
The observation object	Cursor One	Cursor Two	D-value	Max	Min	Average Value
x-axis	71	26	45	---	---	---
Torque instruction (A)	9.8	9.8	---	9.8	-9.8	-2.058
Torque current (A)	9.586	8.727	---	9.803	-12.703	-2.079
Curve difference	0.214	1.073	---	2.903	1.073	0.021

Displays the difference between the two curves within the cursor range.

Torque instruction (A)

select the curve

191.87

adjust the cursor position

Add

add the cursor, enter cursor setting status

Clear

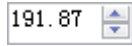
clear the cursor, exit the cursor setting status

Using method:

- (a) Select two curves (the two curves can be the same curve)
- (b) Click add, enter cursor setting status

- (c) In this interface, left click cursor 1, right click cursor 2, after cursor setting finished, the information of the two curves are shown in below table:

The observation object	Cursor One	Cursor Two	D-value	Max	Min	Average Value
x-axis	71	26	45	---	---	---
Torque instruction (A)	9.8	9.8	---	9.8	-9.8	-2.058
Torque current (A)	9.586	8.727	---	9.803	-12.703	-2.079
Curve difference	0.214	1.073	---	2.903	1.073	0.021

- (d) If you want to adjust the cursor position of two curves, you can adjust the cursor position through  on the right side of each curve, or you can select the cursor by clicking left and right again.
- (e) Click clear to clear the cursor setting.

#### 4.7.6 Channel Configuration Extension

In order to obtain better servo performance through curve acquisition function, the channel configuration is extended.

##### 4.7.6.1 Virtual channel

At present, there are virtual channels: speed (virtual channel RPM), acceleration (virtual channel RPM/ms).

When the user configures the channel, if the channel configuration value with virtual channel is configured, the corresponding virtual channel is automatically added to the channel configuration drop-down box; if the channel configuration with virtual channel is cancelled, the corresponding virtual channel is automatically removed from the channel configuration drop-down box.

For example, channel configuration [position instruction], channel configuration drop-down box automatically add [speed instruction (virtual channel RPM)]; channel configuration [position feedback], channel configuration drop-down box automatically add [speed feedback (virtual channel RPM)]; channel configuration [speed feedback (RPM)], add [acceleration (virtual channel RPM/ms)]. If the channel is not equipped with position instruction, [position feedback] or [speed feedback (RPM)], the drop-down box automatically deletes [speed instruction (virtual channel RPM)], [speed feedback (virtual channel RPM)] or [acceleration (virtual channel RPM/ms)].

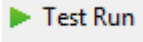
Note:

The configuration value of virtual channel in servo system has the same practical significance as that of non-sampling, both of which are 0.




## 5 Test run interface

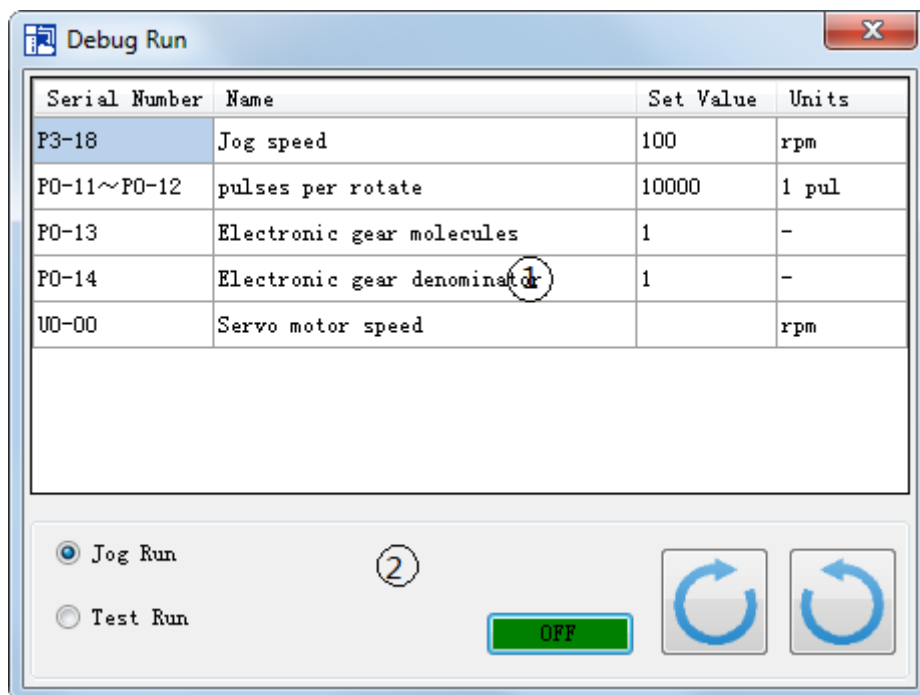
### 5.1 Start 【test run】

1. start XinjeServo software (run as administrator).
2. click  in the main interface.
3. the test run window will show

### 5.2 Close 【test run】

Click  to close the window.

### 5.3 Test run window

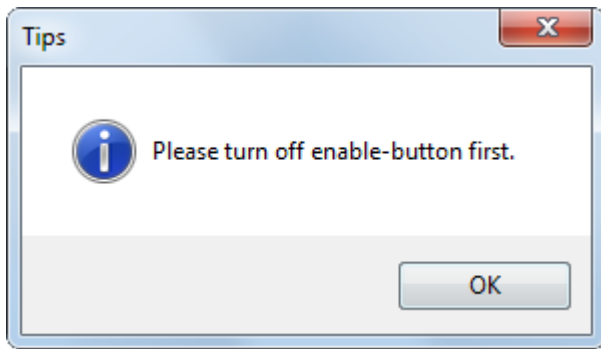


### 5.4 Composition of test run Interface

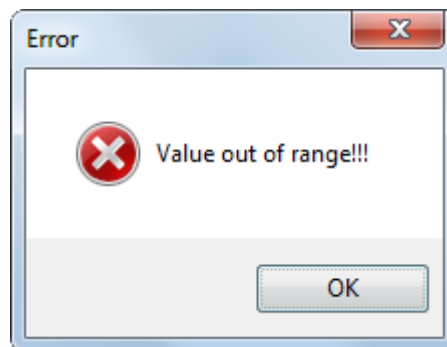
Area 1: Set parameter interface, set jog speed, motor pulse number per rotation and electronic gear ratio, and write setting data by pressing ENTER.

Note:

- (1) When the servo is in the enabled state, setting the parameters will result in the following dialog box prompting the user that the parameters cannot be modified at present.



(2) When the parameter configuration value exceeds the range, the following prompt box is displayed to prompt the user

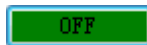


(3)When the parameter configuration value is not a pure number, the prompt box prompts the user to enter only the number

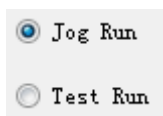
## Area 2: operation interface



click to start the servo enable



click to shut down the servo enable



choose the running mode.





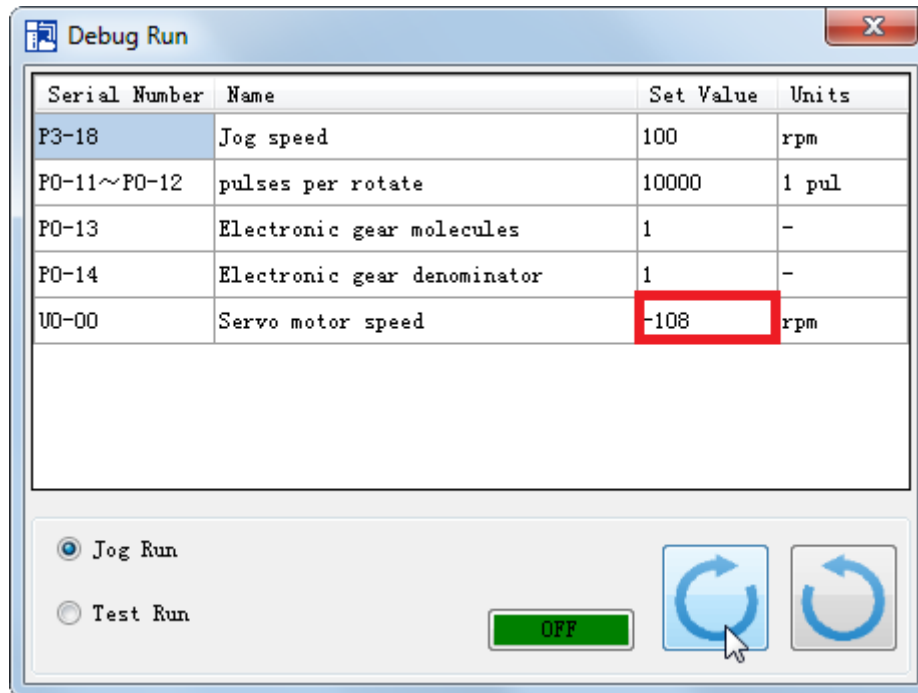
motor run forward.



motor run reverse.

Note:

- (1) When click  or , the value in red box will real-time change, display the present speed.




- (2) When in enabled status, which means the button in area 2 is off, user can switch between jog and test run.
- (3) When in enabled status, which means the button in area 2 is off, the enable status in main interface shows **enable**, at this time, servo is in enabled status (test run enabled status).

## 5.5 notes for test run


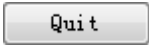
Servo jog run or test run will be in a dedicated mode, during which no other functions will be used. To use other functions, make sure that the test run interface is closed and the panel is not in the jog run or test run state.

## 6 Parameter comparison interface

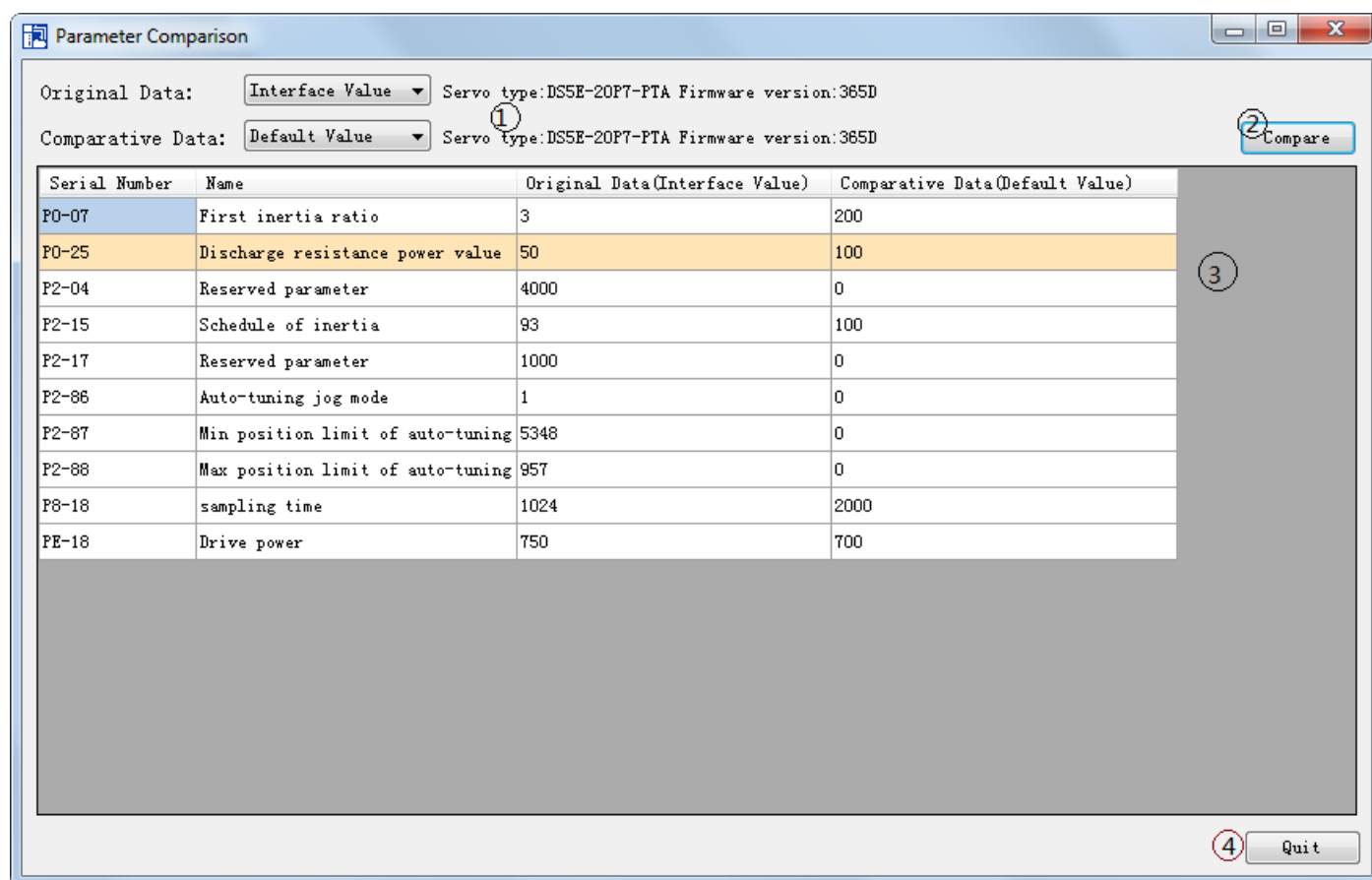
### 6.1 Start 【parameter comparison】

1. Open XinjeServo software (run as administrator)
2. Click  **Parameter Comparison** in the main interface.
3. It will show the parameter comparison window.

### 6.2 Close 【parameter comparison】

- (1) click the .
- (2) click the .

### 6.3 Parameter comparison window

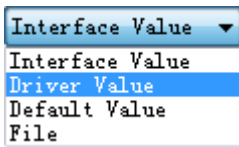


### 6.4 Composition of parameter comparison interface

Area 1: select the data to be compared

Original Data:

Comparative Data:



User-selected data for comparison (interface value, driver value, default value, file).

Servo type:DS5E-20P7-PTA Firmware version:365D

Display the information and status of the selected object (servo model, firmware version, file path (selected file as comparative data source)).

Note:

1) Display **The selected object has no data, please choose again!** if the selected comparative data source does not exist.

2) The selected comparative data source is the driver value. If the user is connected to the servo or is currently connected to the servo, the driver value is the data of the servo. Driver values are reset only when the software is restarted.

3) If you click on "Document" and do not select it, the following dialog box is displayed to prompt the user

Area 2:

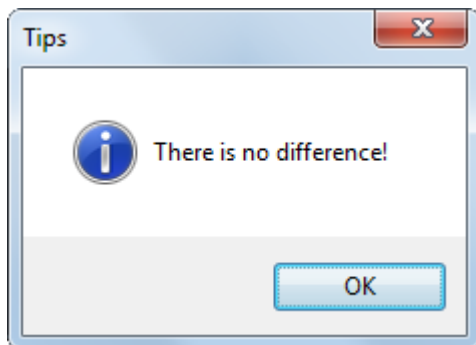


When both sides need to compare are selected, click the compare function button to compare the two sides.

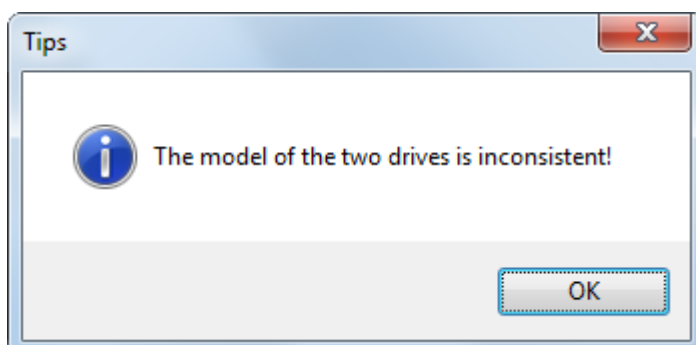
When the comparison is completed, the results of the comparison are displayed in the display area of the comparison results.

Note:

If the comparison button is clicked and the results are the same, the following dialog box is displayed



If the servo models of the two data sources are different, the following dialog box is displayed to prompt the user, and the results of the comparison are not displayed.



Area 3: After clicking the comparison function key to complete the comparison, the comparison results are displayed in the area.

**Serial Number** the parameter with different values


**Name** the parameter name

Original Data(Driver Value) parameter values of Object 1 and display the selected data objects in parentheses

Comparative Data(File) parameter values of Object 2 and display the selected data objects in parentheses

Area 4: Prompt the user for the meaning of the gray check box. If there is no gray check box in the current interface, no prompt is displayed

Area 5:

 exit the comparison interface.

## 7 Gain adjustment

### 7.1 Start 【Gain adjustment】

1. Open XinjeServo software (run as administrator).
2. click 【gain adjustment】 -> 【fast adjustment】。
3. it will show fast adjustment interface.

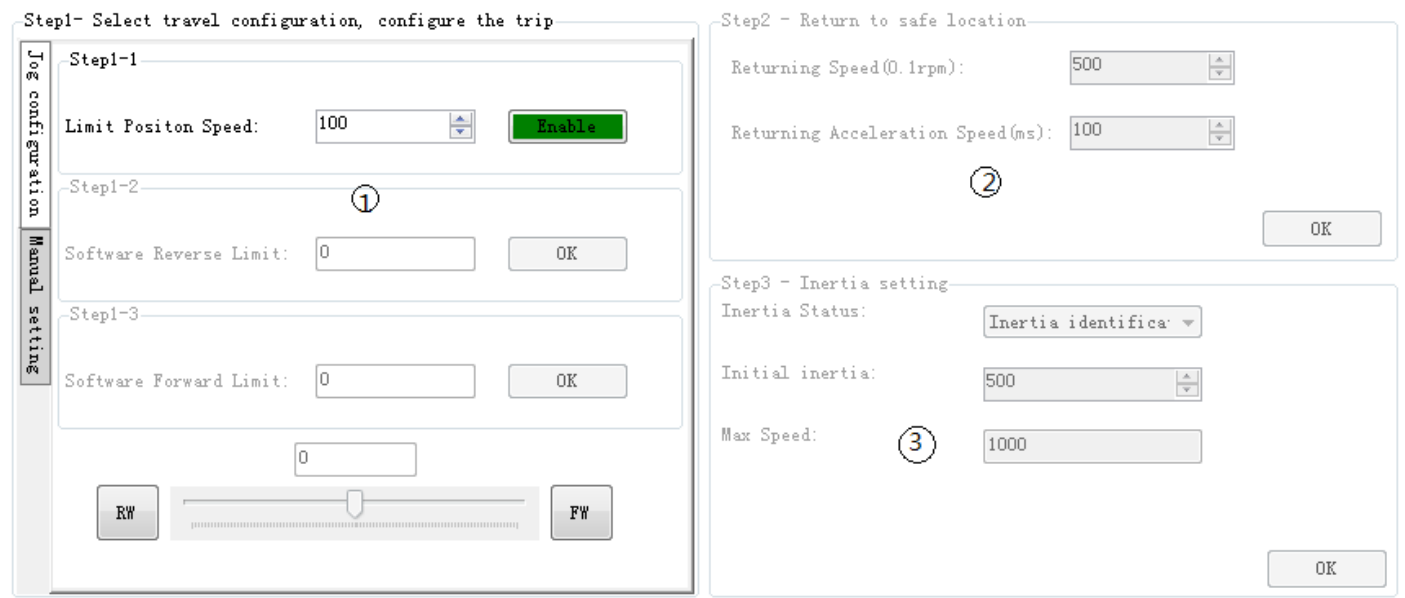
Note: Servo software only supports firmware version 3710 or above; other firmware versions can be operated by servo panel to achieve similar functions.

### 7.2 Close 【fast adjustment】

Click 


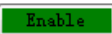
### 7.3 Fast adjustment window

#### 7.3.1 Inertia Identification Interface

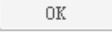


Step1- Select travel configuration, configure the trip

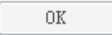
Step1-1

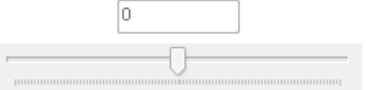
Limit Position Speed: 100  


Step1-2 ①

Software Reverse Limit: 0 


Step1-3


Software Forward Limit: 0 

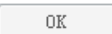
0 

RW 


Step2 - Return to safe location


Returning Speed(0.1rpm): 500 

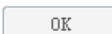
Returning Acceleration Speed(ms): 100 

② 

Step3 - Inertia setting

Inertia Status: Inertia identifica 

Initial inertia: 500 

Max Speed: ③ 1000 

### 7.3.2 Rigid level interface

Step 1: Set the rigidity level level.

If the machine produces large noise, it is not advisable to continue to increase the rigidity level.

Step 2: Fine adjustment of parameters can be modified at the set rigidity level.

④ If the stiffness level parameter does not meet the usage requirements, the following parameters

Rigid level setting

Rigid rating: 21 ⑤

Recommended rigidity level

10~15	Large machinery
15~20	Low-rigidity equipment such as timing belt ⑥
20~30	High rigidity equipment such as screw and straight connection

Parameter tuning

Responsive parameter ⑦ Help

SN	Name	Value	Unit
P2-49	Model loop gain	600	0.1Hz

Edit Write

Rigid parameter ⑧ Help

SN	Name	Value	Unit
P1-00	The first speed loop gain	450	0.1Hz
P1-01	The first speed loop integral ti...	1414	0.01ms
P1-02	The first position loop gain	400	0.1/s
P2-35	Torque instruction filter time c...	90	0.01ms

Edit Write

### 7.3.3 Instruction filter interface

Instruction filter for smoothing position commands for smoother operation

指令脉冲频率

⑨

— 滤波前  
— 滤波后

P1-24 P1-24 时间

指令脉冲频率

⑩

— 滤波前  
— 滤波后

P1-25 P1-25 时间

SN	Name	Value	Unit
P1-24	Position instruction first order...	1	0.1ms

SN	Name	Value	Unit
P1-25	Position command smoothing time ...	0	0.1ms

Read Write

### 7.3.4 Monitor interface

Torque

Color:

Display-State: ☒ show ⑪

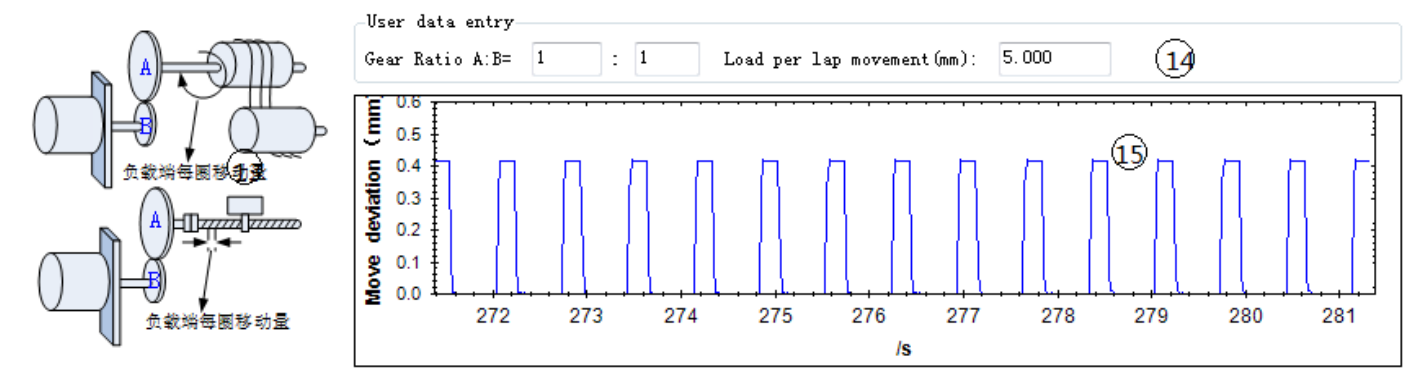
Pulse deviation

Color:

Display-State: ☒ show

⑫

/s



## 7.4 Composition of fast adjustment

Area 1: travel configuration: two modes: jog configuration, manual setting.

Jog configuration:

100

servo jog speed setting

Enable

set the servo to enable status, the button becomes

Enable

Enable

to exit the enable

status, the button becomes

Enable

0

display the motor positive and negative limit value

OK

confirm the motor limit value.

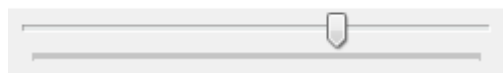
RW

click to make the motor run reverse

FW

click to make the motor run forward

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The slider displays the movement value of the current click. The text box shows the current click-and-move position for easy confirmation of the limit value.

Manual setting:

1.0

set the travel (display as circles)

☒ Forward

☐ Reverse

select the initial direction in auto-tuning

OK

confirm the travel and motion direction

Area 2: Return to safe location operation area: Move a certain distance backward according to travel configuration to improve safety

2000

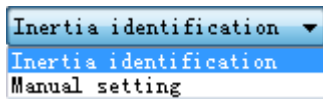
set regression speed, acceleration time

OK

motor starts to return to safety position.



Area 3: Inertia setting. Set inertia to prepare for auto-tuning.



select the inertia status, which is to set the inertia mode.



set the inertia value.

Note:

- 1) When the inertia identification is selected, the inertia value is the value needed in the identification process, and the identified result is the value used in the auto-tuning process.
- 2) When manual setting is selected, the inertia value is the value used in the auto-tuning process.



The highest speed in the process of inertia identification.



confirm the inertia settings

Area 4: Statement of rigid level configuration

Area 5: Rigidity level setting. Display the current rigidity level setting value in the form of a histogram



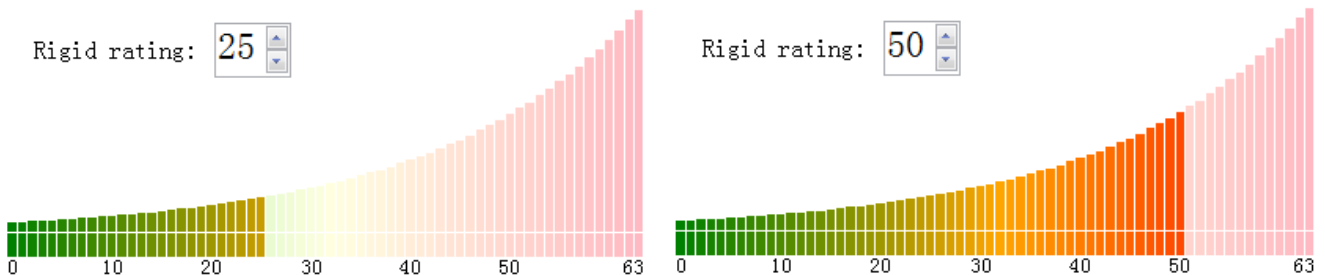
Rigidity level setting and numeric display

Note:

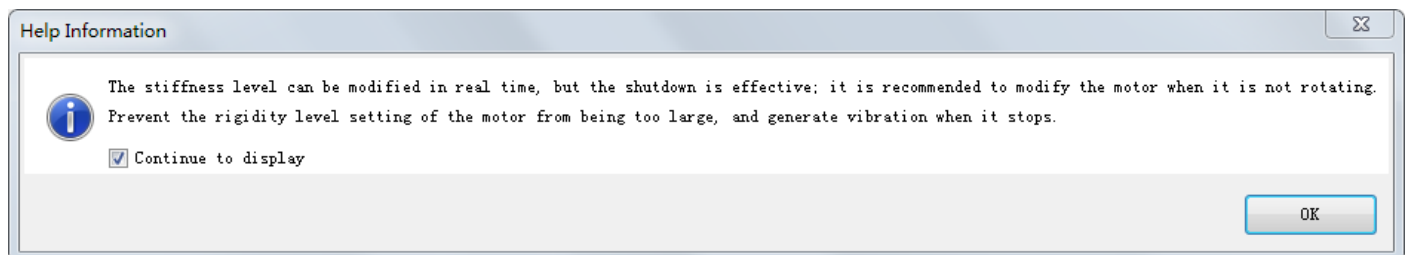
Modification of rigidity grade parameters will change the histogram.

Rigid rating: 25

Rigid rating: 50



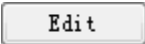

Click on Modify Rigidity Level Parameters to show the following prompts; select [Continue to display], Modify Rigidity Level Parameters will show the prompts; If you do not select [Continue to display], no prompts will appear. Turn it off and turn it on again. The prompt will continue to appear.


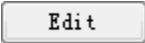


- (1) Do not modify rigidity grade parameters when in test run/jog run status.
- (2) Modify the rigidity level parameters, and the parameters in area 6 will be refreshed synchronously.
- (3) When the motor rotates, changing the rigidity level will not take effect immediately; only when the motor stops rotating, the modification will take effect.

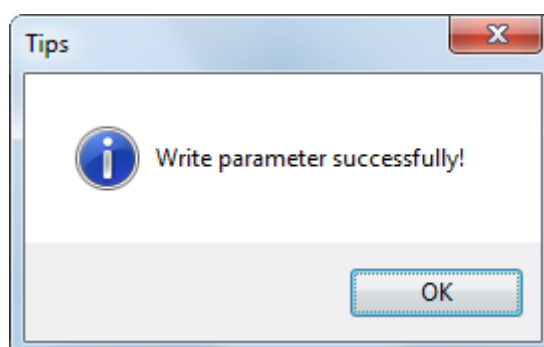
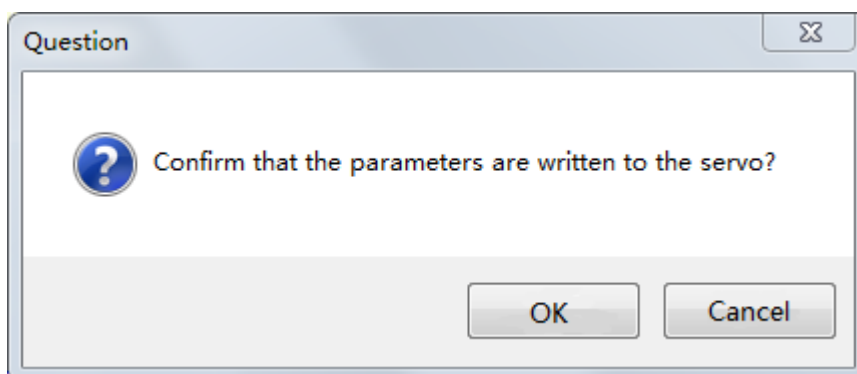
Area 6: Recommended Rigidity Level: Recommended Rigidity Level for Different Mechanical Structures

Area 7: Parameter fine-tuning-responsiveness parameter. Tables display corresponding parameters and parameters related information

 enter the table edit status, after clicking, the button becomes . The value in the table can be edited.

 enter table monitoring status, after clicking, the button becomes . The table cannot be edited.



 write in the parameters. Prompt the user whether to write parameters.




Note:

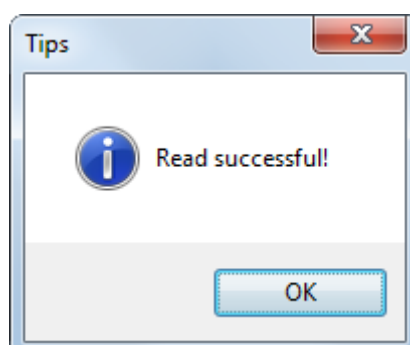
- (1) By modifying the parameter values, the corresponding cells will turn blue.
- (2) Reading the data will refresh the table data to the servo data, and the blue cells representing the modification will disappear; after writing the parameters, the blue cells will disappear.

Area 8: Parameter fine-tuning-responsiveness parameter. Tables display corresponding parameters and parameters related information.

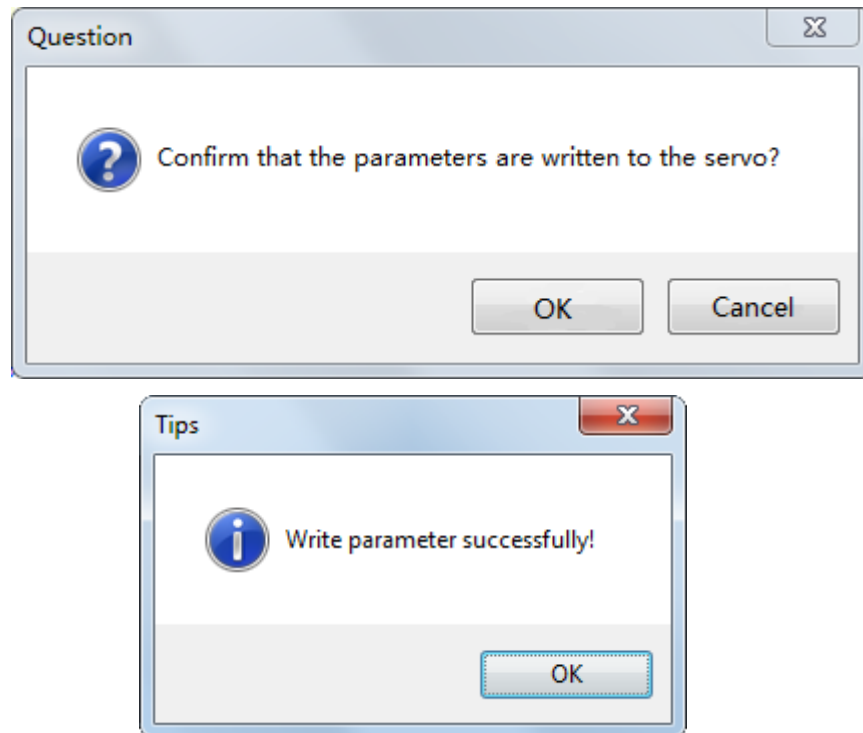
  display/hide the rigidity level parameter table

Area 9: Image and parameters corresponding to first-order low-pass filtering.

 read the parameters. Parameter reading is successful and prompts are displayed.



Write parameters. Prompt the user whether to write parameters.

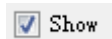


Area 10: Image and parameters corresponding to smoothing filtering

Area 11: Real-time Torque and Pulse Deviation Display Color and Display State Configuration



Current display color. Click to change the color configuration



curve display status

Area 12: Real-time Torque and Pulse Deviation Curve Display

Area 13: Mechanical Connection Structure

Area 14: Movement deviation settings

(1) The unit of movement per cycle at the load side is mm and the progress is 0.001 mm.

(2) Gear ratio can only be input integer


Area 15: Real-time curve of moving deviation

## **7.5 Operation process of inertia identification**

Please refer to auto-tuning interface chapter 8.

# 8 Auto-tuning

## 8.1 Start 【auto-tuning】

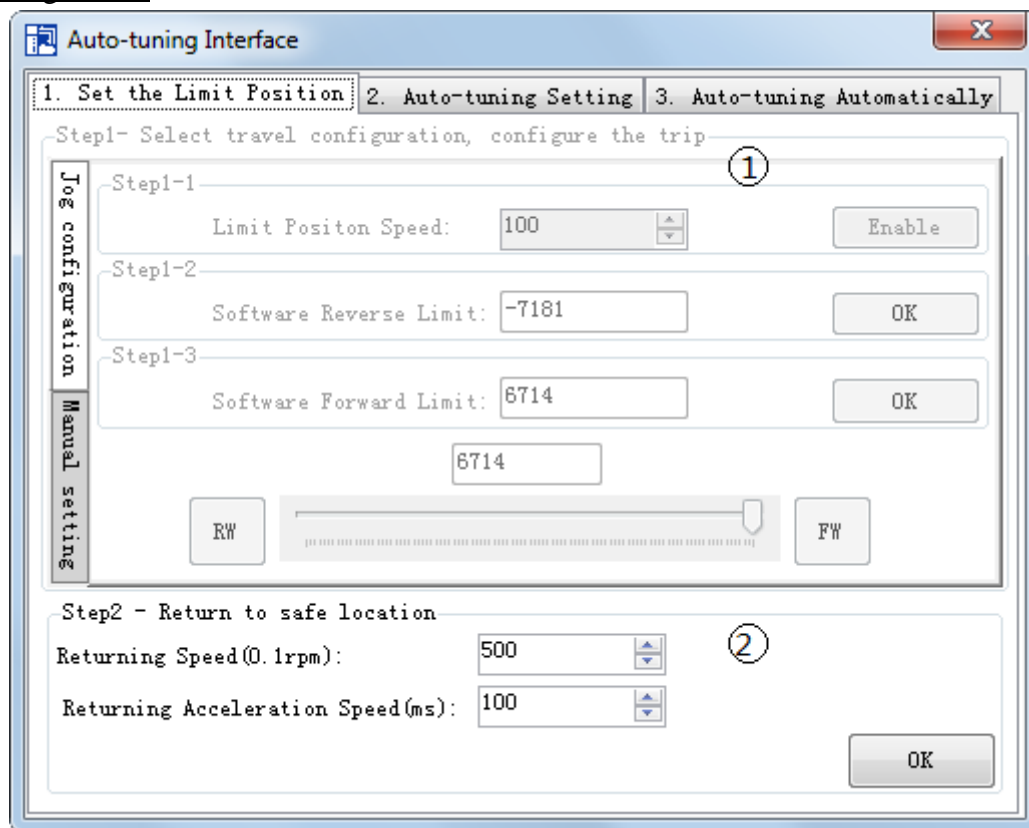
1. Open XinjeServo software (run as administrator).
2. Click  Auto-tuning
3. It will show the auto-tuning window

## 8.2 Close 【auto-tuning】

Click the 

## 8.3 Auto-tuning window

### 8.3.1 Limit configuration



The screenshot shows the 'Auto-tuning Interface' window with three tabs: '1. Set the Limit Position', '2. Auto-tuning Setting', and '3. Auto-tuning Automatically'. The first tab is active. It contains a section titled 'Step1- Select travel configuration, configure the trip' with a circled '1' next to it. On the left, there are two vertical tabs: 'Jog configuration' (selected) and 'Manual setting'. Under 'Jog configuration', there are three steps: 'Step1-1' with 'Limit Positon Speed' set to 100 and an 'Enable' button; 'Step1-2' with 'Software Reverse Limit' set to -7181 and an 'OK' button; and 'Step1-3' with 'Software Forward Limit' set to 6714 and an 'OK' button. Below these, there is a slider bar with 'RW' and 'FW' buttons. The 'Manual setting' tab is currently empty. Below the 'Step1' section, there is a section titled 'Step2 - Return to safe location' with a circled '2' next to it. It contains 'Returning Speed(0.1rpm)' set to 500 and 'Returning Acceleration Speed(ms)' set to 100, both with spinners, and an 'OK' button.

### 8.3.2 Auto-tuning configuration

The 'Auto-tuning Interface' window has three tabs: '1. Set the Limit Position', '2. Auto-tuning Setting' (selected), and '3. Auto-tuning Automatically'. It contains two sections: 'Step3 - Inertia setting' and 'Step4 - Tuning parameter configuration'.

**Step3 - Inertia setting**

Inertia Status: Inertia identification ③

Initial inertia: 500

Max Speed: 1000

OK

**Step4 - Tuning parameter configuration**

Setting Method: No instruction auto-tuning(no inertia identification)

Mode Setting: Rapid positioning(control overshoot)

Load Type: Screw ④

Max Speed: 1000

OK

### 8.3.3 Auto-tuning automatically

The 'Auto-tuning Interface' window has three tabs: '1. Set the Limit Position', '2. Auto-tuning Setting', and '3. Auto-tuning Automatically' (selected). It contains a checkbox 'Default Parameter Auto-tuning' ⑤ and 'Start' ⑥ and 'Quit' buttons.

☐ Default Parameter Auto-tuning ⑤

Start ⑥ Quit

Status Register	Current State	Update Parameter	Value
auto-tuning stage		P0-07	
		P1-00	
		P1-01	
		P1-02 ⑦	
		P1-10	
		P1-11	
		P1-12	
		P1-33	
		P2-00.0	
		P2-00.1	
		P2-00.2	
		P2-00.3	

## 8.4 Composition of auto-tuning Interface

Area 1: travel configuration area: jog configuration, manual setting.

Jog configuration

100

servo jog run speed

Enable

set the servo status to enable, the button becomes

Enable

; click

Enable

, set the servo to exit

the enable, the button becomes

Enable

0

motor forward and reverse direction limit value.

OK

to confirm the motor limit value.

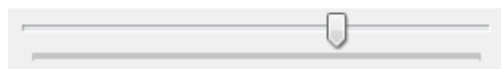
RW

press it to make the motor run reverse.

FW

press it to make the motor run forward.

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The slider displays the movement value of the current click. The text box shows the current click-and-move position for easy confirmation of the limit value.

Manual setting:

1.0

to configure the travel (display in circles)

☒ Forward

☐ Reverse

choose the initial direction for auto-tuning.

OK

confirm the travel and motion direction.

Area 2: Return to safe location operation area: Move a certain distance backward according to travel configuration to improve safety

2000

returning speed, acceleration time setting

OK

to confirm the motor returning safety position.

Area 3 Inertia setting. Set inertia to prepare for auto-tuning

Inertia identification  
Inertia identification  
Manual setting

choose the inertia status which is the inertia mode.

2000

set the inertia value

Note:

(1) When the inertia identification is selected, the inertia value is the value needed in the identification process, and the identified result is the value used in the auto-tuning process.

(2) When manual setting is selected, the inertia value is the value used in the auto-tuning process.

2000

max speed in the inertia identification

Area 4: choose the auto-tuning parameters (mode setting, auto-tuning mode, rigidity level)

Area 5:

☒ Default Parameter Auto-tuning set the auto-tuning parameters

Area 6:

Start

start the auto-tuning

Quit

exit the auto-tuning.

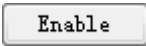
Area 7: display the auto-tuning status.

## 8.5 Auto-tuning process

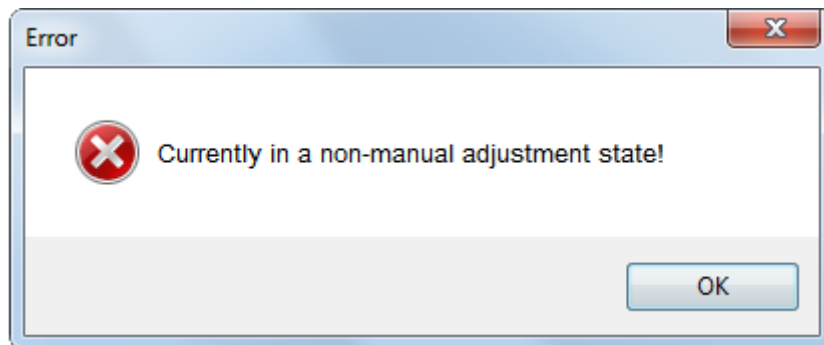
### 8.5.1 Configure the travel

(1) choose travel configuration mode, set the auto-tuning travel.

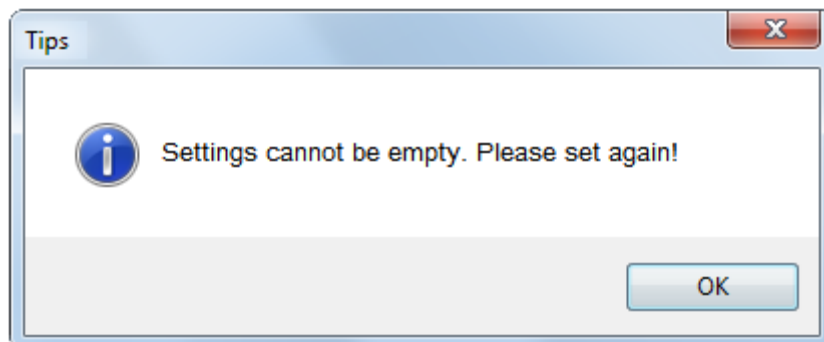
Jog configuration:



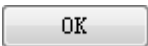
1. Set the limit position running speed, click . Before enabling, the software will judge whether the servo can be enabled or not.




A. Judging that the servo is in manual adjustment, if it is not in this state, the following errors occur:

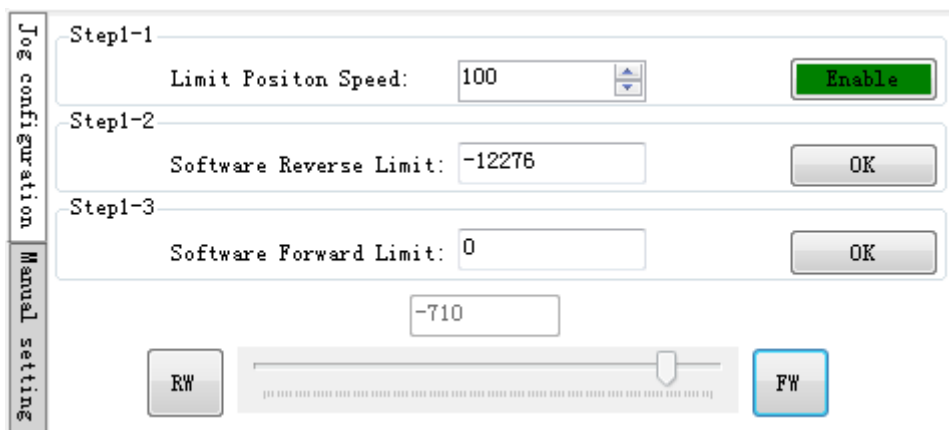


B. Determine whether the speed of limit motion is empty. If it is empty, display the following prompt box



2. Click motor running button   to make the motor move. After confirming the reverse limit, click  of reverse limit.

3. Click motor running button   to make the motor move. After confirming the forward limit, click  of forward limit, complete the travel setting.





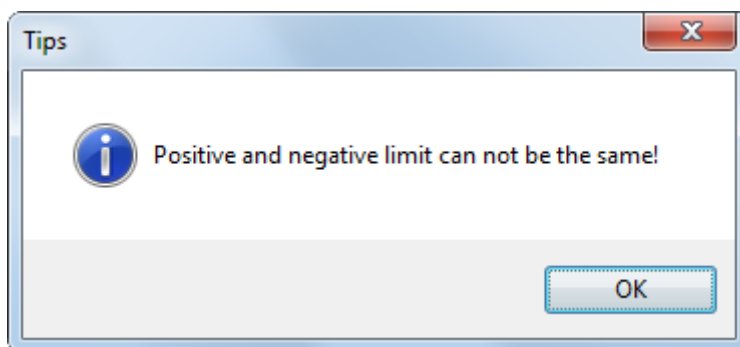
The dialog box is titled 'Jog configuration' and has two tabs: 'Jog configuration' and 'Manual setting'. The 'Jog configuration' tab is active. It contains three steps:

- Step1-1:** 'Limit Positon Speed:' with a value of 100 and an 'Enable' button.
- Step1-2:** 'Software Reverse Limit:' with a value of -12276 and an 'OK' button.
- Step1-3:** 'Software Forward Limit:' with a value of 0 and an 'OK' button.

Below the steps, there is a slider control with a value of -710. At the bottom, there are two buttons: 'RW' (Reverse) and 'FW' (Forward).

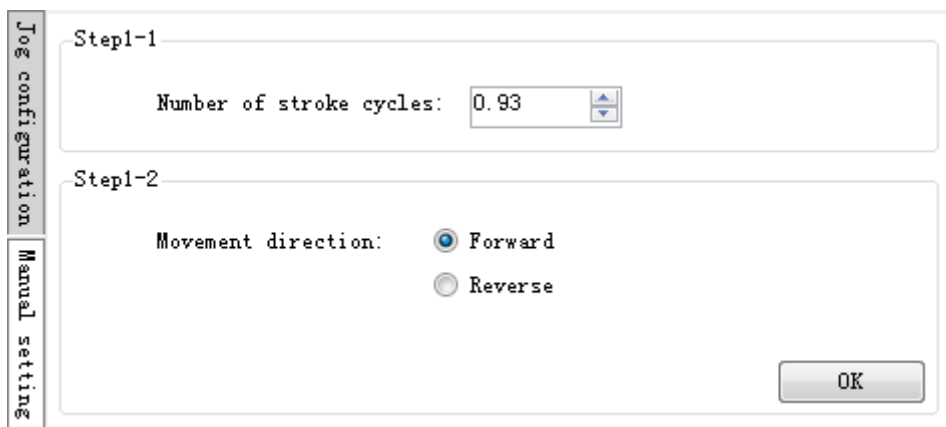
Note:

- (1) Configure limits by jogging. If the positive and negative limits are the same, the following dialog box prompts the user. User can click   to make the motor move, set different value for positive and negative limit.



Manual setting:

1. Set the number of travel cycles (the number of cycles increases or decreases by 0.1 cycles, the minimum number of cycles is 0.1 cycles, the maximum is 32 cycles).
2. Choose the initial direction of motor motion (default forward direction) during the setting process.
3. Click OK to complete the travel configuration.



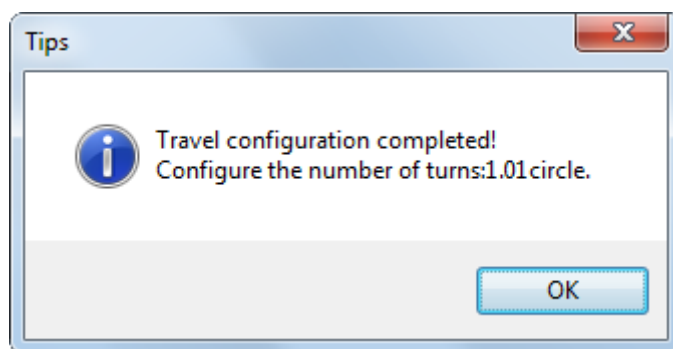
The dialog box is titled 'Manual setting' and has two tabs: 'Jog configuration' and 'Manual setting'. The 'Manual setting' tab is active. It contains two steps:

- Step1-1:** 'Number of stroke cycles:' with a value of 0.93 and a spin button.
- Step1-2:** 'Movement direction:' with two radio buttons: 'Forward' (selected) and 'Reverse'.

At the bottom right, there is an 'OK' button.



Whether it is "jog configuration" or "manual configuration", after the configuration is completed, the following dialog box appears, prompting the user the setting cycles.

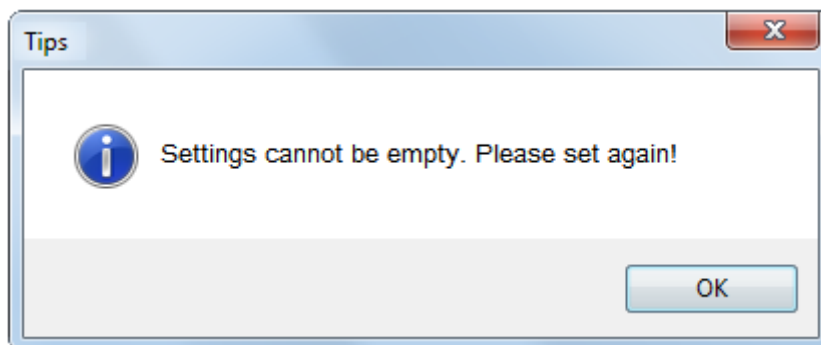


Note: Servo firmware version 3640 and later version do not need to return to the safe position after setting the travel manually, and automatically jump to the setting configuration interface.

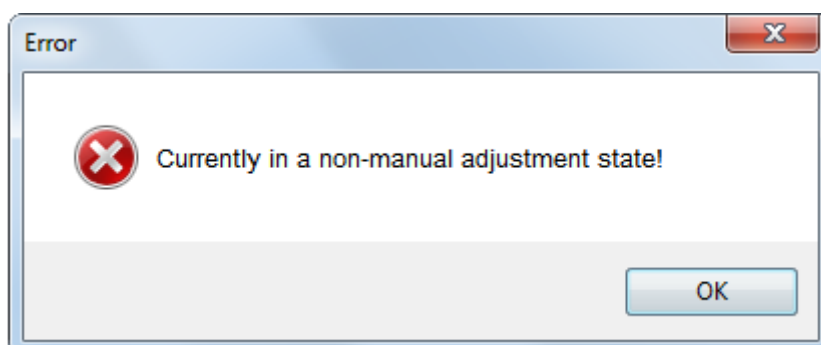
## (2) return to safety position

After configuring the journey, considering the safety problem, it is necessary to click on the return safe position to move backwards, reduce the size of the journey (5% of the total journey), and prevent the motor from colliding with the equipment at both ends of the track in the setting process.

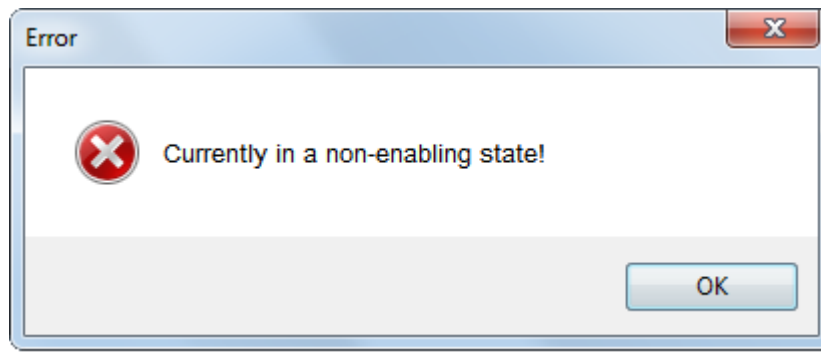
Configure the regression speed and acceleration, and click OK to return to the safe position. The software detects whether the regression velocity and acceleration are empty. If they are empty, the following prompts appear.



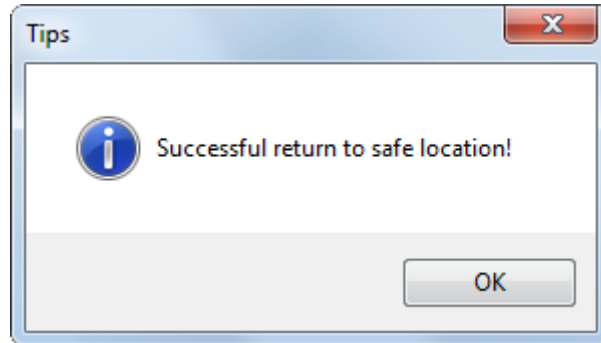
Judging that the servo is in manual adjustment, if it is not in this state, the following errors occur:



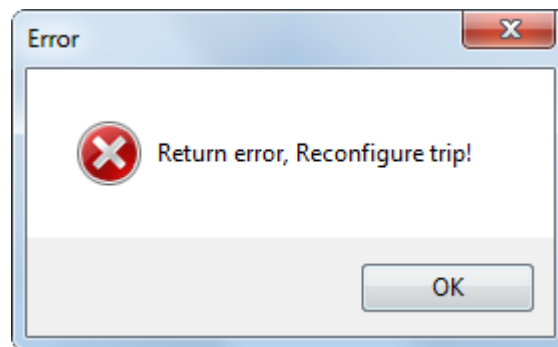
If the servo enabled state is not determined, the following error occurs:



If motor returning is successful, it will show below window:



If the return fails, pop up the dialog box. Users need to reconfigure limits.



Note:

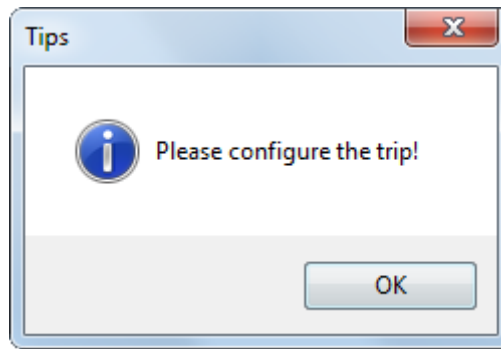
(1) The distance to return to the safe position is 5% of the total distance of the configurable limit, that is, 5% of the safe distance should be reserved in the auto-tuning process.

(2) If it successfully returns to the safe position, jump to 2. Auto-tuning Setting automatically, set the auto-tuning mode to get the best effect.

(3) If there is a problem in configuring the limit, click **Enable** to exit the enabling state.

(4) If the user does not want to continue the jog configuration in the jog configuration process, he can click on the "manual setting" and exit the "jog configuration mode".

(5) Enter the auto-tuning function interface, click 2. Auto-tuning Setting or 3. Auto-tuning Automatically directly, and the following dialog box appears

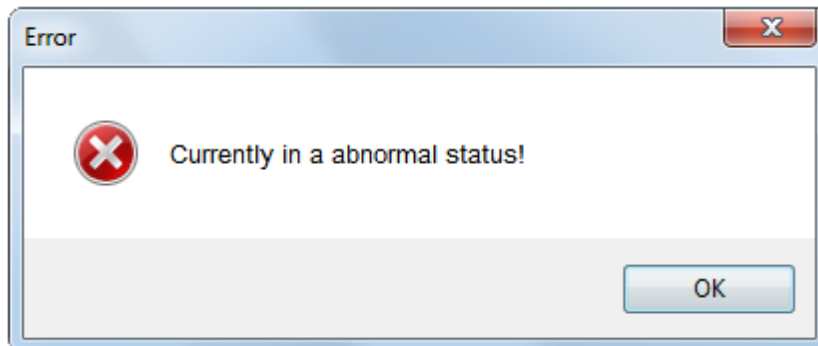
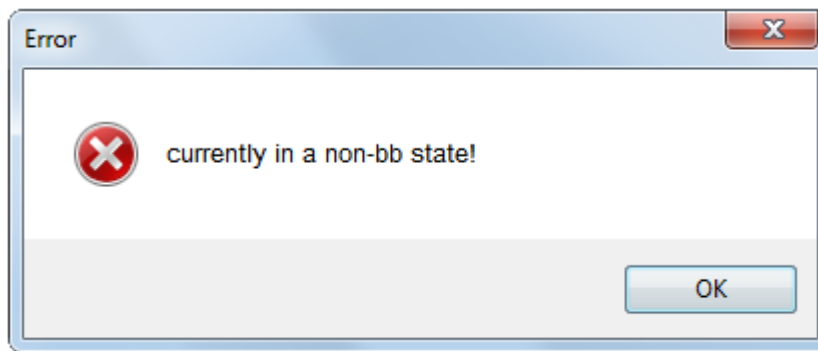


### 8.5.2 Auto-tuning configuration

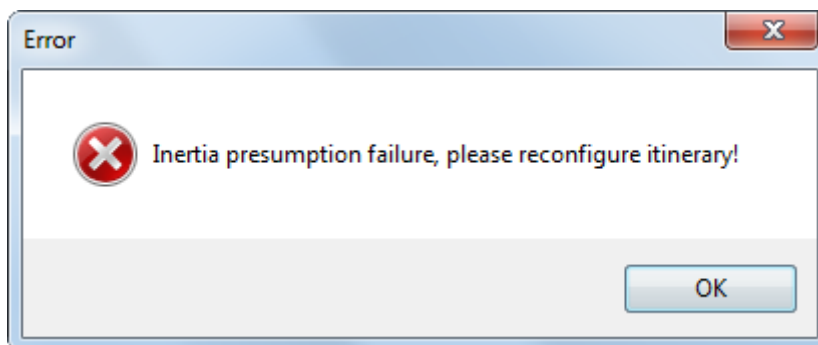
Inertia identification is needed before users can start auto-tuning operation. There are two kinds of inertia states:

(1) Inertia identification:

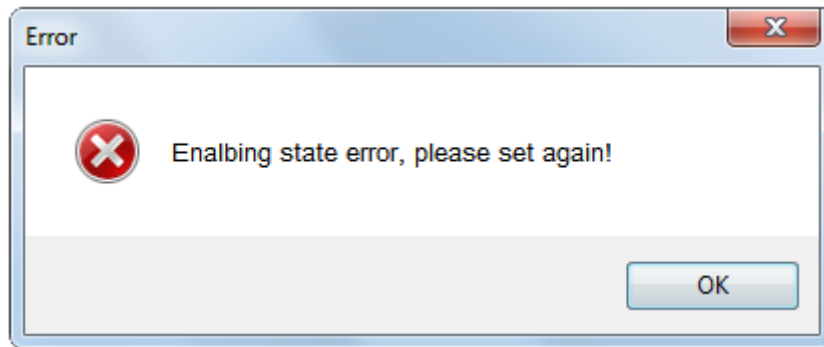
After the user has set the initial inertia, click OK. If the current servo operation status is incorrect, the following dialog box will appear:



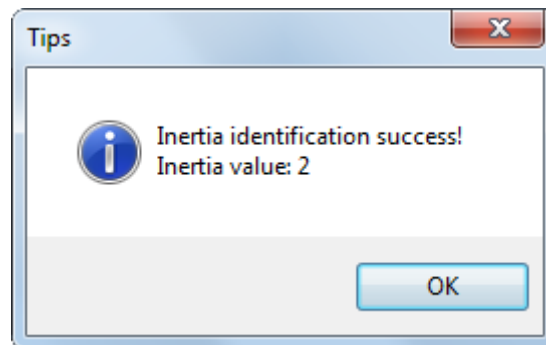
After that, it is judged whether it can enter the inertia identification setting mode. If the setting mode is wrong, the following prompts are displayed.



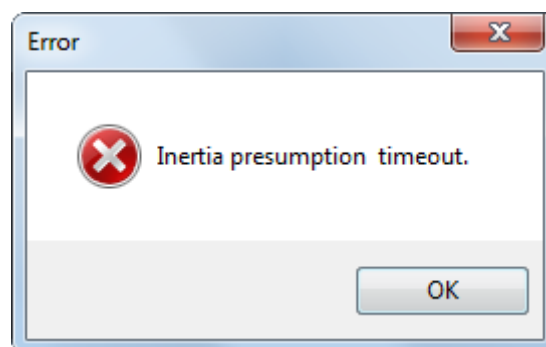
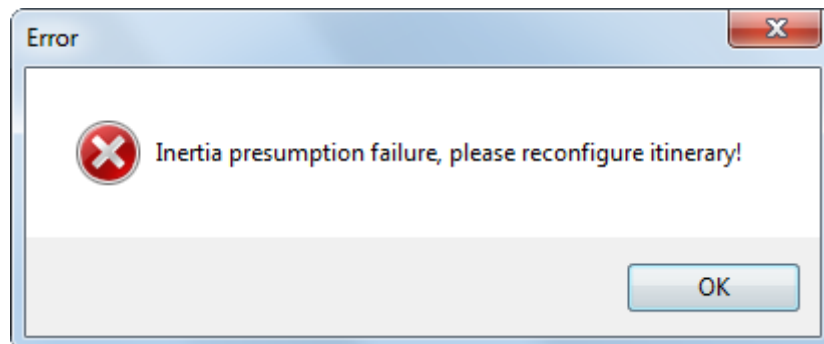
Determine whether the enabled state is normal or not, if the state error shows the following prompt box



The inertia identification is successful and the following dialog box appears.

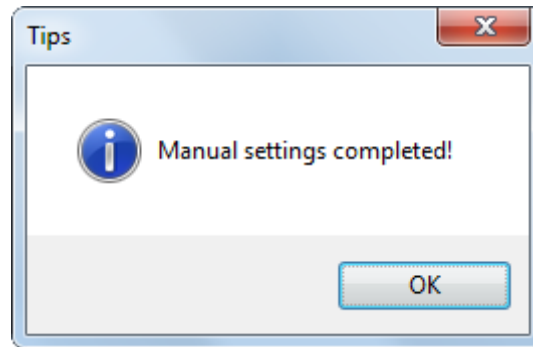


If inertia identification fails or presumptive timeout (30s), the following dialog box prompts the user. If the inertia identification fails, the wrong explanation will be displayed. For example: external inertia identification operation.



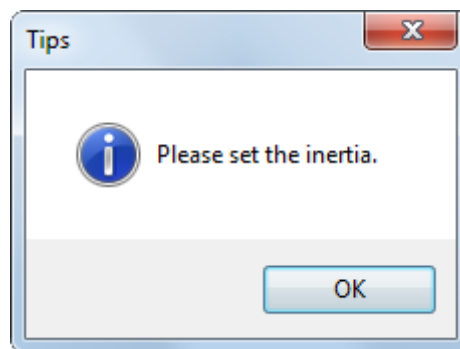
(2) manual setting:

If the user knows the inertia value, it can be set directly. After completion, the following dialog box appears

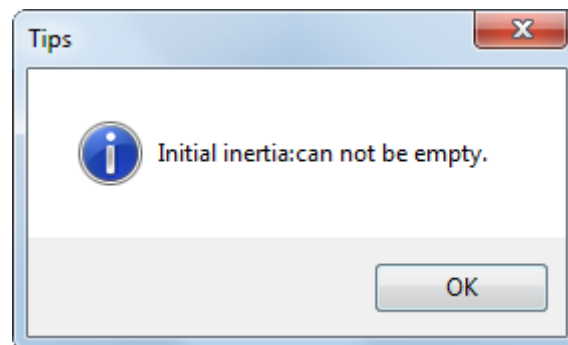


Note:

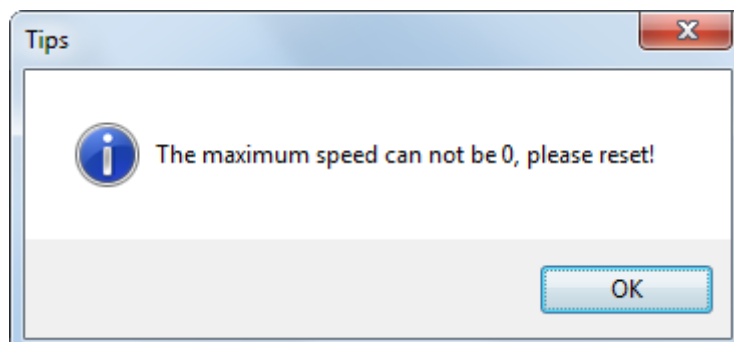
- (1) Click **3. Auto-tuning Automatically** : If the "inertia setting" is not done, the following dialog box appears; if it has already been done, the dialog box does not appear.



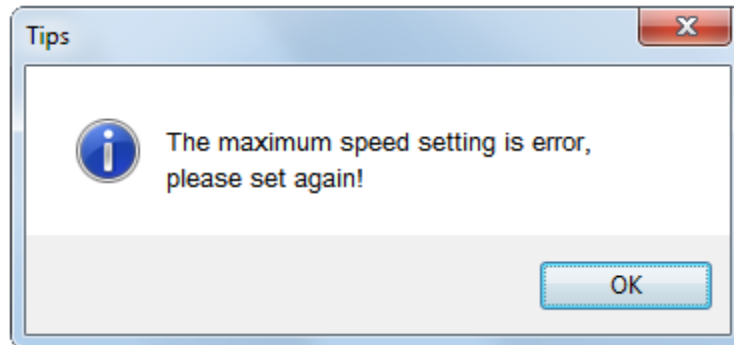
- (2) If misoperation occurs during setting "Initial Inertia", set it to empty and display the following dialog box to prompt the user.



- (3) If user sets the max speed to 0, it will show below window.



- (4) If the user sets the max speed to empty, it will show below window.



- (3) Setting the auto-tuning mechanism: auto-tuning mode, mode setting, load type, maximum speed (no instruction)

Auto-tuning method:

A) Instruction-free tuning (without inertia identification)

B) Instructional tuning (without inertia identification)

Mode setting:

A) soft

B) Fast positioning

C) Fast positioning (control overshoot)

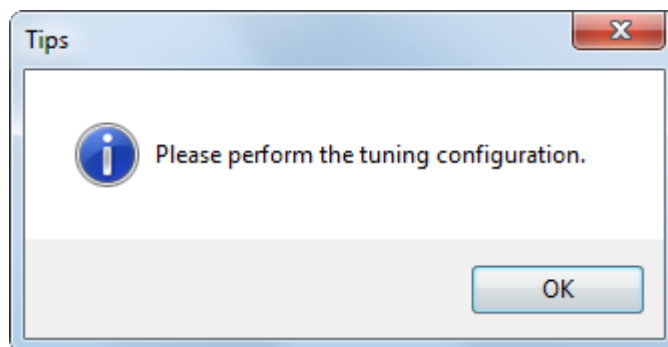
Load type:

A) synchronous belt

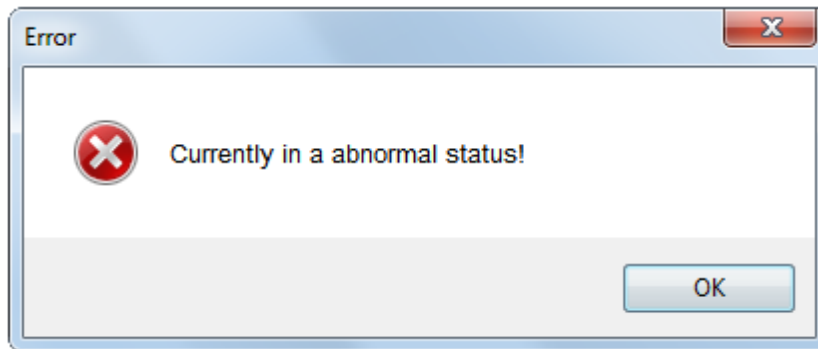
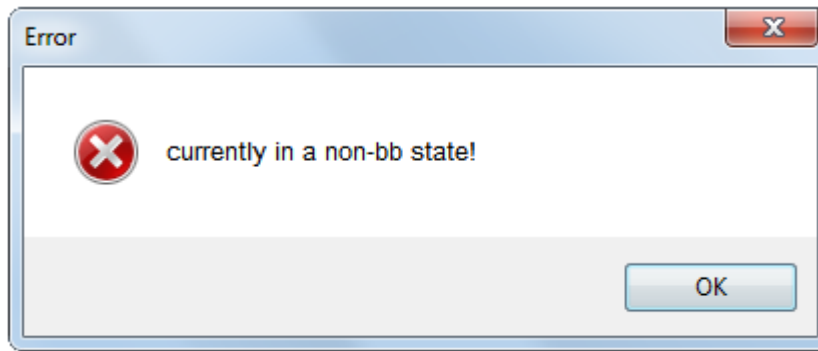
B) screw rod

C) Rigid connections

If the user does not set the auto-tuning mechanism, click 3. Auto-tuning Automatically to appear the following dialog box to prompt the user to set the auto-tuning mechanism.

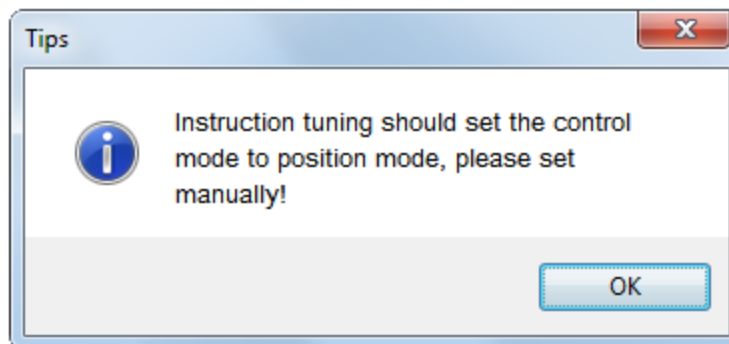


(4) Maximum speed: In the process of "inertia identification" and "no instruction setting", the "maximum speed" should be set (default is 2000, note that "maximum speed" can not be 0, otherwise inertia identification will be wrong). When "instruction setting" is selected, the "maximum speed" need not be set. After the user sets the parameters, click OK. If the current servo operation status is incorrect, the following dialog box will appear:

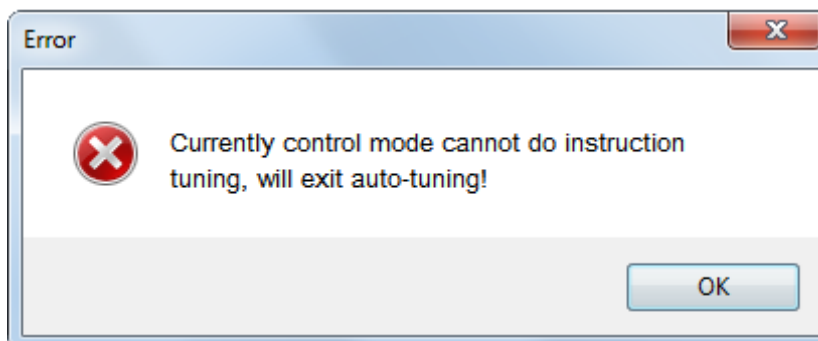


After the detection is completed and passed, if the user configures the "auto-tuning mode" as "instruction tuning", the servo control mode and enabling setting state will be detected.

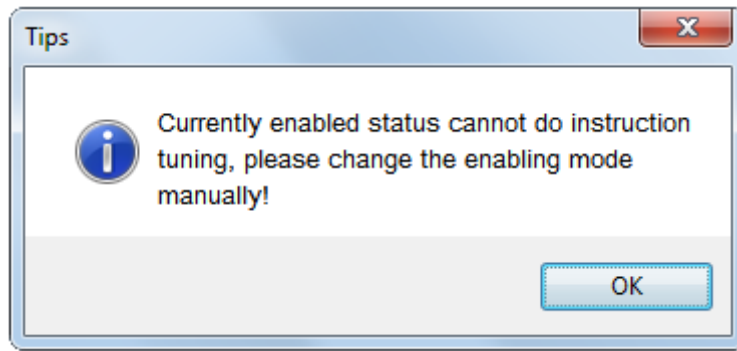
A. If the control mode is not position control mode, the following prompts will appear



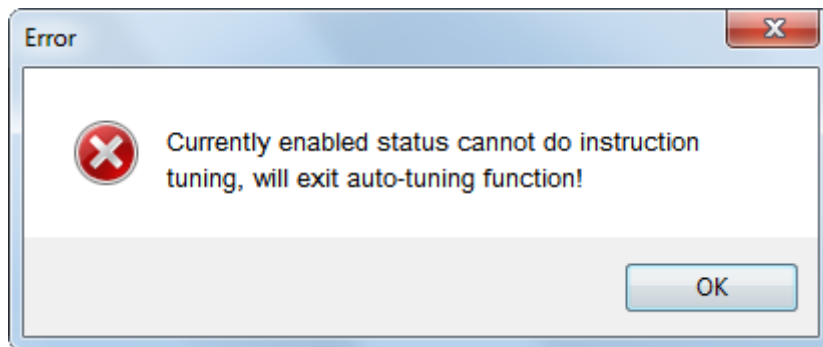
This prompt will appear three times. If the user hasn't changed it after three prompts, the following error statement will appear and exit the auto-tuning function.



If the enabled state cannot do instruction tuning, the following prompt box will appear to prompt the user for modification.

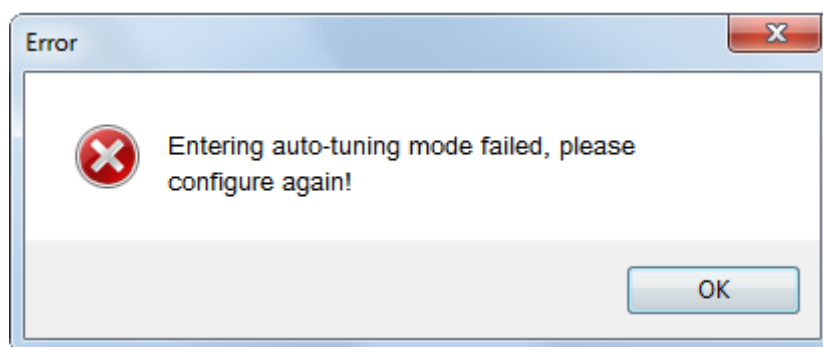


This prompt will appear three times. If the user hasn't changed it after three prompts, the following error statement will appear and exit the auto-tuning function.



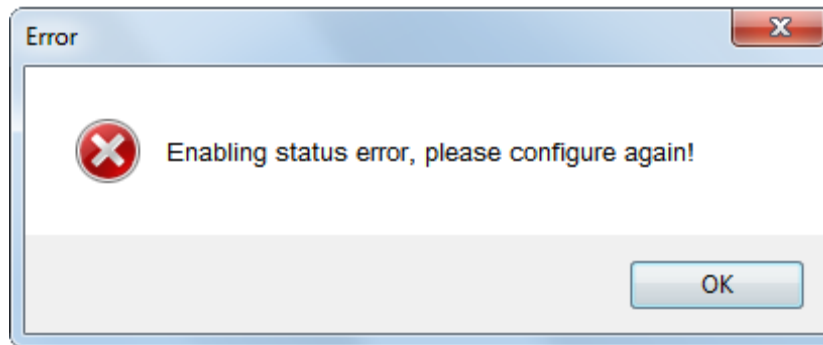
### 8.5.3 Auto-tuning automatically

- (1) If you want to use default parameters for tuning, you need to select the default parameter tuning;
- (2) After clicking , determine whether you can enter the auto-tuning mode. If you can't, display the following prompt box.





Determine whether the enabled state is normal or not, if the state error shows the following prompt box

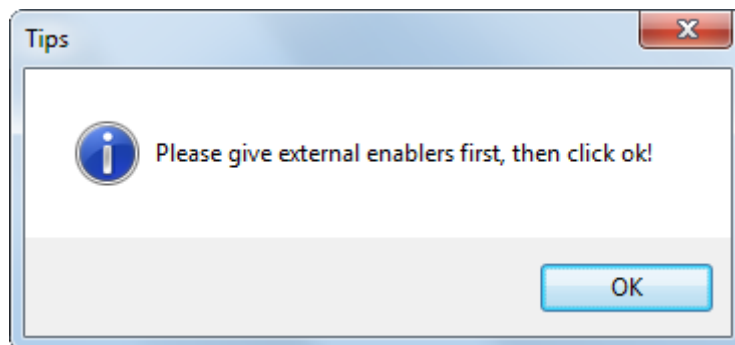


Exit the auto-tuning.

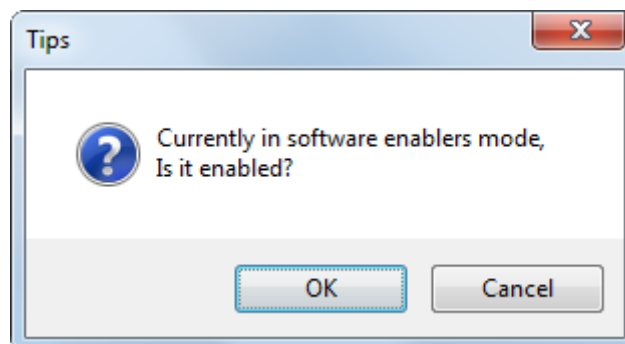
1) If the user uses no instruction tuning, after configuring the inertia, click  to start tuning, and area 7 shows the tuning process.

2) If the user sets instructions tuning, and clicks  after configuring the inertia, the software will pop up three different dialog boxes according to the enabling mode of the user configuration and the distribution of the servo ON signal terminals as follows:

One: The user configuration enabling mode is IO enabling, and the servo ON signal is not normally closed.

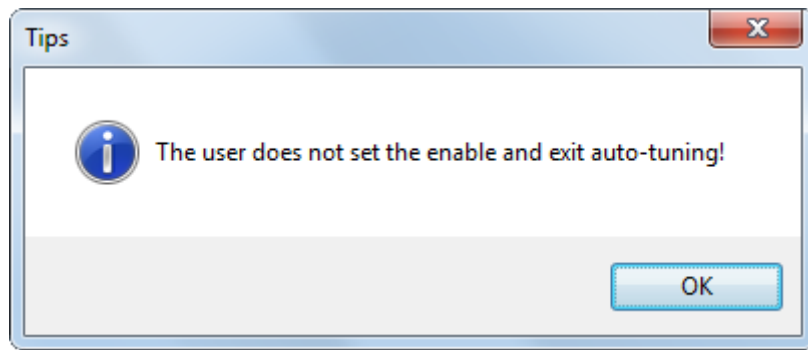


Two: enabling mode is software enabled.

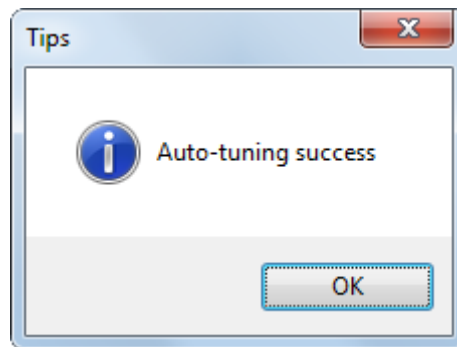


In case one, if the user can click OK to start auto-tuning, and area 7 shows the tuning process; if the user does not enabling click OK, the dialog box will appear three times; if all are not enabled, the following dialog box will appear and exit the auto-tuning.

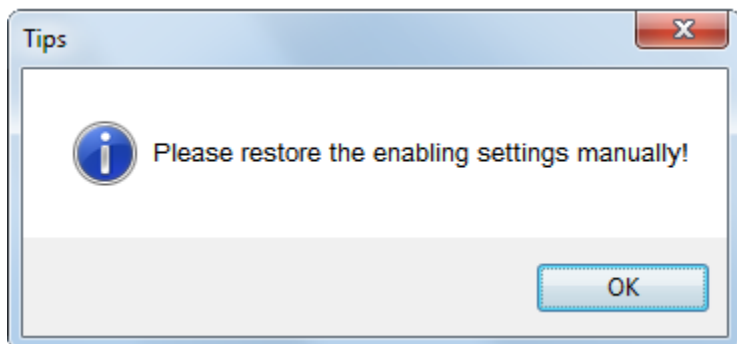
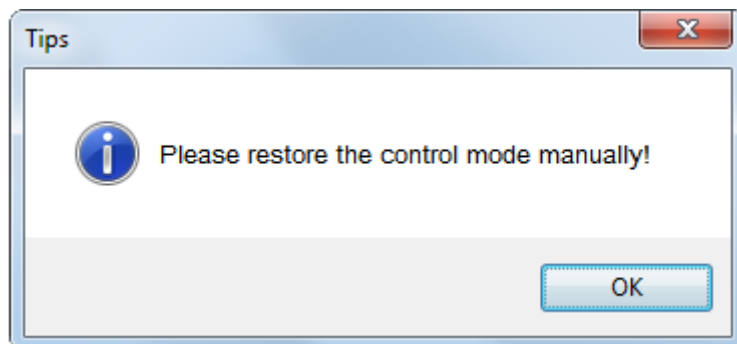
In the case two, the dialog box will appear three times if the user clicks [no]; in the case of not clicking [yes], the following dialog box will appear and exit the auto-tuning.



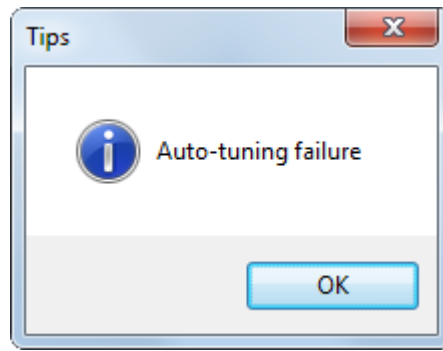
A dialog box pops up when the auto-tuning are successful



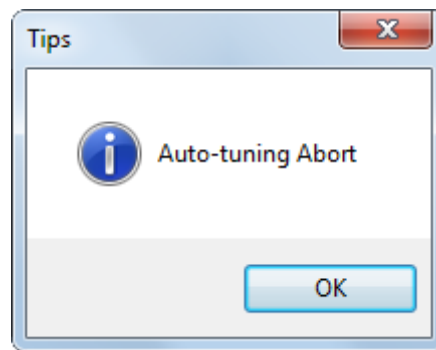
When the setting mode is instruction tuning and the control mode or enabling settings have been manually modified, the following prompt box prompts the user to manually restore the settings.



A dialog box pops up when the auto-tuning failed and shows the cause of the auto-tuning failure. After clicking OK, jump to the trip configuration interface to reconfigure the trip.




If the auto-tuning is abnormal or always in the process, you can click quit or press the keyboard [Esc] key to pop up the following dialog box. After clicking OK, jump to the travel configuration interface to reconfigure the travel.




# 9 Monitor interface

Can confirm the operation status of the driver or motor, input and output signals

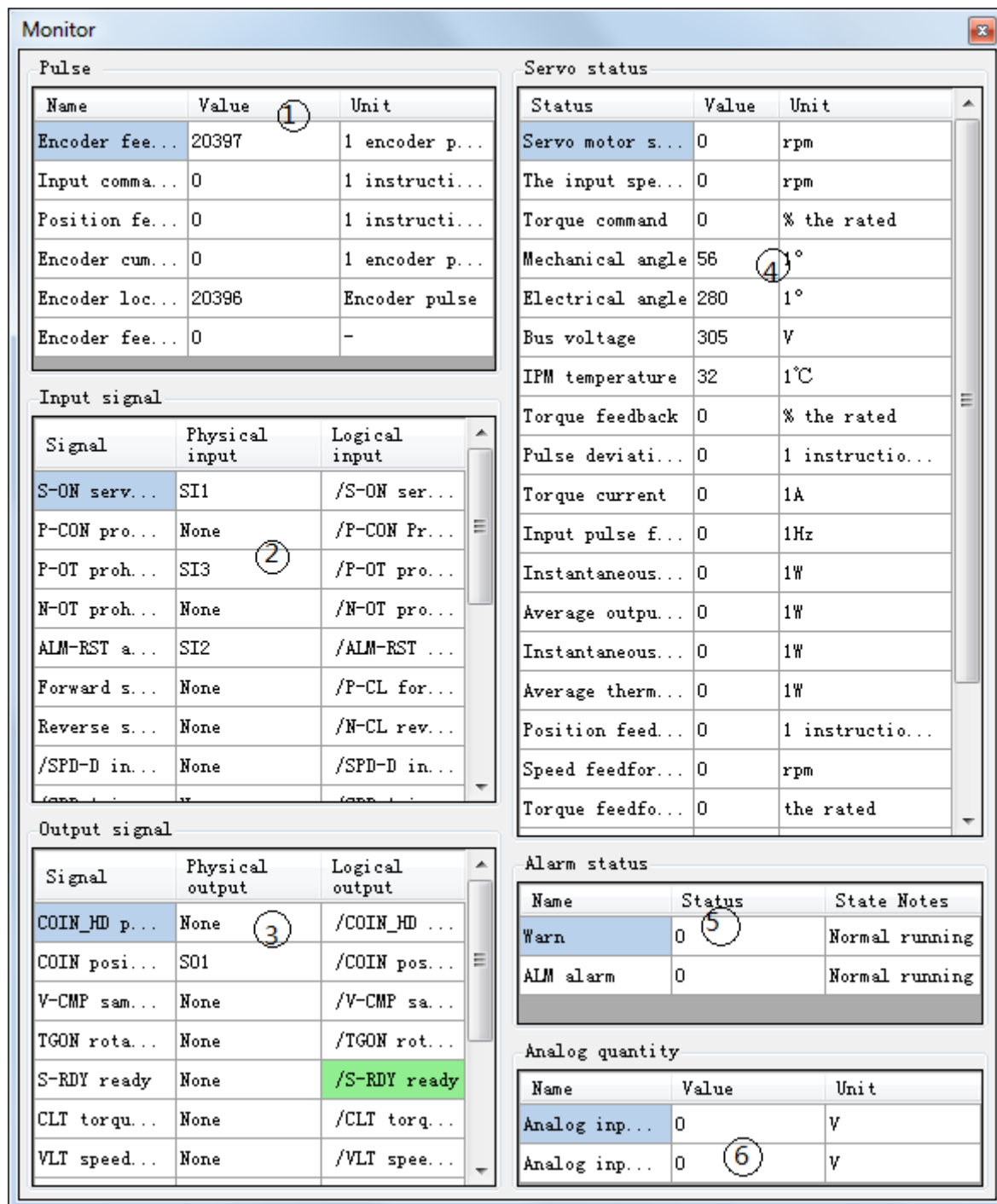
## **9.1 Start 【monitor】**

1. Open XinjeServo software (run as administrator).
2. When the servo is online, click  Monitor on the main interface.
3. It will show the monitor window.

## **9.2 Close 【monitor】**

Click the 

## **9.3 Monitor window**



## 9.4 Composition of Monitor Interface

Area 1: Display the pulse information received by the driver.

Area 2: Display input signal status information. Green: signal input; white: no signal input.

Area 3: Display output signal status information. Green: signal output; white: no signal output.


Area 4: Display the operation information of the driver.

Area 5: Display the alarm information of the driver.


Area 6: Display driver analog input signal information.

# 10 Alarm

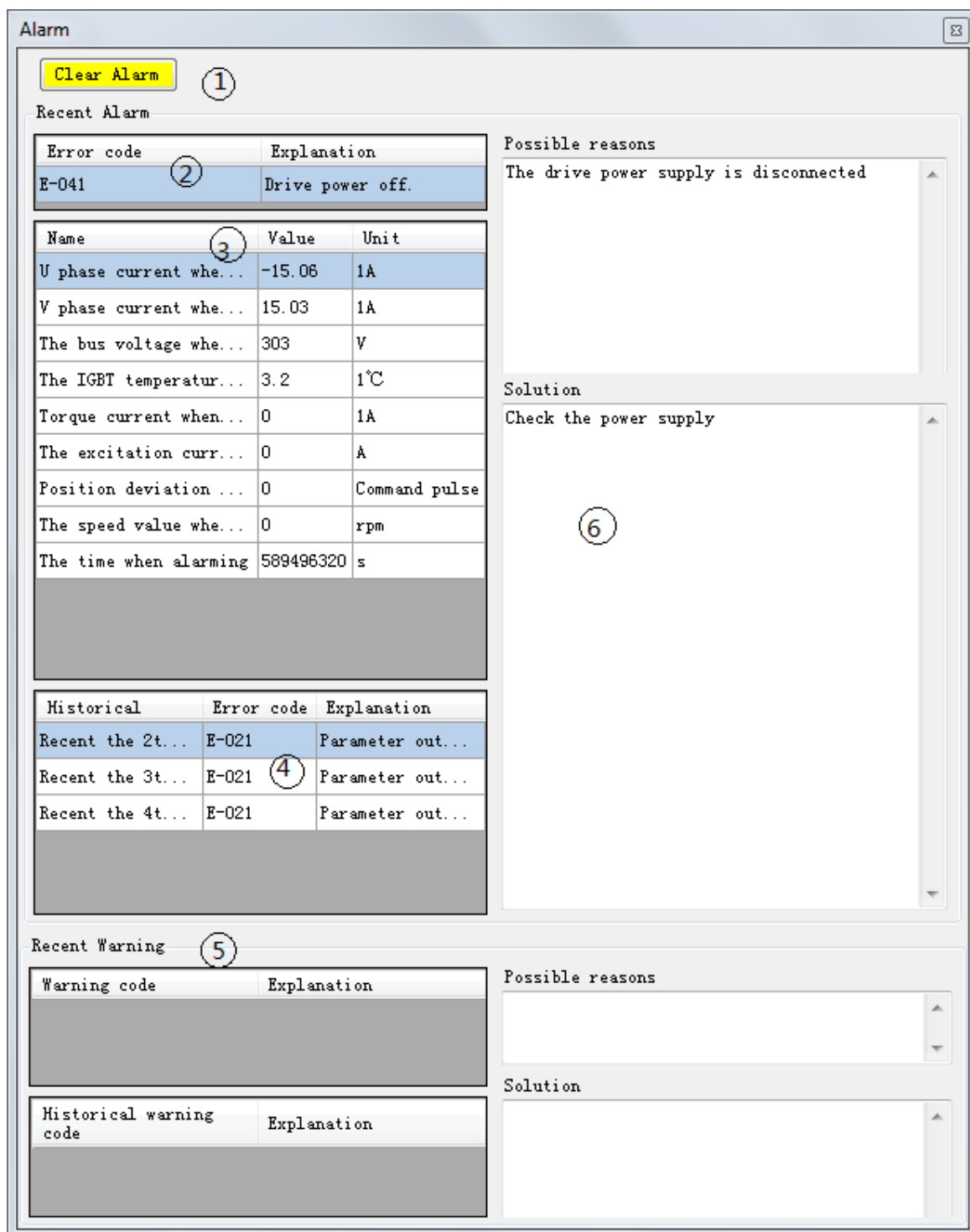
## 10.1 Start 【alarm】

1. Open XinjeServo software (run as administrator).
2. When the servo is online, click  Alarm on the main interface.
3. It will show the alarm window.

## 10.2 Close 【alarm】

Click the 

## 10.3 Alarm window



## 10.4 Composition of alarm interface

Area 1:

Clear the current alarm and return the servo to the state before the alarm.

Area 2: Display the error code and alarm instructions when the alarm occurs.

Area 3: Display servo/click information when alarm occurs.

Area 4: Five alarm records besides the current alarm are displayed.


Area 5: Display the warning code and instructions when the warning occurs.

Zone 6: Display the cause of alarm/warning, and solution of alarm/warning.


Note: When an alarm occurs, the interface will automatically pop up and prompt the user.

## 11 Mechanical properties interface

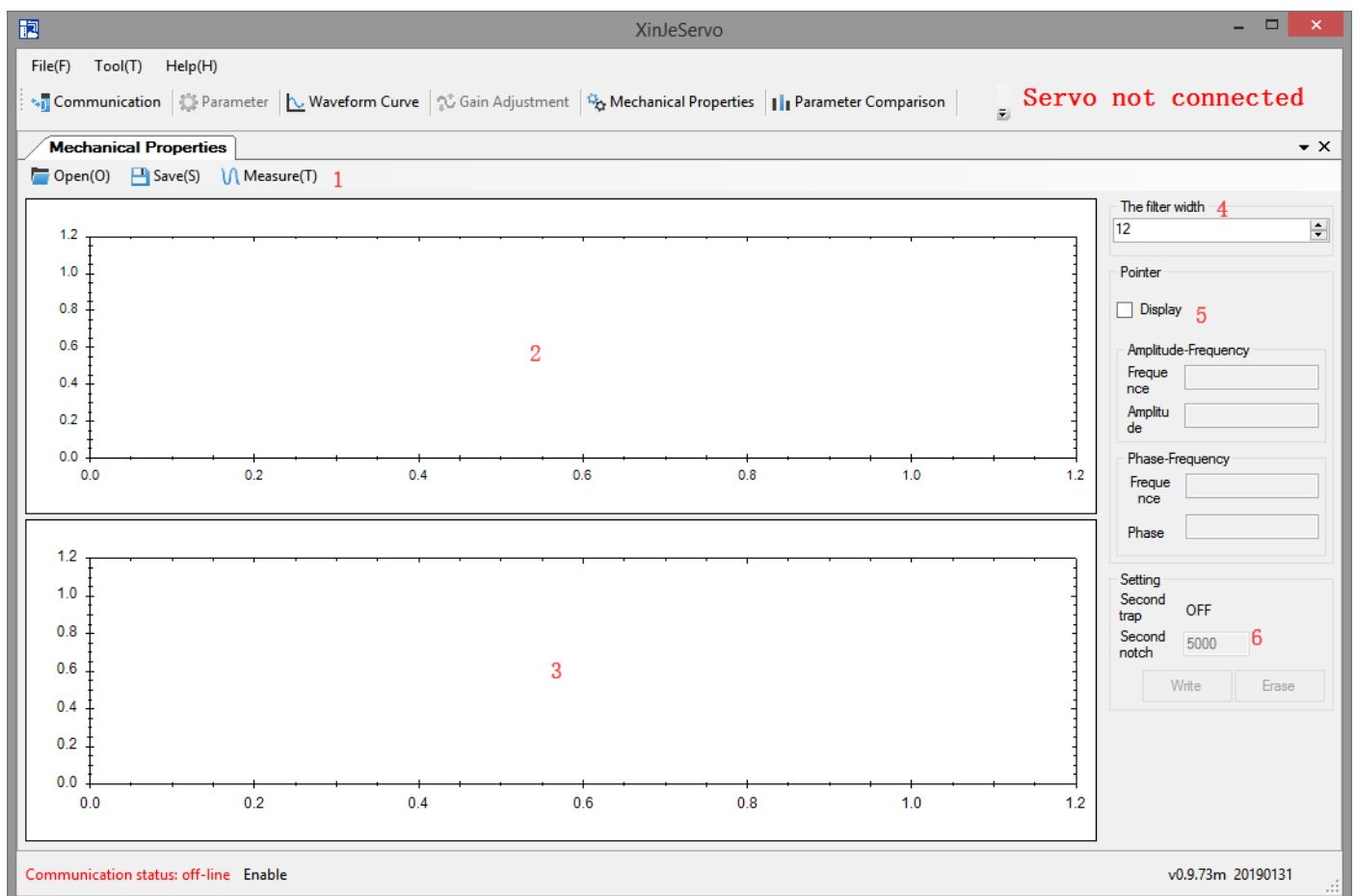
### 11.1 Start 【mechanical properties】

1. Open XinjeServo software (run as administrator).
2. Click  **Mechanical properties** on the main interface.
3. It will show the mechanical properties window.

### 11.2 Close 【mechanical properties】

Click the  .


### 11.3 Mechanical properties window






## 11.4 Composition of mechanical properties

Area 1: too bar

 **Open(O)** Open the saved mechanical characteristic spectrum (amplitude-frequency, phase-frequency).

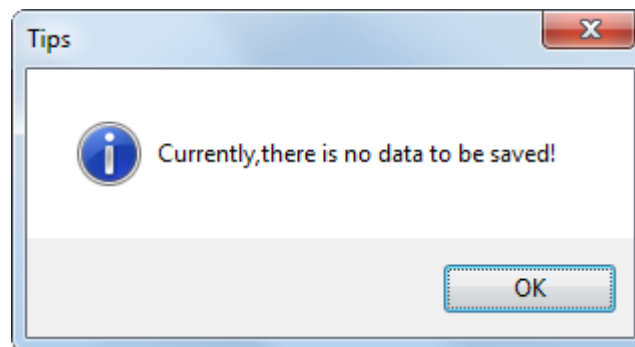
 **Save(S)** save the mechanical characteristic spectrum (amplitude-frequency, phase-frequency).


Note:

(1) Save format is SVP.

If no measurements have been made at present, the following dialog box pops up:

注:



 **Measure(M)** Display [measure] interface. Servo parameters are set to obtain the data needed for mechanical characteristics analysis.

Area 2: Amplitude spectrum image display.

Note:

(1) The abscissa of the image is displayed in the form of log.

(2) The image can not be enlarged. The user should pay attention to it.

Area 3: Phase spectrum image display.

Area 4: Mean filtering

Set the width of the mean filter (the curve involved in the filter is the curve of area 6)

Area 5: Pointer setting, data display area

☒ **Display** If the display is selected, the user can set the pointer by clicking on the image of area 6 (any image in area 6 sets the pointer, the other image shows the pointer in the same position);

If the display is in a non-selected state, the user cannot set the pointer.

Displays information about the location of the pointer.


Area 6: Second notch filter.

OFF/ ON the status of second notch filter

the frequency of second notch

Note:

When the frequency is 5000, the second notch filter is invalid.

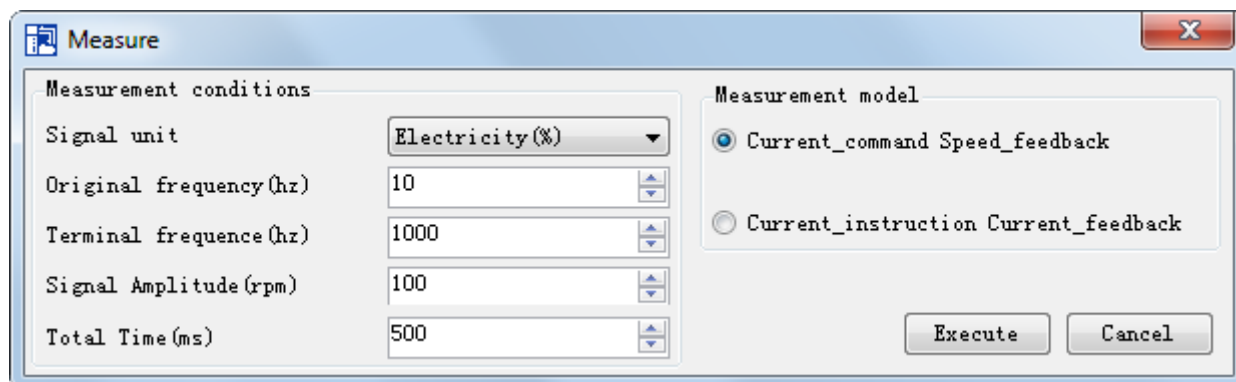
 **Write** Write the second notch frequency and turn on the second notch switch.

Erase

Close the second notch filter and set the second notch frequency to 5000.

## 11.5 Subfunction module

### 11.5.1 Measure



9

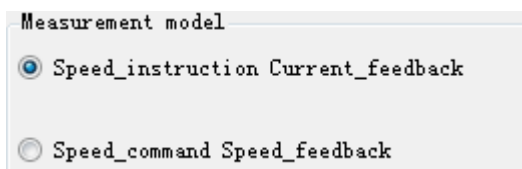
select the sampling time, adjustment total time.

Electricity(%)  
Speed(rpm)  
Electricity(%)

Selection of signal units (different signal units, different measurement modes).

10

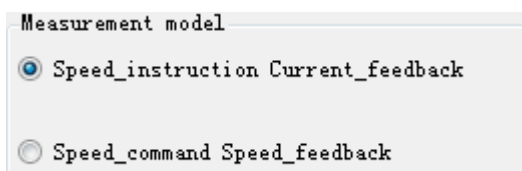
The termination frequency and signal amplitude are set (which affects the results of measurement).



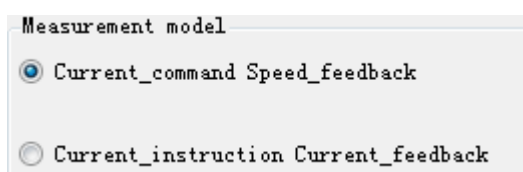
Choose the measurement mode, that is, the object of mechanical characteristics need to be analyzed.

Note:


When the signal unit is Speed(rpm), the measure mode is shown as below:



When the signal unit is Electricity(%), the measure mode is shown as below:



## **11.6 Mechanical properties operation steps**

1. Configure the measure conditions
2. Configure the mode
3. Click enable
4. Click  to turn forward
5. Start to read the data
6. The interface will be closed automatically after reading