SY-01 Syringe Pump Quick Use Guide

Please read the following notes carefully and follow it strictly for correct and safe use of product.

1. Item list

Name	Quantity
SY-01 Syringe Pump	1 set
DB15 Cable with Shell and Cabe	1 pc
Operation Video and User Manual QR Code	1 sheet
Certificate of Conformity	1 sheet
Stroke Accuracy Test Report	1 sheet
Syringe (optional)	Already installed on the syringe pump

2. Cable Connection and Debugging

2.1 Power Cable and Communication Cable

Item	Color
RS232 communication cable	Blue and white-GND, black and white-TX, orange and white-RX
RS485, CAN communication cable	Orange-B, blue-A, green-H, yellow-L
Power cable	Red-positive polar, black-negative polar

Connect to USB30

Connect to Power Supply
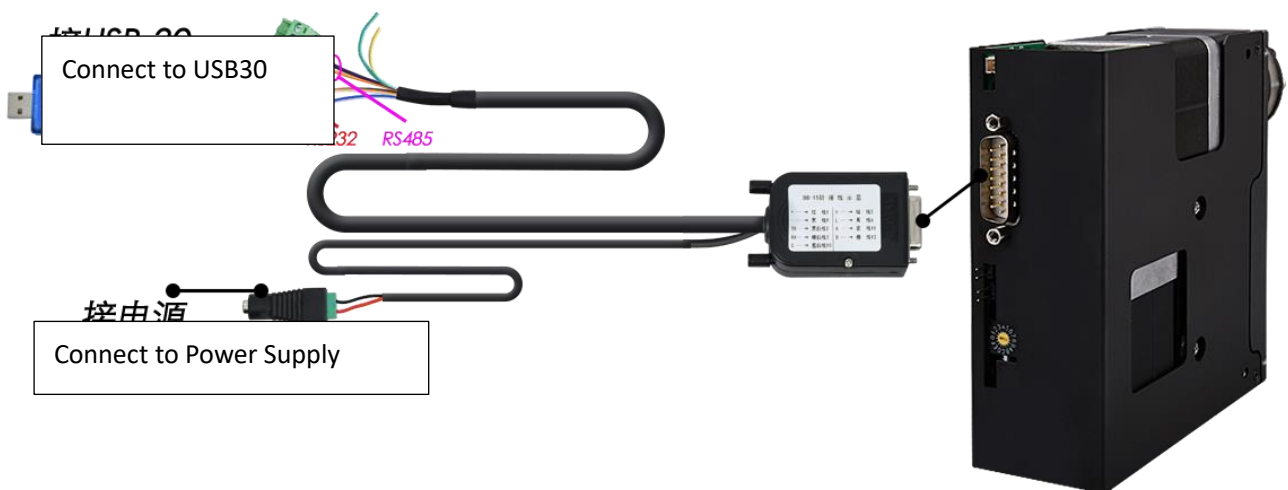
Notes: CAN communication is not supported in the current software version

2.2 USB Driver and Debugging Software Installation

If you are using our USB To RS232/RS485 debugger for the first time, please download the debugger driver from the official website

www.runzeliuti.com

1、Login to the official website (http://www.runzeliuti.com) , Click on the hyperlink to go directly to the download page;

2、"Download"->"Debug Tools"->"USB to RS232, RS485 converter driver "Click to download

3、Driver installation

Open the application file **SETUP.EXE** , confirm it is the CH341SER.INF file, click Install, and then click OK, the installation is complete.

4. Download Debugging Software

| SerialComm_x64_V1.3.0
资料 文件大小：43.92 MB 2021-07-19   点击下载
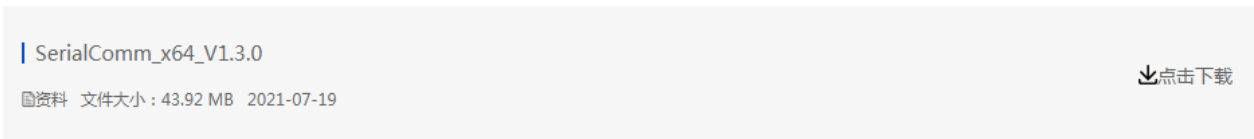
3. Quick Use

3.1 Debugging Software

Open the debugging software serialcomm, Figure 3-1-1 baud rate is the baud rate of the slave computer, the factory default is 9600bps, after setting the serial port and baud rate, click the "Port" button, then click on the Command Generator icon $\boxed{fx}$ in the top left or click on the Tools button to open the Command Generator
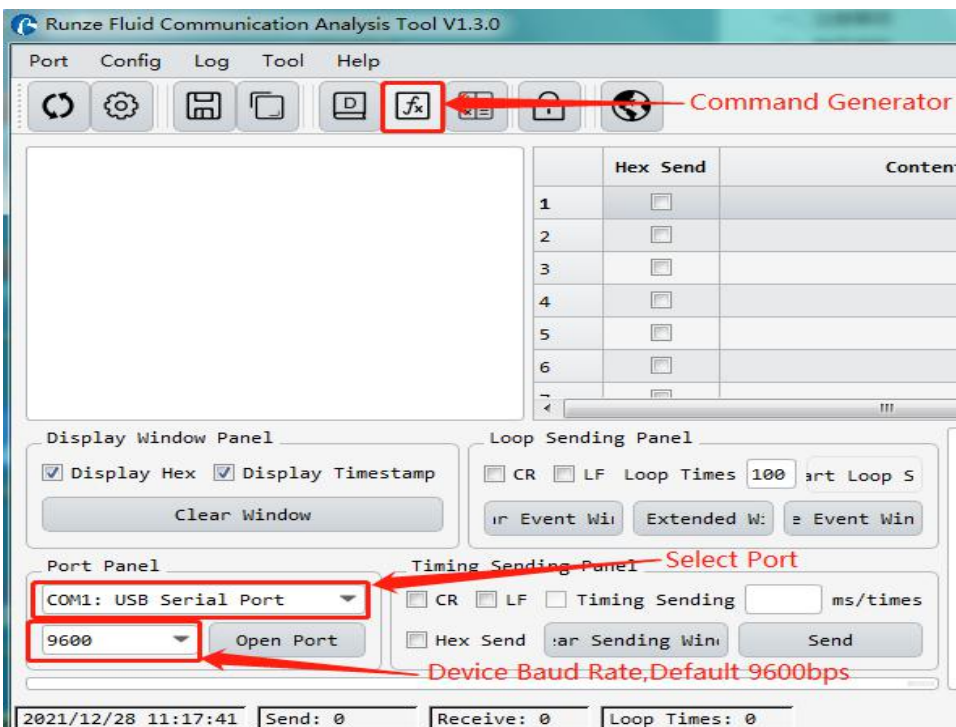
Figure 3-1-1

In the command generation tool, input the address, command, parameters, the command corresponds to various command codes of B2, parameters correspond to B3, B4, if it is a factory command, you need to check the factory mode, if it is a general command is not necessary to check. After setting, click Generate and Copy, the command display box on the right can show the current generated code and has been copied in the clipboard, as shown in Figure 3-1-2 below.

Figure 3-1-2

Note: The input of address, command and parameter boxes are all in hexadecimal.

Return to the main interface of debugging software, double-click the input box under "content", right-click to paste the copied command or use the shortcut key ctrl+V to paste the copied command. Then check the "hex send" ahead and click the blank button in the corresponding line under "send" to send the command.
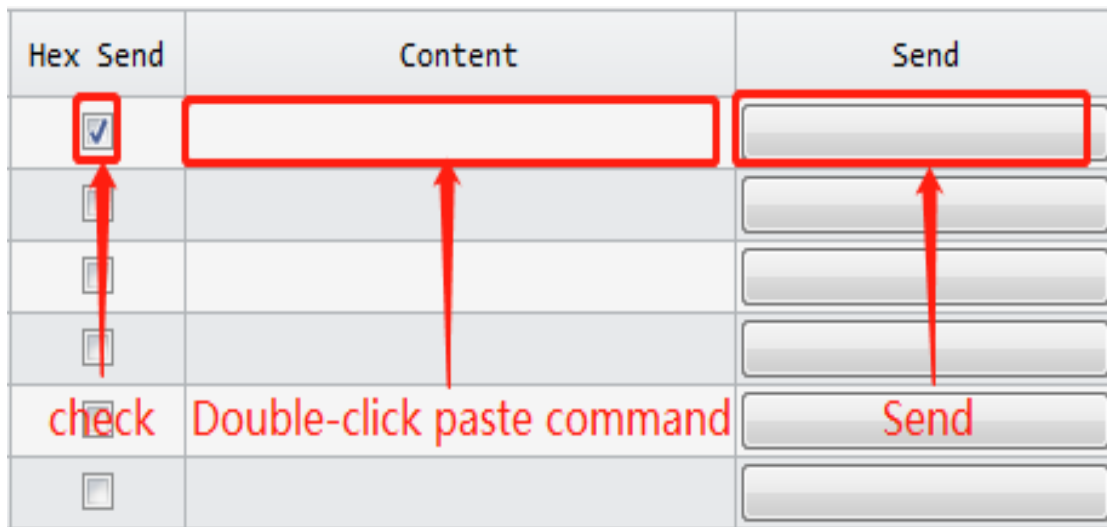
Figure 3-1-3

3.2 Examples of Communication
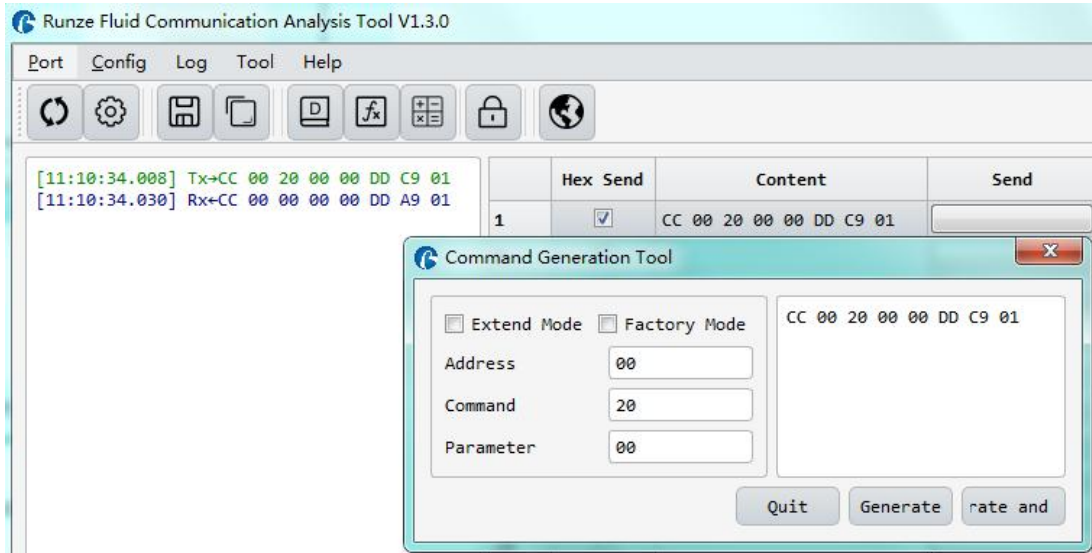
① Send Command: 0x20 query the device address

Figure 3-2-1

Paste the copied command into the blank space below "Content", check the Hex send box in front, then click send, there is a receive command means the device is connected successfully, receive command B3=00, B4=00, which means the current address of the device is 0.
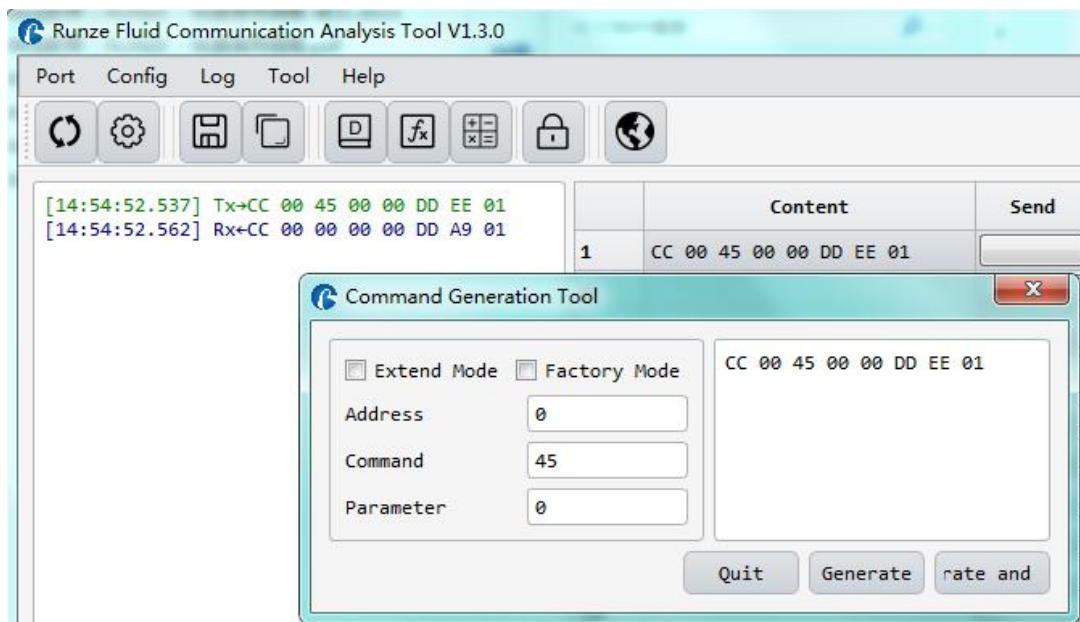
② Send command：0x45 Reset pump

Figure 3-2-2

Paste the copied command into the blank space below "Content", check the hex send box in front,

then click send and get the return code and B2 byte is 00, then the pump reset is successful.
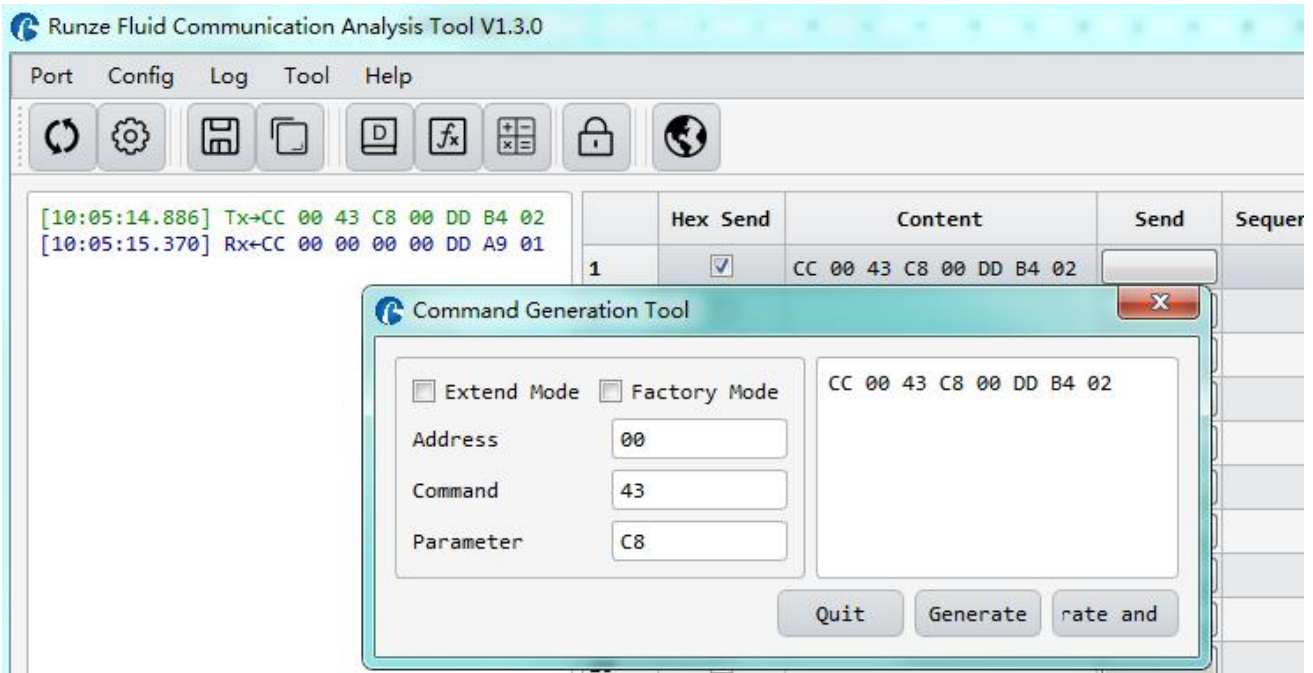
③ Send command: 0x43 aspirating

Figure 3-2-3

Paste the copied command into the blank space below "Content", check the hex send box in front, then click send and get the return code and B2 byte is 00, then the pump reset is successful.

Note: To switch between RS232 and RS485 communication modes, please turn the dial code on the

USB-30 to the corresponding position.

4. Quick Commands

Code B2	Abbreviation	Parameter Description B3 B4
0x20	Query address	B3=0x00 B4=0x00
0xAE	Query current channel address	B3=0x00 B4=0x00
0x3F	Query current version	B3=0x01 B4=0x09, above is just an example, if the response parameter is the same as above parameter, it means the current version is V1.9, see the version number on the label for details
0x4A	Query motor status	B3=0x00 B4=0x00
0x4D	Query valve status	B3=0x00 B4=0x00
0x42	Discharge liquid	When the number of steps corresponding to parameter B3B4 is greater than the maximum number of steps, the motor will not run, and return byte B3=08, B4=00; When the number of steps corresponding to B3B4

0x43	Aspirate liquid	When the number of steps corresponding to parameter B3B4 is greater than the maximum number of steps, the motor will not run, and return byte B3=08, B4=00; When the number of steps corresponding to B3B4 parameter is set to be less than the maximum number of steps, the motor rotates according to the set number of steps.
0x44	The valve rotates through the code disc to automatically select the optimal path	It depends on the actual number of channels/ports of the switching valve, such as 10 channel switching valve, then B3=0xXX B4=0x00 where XX ranges from 01 to 0A
0x4C	Valve reset	B3=0x00 B4=0x00 The switching valve runs to the reset optocoupler and stops
0x45	Reset syringe pump	B3=0x00 B4=0x00 The syringe pump runs to the home position and stops
0x4F	Forced reset of syringe pump	B3=0x00 B4=0x00 The switching valve runs to the encoder home position, which overlaps with the position reset by the 0x45 command
0x49	Force Stop (syringe pump and valve)	B3=0x00 B4=0x00
0x4B	Set dynamic speed	B3B4 ranges from 0x0001 to 0x01C2. The speed of motor is 1 ~ 450

(Note: the top of this table continues from the previous page: "parameter is set to be less than the maximum number of steps, the motor rotates according to the set number of steps.")

5. Common Problems & Solutions

Phenomenon	Problem	Solution
Not working when power on	The working voltage is not in the acceptable range.	Test whether the voltage is within the specified range
	The connection is loose or disconnected.	Check whether the connection is good.
	The working current is not in the acceptable range.	Detect whether the current is within the specified range
Sending a command without a return code	Chose the wrong serial port	Please check the corresponding serial port via Device Manager
	The TX and RX lines of RS232 are connected reversely or phase A &	Exchange the TX and RX line sequence of RS232 and exchange

	B of RS485 are connected reversely.	the phase A & B sequence of RS485.
The sent and received communications are consistent in RS232.	TX and RX are in short circuit.	Check whether there is short circuit, if so, replace the cable.
Working but the sent and received communications are consistent in RS485,	AB reversed, and the USB converter is not dialed to RS485	Switch AB and dial USB to RS485 communication

6. Installation and Use

◆ Applicable power supply: 24V±10%, 3A, When using a linear power supply, the voltage and current must be adjusted to the corresponding parameter values

◆ Please use RUNZE debugging software serialcomm for product debugging

◆ While debugging, try to debug over liquid to avoid dry wear of the spool, which will affect the service life of the valve

◆ While using this product, please connect to GND to reduce the interference brought by environmental factors

◆ When not using this product, remember to clean the valve ports with cleaning solution such as alcohol or water to avoid long periods of test residue in the valve passage, resulting in port blockage.

◆ When installing this product, please install it on the existing installation holes, additional holes are strictly prohibited. For special requirements, please consult sales or technical support.