

VRTB280C USER'S GUIDE

Ver 1.0e (2015)



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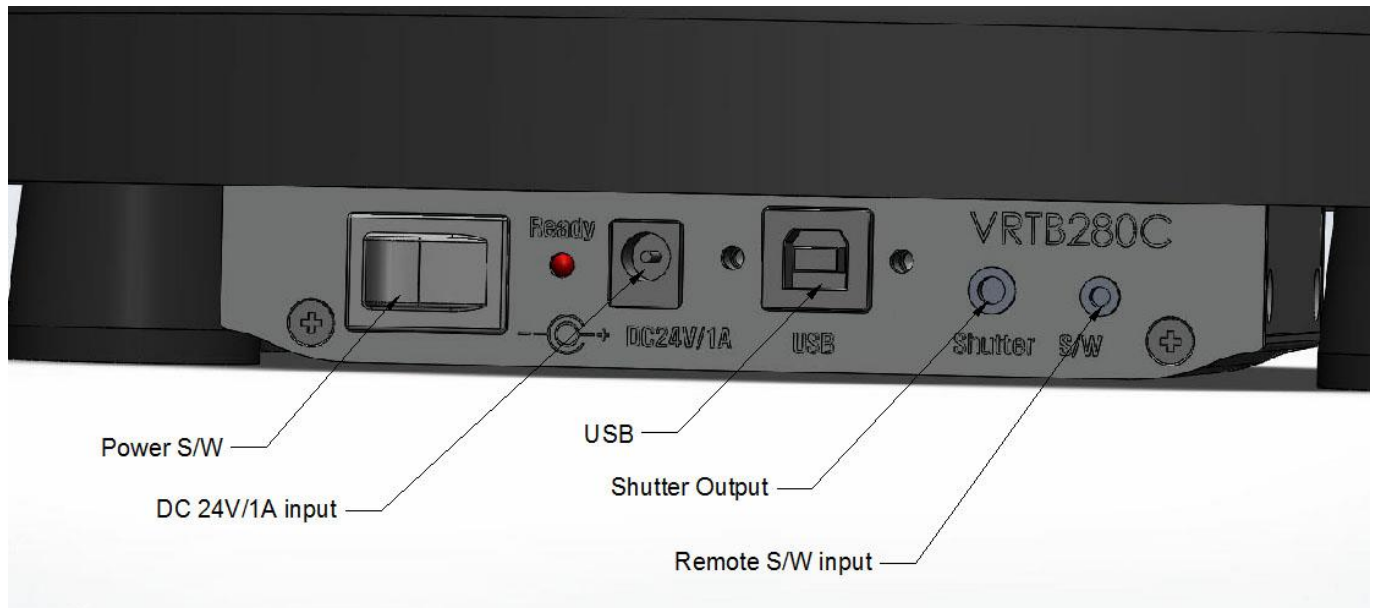
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1. General description



2. General precautions

- Avoid using the machine in extremely dusty place, and keep it out of both direct sunlight and rain.
- Do not expose the machine to high temperature or high humidity.
- Do not clean the machine with other organic solvents. Use a soft, dry cloth only with alcohol.
- Use only enclosed AC adapter (DC 24V±5%/2A SMPS type) designed exclusively for this machine. Use of any other adapter will void the warranty.
- Use only enclosed USB interface cable. Use of any other cable will void the warranty.
- When the machine is not being used for a long period of time disconnect the AC adapter.
- Do not try to disassemble the VRTB280C.
- Place the center of weight of subject on the center of tumblers as possible as you can. If not, Payload will be reduced.
- The maximum for length of USB Cable is 3m.
Use external USB Hub when you need longer one than 3m.
- Be careful not to be impacted when moving.
- Install tumblers horizontally.

3. Getting started

(1) Connecting the AC adapter

Connect the AC adapter to the VRTB280C as described below.

Insert the plug on the adapter cord into the connector marked DC 24V on the VRTB280C.

Insert the plug on the adapter into the nearest standard electrical outlet.

Turn on the Power switch of the VRTB280C.

(2) Connecting the USB interface cable

Connect the VRTB280C to the computer as described below.

When connecting then VRTB280C to an IBM-compatible computer, no need to install any USB driver. VRTB280C is recognized as HID(Human Interface Device).

Insert the flat connector (A type USB connector) on the enclosed USB interface cable into the USB port on the computer.

Insert the square connector (B type USB connector) on the enclosed USB interface cable into the USB port on the VRTB280C.

(3) Software install

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Install the following program with enclosed CD-ROM.

- VRTB win v1.9 later

[Before installation]

Check that your system configuration meets the following requirements.

Computer: IBM PC or compatible

Operating system: Pre-installed with Microsoft Windows XP, Vista, Windows 7, Windows 8

Hard disk free space: At least 20MB

Available memory: Minimum 32MB

Monitor: VGA or higher graphics card

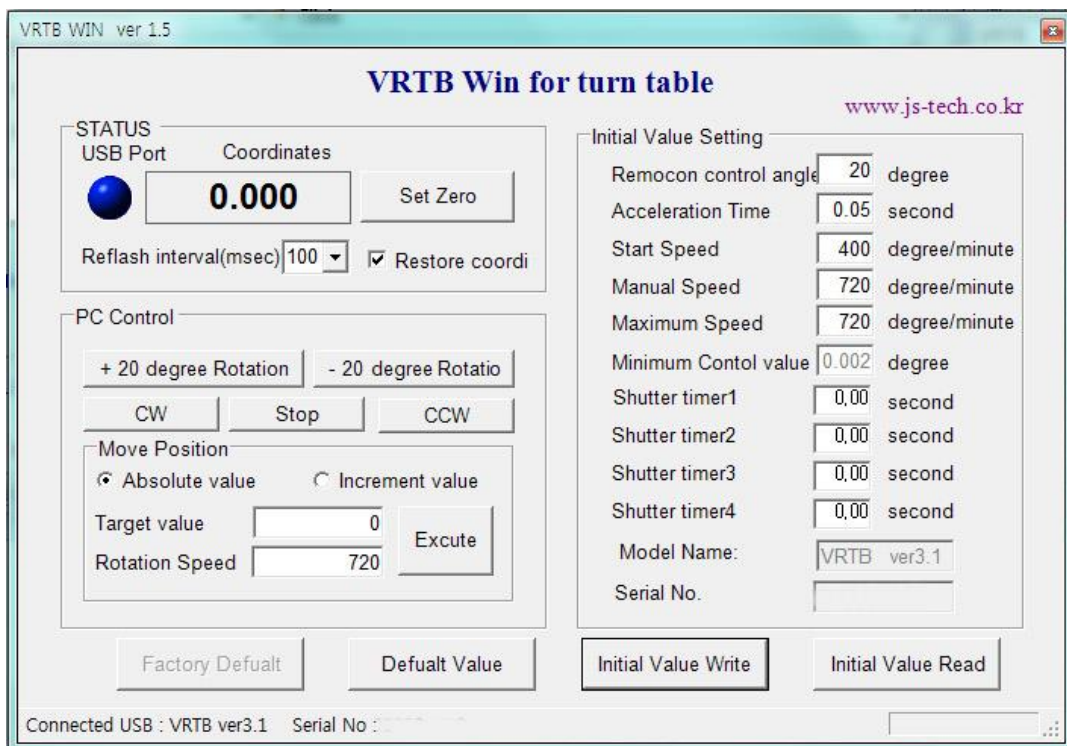
USB port (installed as standard equipment)

CD-ROM drive

[Installing VRTB win]

Install VRTB win software on a PC as described below.

- Insert the enclosed CD-ROM into the computer's CD-ROM driver.
- A dialog box automatically appears. If the dialog box does not automatically appear, click "My computer" on desktop, find out CD-ROM drive and then double-click "Setup.exe".
- During installing, check the new version of VRTB win in our web site. (Any information about the user does not be transmitted.)
- Install and ignore of warning.
- Now you can see, VRTB win is running.



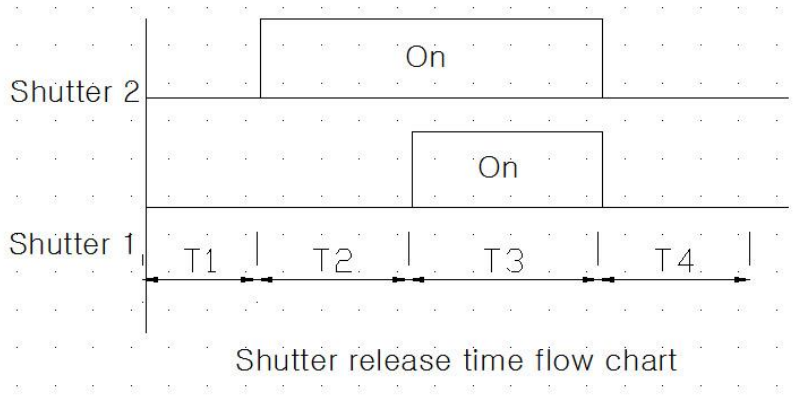
[VRTB280C Initial Value]

If you operate VRTB Win, you can see the picture as above.

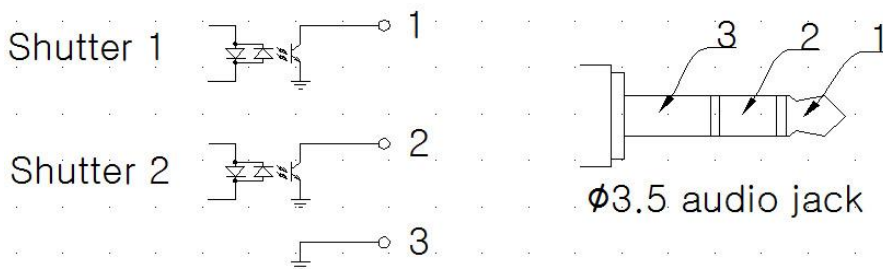
The explanation of Initial Value Setting on the right is following as below.

Remote control angle	The turning angle when pressing once the button of remote control.
Acceleration time	The time from the beginning of operating to the maximum speed.
Start Speed	Starting speed of the motor.
Manual Speed	The speed of operating by the remote control.
Maximum Speed	The highest speed of operating
Minimum Control value	The smallest angle of controlling
Shutter timer 1	Shutter release output control timer : T1
Shutter timer 2	Shutter release output control timer : T2
Shutter timer 3	Shutter release output control timer : T3
Shutter timer 4	Shutter release output control timer : T4

- * The speed of operating can not be faster than Maximum speed and slower than Start speed.
- * T1~T4 = 0 : not use shutter release out

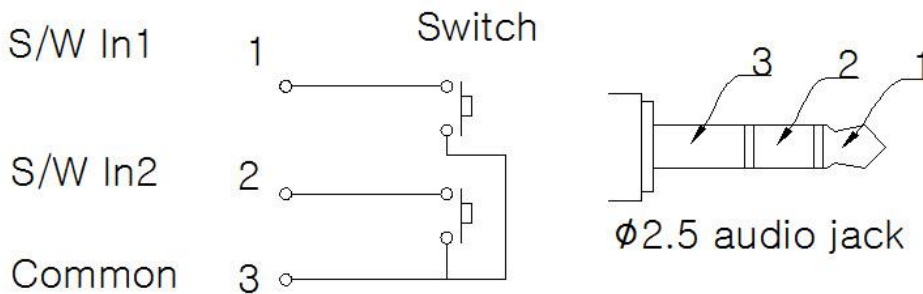


The Wired Release will depend on each camera maker. Please contact us as for release S/W with our turntables. If you create one in yourself, please wire as shown in the figure below.



4. Using the machine

- If you connect the designated DC Adapter with Power Jack and turn on the Power s/w, Ready LED will be working with the sound 'bbip'.
- If you press once the button of Remote S/W control, the angle which is already made (a unit is 20) will turn by the designated unit. But if you press the continuously, the angle will also turn constantly by the designated unit.
- The speed of turning and the basic angle can be changed on VRTB Win program.
- When the computer is being connected with USB and VRTB Win is running, you can see the changed coordinate by handling the remote control and the PC control.
- Remote Switch for manual manipulation of the wires are as follows.



[Function description]

- S type symmetry acceleration
The acceleration of speed graph has the shape of S type curve.
- Prohibition for chopping wave of speed graph
When moving at short distance between acceleration and retardation, chopping wave of speed graph is prohibited
- Function of Ring Count (0~360 degree)
The coordinate of VRTB280C will be changed from 359.998 to 0.000. The reverse is the same.
- The function of mobile for the shortest distance
If there is a way of moving from a present angle position of 10 degrees to 350 degrees, it does not turn 340 degrees clockwise, but turn 20 degree counterclockwise.
Accordingly, if the amount of turning is larger than 180, it will turn in the opposite direction.
- The function of Stop Current Down for 2 phase Step Motor
If the motor is not turning for 1 second, unnecessary waste of electric power and generation heat are protected with lowering approved Phase Current up to 30%.
- The reverse power protection circuit of Power Adapter
When using DC adapter, the internal of Jack entrance will be plus.
And it will not be working despite the power is approved on the contrary but the internal circuit will be protected.

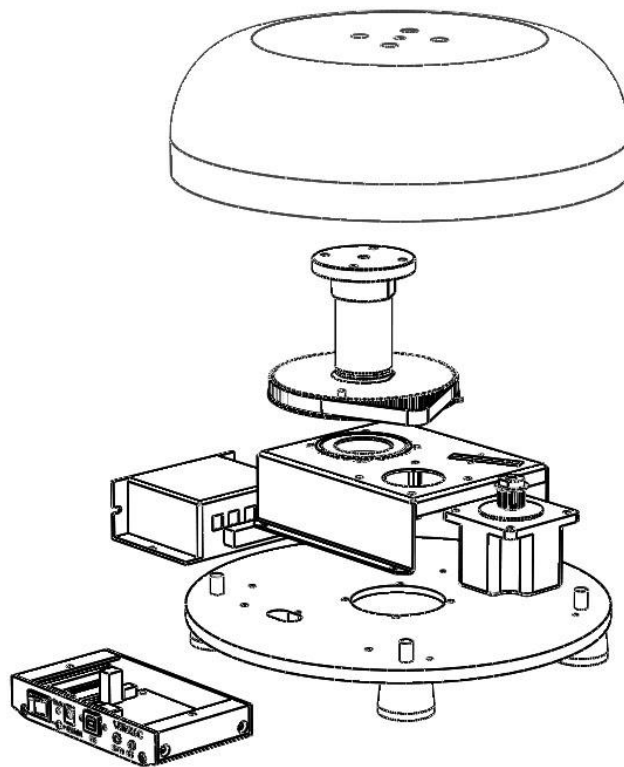
5. Troubling shooting

- Bearing checking (Bearing life cycle : 20,000 ~30,000 hour)
- Worm gear checking (Greece injected once a year.)
- If the buzzer sounds within one second after turning on the power s/w and the READY LED is not working, that would be an electronic circuit error. Please request A/S.
- When the motor is turning, there is only sound or it is not working smoothly, If there is no mechanical problem, modify Start speed, Maximum speed and Acceleration time on VRTB win.

6. Machine specification

1	Power	DC 24V/1A
2	Weight	3.5Kg
3	Dimension	280mm*106mm(h)
4	Payload	20Kg
5	Gear Type	Timing belt type
6	Gear Ratio	7.2 : 1
7	Motor	2 Phase micro step motor
8	Max Speed	20 turn/min (RPM)
9	Accuracy	5/100 ^o
10	Repeatability	1/10 ^o
11	Controller	1axis NC Controller (iCAM-USB)
12	Communication	USB 2.0
13	Order Code	ISO6983 NC Code (G code, M code)
14	Include Parts	USB Cable(3m) DC 24V/1A Adapter Remote S/W

7. Machine exploded view



8. Machine dimensions

