

# Failure Solution

Failure Description	Failure Causes	Solution
Power on and the LCD screen doesn't light up	1.The power cord plug is not connected properly to the power socket.	Re-connect the power cord plug
	2.The fuse in the power socket blown	Replace it with 5A fuse
	3.The fuse in the circuit blown.	Replace it with 1.5A fuse
	4.The flat cable between the LCD and main board loosed.	Plug the flat cable tightly
	5.The switch power supply don't work properly.	Return to factory for repair or replace the main board.
Power on and the LDC screen light up, but display nothing.	1.The flat cable between the LCD and main board loosed	Plug the flat cable tightly
	2.The LCD was damaged	Replace the LCD
	3.The communication between SCM and LCD display is abnormal	Return to factory for repair or replace the main board.
The setting knob did no work	1.The flat cable between the knob and main board loosed.	Plug the flat cable tightly
	2.The knob is pressed too deep and too tight to reset.	Pull the knob out
	3.Encode was damaged.	Replace the encode
The device has the abnormal noise	1.Foreign matter in the fan.	Open the case and remove the foreign matter
	2.The fan doesn't rotate properly.	Refueling is need if there is high noisy, replace the fan if it is damaged
No voltage displays after the test cables connect to the battery	1.The poor connection between the test cables and the battery.	Clear the clamp of test cables or cathode tab of the battery
	2.The voltage sampling flat cable of test cable in the main board loosed or the test cable was damaged.	Reinsert the flat cable or replace the test cable.
	3.The SCM can not detect the voltage.	Return to the factory or replace the main board
Press the start button and fail in start	1.The flat cable of start button loosed.	Reinsert the flat cable
	2.The start button was damaged.	Replace the start button
	3.The SCM can not detect the voltage.	Return to the factory or replace the main board.
There is voltage displays in the LCD after the test cables are connected to the battery, but it can't charge and discharge(without current) after start	1.The connection of four core wire in the main board loosed or the four core wire was damaged.	Reconnect the wire or replace the quad
	2.The SCM can not detect the current or the switch power supply was damaged.	Return to the factory or replace the main board.
	3.The heat wire loosed.	Tighten the heat wire
	4. MOS tube was damaged.	Return to factory or replace it

# VRLA/Lithium Battery Charge-Discharge Test Machine User Manual HTCC20A

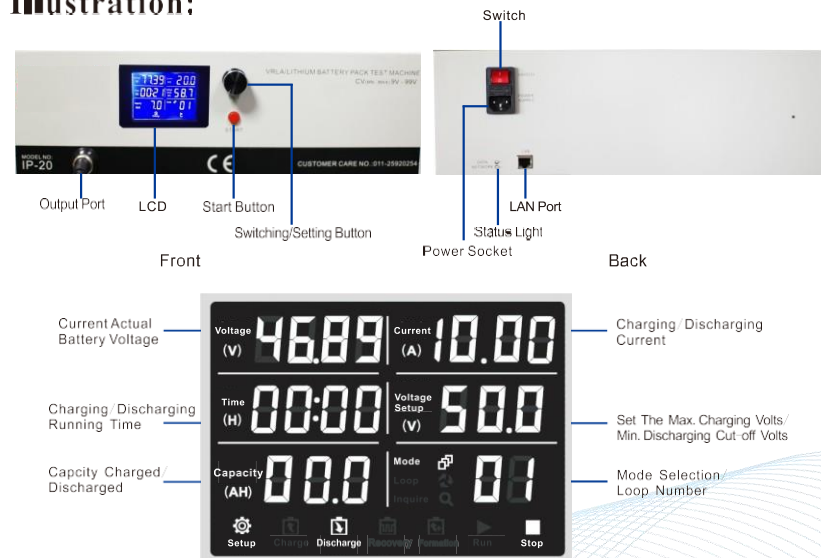
## Description:

VRLA/Lithium Battery Charge-Discharge Test Machine is a specialized battery detection device which integrates with the functions of high-precision capacity discharge detection and high-precision series charging. It can perform the charge and discharge test for the lead-acid batteries, lithium ion batteries and other batteries. It's a high-precision specific instrument which is suitable for EV dealer and battery producer to test the performance of the batteries.

## Technical Parameter:

Discharging Test Cut-off Voltage:	9V-99V 0.1V stepping adjustable	Discharging Current:	9V-21V: 0.5-10A adjustable 21V-99V: 0.5-20A adjustable
Charging Test Voltage:	9V-99 adjustable 0.1V stepping	Charging Current:	0.5-10A adjustable
Discharging Stepping Current:	0.1A	Charging Stepping Current:	0.1A
Charging Cut-off Current:	0.1-5A adjustable	Loop Idle Interval:	0-20 MINS adjustable
Max. Loop No.:	99 times	Voltage/Current Errors:	<0.03 V/A
The Preset Charging Capacity of Last Loop: 0-99.9AH (If 0 is set, it means the charging capacity of last loop is not preset.)			

## Illustration:



## Working Mode:

※ 4 working modes:

Mode Code	Function
00	Inquire
01	Discharge
02	Charge
03	Loop

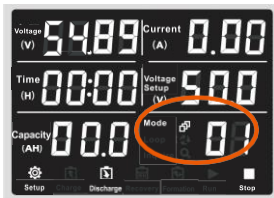
## Usage:

### Mode 01-Discharge(The detailed steps refers to the discharge figure 1 -4)

Discharging Current: 0.5-10A adjustable (9V-21V) ; 0.5-20A adjustable (21V-99V)

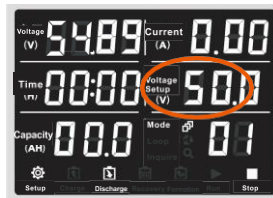
Discharging Stepping Current: 0.1A

Discharging Cut-off Voltage: 9-99V 0.1V Stepping



After power on, press the black setting knob and the mode selection bar in the bottom right flashes, rotate the black setting knob to set to mode "01"

Discharge Figure 1



After the mode is set, continue to press the setting knob, the voltage setting bar flashes, rotating the black setting knob to set the minimum discharge cut-off voltage.

Discharge Figure 2



After the voltage is set, continue to press the setting knob and the current bar flashes, rotating the black setting knob to set the discharge current.

Discharge Figure 3



After the current is set, press the black setting knob again, all the setting bars stop flashing, and the current display "0.00", the setting is completed. Press the red start knob to discharge. Judging whether the battery is good or bad according to the time of the battery discharging.

Discharge Figure 4

## Performance and Usage Tips:

- ※ The protection function of positive and negative polarity reverse connection.
- ※ Intelligent cooling fan.
- ※ Specialized LCD screen, all data is clear at a glance.
- ※ High precision, flexible setting, meeting the different charge-discharge requirement.

### Special Caution:

The system will automatically save the setting after the parameter setting is completed, it's not necessary to set in next starting-up, click the start button to run directly.

In the charge/discharge process, press the Start button to suspend working, and press the Start button again to continue the work.

The machine will suspend working if the connection cables come off, please keep the connection cables in the good connection.

If the machine stop working accidently, press the red Start button for 5 seconds, the machine will resume immediately running state before pause.

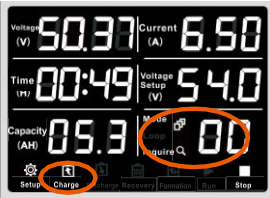
## Safety Caution:

Connecting the battery in proper polarity and keeping the good connection

Keep away from the inflammable and explosive articles in use, and put them in cool and ventilated place. Do not block the air inlet and outlet.

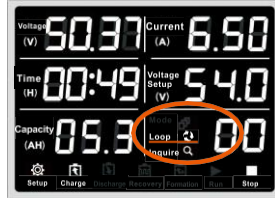
Please take a proper storage, and avoid violent action such as collision during use and transportation.

## Mode 00-Inquire(The detailed steps refers to the inquire figure 1 -5)



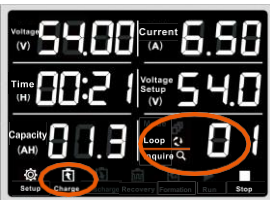
Press the black setting knob, the mode bar in the lower right flashes, rotate the black setting knob to set mode "00", at this moment, the LCD displayed the data of last single charge or last single discharge.

Inquire Figure 1



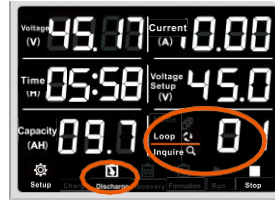
To inquire the data of last loop of charge-discharge, press the black setting knob, the mode bar in the lower right stop flash and the indicator light of loop number lights on.

Inquire Figure 2



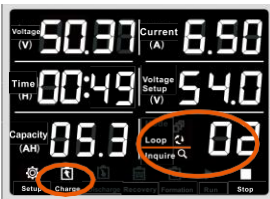
Rotate the black setting knob clockwise, the mode bar in the lower right display "01", the screen displays the data of the first loop charge.

Inquire Figure 3



Continue rotate the black setting knob clockwise, the mode bar in the lower right displays "01", the screen displays the data of the first loop discharge.

Inquire Figure 4



Continue rotate the black setting knob clockwise, the mode bar in the lower right displays "02", the screen displays the data of second charge. For more loops, repeat rotating the black knob and so on.

Inquire Figure 5

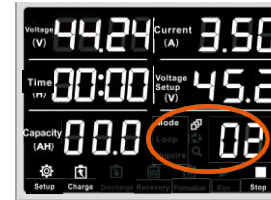
## Mode 02-Charging(The detailed steps refers to the charge figure 1 -5)

Charging stepping current: 0.1 A

Charging cut-off current: 0.1-5A adjustable

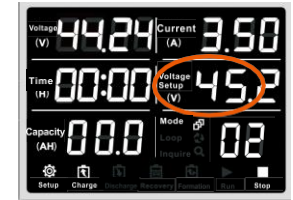
The max. voltage of charging test : 9-99V adjustable, 0.1V stepping

Charging current: 0.5-10A adjustable



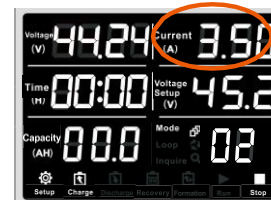
Press the black setting knob, the mode selection bar in the lower right flashes, rotate the black setting knob to set to mode "02".

Charge Figure 1



After the mode is set, continue to press the setting knob, the voltage setting bar flashes, and rotates the black setting knob to set the maximum charging voltage.

Charge Figure 2



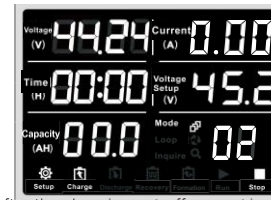
After the voltage is set, continue to press the setting knob, the current bar flashes, and rotate the black setting knob to set the charging current.

Charge Figure 3



After the current is set, press the black setting knob again, the current bar displays "0.10", and rotate the black setting knob to set the charging cut-off current

Charge Figure 4



After the charging cut-off current is set, press the black setting knob again, all the setting bar stop flashing, the current display "0.00", the setting is completed. Press the red start knob to charge, it will automatically stop after the charging is completed.

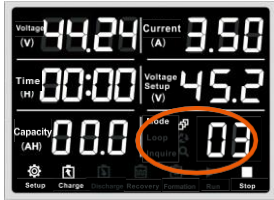
Charge Figure 5

## Mode 03-Loop(The detailed steps refers to the loop figure 1 -11)

Max. loop index: 99

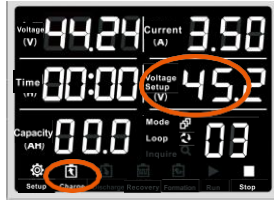
Loop idle interval: 0-20 mins adjustable

The preset charging capacity of the last loop: 0-99.9AH( If "0" is set, it means the charging capacity of last loop is not preset.)



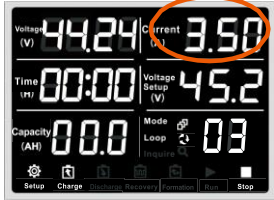
Press the black setting knob, the mode selection bar in the lower right flashes, rotate the black setting knob to set the mode to "03"

Loop Figure 1



After the mode is set, continue to press the setting knob, the voltage bar flashes, rotate the black setting knob to set the max. charging voltage.

Loop Figure 2



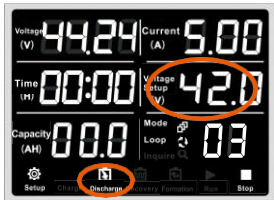
After the voltage is set, continue to press the setting knob, the current bar flashes, rotate the black setting knob to set charging current

Loop Figure 3



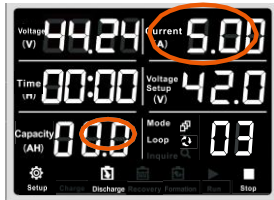
After the current is set, press the black setting knob again, the current bar displays "0.10", rotate the black knob to set the charging cut-off current

Loop Figure 4



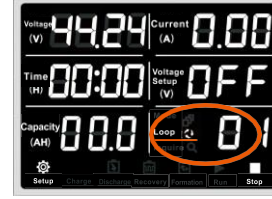
After the charging cut-off current is set, press the black setting knob again, the voltage setting bar flashes, rotate the black knob to set the min. discharging voltage.

Loop Figure 5



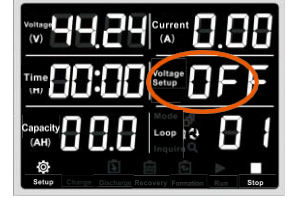
After the voltage is set, press the setting knob again, the current bar flashes, rotate the black knob to set the discharging current

Loop Figure 6



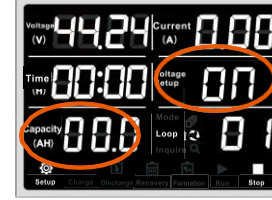
Press the black setting knob, the loop number bar in the lower right flashes, rotate the black setting knob to set the max. charging voltage.

Loop Figure 7



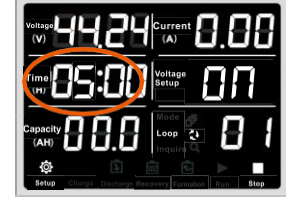
After the loop number is set, continue to press the setting knob, the voltage setting bar display "OFF", rotate the black setting knob to display "ON". "OFF" means the last loop end with the discharge, "ON" means the last loop end with charge.

Loop Figure 8



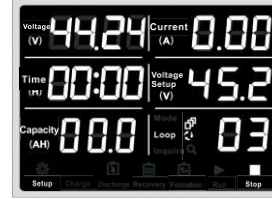
If the last loop select "ON", continue press the setting knob, the capacity bar flashes. Rotate the black setting knob to set the charging capacity of the last loop 0-99.9AH at option

Loop Figure 9



After the capacity charged of last loop is set, press the black setting knob again, time bar flashes. Rotate the black knob to set the loop step interval 0-20 mins at option

Loop Figure 10



After the step interval is set, press the black setting knob again, all setting bar stop flash, the setting is completed. Press the red start button to start the charge-discharge loop

Loop Figure 11