

INSTRUCTION MANUAL

AC/DC INPUT

Professional Balance
Charger/Discharger



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Thank You for purchasing the  **HTRC**® charger. Designed for both rookies and Pro-fessionals, this system is extremely versatile. For the safety and the best use of your system, please read this manual carefully.

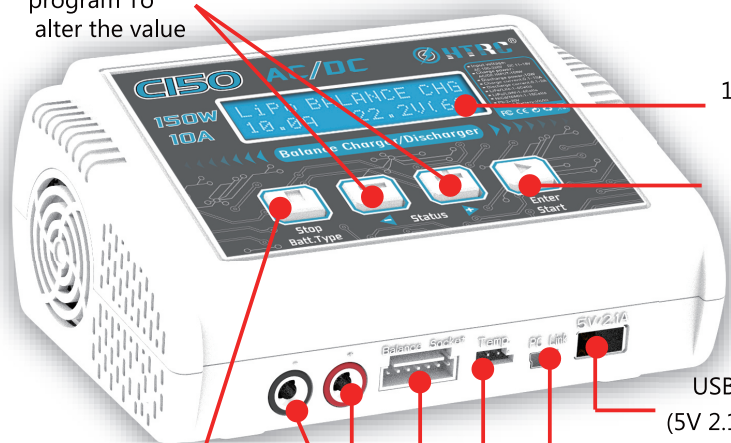
SPECIFICATIONS:

Product Model:	C150	C240 DUO Power Distribution	T150	T240 DUO Power Distribution
AC Input Voltage	100-240V	100-240V	100-240V	100-240V
DC Input Voltage	11-18V	11-18V	11-18V	11-18V
Charge power	AC INPUT 150W DC INPUT 150W	AC INPUT (CH1+CH2=150W) DC INPUT (120W*2)	AC INPUT 150W DC INPUT 150W	AC INPUT (CH1+CH2=150W) DC INPUT (120W*2)
Charge current	0.1-10A	0.1-10A*2	0.1-10A	0.1-10A*2
Discharge current	0.1-2A	0.1-2A*2	0.1-2A	0.1-2A*2
Lipo/Lilo/LiFe/LiHV	1-6cells	1-6cells*2	1-6cells	1-6cells*2
NiCd/NiMH	1-15cells	1-15cells*2	1-15cells	1-15cells*2
PB	2-20V	2-20V*2	2-20V	2-20V*2
Smart Battery	I/II/III	I/II/III*2	I/II/III	I/II/III*2
Net weight	0.70Kg	0.75Kg	0.70Kg	0.75Kg
Dimension	145x105x64mm	145x105x64mm	145x105x64mm	145x105x64mm

INTRODUCTION

Dec/inc
To select sub
program To
alter the value

C150



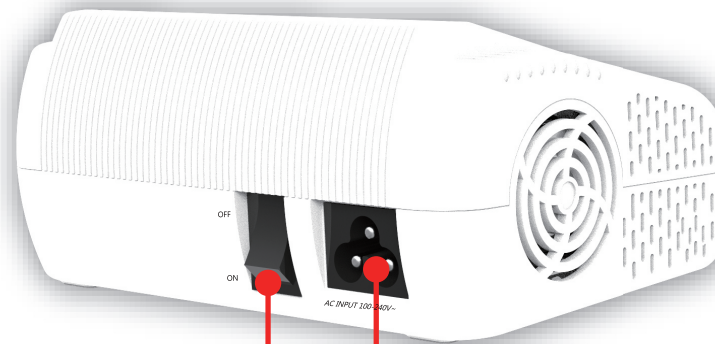
T150

3.2"
TOUCH
COLOR SCREEN



DC 11-18V

PC Link

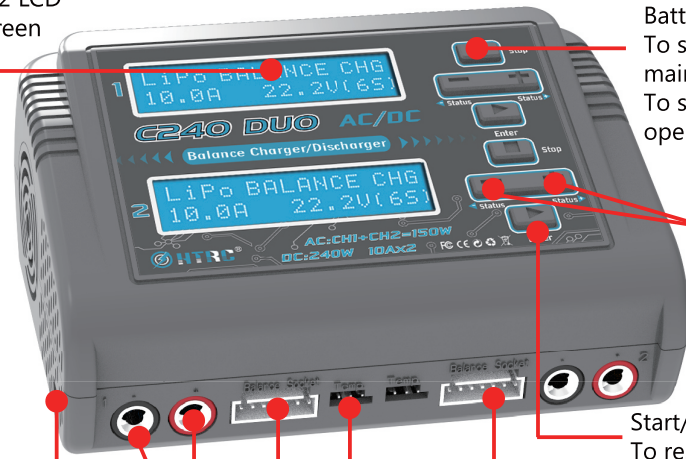


Power Switch

AC 100-240V

C240 DUO

1602 LCD screen



Batt type/stop
To select
main program
To stop the
operation

Dec/inc
To select sub
program To
alter the value

PC Link

Output port

Temp.
Balance port

Balance port

Start/enter
To resume or
start the operation

T240 DUO

3.2"
TOUCH
COLOR SCREEN



Output port

Temp.
Balance port

DC 11-18V

PC Link



PC Link

DC 11-18V

DC 11-18V

PC Link

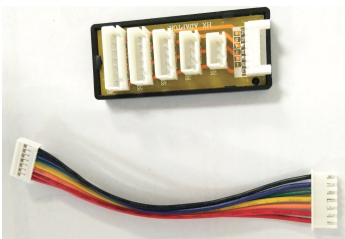
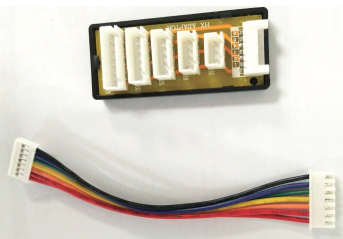
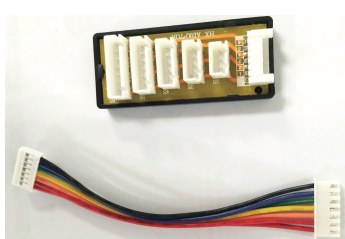
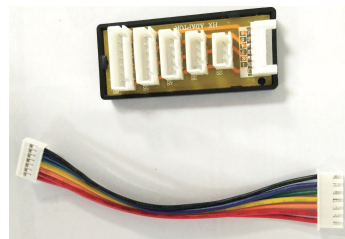
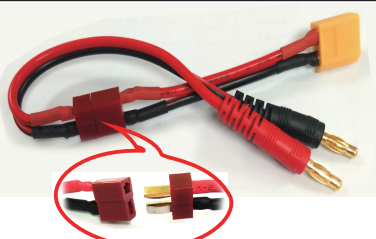
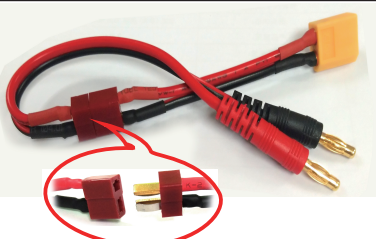
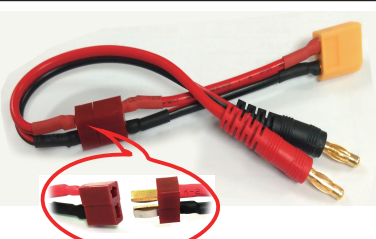
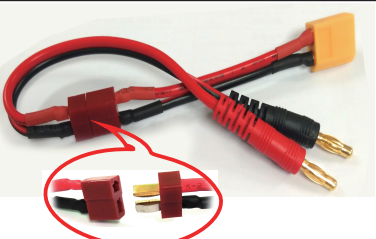
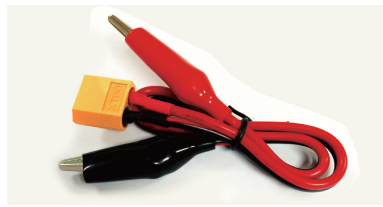


Power Switch

AC 100-240V

PC Link

ACCESSORIES

C150	C240 DUO	T150	T240 DUO
			
Adapter Board1SET	Adapter Board 2 SET	Adapter Board1SET	Adapter Board 2 SET
			
Extra Cable x1pcs	Extra Cable x2pcs	Extra Cable x1pcs	Extra Cable x2pcs
			
Extra Cable x1pcs	Extra Cable x1pcs	Extra Cable x1pcs	Extra Cable x1pcs
			
AC Cord x1pcs	AC Cord x1pcs	AC Cord x1pcs	AC Cord x1pcs

- ⚠ - This charger is ONLY suitable for charge rechargeable LiPo, Lilo, LiFe, LiHv, NiCd, NiMH, Smart and Pb batteries. Do not attempt to charge dry cells. Charge other types of batteries may cause fire or explosion.
- ⚠ - Set up the InputPower Limit/Low Input VOLT Cutoff correctly in the USER SETTING for the DC power supply.
- ⚠ - Pay attention to the charger during use. Do not leave the charger unattended.
- ⚠ - Never charge the dead or damaged batteries.
- ⚠ - Do not attempt to charge a battery pack containing different types of batteries.
- ⚠ - Do not use a too long or damaged cables.
- ⚠ - Do not use the charger close by a flammable object. Use only in well-ventilated areas.
- ⚠ - Only charge the rechargeable batteries that meet the product specifications of this charger.
- ⚠ - Do not allow water, moisture or foreign objects into the charger.
- ⚠ - Do not use in humid locations. Do not operate with wet hands.
- ⚠ - Do not attempt to disassemble the charger.
- ⚠ - Do not use the charger on fleecy materials, such as carpets, blankets, beds and cushions.
- ⚠ - Do not block the cooling fan and the air inlet.
- ⚠ - Strongly recommend balancing Lithium packs. An unbalanced pack may damage during discharging.
- ⚠ - General default charging current is 1C. Read the manual of the battery and setup the suitable current to charge the battery. Higher charge/discharge current will damage the battery, even cause a fire.

BATTERIES INFO and MAX CHARGE CURRENT

Battery Type	No.o f Cells	Rated Voltzge(V)	Charger Current(A)
LiHV	1	3.8	0.1-10.0A
	2	7.6	0.1-10.0A
	3	11.4	0.1-10.0A
	4	15.2	0.1-10.0A
	5	19.0	0.1-10.0A
	6	22.8	0.1-10.0A
Lipo	1	3.7	0.1-10.0A
	2	7.4	0.1-10.0A
	3	11.1	0.1-10.0A
	4	14.8	0.1-10.0A
	5	18.5	0.1-10.0A
	6	22.2	0.1-10.0A
LiIo	1	3.6	0.1-10.0A
	2	7.2	0.1-10.0A
	3	10.8	0.1-10.0A
	4	14.4	0.1-10.0A
	5	18	0.1-10.0A
	6	21.6	0.1-10.0A
LiFe	1	3.3	0.1-10.0A
	2	6.6	0.1-10.0A
	3	9.9	0.1-10.0A
	4	13.2	0.1-10.0A
	5	16.5	0.1-10.0A
	6	19.8	0.1-10.0A
NiMH /NiCd	1	1.2	0.1-10.0A
	2	2.4	0.1-10.0A
	3	3.6	0.1-10.0A
	4	4.8	0.1-10.0A
	5	6	0.1-10.0A
	6	7.2	0.1-10.0A
	7	8.4	0.1-10.0A
	8	9.6	0.1-10.0A

Battery Type	No.o f Cells	Rated Voltzge(V)	Charger Current(A)
NiMH /NiCd	9	10.8	0.1-10.0A
	10	12	0.1-10.0A
	11	13.2	0.1-10.0A
	12	14.4	0.1-10.0A
	13	15.6	0.1-10.0A
	14	16.8	0.1-10.0A
	15	18	0.1-10.0A
Pb	1	2	0.1-10.0A
	2	4	0.1-10.0A
	3	6	0.1-10.0A
	4	8	0.1-10.0A
	5	10	0.1-10.0A
	6	12	0.1-10.0A
	7	14	0.1-10.0A
	8	16	0.1-10.0A
	9	18	0.1-10.0A
	10	20	0.1-10.0A
	11	22.0	0.1-10.0A
	12	24.0	0.1-10.0A

Lipo	Voltage Level: 3.7V/cell Max Charge Voltage: 4.2V/Cell Discharge Voltage Cut off Level: 3.0V/cell or Higher
LiIo	Voltage Level: 3.6V/cell Max Charge Voltage: 4.1V/Cell Discharge Voltage Cut off Level: 3.0V/cell or Higher
LiFe	Voltage Level: 3.3V/cell Max Charge Voltage: 3.8V/Cell Discharge Voltage Cut off Level: 2.0V/cell or Higher
LiHV	Voltage Level: 3.8V/cell Max Charge Voltage: 4.35V/Cell Discharge Voltage Cut off Level: 3.2V/cell or Higher
NiMH /NiCd	Voltage Level: 1.2V/cell Max Charge Voltage: 1.6V/Cell Discharge Voltage Cut off Level: 0.80V/cell or Higher
Pb	Voltage Level: 2.0V/cell Max Charge Voltage: 2.45V/Cell Discharge Voltage Cut off Level: 1.50V/cell or Higher

PROGRAM OF Lipo/Lilo/LiFe/LiHV(C150/C240 DU0)

Press +/- to shift the work modes between the battery and the charger. Press ENTER to select
Press STOP to quit

```
LiPo BALANCE CHG
10.0A          AUTO
```

BALANCE CHARGE: With this mode, the charger will charge the battery to the termination voltage and balance each cell of the battery pack.
Balance port of the battery must be connected.

```
LiPo CHARGE
10.0A    22.2V(6S)
```

CHARGE: With this mode, the charger will charge the battery to the termination voltage by CC-CV mode, and stop at 1/10 of setting current.

```
LiPo FAST CHARGE
10.0A    22.2V(6S)
```

FAST CHARGE: With this mode, the charger will charge the battery to the termination voltage by CC-CV mode, and stop at 1/5 of setting current.

```
LiPo STORAGE
2.0A      2.2V(6S)
```

STORAGE: With this mode, the charger will charge or discharge the battery to the storage voltage.
(LiPo: 3.85V/S Lilo: 3.75V/S LiFe: 3.45V/S LiHV: 4.35V/S)

```
LiPo DISCHARGE
2.0A      22.2V(6S)
```

DISCHARGE: With this mode, the charger will discharge the battery to the termination voltage.

Select Battery Type/Current/Cell Count after work mode selection.

Press +/- button to shift or increase/decrease

Press ENTER to select

Press STOP to quit

Battery Type: LiPo/Lilo/LiFe

Work Mode(selected)

Current

```
LiPo CHARGE
10.0A    22.2V(6S)
```

Cell Count

The character will be blinking during being select

Press ENTER for 2 seconds, the charger will check the battery then enter confirm interface. Press STOP to cancel, press ENTER to start working.

Charger detected Cell Count

```
R: 6SER    S: 6SER
CONFIRM(ENTER)
```

User set Cell Count

CANCEL(STOP)

WORKING INTERFACE (C150/C240 DUO)

General

Battery type and cell count

Alternate Show

Work Mode(short form)

BAL Balance Charge

CHG Charge

FAS Fast Charge

STO Storage

DSC Discharge

Current Battery Voltage

```

LiPo  5.0A 22.20V
CHG   038:38 2998
    
```

Timer Capacity

Press ENTER to return

```

LiPo  5.0A 22.20V
CHG   038:38 2998
    
```

Press

Status

Press

STATUS

Data

```

Capacity Cut-off
ON       8000mAh
    
```

```

Safety Timer
ON       240Min
    
```

```

Ext.Temp Cut-off
        80°C
    
```

```

Ext.Temp
        30°C
    
```

```

Input Voltage
        12.10V
    
```

```

End Voltage
        25.20V(65)
    
```

STATUS

Cell Voltage

Cell1	Cell2	Cell3
3700	3700	3700 mV
3700	3700	3700 mV
Cell4	Cell5	Cell6

Work Finished

Show alternated between battery type/cell count with FULL(END)

FULL

```

Li6S  0.5A 25.20V
CHG   088:38 4968
    
```

Press

STATUS

```

4200  4198 4202 mV
4198  4202 4200 mV
    
```


PROGRAM OF NiMH/NiCd(C150/C240 DU0)

Press +/- to shift the work modes between the battery and the charger.

Press ENTER to select

Press STOP to quit

```
NiMH CHARGE
10.0A
```

CHARGE: With this mode, the charger will automatically detect the cell count of the battery and charge the battery to the termination voltage.

```
NiMH DISCHARGE
2.0A 10.0V(10S)
```

DISCHARGE: With this mode, the charger will discharge the battery to the termination voltage.

```
NiMH CYCLE
C-D Times: 3
```

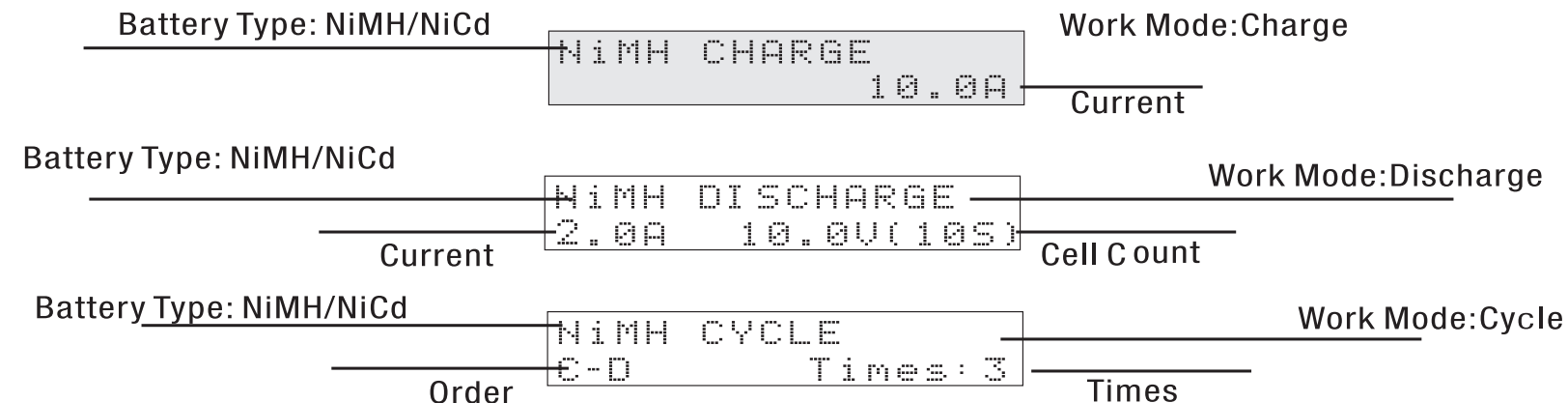
cycle: With this mode, the charger will charge and discharge the battery by the user's setting. (Current, Cell Count separately set in Charge and Discharge mode)

Select Battery Type/Current/Cell Count after work mode selection.

Press +/- button to shift or increase/decrease

Press ENTER to select

Press STOP to quit



The character will be blinking during selection

Press ENTER for 2 seconds, the charger will start working.

WORKING INTERFACE (C150/C240 DUO)

General

Battery type and cell count

Alternate Show

Work Mode(short form)

CHG Charge

DSC Discharge

C-D/D-C Cycle

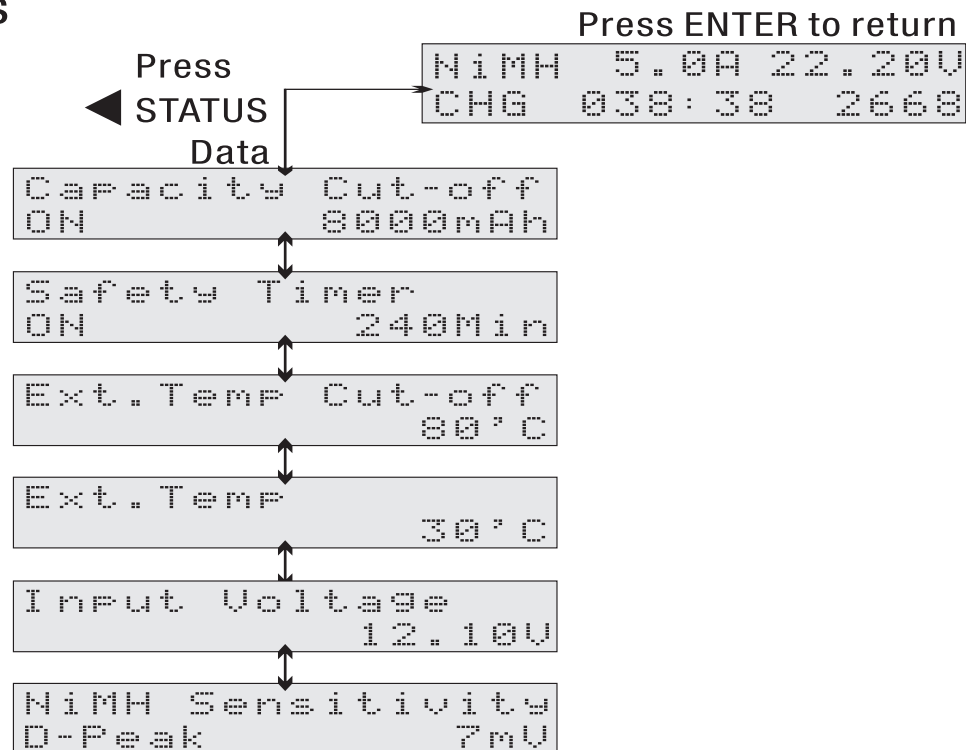
Work Finished

Show alternated between battery type/cell count with FULL(END).

FULL

```
NiMH 0.4A 16.00V
CHG 058:38 4968
```

Status



PROGRAM OF PB(Lead-Acid)(C150/C240 DU0)

Press +/- to shift the work modes between the battery and the charger.

Press ENTER to select

Press STOP to quit

```
Pb CHARGE
10.0A  12.0V(65)
```

CHARGE: With this mode, the charger will charge the battery to the termination voltage.



```
Pb DISCHARGE
2.0A   12.0V(65)
```

DISCHARGE: With this mode, the charger will discharge the battery to the termination voltage.

Select Current/Cell Count after work mode selection.

Press +/- button to shift or increase/decrease

Press ENTER to select

Press STOP to quit

Current

```
Pb CHARGE
10.0A  12.0V(65)
```

Work Mode:Charge

Cell Count

Current

```
Pb DISCHARGE
2.0A   12.0V(65)
```

Work Mode:Discharge

Cell Count

The character will blinking during being select

Press ENTER for 2 seconds, the charger will start working.

WORKING INTERFACE (C150/C240 DUO)

General

Battery type and cell count

Alternate Show

Work Mode(short form)

CHG Charge

DISC Discharge

Current

Battery Voltage

```
6S
Pb 10.0A 12.00V
CHG 038:38 2868
```

Timer

Capacity

Status

Press ENTER to return

Press
STATUS

```
Pb 10.0A 12.00V
CHG 038:38 2868
```

Data

```
Capacity Cut-off
ON 8000mAh
```

```
Safety Timer
ON 240Min
```

```
Ext.Temp Cut-off
80'C
```

```
Ext.Temp
30'C
```

```
Input Voltage
12.10V
```

```
End Voltage
14.70V(6S)
```

Work Finished

Show alternated between battery type/cell count with FULL(END).

```
FULL Pb 0.5A 14.70V
CHG 058:38 4988
```

PROGRAM OF USER SETTINGS(C150/C240 DUO)

PROGRAM SELECT User Settings	Key Beep On Buzzer On	LiPo Charge TVC 4200mV/s
	Completion Ring Beep 1Min	LiPo Discharge TVC 3200mV/s
	Cycle Waste Time 5Min	LiHV Charge TVC 4350mV/s
	Low Input VOLT Cut-Off 10.0V	LiHV Discharge TVC 3300mV/s
	Ext-TEMP Cut-off	LiFe Charge TVC 3600mV/s
	Capacity Cut-off On 5000mAh	LiIo Discharge TVC 2500mV/s
	Safety Timer On 240Min	LiFe Charge TVC 3600mV/s
	Charge Power Limit 240W	LiFe Discharge TVC 2500mV/s
	LiXx Balance Control Standard	NiMH Sensitivity D.Peak 4mV
	Termination Voltage Control	NiMH Discharge TVC 800mV
	Reset Factory Default Setting	NiCd Sensitivity D.Peak 7mV
		NiCd Discharge TVC 1000mV
		Pb Charge TVC 2400mV/s
		Pb Discharge TVC 1500mV/s

Key Beep On
Buzzer VOL LOW

In this menu, you can turn on/off of the key sound and set the volume of the buzzer. Keep Beep default: On . Buzzer default: Low

Completion Ring
Beep 1Min

In this menu, you can set the completion ring, 1-5 minutes/off/always optional. Default: 1Min

Cycle Waste Time
5Min

In this menu, you can set the waste time between charge and discharge in NiMH/NiCd cycle mode. Range from 1-60Min, Default: 5Min

Low Input VOLT
Cut-Off 10.0V

In this menu, you can set the cutoff input voltage of the power supply of the charger to protect your power supply. The charger will cutoff working when input voltage lower than the setting value. Range from 10.0-18.0V, Default: 10.0V

Ext-TEMP Cut-off
ON 80°C

In this menu, you can set the cutoff external temperature to protect your battery. The charger will cutoff working when the external temperature is higher than the setting value (a external temperature sensor is needed). On/Off optional, range from 30-90°C, Default: 80°C

Capacity Cut-off
ON 5000mAh

In this menu, you can set the cutoff capacity to protect your battery. The charger will cutoff working when the capacity is more than the setting value. On/Off optional range from 100-60000mAh Default: 8000mAh

PROGRAM OF USER SETTINGS(C150/C240 DUO)

Safety Timer
On 240Min

In this menu, you can set a safety time to protect your charger and battery.
The charger will cutoff working when the safety time is up to the setting value.
On/Off optional, range from 10-720 minutes, Default: 240 minutes

Charge Power
Limit 240W

In this menu, you can set the charge power limit to meet your power supply.
The charge will work under the setting value. Range from 10-250 watt, Default: 250 watt

LiXx Balance
Control Standard

Balance control of LiPo/LiIo/LiFe, you can set the balance control to meet your demand.
Standard/Fast/Accurate optional.
Default: Standard

*Fast: Balance speed fastest, less accurate.

*Accurate: Balance speed lowest, more accurate.

*Standard: balance speed and accurateness between Fast and Accurate

Reset Factory
Default Setting

Reset factory default setting.

Termination
Voltage Control

Termination voltage control per cell of all the batteries this charger support. You can set the value according to your request.

LiPo Charge
TVC 4200mV/s

Range from 4150-4250 mV/s
Default: 4200mV/s

LiPo Discharge
TVC 3200mV/s

Range from 3000-3850mV/s
Default: 3200mV/s

LiHV Charge
TVC 4350mV/s

Range from 4300-4400 mV/s
Default: 4350mV/s

LiHV Discharge
TVC 3300mV/s

Range from 3100-3950mV/s
Default: 3300mV/s

LiIo Charge
TVC 4100mV/s

Range from 3750-4200mV/s
Default: 4100mV/s

LiIo Discharge
TVC 3100mV/s

Range from 3000-3750mV/s
Default: 3100mV/s

LiFe Charge
TVC 3600mV/s

Range from 3300-3800mV/s
Default: 3600mV/s

LiFe Discharge
TVC 2500 mV

Range from 2500-3300mV/s
Default: 2500mV/s

NiMH Sensitivity
Default

Range from 4-20mV

NiMH Discharge
TVC 800mV

Range from 500 1000mV/s
Default: 800mV/s

NiCd Sensitivity
D.Peak 7mV

Range from 4-20mV
Default: 7mV

NiCd Discharge
TVC 1000mV

Range from 500-1000mV/s
Default: 1000mV/s

Pb Charge
TVC 2.4V/s

Range from 1500-2500mV/s
Default: 2400mV/s

Pb Discharge
TVC 1.5V/s

Range from 1000-1500mV/s
Default: 1500mV/s

PROGRAM OF EXTRA FUNCTION(C150/C240 DU0)

Menu Chart

PROGRAM SELECT
Extra Function

1> Meter LiXx
Battery Status

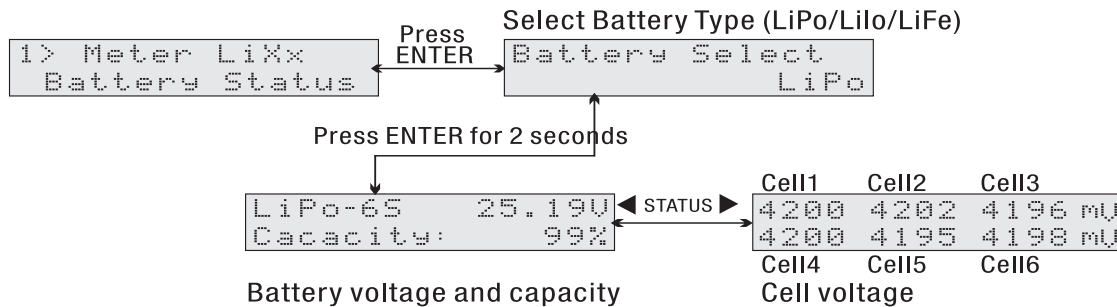
2> Meter LiXx
Battery IR

3> Balancer
LiPo/LiIo/LiFe/LiHV

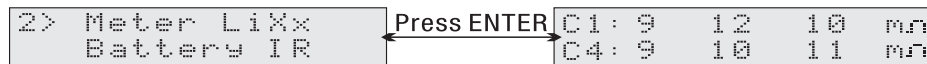
4> Digital Power

5> Brush Motor
Driver

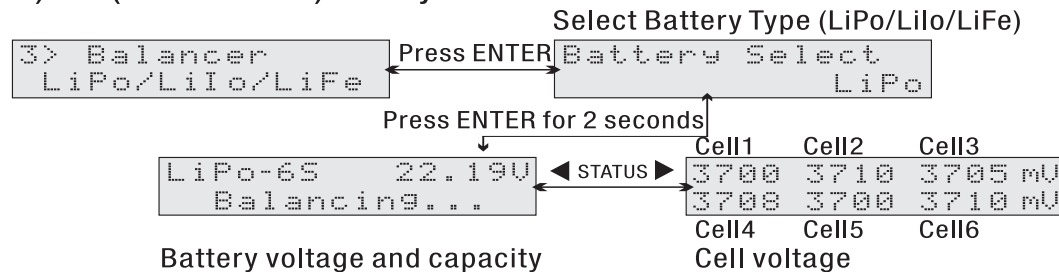
1) Meter LiXx (LiPo/Lilo/LiFe) battery status.



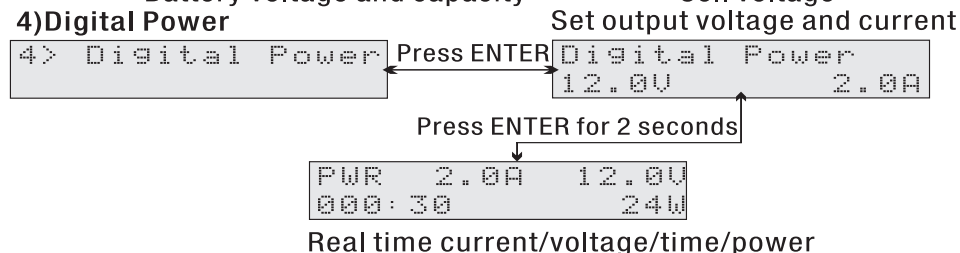
2) Meter LiXx (LiPo/Lilo/LiFe) battery internal resistance.



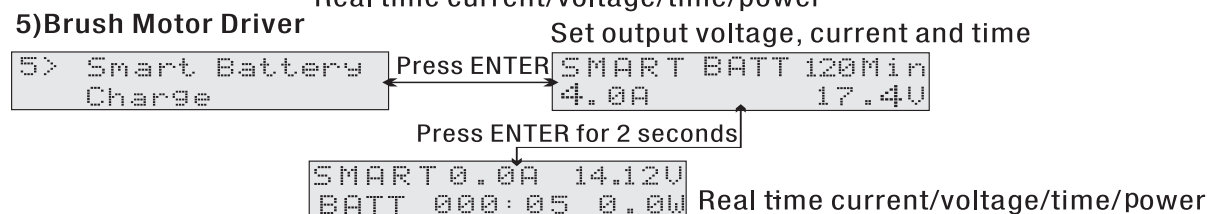
3) LiXx (LiPo/Lilo/LiFe) Battery Balancer.



4) Digital Power

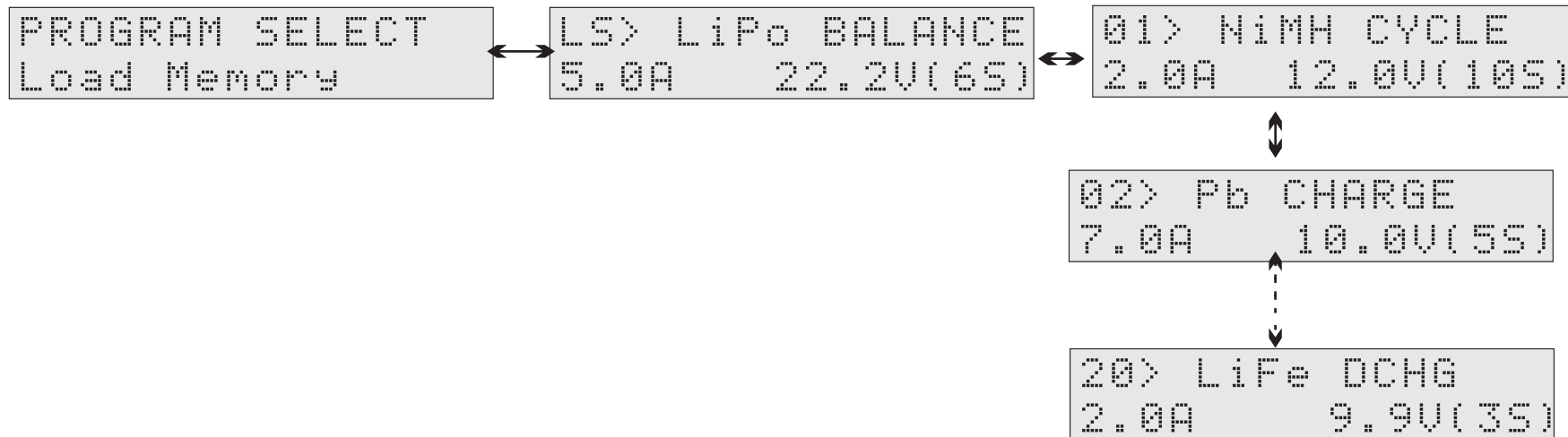


5) Brush Motor Driver



PROGRAM OF LOAD MEMORY(C150/C240 DU0)

Menu Chart



There are 20 memories record the work of the charger. LS=latest record. Press +/- to shift the memories, press ENTER to revise, then press ENTER for 2 seconds to start working.

ERROR INFORMATION(C150/C240 DU0)

INPUT VOLTAGE
TOO HIGH

Input voltage is higher than 18V, check the power supply, then restart the charger.

INPUT VOLTAGE
TOO LOW

Input voltage is lower than the value of LOW INPUT VOLTAGE CUT- OFF, check the power supply, then restart the charger.

REVERSE POLARITY
CHECK

Reverse polarity, check the connection between the charger and the battery, correct the connection, then restart the work.

BATTERY CHECK
DISCONNECT

Battery disconnect, check the connection between the charger and the battery, then restart the work.

BATTERY CHECK
OVER VOLTAGE

Total voltage of the battery is over the termination voltage control(TVC), check the battery and the TVC setting, then restart.

BATTERY CHECK
LOWER VOLTAGE

Total voltage of the battery is lower than the termination voltage control(TVC), check the battery and the TVC setting, then restart.

BATTERY CHECK
CELL COUNT ERROR

Cell count detected by the charge is different from the setting, check the battery cell count and reset the cell count of the work.

BATTERY CHECK
OVER CELL VOLT

Cell voltage of the battery pack is over the termination voltage control(TVC), check the battery and the TVC setting, then restart.

BATTERY CHECK
LOWER CELL VOLT

Cell voltage of the battery pack is lower the termination voltage control(TVC), check the battery and the TVC setting, then restart.

BATTERY CHECK
FULL BATTERY

Full battery, no need to charge.

OVER Ext.TEMP
CUTOFF

External temperature is higher than the setting value, cutoff.

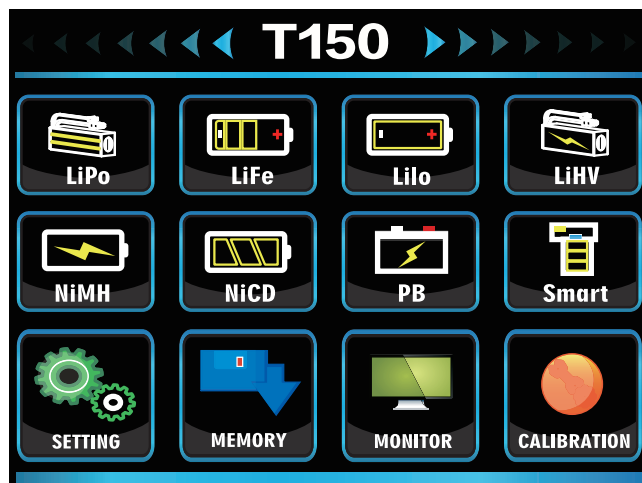
OVER CAPACITY
CUTOFF

Capacity is over than the setting value, cutoff.

SAFETY TIME OUT
CUTOFF

Time is up to the setting value of Safety Timer, cutoff.

MAIN MENU INFO(T150,T240 DUO)



Main Menu



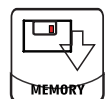
3.2 Inch Touch screen



security settings



Battery Management, Checking Battery Capacity, Voltage, Balancer

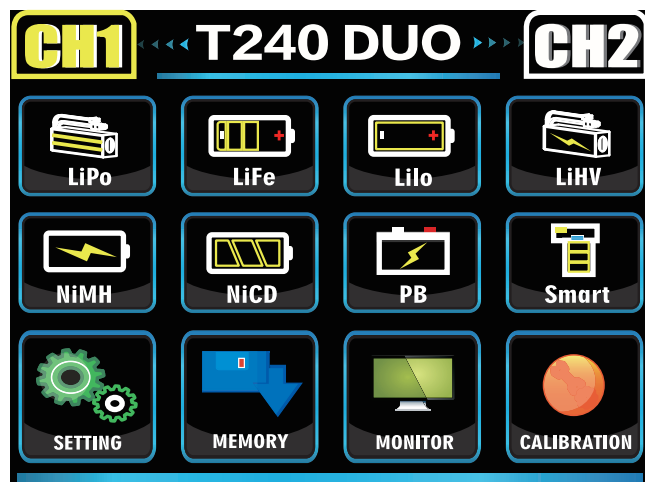


Memory: Save Six operation data



Calibrate Charger

NOTE: Please read carefully before doing anything !!



Main Menu

CH1 **CH2**

means CH-2 or CH-1 Swift image

Note: 1. If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation

2. If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly

3. Two Channel are independent, and you can use different mode to operate

PROGRAM OF LiPo/LiLo/LiFe/LiHV(T150/T240 DUO)

Example 1: Choose a set of LiPo battery charging, please follow the below steps:

Step1. Enter to Menu, Select Battery Type (Image1)。

Such as: LiPo, Enter into "SELECT WORK MODE" (Image2)。

Step2. Select "BAL CHARGE" MODE, And set the related parameters (Image2)

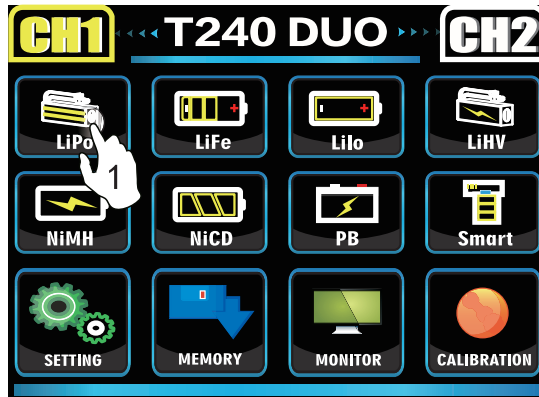


Image 1

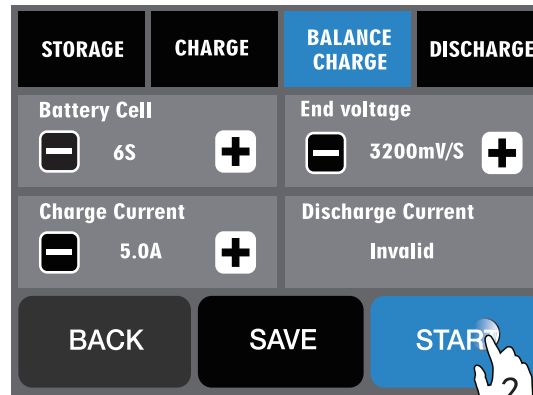


Image 2

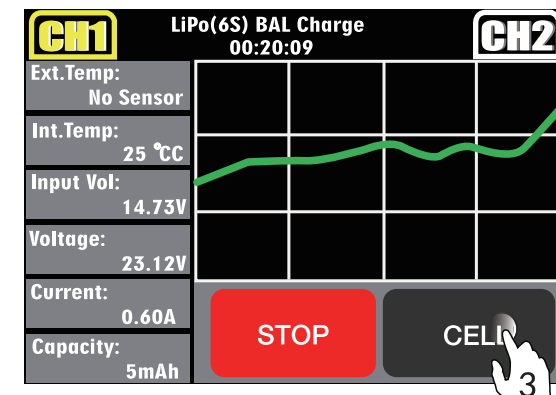


Image 3

MODE1: STORAGE
MODE2: CHARGE
MODE3: BAL CHARGE
MODE4: DISCHARGE

Next step will be example at "MODE 3" (T240 DUO)

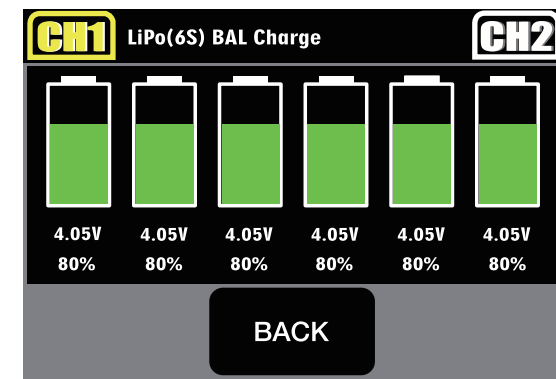


Image 4

WORKING INTERFACE(T150/T240 DUO)

Step 3: If you often use the same battery, please touch Save icon (Image 2) to enter into Save interface. Touch Unused icon to save the data and it will be easy for you to charge next time.

Note: 8 groups data can be saved

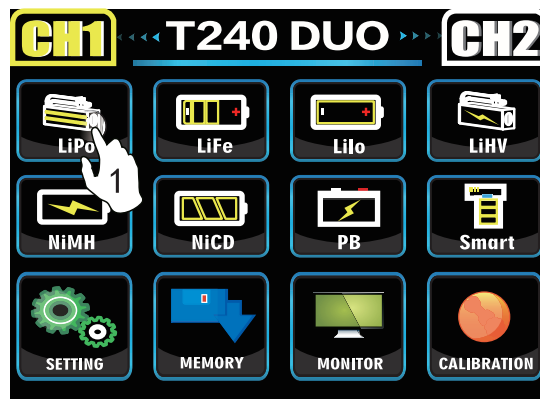


Image 1

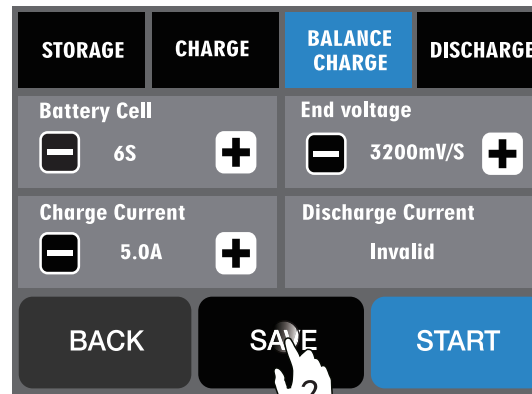


Image 2

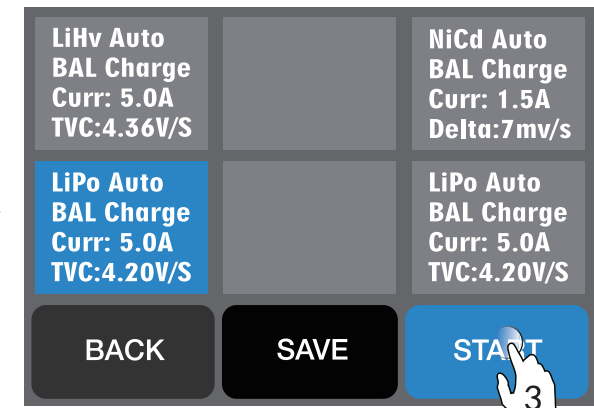
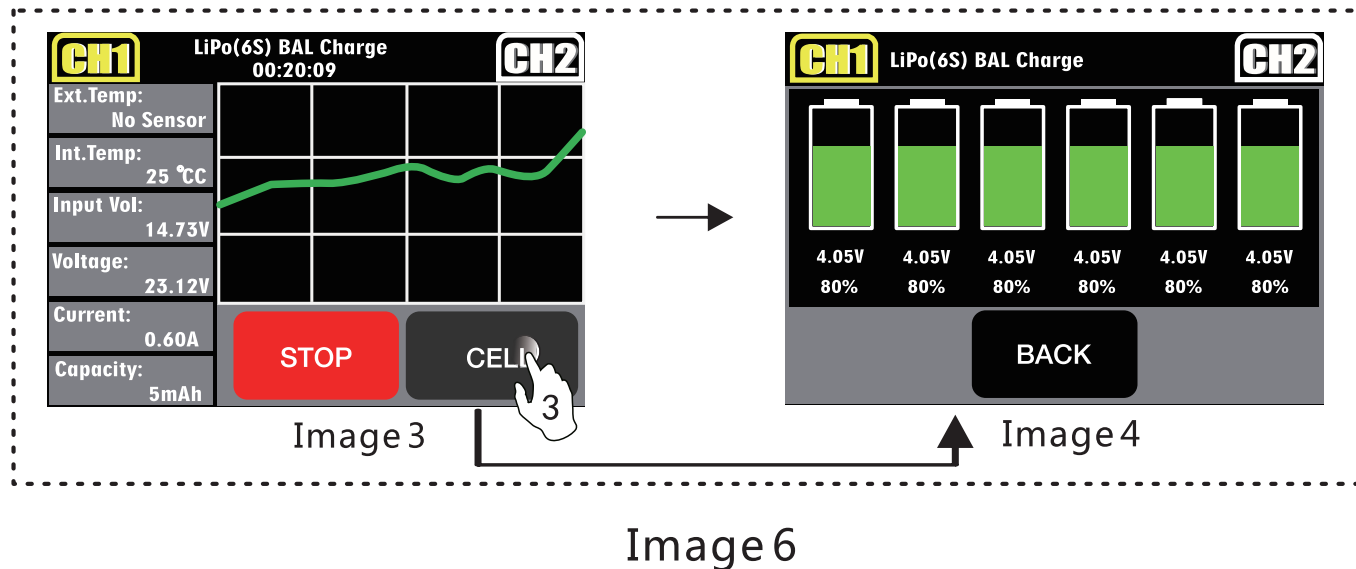


Image 5

Step 4. Select previous date to START (Image 5) to balance charging (Image 3), or touch BACK icon into previous step (Image 2), and touch START to balance charge. (Image 6)

WORKING INTERFACE(T150/T240 DUO)



- NOTE: 1. Image 3 show the graphic photo for lipo charger current and voltage.
2. Image 4 show each cell voltage and percent during lipo charging.
3. Image 3 show all setting data for lipo charging.

CH1 **CH2**

means CH-2 or CH-1 Swift image

Note: 1.If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation

2.If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly

3. Two Channel are independent, and you can use different mode to operate

PROGRAM OF NiMH/NiCd(T150/T240 DUO)

Example 2: Choose a set of NiMH battery charging, please follow the below steps:

Step 1. Enter to Menu, Select Battery Type (Image 8).

Such as: NiMH, Enter into "SET PARAMETER FOR NiMH BATTERY" (Image 9).

Step 2. Select "CHARGE" MODE, And set the related parameters (Image 9)

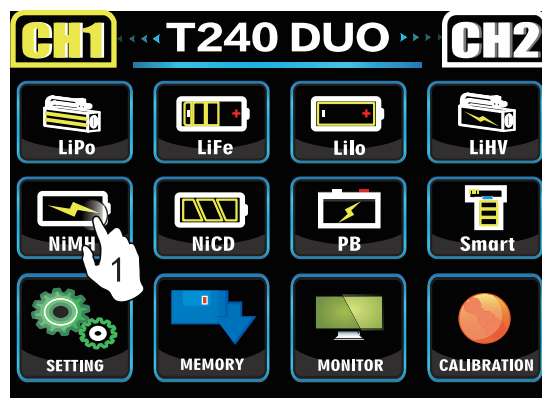


Image 8

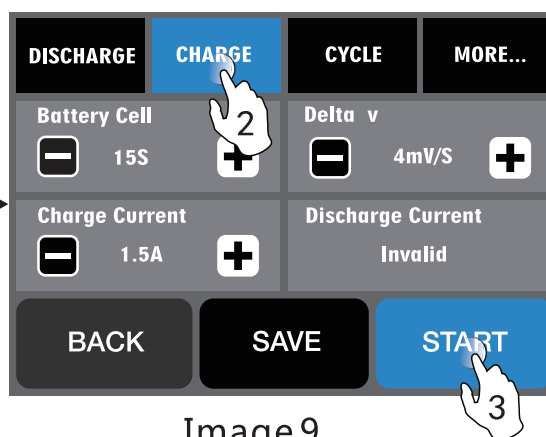


Image 9

MODE1: CYCLE
MODE2: CHARGE
MODE3: DISCHARGE

Next step will be example at "MODE 2"
(T240 DUO)

Note: 8 groups data can be saved

Step 3: If you often use the same battery, please touch Save icon (Image 9) to enter into Save interface. Touch Unused icon to save the data and it will be easy for you to charge next time. (Image 10-11)

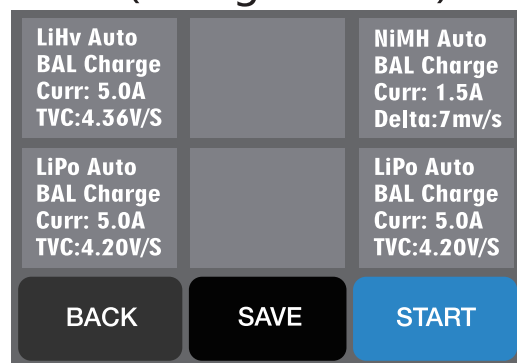


Image 10

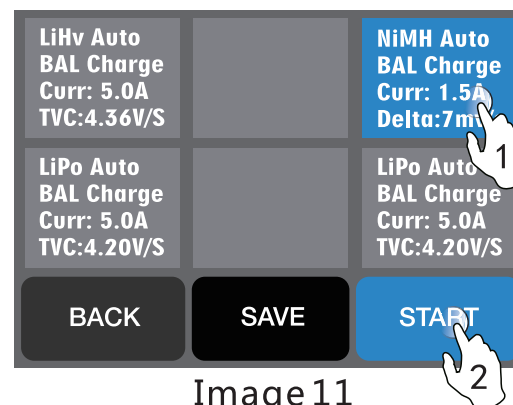


Image 11

WORKING INTERFACE(T150/T240 DU0)

Step 4. Select previous data to START(Image11)to Discharge (Image12),
Or touch BACK icon into previous step (Image9),and touch START to
charge(Image12)

WORKING INTERFACE

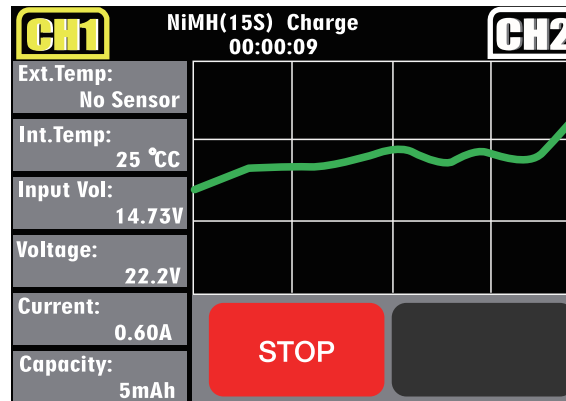


Image 12

NOTE: 1. Image12 show the graphic photo for NiMH charge current and voltage
2. Image12 show all setting data for NiMH charging

CH1 **CH2** means CH-2 or CH-1 Swift image

Note: 1.If CH-2 has been not used, **CH2** press image, return back to main menu,
and use CH-2 operation

2.If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly

3.Two Channel are independent,and you can use different mode to operate

PROGRAM of PB(lead-Acid)(T150/T240 DUO)

Example 4: Choose a set of PB battery charging, please follow the below steps:

Step 1. Enter to Menu, Select Battery Type (Image 13).

Such as: PB, Enter into "SET PARAMETER FOR PB BATTERY" (Image 14).

Step 2. Select "CHARGE" MODE, And set the related parameters (Image 14)

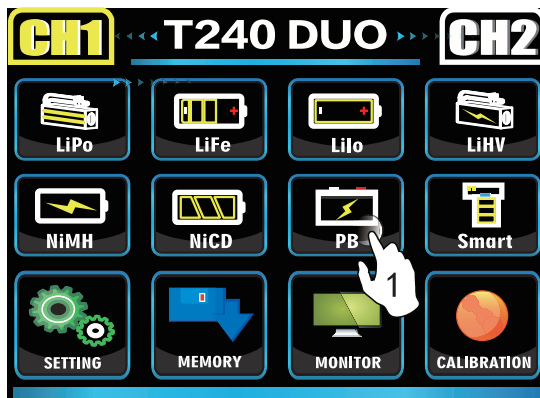


Image 13

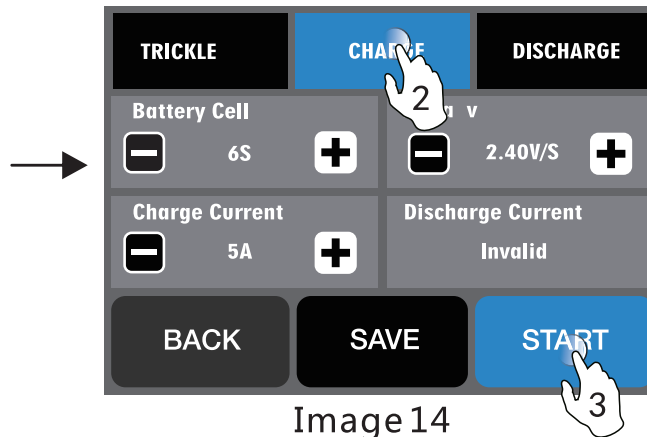


Image 14

MODE1: TRICKLE
MODE2: CHARGE
MODE3: DISCHARGE

Next step will be example at "MODE 2"

(T240 DUO)

Step 3: If you often use the same battery, please touch Save icon (Image 14) to enter into Save interface. Touch Unused icon to save the data and it will be easy for you to -charge next time. (Image 15-16)

Note: 8 groups data can be saved

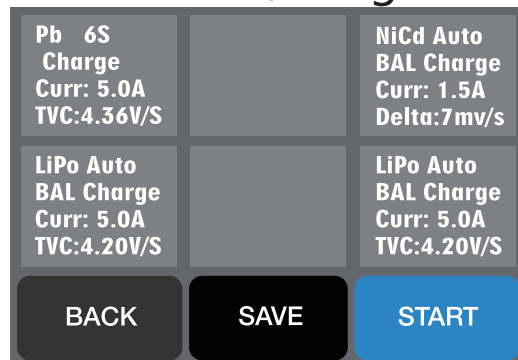


Image 15

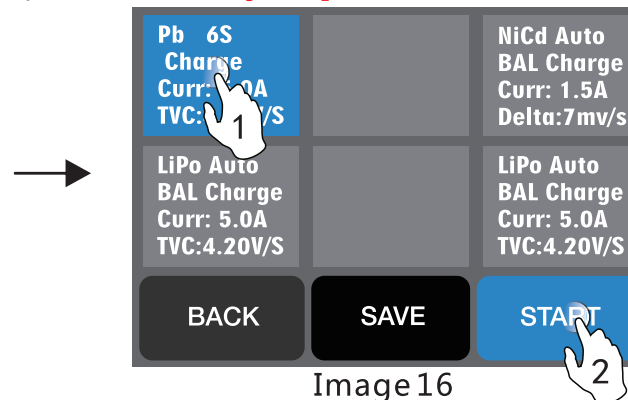


Image 16

WORKING INTERFACE(T150/T240 DU0)

Step 4. Select previous data to START(Image16)to balance charging(Image17),
Or touch BACK icon into previous step (Image16),and touch START to
balance charge(Image17)

WORKING INTERFACE

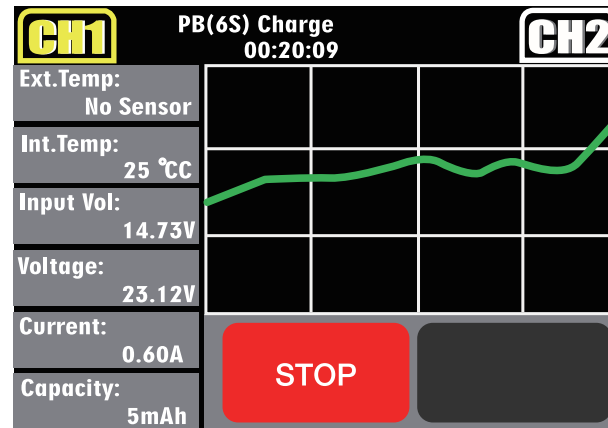


Image 17

- NOTE: 1. Image17 show the graphic photo for Pb charge current and voltage
2. Image17 show all setting data for Pb charging

CH1 **CH2** means CH-2 or CH-1 Swift image

Note: 1.If CH-2 has been not used, **CH2** press image, return back to main menu,
and use CH-2 operation

2.If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly

3.Two Channel are independent,and you can use different mode to operate

PROGRAM OF SMART(T150/T240 DUO)

Example 3: Choose a set of SMART battery charging, please follow the below steps:

Step 1. Enter to Menu, Select Battery Type (Image 18).

Such as: SMART, Enter into "SMART BATTERY POWER SUPPLY" (Image 19).

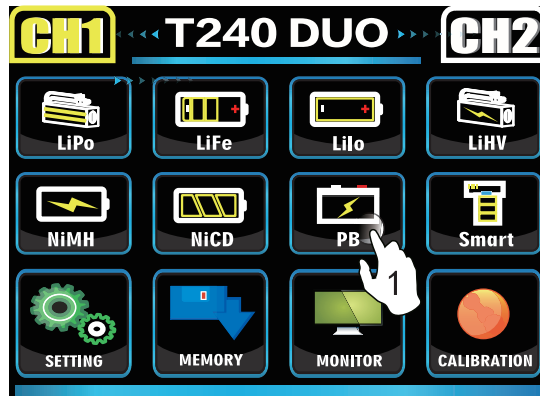


Image 18

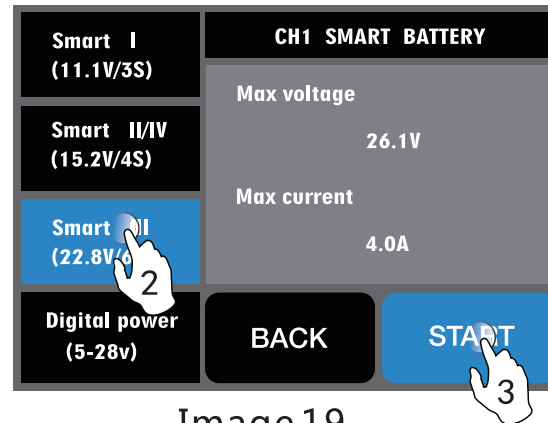


Image 19

MODE1: SMART I
MODE2: SMART II
MODE3: SMART III
MODE4: User set

Next step will be example at "MODE 4"

Step 2. Select START (Image 19) to charging (Image 20).

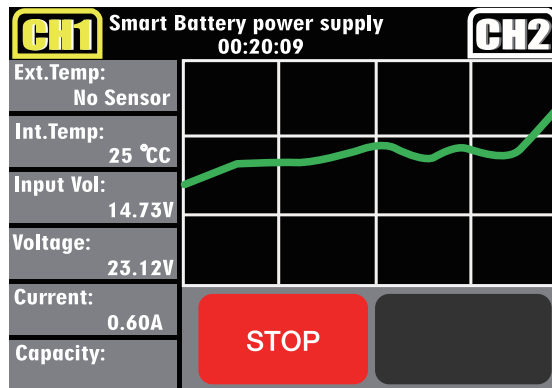


Image 20

NOTE: Image 20 show the graphic photo for the current and voltage for the smart charge.

CH1 CH2 means CH-2 or CH-1 Swift image

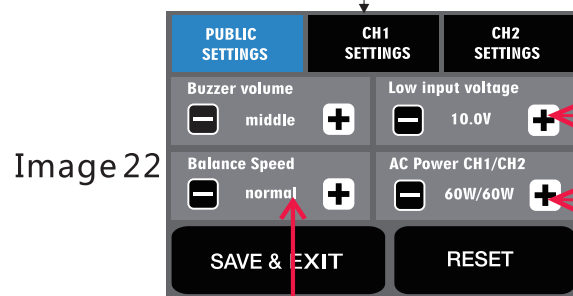
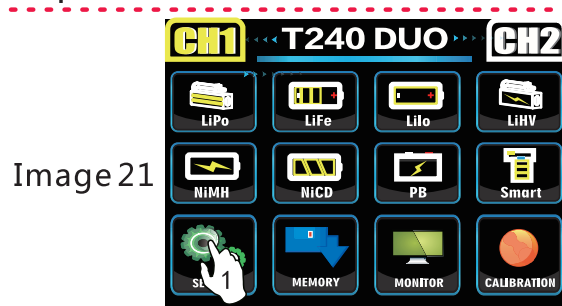
Note: 1. If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation

2. If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly

3. Two Channel are independent, and you can use different mode to operate

PROGRAM OF SETTINGS(T150/T240 DUO)

Step1.Enter to Menu, Select Setting (Image21),into set interface (Image22-24)。



Set the volume of the buzzer. Keep Beep default: **Middle,Low/Middle/High/Off optional**

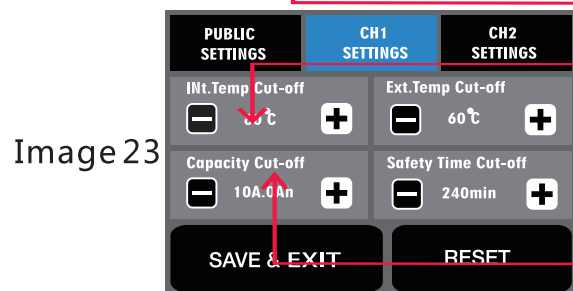
In this menu, you can set the cutoff input voltage of the power supply of the charger to protect your power supply. The charger will cutoff working when input voltage lower than the setting value. Range from 11.0-18.0V, Default: 10.0V

In this menu, you can set the charge power limit to meet your power supply. The charge will work under the setting value.

Balance control of LiPo/Lilo/LiFe/LiHV, you can set the balance control to meet your demand. Normal /Fast/slow optional. Default: Normal

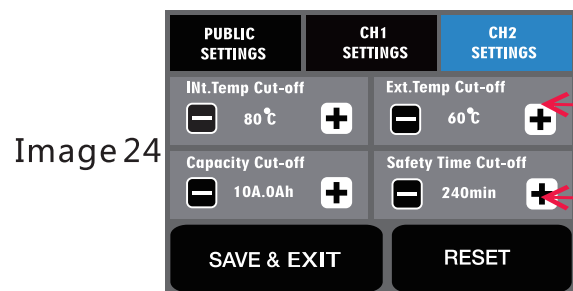
*Fast: Balance speed fastest, less accurate. * Slow : Balance sSpeed lowest, more accurate.

*Normal : balance speed and accurateness between Fast and slow



In this menu,you can set the cutoff Internal temperature to protect your battery. The charger will cutoff working when the Internal temperature is higher than the setting value range from 30-85°C,Default:80°C

In this menu, you can set the cutoff capacity to protect your battery. The charger will cutoff working when the capacity is more than the setting value. range from off- 65.0Ah, Default: 10.0 Ah



In this menu, you can set the cutoff external temperature to protect your battery. The charger will cutoff working when the external temperature is higher than the setting value (anexternal temperature sensor is needed). range from 30-85°C,Default: 60°C

In this menu, you can set a safety time to protect your charger and battery. The charger will cutoff working when the safety time is up to the setting value. On/Off optional, range from 1 - 600 minutes, Default: 240 minutes

PROGRAM OF MONITOR/CALIBRATION (T150/T240 DUO)

ONE: Enter into Menu, select Monitor (Image25) and into BATTERY MONITOR (Image26).

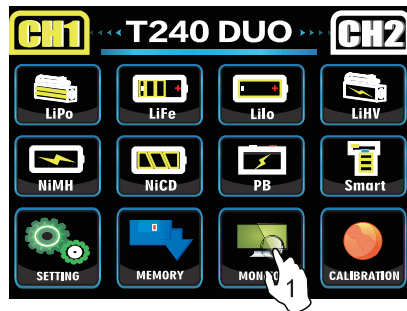


Image 25

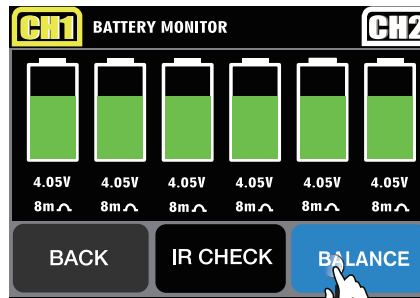


Image 27

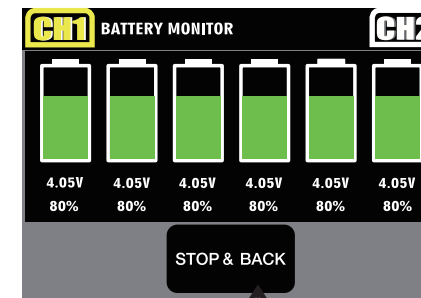


Image 26

- 1) Meter LiXx(LiPo/LiIo/LiFe/LiHV) battery status.(Image27)
- 2) Meter LiXx(LiPo/LiIo/LiFe/LiHV) battery internal resistance.(Image27)
- 3) LiXx(LiPo/LiIo/LiFe/LiHV) battery balancer.(Image28)

CH1 CH2 means CH-2 or CH-1 Swift image

- Note: 1.If CH-2 has been not used, **CH2** press image, return back to main menu, and use CH-2 operation
- 2.If CH-2 has been used, **CH1** press image, enter into CH-2 operation directly
- 3.Two Channel are independent,and you can use different mode to operate

TWO: Step1.Enter to Menu, select Calibration (Image29) , into "CHARGER CALIBRATION"(Image30)

Step2. select "RESET" (Image30)recover original setting (Image30)

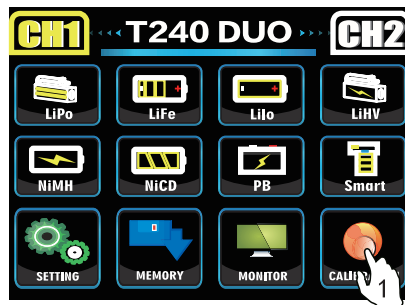


Image 29

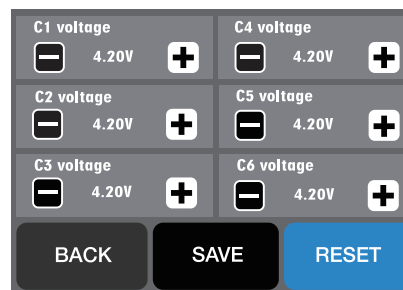


Image 30

PROGRAM OF MEMORY (T150/T240 DUO)

Step1.Enter into Menu, select Memory (Image31)。

Step2:Select correct icon as exact battery typeimage32,and select “Modify” icon,(Image33).

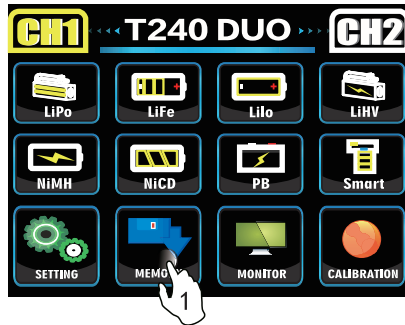


Image 31

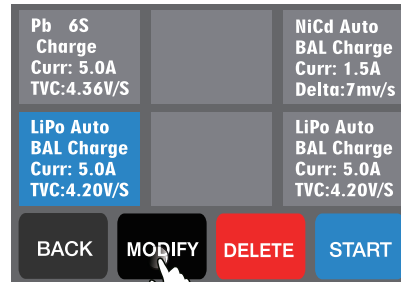


Image 32

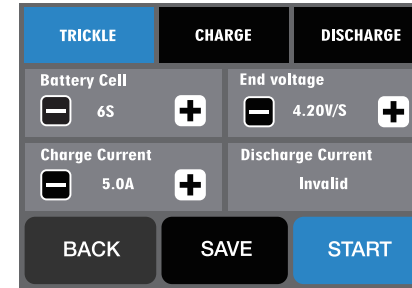


Image 33

Step1.Enter into Menu, select Memory (Image31)。

Step 2:Select “start” icon (Image 32),and select “ cell ” icon (Image 34)(Image 35)

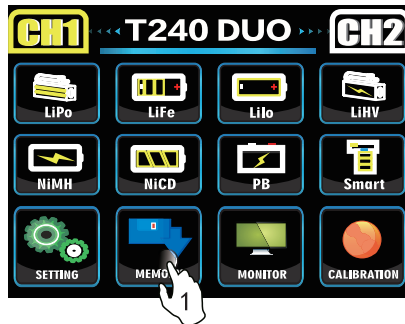


Image 31

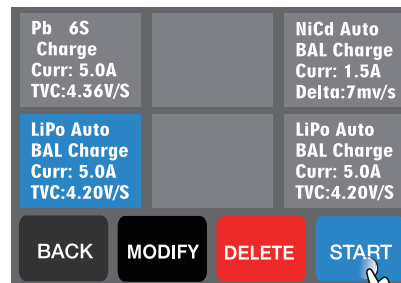


Image 32

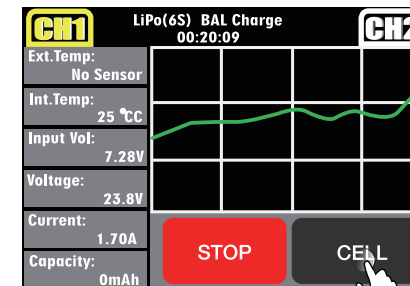


Image 34

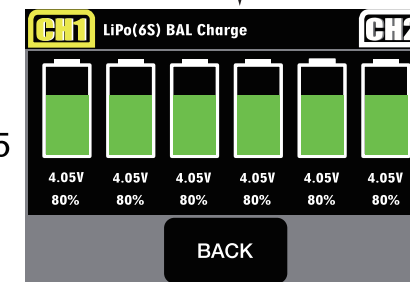
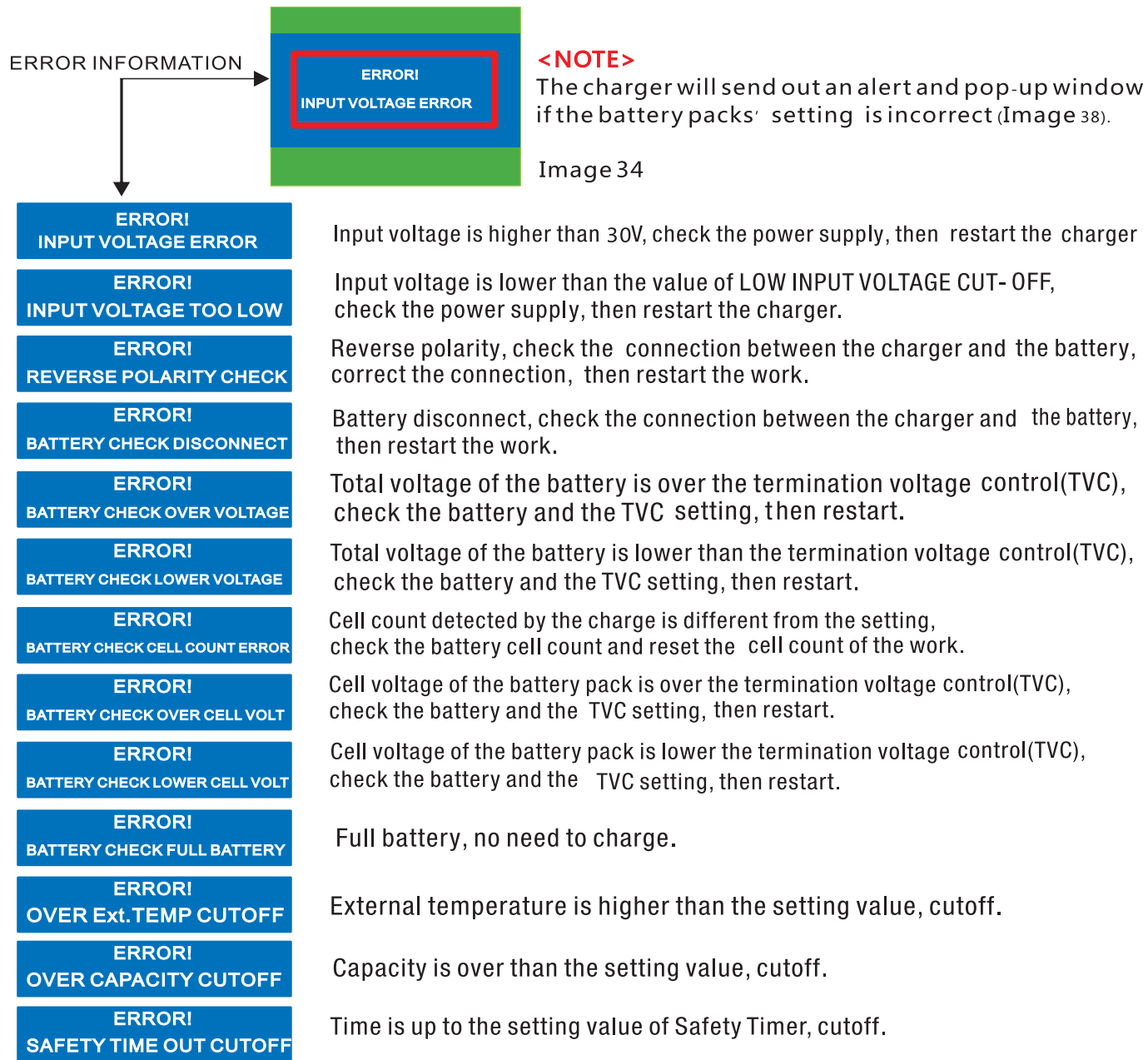


Image 35

ERROR INFORMATION(T150/T240 DU0)



WARRANTY

SHENZHEN HUITUO provide a period of one year product warranty from the date of purchase. The warranty only applies to material or operational defects, which are present at the time of purchase. During that period we will repair or replace free of service, charge for products deemed defective due to those causes. This warranty is not valid for any damage or subsequent damage arising as a result of misuse, modification or as a result of failure to observe the use guideline in this manual.

LIABILITY EXCLUSION

This charger is designed and approved exclusively for charge the types of battery stated in this manual. **SHENZHEN HUITUO** do not accept any liability if the charger is used for any purpose other than that stated. We are unable to ensure you follow the instructions come with the charger, and we have no control over the methods you employ for using, operating and maintaining this device.

For this reason we are obliged to deny the liability for loss, damage or costs which are incurred due to the incompetent or incorrect use and operation of this product, or which are connected with such operation in any way. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of those products which were immediately and directly involved in the event in which the damage occurred

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