

G6 DC Balance Charger & Discharger

CHARGER

INSTRUCTION MANUAL



Products by
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Congratulations on your choice of the G-force G6 balance charger/discharger.

The unit is simple to use, but the operation of a sophisticated automatic charger such as G-force G6 balance charger/discharger does require some knowledge on the part of the user. These operating instructions are designed to ensure that you quickly become familiar with its functions. It is therefore important that you read right through the Operating Instructions, Warning and Safety Notes before you attempt to use your new automatic charger for the first time. We hope you have many years of pleasure and success with your new battery charger.

G-force G6 balance charger/discharger is a high-performance, micro processor control charge/discharge station with battery management suitable for use with all current battery types. With integral equalizer for six-cell, Lithium-Polymer (LiPo), Lithium-Ferrum (LiFe) and Lithium-Ion (Lion) batteries.

Maximum 10A charge current; maximum 80W charge power; can be powered by a 12 Volt car battery or from 100V-240V via the built in switch-mode power supply.

When a Nickel battery is fully charged, the unit terminates the process using the Delta-Peak method. Lithium and lead (Pb) batteries are charged using the CC-CV method.

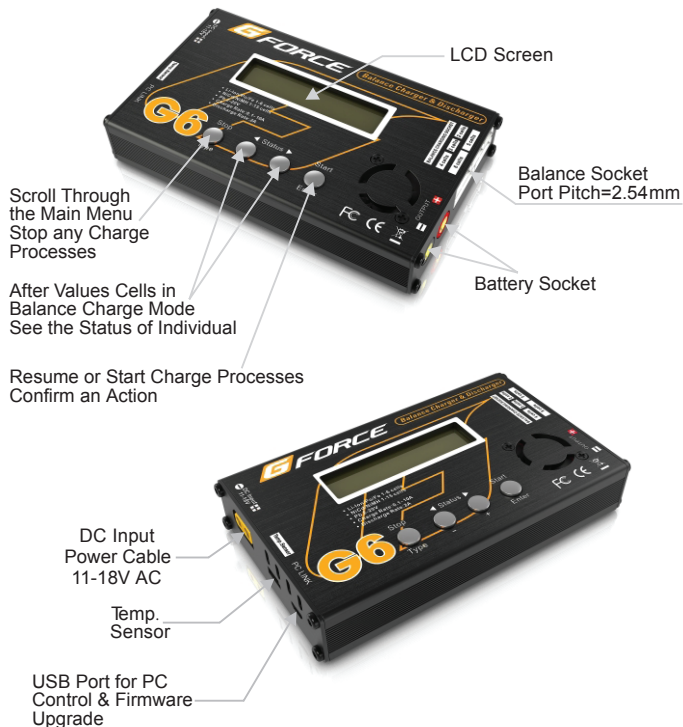
The fan cooling system is so smart and efficient. The fan speed is controlled by internal temperature sensor.

The user can check battery's total voltage, the highest voltage, the lowest voltage and each cell's voltage.

It can be dangerous to mis-handle batteries and battery chargers, as there is always a risk of batteries catching fire and exploding.

Please BE SURE to read these INSTRUCTIONS, WARNING and SAFETY NOTES before you use the charger for the first time.

Please read this entire operating manual completely and attentively before using this product, as it covers a wide range of information on operating and safety. Or please do use this product in company with a specialist!



Optimized Operating Software

G-force G6 balance charger/discharger features the so-called AUTO function that set the feeding current during the process of charging or discharging. Especially for lithium batteries, it can prevent the overcharging which may lead to an explosion due to the user's fault. It can disconnect the circuit automatically and alarm once detecting any malfunction. All the programs of this product were controlled through two way linkage and communication, to achieve the maximum safety and minimize the trouble. All the settings can be configured by users!

Internal Independent Lithium Battery Balancer

G-force G6 balance charger/discharger employs an individual-cell-voltage balancer. It isn't necessary to connect an external balancer for balance charging.

Balancing Individual Cells Battery Discharging

During the process of discharging, G-force G6 balance charger/discharger can monitor and balance each cell of the battery individually. Error message will be indicated and the process will be ended automatically if the voltage of any single one cell is abnormal.

Adaptable to Various Type of Lithium Battery

G-force G6 balance charger/discharger is adaptable to various types of lithium batteries, such as LiPo, Lilon and the new LiFe series of batteries.

Fast and Storage Mode of Lithium Battery

Purposes to charge lithium battery varies, 'fast' charge reduce the duration of charging, whereas 'store' state can control the final voltage of your battery, so as to store for a long time and protect useful time of the battery.

Cyclic Charging/Discharging

1 to 3 cyclic and continuous process of charge>discharge or discharge > charge is operable for battery refreshing and balancing to stimulate the battery's activity.

Data Store/Load

The charger can store up to 10 different charge/discharge profiles for your convenience. You can keep the data pertaining to program setting of the battery of continuous charging or discharging. Users can call out these data at any time without any special program setting.

Terminal Voltage Control(TVC)

The charger allows user to change the end voltage.

Lipo Battery Meter

The user can check battery's total voltage, the highest voltage, the lowest voltage and each cell's voltage.

Re-Peak Mode of NiMH/NiCd Battery

In re-peak charge mode, the charger can peak charge the battery once, twice or three times in a row automatically. This is good for making certain the battery is fully charged, and for checking how well the battery receives fast charges.

Delta-peak Sensitivity for NiMH/NiCd

Delta-peak sensitivity for NiMH/NiCd battery: The automatic charge termination program based on the principle of the Delta-peak voltage detection. When the battery's voltage exceeds the threshold, the process will be terminated automatically.

Automatic Charging Current Limit

You can set up the upper limit of the charging current when charging your NiMH or NiCd battery, it is useful for the NiMH battery of low impedance and capacity in the 'AUTO' charging mode.

Capacity Limit

The charging capacity is always calculated as the charging current multiplied by time. If the charging capacity exceeds the limit, the process will be terminated automatically when you set the maximum value.

Temperature Threshold*

The battery's internal chemical reaction will cause the temperature of the battery to rise. If the temperature limit is reached, the process will be terminated.

* This function is available by connecting optional temperature probe, which is not included in the package.

Processing Time Limit:

You can also limit the maximum process time to avoid any possible defect.

PC Control Software "Charge Master"

The free "Charge Master" software gives you unparalleled ability to operate the charger through the computer. You can monitor pack voltage, cell voltage and other data during the charging, view charge date in real-time graphs. And you can initiate, control charging and update firmware from "Charge Master".

These warnings and safety notes are particularly important. Please follow the instructions for maximum safety; otherwise the charger and the battery can be damaged or at worst it can cause a fire.

- ❗ Never leave the charger unattended when it is connected to its power supply. If any malfunction is found, TERMINATE THE PROCESS AT ONCE and refer to the operation manual.
- ❗ Keep the charger well away from dust, damp, rain, heat, direct sunshine and vibration. Never drop it.
- ❗ The allowable DC input voltage is 11-18V DC.
- ❗ This charger and the battery should be put on a heat-resistant, non-flammable and non-conductive surface. Never place them on a car seat, carpet or similar surface. Keep all flammable volatile materials away from the operating area.
- ❗ Make sure you know the specifications of the battery to be charged or discharged to ensure it meets the requirements of this charger. If the program is set up incorrectly, the battery and charger may be damaged. Fire or explosion can occur due to overcharging. This warranty is not valid for any damage or subsequent damage arising as a result of a misuse or failure to observe the procedures outlined in this manual.
- ❗ To avoid short circuiting between the charge lead, always connect the charge cable to the charger first, then connect the battery. Reverse the sequence when disconnecting.
- ❗ Never attempt to charge or discharge the following types of batteries:
 - A battery pack which consists of different types of cells (including different manufacturers)
 - A battery that is already fully charged or just slightly discharged
 - Non-rechargeable batteries (pose an explosion hazard)
 - A faulty or damaged battery
 - A battery fitted with an integral charge circuit or a protection circuit

- Batteries installed in a device or which are electrically linked to other components
- Batteries that are not expressly stated by the manufacturer to be suitable for the currents the charger delivers during the charge process

❗ **Please bear in mind the following points before commencing charging:**

- Did you select the appropriate program suitable for the type of battery you are charging?
- Did you set up adequate current for charging or discharging?
- Have you checked the battery voltage? Lithium battery packs can be wired in parallel and in series, i.e. a 2-cell pack can be 3.7V (in parallel) or 7.4V (in series).
- Have you checked that all connections are firm and secure? Make sure there are no intermittent contacts at any point in the circuit.

Standard Battery Parameters

	LiPo	LiIon	LiFe	NiCd	MiMH	Pb
Nominal Voltage	3.7V/cell	3.6V/cell	3.3V/cell	1.2V/cell	1.2V/cell	2.0V/cell
Max Charge Voltage	4.2V/cell	4.1V/cell	3.6V/cell	1.5V/cell	1.5V/cell	2.46V/cell
Storage Voltage	3.8V/cell	3.7V/cell	3.3V/cell	n/a	n/a	n/a
Allowable Fast Charge	≤ 1C	≤ 1C	≤ 4C	1C-2C	1C-2C	≤ 0.4C
Min. Discharge Voltage	3.0-3.3V/cell	2.9-3.2V/cell	2.6-2.9V/cell	0.1-1.1V/cell	0.1-1.1V/cell	1.8V/cell

Be very careful to choose the correct voltage for different types of battery otherwise you may cause damage to the batteries. Incorrect settings could cause the cells to fire or explode.

⚠ Charging

During charge process, a specific quantity of electrical energy is fed into the battery. The charge quantity is calculated by multiplying charge current by charge time. The maximum permissible charge current varies depending on the battery type or its performance, and can be found in the information by the battery manufacturer. Only batteries that are expressly stated to be capable of quick-charge are allowed to be charged at rates higher than the standard charge current.

Connect the battery to the terminal of the charger: red is positive and black is negative. Due to the difference between resistance of cable and connector, the charger can not detect resistance of the battery pack, the essential requirement for the charger to work properly is that the charge lead should be of adequate conductor cross-section, and high quality connectors which are normally gold-plated should be fitted to both ends.

Always refer to the manual by the battery manufacturer pertaining to charging methods. Operate according to their recommended charging current and charging time. lithium batteries, in particular, should be charged strictly according to the manufacturer's instruction.

Close attention should be paid to the connection of lithium batteries.

Do not attempt to disassemble the battery pack arbitrarily.

Please get highlighted that lithium battery packs can be wired in parallel and in series. In the parallel connection, the battery's capacity is calculated by multiplying single the battery's capacity by the number of cells, bearing in mind that total voltage stays the same. If the voltage is imbalanced, it may cause a fire or explosion. Lithium batteries are recommended to charge in series.

⚠ Discharging

The main purpose of discharging is to clean the residual capacity of the battery, or to reduce the battery' voltage to a defined level. The same attention should be paid to the discharging process as the charging process. The final discharge voltage should be set up correctly to avoid deep discharging. Lithium batteries cannot be discharged to lower than the minimum voltage, or it will cause a rapid loss of capacity or a total failure. Generally, lithium batteries don't need to be discharged. Please pay attention to the minimum voltage of lithium batteries to protect them.

Some rechargeable batteries have a memory effect. If they are partly used and recharged before the whole charge is accomplished, they remember this and will only use that part of their capacity next time. This is a 'memory effect' It is said that NiMH and NiCd batteries are suffering from memory effect. NiCd has more 'memory effect' than NiMH.

Lithium batteries are recommended to be discharged partially rather than fully. Frequent full discharging should be avoided if possible. Instead, charge the battery more often or use a battery of larger capacity. Full capacity cannot be reached until it has been subjected to 10 or more charge cycles. The cyclic process of charge and discharge will optimize the capacity of battery pack.

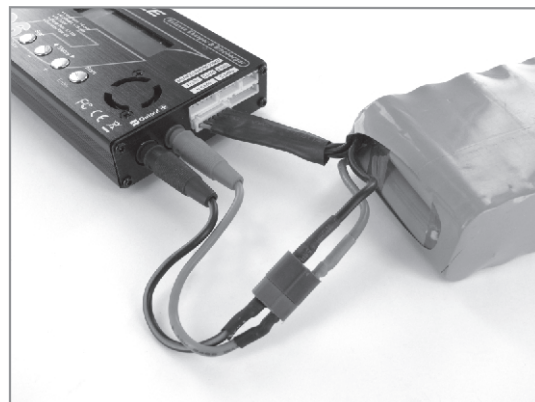
CONNECTING THE BATTERY

Important!!! Before connecting a battery it is absolutely essential to check one last time that you have set the parameters correctly. If the settings are incorrect, the battery may be damaged, and could even burst into flames or explode. To avoid short circuits between the banana plugs, always connect the charge leads to the charger first, and only then to the battery. Reverse the sequence when disconnecting the pack.

Balance socket:

The balance wire attached to the battery must be connected to the charger with the black wire aligned with the negative marking. Take care to maintain correct polarity! (See the wiring diagram below.)

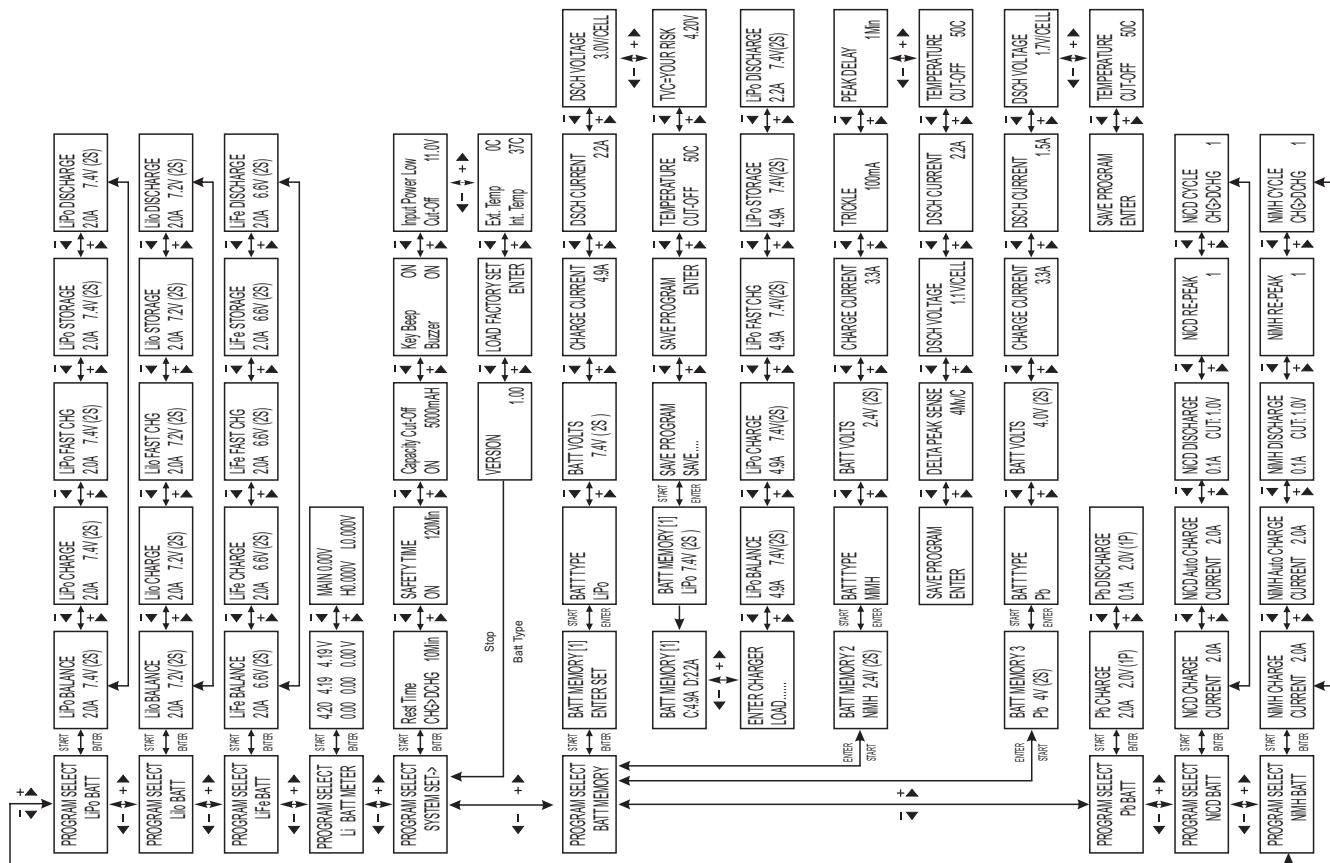
This diagram shows the correct way to connect your battery to the G-force G6 balance charger/discharger while charging in the balance charge program mode only.



WARN ING:

⚠ Failure to connect as shown in this diagram will damage this charger.

PROGRAM FLOW CHART



PROGRAM FLOW CHART

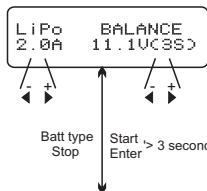
These programs are only suitable for charging and discharging Lithium batteries with a nominal voltage of 3.3V, 3.6V and 3.7V per cell. These batteries need to adopt different charge technique is termed a constant voltage(CV) and constant current(CC) method. The charge current varies according to the battery capacity and performance. The final voltage of charge process is also very important; it should be precisely matched with the charade voltage of the battery. They are 4.2V for LiPo, 4.1V for Lilo, and 3.6 V for LiFe. The charge current and nominal voltage as for cell count set on the charge program must always be correct for the battery to be charged.

When you are willing to alter the parameter value in the program, press Start/Enter key to make it blink then change the value with ◀- or ▶+ key. The value will be stored by pressing Start/Enter key once.

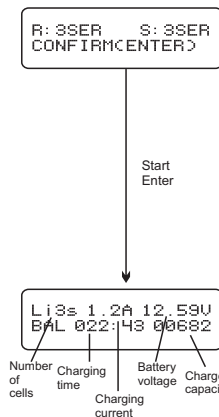
CHARGING LITHIUM BATTERY AT BALANCE MODE

This function is for balancing the voltage of Lithium-polymer battery cells while charging. In the balance mode, the battery needs to have a balance lead to connect to the battery's power lead to the output of charger. In this mode, the charging process will be different from ordinary charging mode. The internal processor of the charger will monitor the voltages of each cell of the battery pack and controls charging current that is feeding to each cell to normalise the voltage.

Note: We recommends charging lithium batteries with a balance lead in the balance mode only.



The left side of the first line shows the type of battery you choose. The value on the left of the second line of the charger is current user set. After setting the current and voltage, press Start/Enter key for more than 3 seconds to start the process.(charge current: 0.1-10.0A, voltage: 2S-6S).



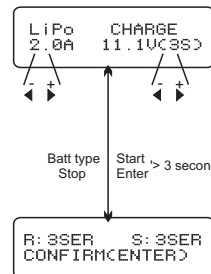
This displays the number of cells you set up and the processor detects. s detected by the charger and cells set by you at the previous screen. If both numbers are identical you can start charging by press Start/Enter button. If not, press Batt Type/Stop button to go back to previous screen to carefully check the number of cells of the battery pack before going ahead.

This screen shows the real-time status during charge process. Press Batt Type/Stop key once to stop the charge process.

CHARGING OF LITHIUM BATTERY

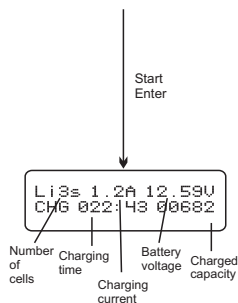
This charging mode is for charging Li-Po/Ion/Fe battery without balance lead.

Note: We recommends charging lithium batteries with a balance lead in the balance mode only.



The left side of the first line shows the type of battery you choose. The value on the left of the second line of the charger is current user set. After setting the current and voltage, press Start/Enter key for more than 3 seconds to start the process.(charge current: 0.1-10.0A, voltage: 1S-6S).

This displays the number of cells you set up and the processor detects. s detected by the charger and cells set by you at the previous

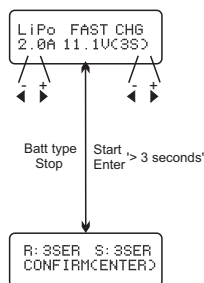


screen. If both numbers are identical you can start charging by press Start/Enter button. If not, press Batt Type/Stop button to go back to previous screen to carefully check the number of cells of the battery pack before going ahead.

This screen shows the real-time status during charge process. Press Batt Type/Stop key once to stop the charge process.

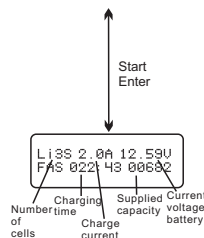
'FAST' CHARGING OF LITHIUM BATTERY

The charging current is getting smaller as the process goes to the near end term of Lithium battery charging. To finish charging process earlier, this program eliminate certain term of CV process. Actually, the charging current will goes to 1/5 from the initial value to end the process while the normal charging goes to 1/10 during CV term. The charging capacity may be a bit smaller than normal charging but the process time will be reduced.



The value on the left side of the second lines sets the charge current. The value on the right side of the second lines sets the battery pack's voltage. After setting current and voltage, press Star/Enter for more than 3 seconds to start the process.

This displays the number of cells you set up and the processor detects. s detected by the charger and cells set by you at the previous screen. If both numbers are identical you can start charging by press Start/Enter button. If

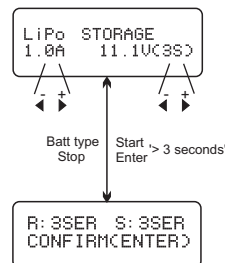


not, press Batt Type/Stop button to go back to previous screen to carefully check the number of cells of the battery pack before going ahead.

This screen shows the real-time status during charge process. Press Batt Type/Stop key once to stop the charge process.

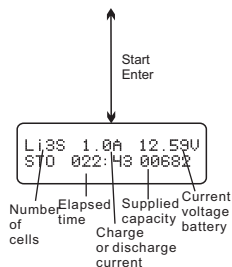
'STORAGE' CONTROL OF LITHIUM BATTERY

This is for charging or discharging Lithium battery not to be used for the time being. The program will determine to charge or discharge the battery to the certain voltage depending on the voltage of the battery at its initial stage. They are different from the type of the battery, 3.75V for LiIo, 3.85V for LiPo and 3.3V for LiFe per cell. If the voltage of battery at its initial stage is over the voltage level to storage, the program will start to discharge.



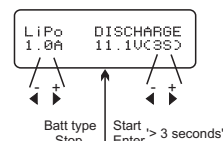
At this screen, you can set up the current and voltage of the battery pack. Charging and discharging will make the batteries come to the voltage level of storage state.

This displays the number of cells you set up and the processor detects. s detected by the charger and cells set by you at the previous screen. If both numbers are identical you can start charging by press Start/Enter button. If not, press Batt Type/Stop button to go back to previous screen to carefully check the number of cells of the battery pack before going ahead.



This screen shows the real-time status charging. Press Batt Type/Stop key once to stop the charge process.

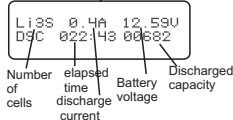
DISCHARGING LITHIUM BATTERY



The value of discharge current on the left can not exceed 1C, and the value on the right can not be under the voltage recommended by the manufacturer to avoid deep discharging. Press Start/Enter for more than 3 seconds to start discharging.

R:3SER S:3SER
CONFIRM(ENTER)

This displays the number of cells you set up and the processor detects. s detected by the charger and cells set by you at the previous screen. If both numbers are identical you can start charging by press Start/Enter button. If not, press Batt Type/Stop button to go back to previous screen to carefully check the number of cells of the battery pack before going ahead.



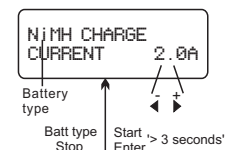
This shows the real-time status of discharging, you can press Batt Type/Stop key to stop discharging.

These programs are for charging or discharging NiMH (Nickel-Metal-Hydride) or NiCd (Nickel-Cadmium) battery commonly used for R/C model applications. To alter the value at the display, press Start/Enter key to make it blink then change the value using ◀- or +▶ key. The value will be stored by pressing Start/Enter key once.

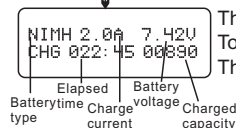
To start the process, press Start/ Enter button for more than 3 seconds.

CHARGING OF NIMH/NICD BATTERY

The charger will charge NiCd and NiMh batteries using the charge current set by the user.



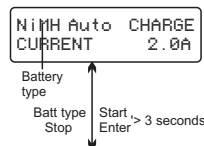
This program is for charging of NiCd/NiMH batteries associated with R/C models applications. You can press Start/Enter key to make it blink and then ◀- or +▶ to change the parameter value. Press START/ENTER key to store the value.



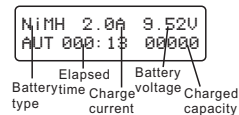
The screen displays the current state of charging. To stop the process, press Batt type/Stop key once. The audible sound indicates you the end of process.

CHARGING NIMH/NICD BATTERY IN THE AUTO CHARGE MODE

In this program the charger detects the condition of the battery which is connected to the output and automatically charges the battery. In this mode, you should set up the upper limit of the charge current to avoid damage by excessive feeding current. Some batteries of low resistance and capacity can lead to higher current in the auto charging mode.



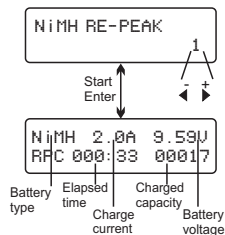
This program is for charging of NiCd/NiMH batteries. You can press the Start/Enter button to make it blink and then press the ◀-/+▶ button to change the parameter value. Press the Start/Enter button more than 3 seconds to start the charging process.



The screen indicates the discharging state. You can press Start/Enter key to alter discharge current. Press Start/Enter again to store the value. Press Batt Type/Stop key to stop discharging. The emitted sound alerts the end of discharging.

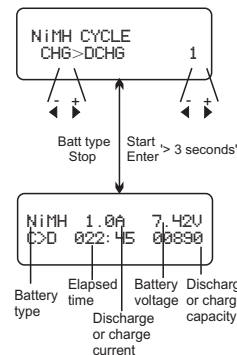
CHARGING NIMH/NICD BATTERY IN RE-PEAK CHARGE MODE

Re-peak Charge Mode (NiCd and NiMH batteries only): In re-peak charge mode, the charger can peak charge the battery once, twice or three times in a row automatically. This is good for confirming the battery is fully charged, and for checking how well the battery receives fast charges. A five minute cool-off delay occurs after each re-peak charge. See the diagram below for using re-peak charge mode. To start charging, press the Start/Enter button for 3 seconds.



"Re-peak cycle: 1" shows on the display. Press the Start/Enter button to make the re-peak cycle number blink and press the ◀-/▶ button to find the desired number of times to re-peak. Press the Start/Enter button to confirm selection.

CHARGE/DISCHARGE & DISCHARGE/CHARGE CYCLE OF NIMH/NICD BATTERY



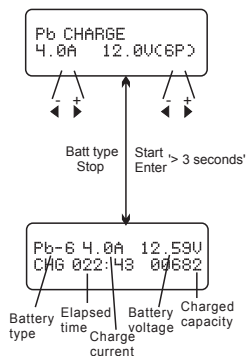
You can set up sequence on the left and the number of cycles on the right. Range of the cycle number is 1-3.

Press Batt Type/Stop key to stop program, you can press Start/Enter key to alter charge current. The sound indicates the end of program.

This is programmed for charging Pb(lead-sulphuric acid) battery with nominal voltage from 2 to 20V. Pb batteries are totally different from NiCd or NiMH batteries. They can only deliver relatively lower current compare to their capacity, and similar restrictions definitely apply to charge. So the optimal charge current will be 1/10 of the capacity. Pb batteries must not be charged rapidly. Always follow the instruction is supplied by the manufacturer of battery.

When you are willing to alter the parameter value in the program, press Start/Enter key to make it blink then change the value with ◀- or +▶ key. The value will be stored by pressing Start/Enter key once.

CHARGING OF PB BATTERY



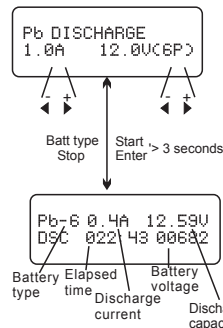
Set up the charge current on the left and the nominal voltage of the battery on the right. The charge current ranges from 0.1 to 10.0A and the voltage should be matched with the battery being charged.

Start the charge process by pressing Start/Enter key for more than 3 seconds.

The screen displays the state of charging process. To stop charging forcibly, press Batt type/Stop key once.

The audible sound indicates you at the end of process.

DISCHARGING OF PB BATTERY



Set discharge current on the left and final voltage on the right. The discharge current ranges from 0.1 to 2.0A.

To start the process, press Start/Enter key for more than 3 seconds.

The screen displays the current state of discharge. You can alter the discharge current by pressing Start/Enter key during the process. Once you change the current value, store it by pressing Start/Enter button again.

To stop discharging press Batt Type/Stop key once. The audible sound indicates you at the end of process.

USING THE CHARGE CONTROL SOFTWARE "CHARGE MASTER"

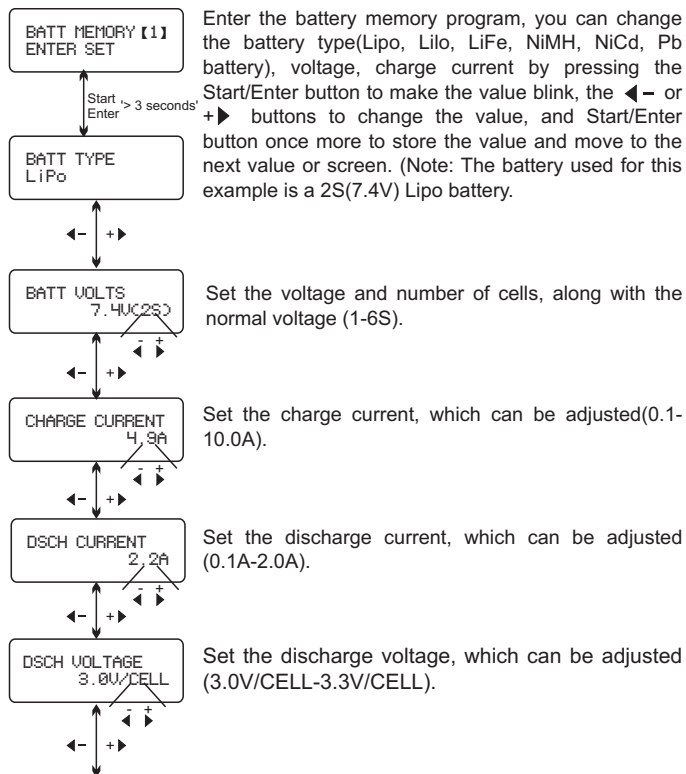
The free "Charge Master" software gives you unparalleled ability to operate the charger through the computer. You can monitor pack voltage, cell voltage and other data during the charging, view charge date in real-time graphs. And you can initiate, control charging and update firmware from "Charge Master".

In order to connect the charger to the computer and use the "Charge Master", you are required to use a USB cable which is not included in this package. The cable must be terminated on one end with "A" plug and the opposite end is terminated with "micro" plug which can connect to charger directly.

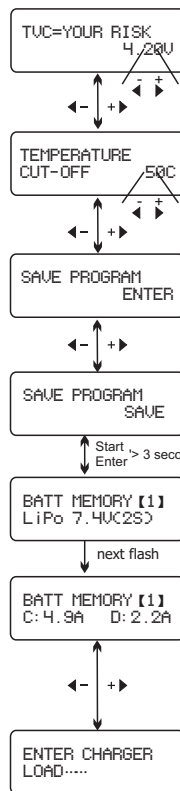
The "Charge Master" can be download from www.gforce-hobby.jp

BATTERY MEMORY SET

The charger can store up to 10 different charge/discharge profiles for your convenience, and the stored profiles can be recalled quickly without having to go through the setup process.



BATTERY MEMORY SET



Set the terminal voltage, which can be adjusted (4.18-4.30V).

Set the cut-off temperature, which can be adjusted (20°C/68°F-80°C/176°F).

Save the program set by pressing the Start/Enter button for more than three seconds.

This screen indicate the saved profile.

Once you've saved a charge profile, you can load those settings to use later. To load a memory, you have to press the Start/Enter Button for more than 3 seconds. Otherwise you only enter the setting mode.

This screen indicates that the charge profile is being loaded.

The user can check battery's total voltage, the highest voltage, the lowest voltage and each cell's voltage.

Please connect the battery to the charger main battery lead to battery socket and balance wires to balance socket.

PROGRAM SELECT
Li BATT METER

Press the Start/Enter button to enter the Lithium Battery Meter.

4.19 4.15 4.18V
0.00 0.00 0.00V

The screen indicate each cell's voltage.

MAIN 12.52V
H4.190V L4.160V

The screen indicate the total voltage, the highest voltage, the lowest voltage.

It will be operated with the default value of the essential user settings when it is connected to a DC 11~18V battery for the first time. The screen displays the following information in sequence and the user can change the value of parameter on each screen.

When you are willing to alter the parameter value in the program, press Start/Enter key to make it blink then change the value with ◀- or +▶ key. The value will be stored by pressing Start/Enter key once.

PROGRAM SELECT
SYSTEM SET

User set up starting screen.

Rest Time
CHG>DCHG 10Min

The battery is on the cyclic process of charge and discharge can often become warm after charge or discharge period. The program can insert a time delay to occur after each charge and discharge process to allow the battery adequate time to cool down before being subjected to the next process. The value ranges from 1 to 60 minutes.

SAFETY TIME
ON 120Min

When you start a charge process, the integral safety timer automatically starts running at the same time. This is programmed to prevent overcharge the battery if it proves to be faulty, or if the termination circuit cannot detect the battery full. The value for the safety timer should be generous enough to allow a full charge of the battery.

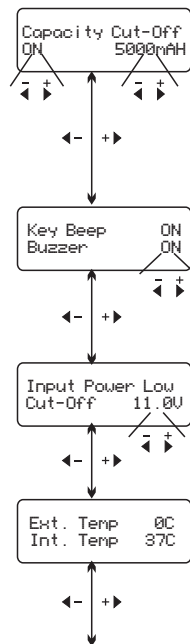
Safe timer Calculation

When charging NiCd or NiMH batteries, divide the capacity by current, then divide the result by

11.9, set this number as the value for safety timer setting. If the charger stopped at this threshold, about 140% of the capacity will have been fed into the battery.

For example:

Capacity	Current	Safety Time
2000mAh	2.0A	(2000/2.0=1000)/11.9=84 minutes
3300mAh	3.0A	(3300/3.0=1100)/11.9=92 minutes
1000mAh	1.2A	(1000/1.2=833)/11.9=70 minutes

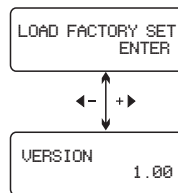


This program sets the maximum charge capacity that will be supplied to the battery during charge. If the deltapack voltage is not detected nor the safety timer expired by any reason, this feature will automatically stop the process at the selected capacity value.

The beep sounds at every time pressing the buttons to confirm your action. The beep or melody sounded at various times during operation to alert different mode changes. These audible sounds can be on or off.

This program monitors the voltage of input battery. If the voltage drops below the value you set the operation forcibly terminated to protect the input battery.

This screen shows the external and internal temperature.



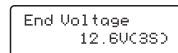
Press and hold the Start/Enter button for more than three seconds to load the factory set.

This screen shows the version.

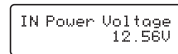
VARIOUS INFORMATION DURING THE PROCESS

You can inquire various information on LCD screen during charging or discharging process. When you press ◀- button the charger shows the establishment of user settings.

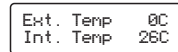
And also you can monitor the voltage of individual cell by pressing + ▶ button when the individual connection cable is linked to the Lithium battery being processed.



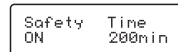
It comes to the final voltage when the program ended.



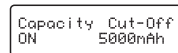
Present input voltage.



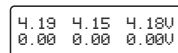
This screen shows the internal temperature.



Displayed safety timer is turn on and duration of time in minutes.



Displayed capacity cut-off function is turn on and the setting value of capacity.



The battery is connected with balance lead, you can check voltage of each cell in the battery pack.

It incorporates a variety of functions for the systems to verify processes and the state of the electronics. In case of an error the screen will display the cause of error and emit an audible sound.

REVERSE POLARITY

Incorrect polarity connected.

CONNECTION BREAK

The battery is interrupted.

CONNECT ERROR
CHECK MAIN PORT

The Battery connection is wrong.

BALANCE CONNECT
ERROR

The balance connect is wrong.

DC IN TOO LOW

Input voltage less than 11V.

DC IN TOO HIGH

Input voltage higher than 18V.

CELL ERROR
LOW VOLTAGE

Voltage of one cell in the battery pack is too low.

CELL ERROR
HIGH VOLTAGE

Voltage of one cell in the battery pack is too high.

CELL ERROR
VOLTAGE-INVALID

Voltage of one cell in the battery pack is invalid.

CELL NUMBER
INCORRECT

The cell number is wrong.

INT. TEMP. TOO HI

The internal temperature of the unit goes too high.

EXT. TEMP. TOO HI

The external temperature of the unit goes too high.

OVER CHARGE
CAPACITY LIMIT

The battery capacity is more than the maximum capacity which the user sets.

OVER TIME LIMIT

The charging time is longer than the maximum charging time which the user sets.

BATTERY HAS FULL

The battery voltage is higher than the maximum voltage which the user sets when charging in balance mode.

SPECIFICATION

DC Input	11-18Volt
Charge circuit power	DC Input 80W
Charge current range	0.1-10.0A
Discharge current power	10W
Discharge current range	0.1-2.0A
Current drain for balancing port	200mA/cell
NiCd/NiMH battery cell count	1-15Cells
LiPo/LiFe/Lilon cell count	1-6Cells
Pb battery voltage	2-20V
Net weight	300g
Dimension	138.5x80.5x28.5mm

(stated values refer to one charger except built-in power supply, dimension & weight)

THE SET CONTAINS

1. G-force G6 Charger
2. Plug-in battery clamps
3. XT60 DC Cable
4. Dean connector with banana plug cable
5. Tamiya charging cable
6. Futaba RX charging cable
7. 3pin XH-TP/FP adaptor cable



LIABILITY EXCLUSION

This charger is designed and approved exclusively for use with the types of battery stated in these Instruction Manual. G-force accepts no liability of any kind if the charger is used for any purpose other than that stated. We are unable to ensure that you follow the instructions supplied with the charger, and we have no control over the methods you employ for using, operating and maintaining the device. For this reason we are obliged to deny all liability for loss, damage or costs which are incurred due to the incompetent or incorrect use and operation of our products, 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 G-force products which were immediately and directly involved in the event in which the damage occurred.