BCS DOUBLE

Owner's Manual

Main Features
NiMH & NiCd Battery Compatible Charger x2

Input Voltage
.....DC12V
Battery Voltage (cells)
.....1.2 ~ 14.4v
(1 ~ 12 cells)
Battery Capacity
.....270 ~ 6000mAh
Charge Amperage
.....0.3 ~ 9.9A
LCD Display Modes
..... Voltage
..... Amperage
.....Capacity
..... Temp
Charge Modes
..... Yokomo Charge
..... Peak Charge
..... Temp Charge
Built-in Cooling Fan

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2002.1.15

BCS DOUBLE

Thank you for purchasing the Yokomo BCS DOUBLE Charger. Featuring two individually separate charging circuits, the BCS DOUBLE is capable of simultaneously charging two battery packs using separate charge method settings. Please read this Owners Manual carefully to learn how to operate the charger correctly.

Specifications

★ Compatible with both NiMh(Nickel Metal Hydride) and NiCd(Nickel Cadnium) batteries.

★ Two separate charge circuits installed. Capable of charging two batteries using separate charge mode settings.

★ In addition to the newly developed Yokomo Charge Mode (for maximum battery power), Temp Charge Mode (for temperature controlled charging) and standard Delta Peak Charge Modes are also available.

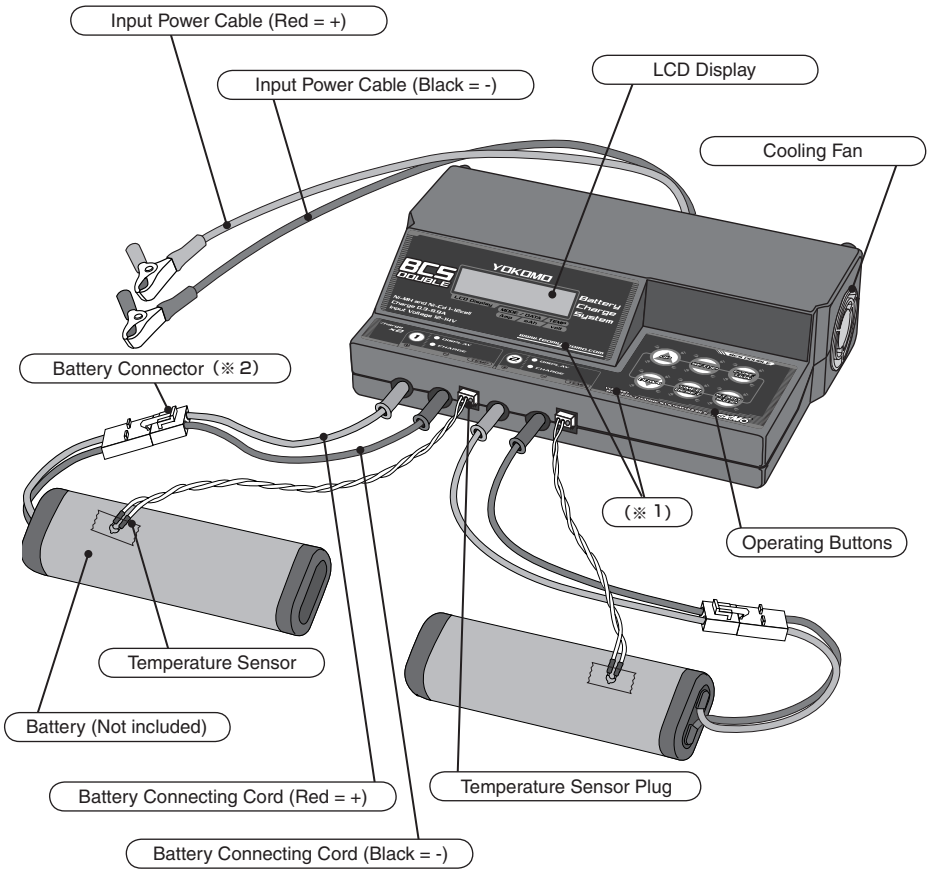
★ Dual cooling fans allow for stable and safe charging. Fans operate automatically.

★ Temperature probes included for safe charging.

★ Real-time charge data is displayed on an easy-to-read backlit LCD display panel.

■ Application	:	R/C models Rechargeable batteries used for electric powered cars, planes, boats Charging receiver battery packs
■ Input Power	:	DC 12V (12~16V) Above 14A (30A suggested)
		※ Input power requirements will vary depending on the charge settings. example) Charging two 6-cell (7.2V) batteries at 6A each = min. 14A Multiply the total charge amps by 1.5 to obtain power requirements.
■ Compatible Batteries	:	Compatible with NiCd(Nickel Cadnium) & NiMh(Nickel Metal Hydride) cells 1~12 cells (12~14.4V)
■ Charge Amps	:	0.3~9.9A (1~7 cells) 0.3~8.0A (8~10 cells) 0.3~6.0A (11~12 cells)
■ Case Size	:	220 x 135 x 56mm (excluding wires)
■ Weight	:	870g

Descriptions



Read before using

A protective film has been applied to the display panel and button pad areas when shipped from the factory. Please remove the film before using.

Safety Precaution

When improperly used, the standard battery connector included may not provide a good connection, causing the connector to overheat and deform. As a safety precaution, when charging at very high amperage levels, it is recommended that the wire be soldered directly to the battery.

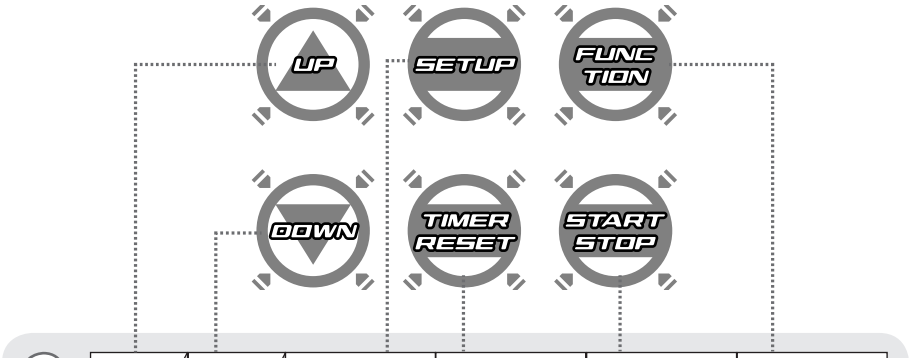
Basic Operation

Button Functions

Precaution

To prevent multiple commands, the keypad buttons will not respond by pressing lightly. Press the button for about 0.5~1 second.

Each button is used for both the Main Screen and Setting Mode.



Main Screen			SETUP MODE Press to change to the Setting Mode screen.	SETUP TIMER Use to set the Timer. Press the SETUP button after this button to change the timer settings. RESET TIMER	Functions: START PAUSE CONTINUE	CHANGE DISPLAY Use to switch back between displays for each charge port.
Setting Mode	設定変更 (上)	設定変更 (下)	MOVE CURSOR Use to move the cursor position to the next setting.		CONFIRM SETTING Use to confirm any changes made to the charge settings. Also use to return to the Main Screen.	MOVE CURSOR Use to move the cursor position one character at a time.

Other Functions

● RESET

Turning the power on while holding the SETUP button will reset all settings.

Display Information

Opening Screen (After power input)

※ The VX.XX displayed in the upper right-hand corner of the screen is the firmware version number,

Automatic screen change

Charge System ①

Main Screen

SETUP

START STOP

Setting Mode

START STOP

Charging

FUNC TION

Charge System ②

Main Screen

SETUP

START STOP

Setting Mode

START STOP

Charging

Charging

Charge Settings

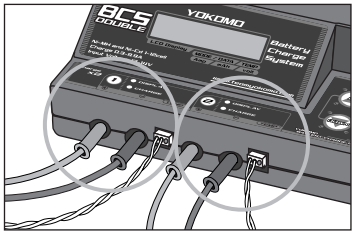
Setting Procedure

The BCS DOUBLE has many settings to provide safe, accurate charging.
Always confirm your charge settings before charging.

FUNCTION

Changing screens

★ Set the settings for Charge Systems ①②.
Press the FUNCTION button to change screens between Charge Systems ①② . The LED (green) on the front panel will indicate the displayed Charge System. The screen can be changed at anytime between the two systems as long as the display is not in the Setting Mode.



SETUP

Change to Setting Mode

Press the SETUP button to change the display to the Setting Mode. Look for the cursor to be displayed.

FUNCTION

Move cursor to different setting

Press the FUNCTION button to move the cursor to the setting you want to change.

※ To adjust the charge amp setting for the Delta Peak Charge Mode, see P10.

UP

DOWN

Changing setting values

Press the UP and DOWN buttons to change setting values.

START STOP

Return to the Main Screen

Press the START/STOP button to return to the Main Screen.

Charge settings will not be erased when power is turned off.

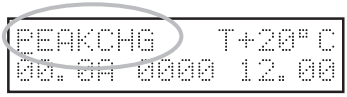
Charge Mode

Any of the following three charge modes can be selected.

Delta Peak Charge [Linear Mode]

PEAKCHG

This charge mode uses the common Linear charging method. Battery voltage is closely monitored throughout the charge. Charging stops when the system detects a Delta Peak.



This charge mode is suited for practice batteries and receiver battery packs.

Yokomo Charge [Pulse Mode]

YOKOMOCHG

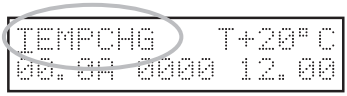
Specially developed for racing use, this revolutionary pulse charging method allows batteries to be charged for high voltage and run-time without causing any damage to the battery cells.

★ Set the charge amperage 1.5-times higher than normal when using this charge mode.

Temp Charge [Linear Mode]

TEMPCHG

The system monitors battery temperature via the temperature probe and will stop charging once the batteries reach the set temperature. This helps overcharging or false-peaking of the batteries.



Safety Precaution

Always make sure to securely attach the temperature sensor to the batteries before charging, and check to see that the sensor is working properly. An improperly attached sensor may cause an inaccurate temperature reading, and possibly causing the battery to be overcharged.

Charge Cut-off Temperature (Safe Charge Setting)

Always set the Charge Cut-off Temperature to prevent overcharging. Charging will stop when the battery reaches the set temperature value.

Recommended Setting Values	Nickel Metal Hydride : 42℃ Nickel Cadnium : 45℃

Charge Amperage

Use a Charge Amperage setting best suited for your batteries.

Recommended Setting Values	SANYO RC3000 : 4.5A SANYO RC2400 : 5.0A SANYO RC2000 : 5.0A

★ When using the YOKOMOCHG mode, set the Charge Amperage 1.5 times higher.

Charge Cut-off Capacity (Safe Charge Setting)

Always set the Charge Cut-off Capacity to prevent overcharging. Charging will stop when the battery reaches the set capacity value.

Recommended Setting Values	Approx. 1.3 x Battery Capacity
	SANYO RC3000 : 3600mAh SANYO RC2400 : 2800mAh SANYO RC2000 : 2500mAh

Charge Cut-off Voltage (Safe Charge Setting)

Always set the Charge Cut-off Voltage to prevent overcharging. Charging will stop when the battery reaches the set voltage value.

Recommended Setting Values	Approx. 1.7 x Battery Voltage
	7.2V (6 Cell) : 13V

Delta Peak Cut-off Voltage

Pressing the TIMER/RESET button while in the Charge Setting mode will displat the Delta Peak Voltage Cut-off setting screen. Press the START/STOP button to return to the main Charge Setting screen.
Use a Delta Peak Cut-off Voltage value best suited for your batteries.
Raising the Cut-off Voltage value will lengthen charge duration.

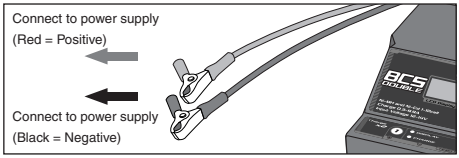
Recommended Setting Values	Nickel Metal Hydride : 10~20mV/cell Nickel Cadnium : 20~30mV/cell

※ This setting can be changed when using either the PEAKCHG mode or YOKOMOCHG mode.

Preparing to Charge

1 Connecting the power cables

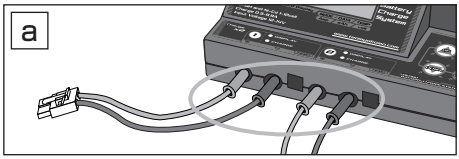
Connect the power cables to a power supply (stable power supply rated above 12V 14A). The LCD display will light up when powered.

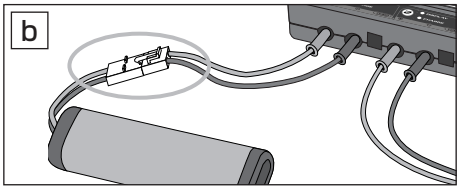


2 Connecting the battery

Attach the included battery cables to the plugs on the front panel as shown in (a).

Connect the battery cord to the battery as shown in (b). Battery voltage will be displayed on the screen.



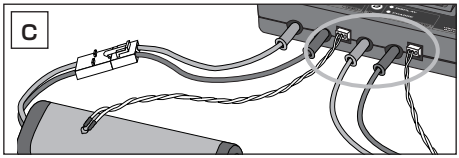


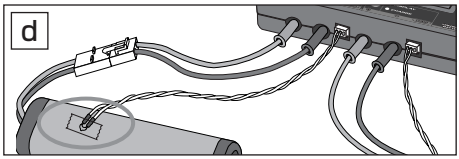
3 Connecting the temp. sensor

Attach the temperature sensor to the plugs on the front panel as shown in (c).

Attach the temperature sensor to the battery using a piece of tape as shown in (d). Battery temperature will be displayed on the screen.

★ To prevent damage to the temperature sensor plug, avoid frequent removal of the temperature sensor plug.





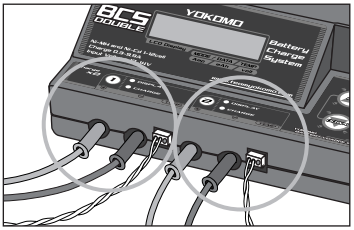
Charging

Charging

Make sure that the display has returned to the Main Screen. (Same screen as when first powered)

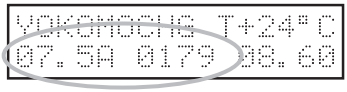
Changing Screens

Press the FUNCTION button to view the screens for Charge System ①② .
The green LED lamp on the front panel will indicated which screen is being displayed.



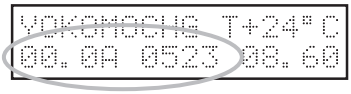
Start

Press the START/STOP button to begin charging. The red LED lamp will light up and the battery capacity value will start to increase.



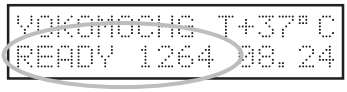
Stop

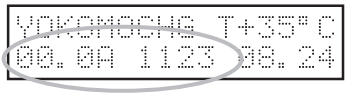
Press the START/STOP button to stop charging. Press again to re-start.



Charge Complete

The red LED lamp will turn off when charging has completed. The screen will display READY to indicate a successful charge. Charge capacity and voltage will also be displayed.
If the battery did not charge completely, the charge amperage value will change to indicate a code as shown on the right. Here is a list of possible codes and what they mean.





[CO.O A] Battery cell number problem
[VO.O A] Charge Cut-off Voltage reached
[MO.O A] Charge Cut-off Capacity reached
[TO.O A] Charge Cut-off Temperature reached
[EO.O A] System hardware problem
※ If the code reads [EO.O A], turn the power off, and then on again.
※ To continue charging another battery, press the TIMER/RESET button to reset the displayed data.

Re-Peaking

Re-Peaking the batteries before running will help obtain additional battery power.

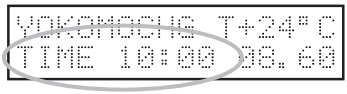
Make sure to clear the data from the previous charge before Re-Peaking. Pressing the TIMER/RESET button will clear the data. Press the START/STOP button to start charging once more. Re-Peaking the battery is the process of charging the battery once more after it has already been charged.

Timed Charging

Set the timer to start charging at a later time.

Press the TIMER/RESET button. As soon as the TIME is displayed on the screen, press the SETUP button. Set the amount of time to wait before charging and press the START/STOP button to confirm the setting. Press the START/STOP button again to start the timer.

example) start charging in 10 minutes



Q & A Troubleshooting

Q Nothing displayed on screen

A. Problem with power supply..... Not enough current coming from power supply

A. Bad connection..... Improperly connected or deteriorated connector

A. Malfunction..... Possible blown fuse (internal) or damage due to power/battery cords connected in reverse

Q Incorrectly displayed on screen

A. Reset all settings. Turn the power off and then turn the power on while holding down the SETUP button.

Q Temperature not displayed on screen

A. Temperature Sensor damaged ..... Replace the temperature sensor.

A. Temperature Sensor not connected correctly .... Make sure that plug is fully inserted.

Q Temperature reading incorrect

A. Sensor not connected correctly..... Sensor not securely attached to battery,

Q Buttons do not work

A. The buttons must be pressed down for about 1 second. (Safety feature)

Q [ERROR] message displayed

A. Incorrect connection..... Battery connected incorrectly.

Q Does not charge completely

A. Charge settings not optimal..... Adjust Temperature, Capacity and Voltage Cut-off settings.

A. Bad battery..... Battery polarity reversed, or bad cell.

A. Bad connection..... Incorrectly connected or damaged connectors.

A. Charger overheating..... Allow charger to cool before charging again.

YOKOMO

World Champions R/C Car Constructor YOKOMO Ltd. Japan