

## ● Controller Functions

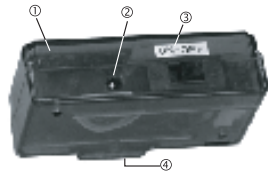
The battery nickel-cadmium battery that powers the cell type drivers has a control function. When its charge drops below approximately 9.9 volts the power monitor function sounds a warning tone and lights the yellow LED, indicating that the power will automatically cut off within about 10 seconds.  
Torque can be controlled to the final screw fastening operation.

## ● If the controller warning tone sounds during operation, please do the following.

1. When you hear the warning tone, turn the power switch off. This will stop the warning tone.
2. Remove the driver from the battery.

Note: Please refer to the cautionary notes under "(With Controller Function)" above.

### CDS-12



#### ① LEDs

The yellow LED lights when voltage is low.  
The red LED lights when there is a power surge.

#### ② Circuit breaker reset button:

The circuit breaker automatically stops the driver when amperage climbs too high. Press this button to restore the circuit, but take care not to apply excessive pressure to the button, and do not continually repeat pressing the button.

#### ③ Power switch ON/OFF

#### ④ 6 pin connector:

Connects driver cord and recharging unit.

### CDB-12



## ● Recharging Procedure

1. Connect the recharging unit AC plug to an AC power source.
2. Check to see that the controller power switch is off and connect the recharging unit's 6 pin plug to the controller's 6 pin connector.
3. The yellow LED will light when recharging begins.
4. The green LED will go on when recharging is complete.
5. Let the recharging unit cool down before storing it away or recharging another battery.



- If the red LED blinks during recharging, the battery life might be over. If the battery life is over, replace the battery with a new one.
- Please be sure to allow the recharging unit to cool down before using it to recharge another battery.

## ● CD Driver Specifications

Lever Start Model	CD-4000	CD-5000	CD-6000	CD-7000
Push-to-Start Model	—	CD-5000PS	CD-6000PS	CD-7000PS
Rated Input Voltage	12 VDC			
Output Torque Range	N • m	0.1-0.5	0.4-1.2	0.5-1.5
	lbf • in	0.9-4.3	3.5-10	4.3-13
	kgf • cm	1-5	4-12	5-15
Torque Switching	Stepless Adjustment			
Unloaded Rotation Speed (r.p.m)	1,000	1,000	1,300	900
Screw Size (mm)	Machine Screw	1.4 - 2.6	2.0 - 3.0	2.6 - 4.0
	Tapping Screw	1.4 - 2.3	2.0 - 3.0	2.6 - 4.0
Dimensions (mm)	Grip Diameter	Φ32.5	Φ32.5 (37.5*)	Φ37 (32.5*)
	Length	197	207 (207*)	220 (226*)
Weight (g)	350	440 (478*)	525 (507*)	527 (511*)
Bit Drive	HIOS Shank	H4		H5
	HEX Shank	1/4HEX or 5HEX		
Accessories	Cord Length	Curly Cord 2.0m 6P		
	HIOS Shank Bit (one each)	H4 + #0 (Φ2.5×40mm)	H4 + #1 (Φ4.0×40mm)	H5 + #1 (Φ5×60mm)
		H4 + #1 (Φ4.0×40mm)	H4 + #2 (Φ4.0×40mm)	H5 + #2 (Φ5×60mm)
	Carbon Brush (Order code)	1pair (AB45-0420)		1pair (AB65-0490)

\* for Push-to-Start

## ● Battery Specifications

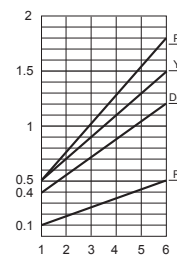
Model	CDS-12	CDB-12
Rated Input Voltage	12 VDC	
Battery Capacity	1,900 mAh	
Dimensions	70-110 cm (Belt length)	152 x 100 x 50 (H) mm
Weight	1,010g*	930g
Continuous Operating Time on a Full Charge	CD-5000: able to fasten about 4,000 screws with torque of 1 N•m (10 kgf•cm)	
Battery Life	500 times	
Connector Type	6P	
Functions	Power ON/OFF SW, Breaker restoration	

\* The weight includes the holster case, the battery (1900mAh) and the control box.

## ● Specifications of CDC-12 Battery Charger

Model	CDC-12SW (for one battery)
Primary Input Power Voltage	AC 100V±5% (50/60 Hz)
Secondary Output	DC 15V 1,900mA
Charging Time	About 100 minutes
Dimensions (mm)	66 x 124 x 46 (H)
Weight (g)	340
Connector	6P

## ● Output Torque Guide



Torque Scale

### Color of Spring

R: Red CD-4000  
Dg: Dark green CD-5000  
Y: Yellow CD-6000  
P: Purple CD-7000

# HIOS®

Screwdrivers for cell production

## CDS-12 CDB-12

## Operation Manual

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# HIOS Inc.

1-16-5 Akiyama, Matsudo City, Chiba Pref., Japan  
TEL: +81-47-392-2001 / FAX: +81-47-392-7773

### CD Driver



### Portable model: CDS-12

Battery & Controller



### Bench-mount model: CDB-12

Battery & Controller



### Battery Charger: CDC-12SW





## Caution

Please read the following carefully.

### ● Driver

- Please note that this driver runs on 12 volts, unlike the standard drivers.
- Please use the HIOS battery only to run the tool as a cell type driver. Never use any other type of power source. Doing so could result in damage.

### ● Battery & Controller

Before using the battery, please conduct a check of the battery and controller functions.

- This battery should not be connected to any driver other than the indicated one under any circumstances.
  - If the battery case shows evidence of deformation, discoloration, emits an odor or shows some other type of disorder, cease operation immediately, turn off the power, please contact your HIOS dealer.
  - Always be sure that the power switch is off before disconnecting the battery from the driver and recharging unit. Leaving the power on when disconnecting could result in a short that could damage the circuitry if a metallic object comes in contact with the connector pins.
  - If the battery becomes inoperative due to a short circuit, please contact your HIOS dealer.
  - Recharging the battery while it is hot could result in damage.
- Always allow the battery to cool down before recharging.
- Not using the battery for prolonged periods can result in deterioration of its operability so that it will no longer run upon recharging. Please contact your HIOS dealer if the battery becomes inoperative.
  - When ordering battery replacements, please contact your HIOS dealer.

### ● Recharging Unit

Please carefully read "Recharging" on the back before using the recharging unit.

- Never connect battery other than the specified one to the recharging unit.
- If you are recharging more than one battery at a time, please allow adequate time for the unit to cool down before using it again.
- Please operate the unit within a temperature range of 10°C-40°C. Never conduct recharging in the rain.
- Recharging generates heat, so be sure there are no combustible materials in the immediate area.
- Conduct recharging for about 100 minutes.
- Disconnect the recharging unit from its power source when not recharging.

### ● Operating Procedure

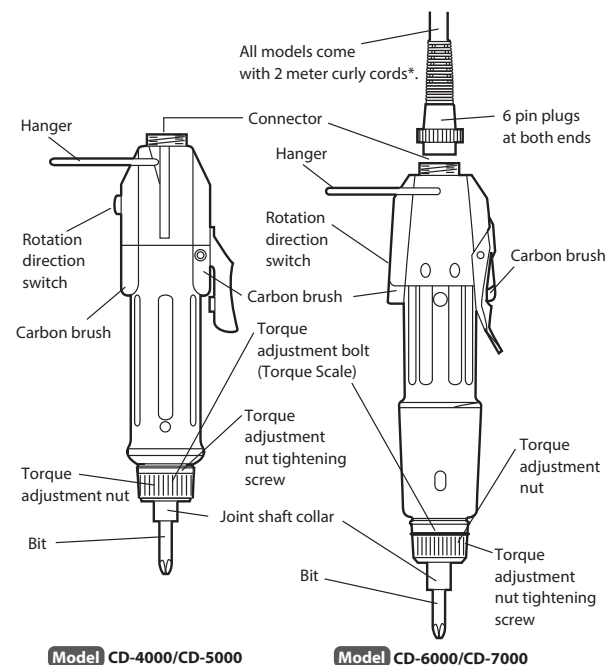
1. Check that the controller power switch is off.
2. Connect the driver cord to the 6 pin connectors on the driver and battery.
3. Set the battery upon or affix it to a stable surface.
4. Attach a bit to the end of the driver.
5. Turn the controller power switch on.
6. Set the driver switch to forward (FOR) or reverse (REV) and check that the motor is running. The driver will start by lightly touching the bit to the end of a screw.



### Caution

- The push-to-start mechanism is sensitive, easily starting high-speed operation at a mere touch. Take care that the bit does not come in contact with any surface before you are ready to start proper operation.
- Always bear in mind that the bit is dangerous and take care not to touch it.

### ● Names of Parts

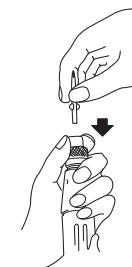


\* 2 meter straight cords are optionally available.

### ● Attachment and Detachment of Bits

Pull down the joint shaft collar on the end of the driver and insert the bit. After attachment, pull the bit to be sure it does not come out.

- Use either a HIOS H4, H5 or 1/4 HEX shank.
- Please refer to the specifications on the reverse side for bits that can be attached to the driver.



### Caution

Always check that the controller power switch is off before attaching a bit.

Failure to do so could be especially dangerous if the driver is set to pushstart mode. In either case, unexpected start up of the driver could result in injury.

### ● Torque Adjustment Procedure

Torque is adjusted by varying pressure from a spring in the torque adjustment nut.

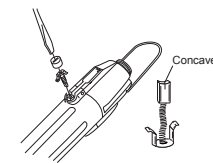
1. If you already know the torque setting you want to set the driver to, consult the output torque graph to determine the appropriate setting on the 1-6 scale.
2. Loosen the torque adjustment nut screw and adjust the upper edge of the nut so that it is directly over the desired scale setting.
3. Start the motor and perform a test screw fastening operation. When the driver automatically stops, check that the screw has been fastened as desired.
4. Readjust the torque setting, tighter or looser, as necessary. Repeat the procedure until you arrive at the desired torque setting. Fix the desired torque setting by fastening the screw on the torque adjustment nut.

Use the HIOS torque meter to check the screw fastening torque.

- Use HP series for electric driver torque setting.
- Use HDP series for measuring screw loosening torque and refastening torque.

### ● Replacing Carbon Brushes

Always be sure that the controller power switch is off or the controller is not connected before replacing the carbon brushes.



- Use a flat head screwdriver to remove the brush cap
- Fit the concave surface of the brush end into the rotating communicator surface.

- There is a groove in the surface of the carbon brush to indicate the limit to which the brush can be used. Replace the brush when it wears down that far.
- Replace both carbon brushes at the same time.



### Caution

- Please be sure to use authentic HIOS carbon brushes. HIOS Corporation cannot be responsible for accidents or damage that may occur as the result of using products not made by HIOS.
- In order to avoid poor insulation of the brushes please submit drivers for maintenance inspection after every one million fastening.