

There are many factors that affect the overall quality of screw tightening.

HIOS aims to provide the highest quality and to create a comfortable working environment from the viewpoint of customers. We review the environment surrounding tightening operations from various aspects and try to improve it every day.

The HIOS New Fastening System is a comprehensive system that achieves highly reliable screw tightening and high quality control.



Problems with conventional tools

Cross recess 	→	Damaged recess
Brushed screwdrivers 	→	Regular maintenance
Torque control 	→	Insufficient torque
Management of the number of screws to be tightened 	→	Skipping screw tightening
Screw tightening data management (tightening criteria) 	→	Operator's judgment
Manual tools 	→	Operator's skill

Improvements introduced with the New Fastening System

TOTSUPURA Screws (HIOS Pat. Screws) prevents "Cam out" phenomenon and achieves highly reliable screw tightening and highly quality control.	
Brushless® screwdrivers Consumables are no longer required, providing outstanding durability and stability. We recommend more use of brushless screwdrivers because they are environmentally friendly.	
Torque Meters help to sustain screw tightening quality by checking torque of screwdrivers and already tightened screws.	
Screw Counters count the number of screws to be tightened, so operators do not have to worry about forgetting to tighten screws or insufficient tightening.	
PG Brushless®Screwdrivers with built-in counter Pass/Fail judgment based on preset acceptance criteria is available for every screw tightening. All the work data can be stored in a PC.	
For automatic and labor-saving equipment Auto-Screwdriver s/ Reciprocating Screwdrivers improve productivity to reduce work hours and costs.	

HIOS Products

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Electric Screwdrivers



Screwdrivers and Reciprocating Screwdrivers for Automated Machines



Torque Meters



Screw Counters



Automatic Screw Feeders



Electric Tappers



Accessories



Bits/ Suction Attachments (Vacuum Attachments)



Features of Electric Screwdrivers

DC type Low voltage direct current system

With low voltage direct current power, it can be used with approx. 30V (HI) and approx. 20V (LOW).



AC type Transformerless system

It can be used by connecting directly to the AC outlet.



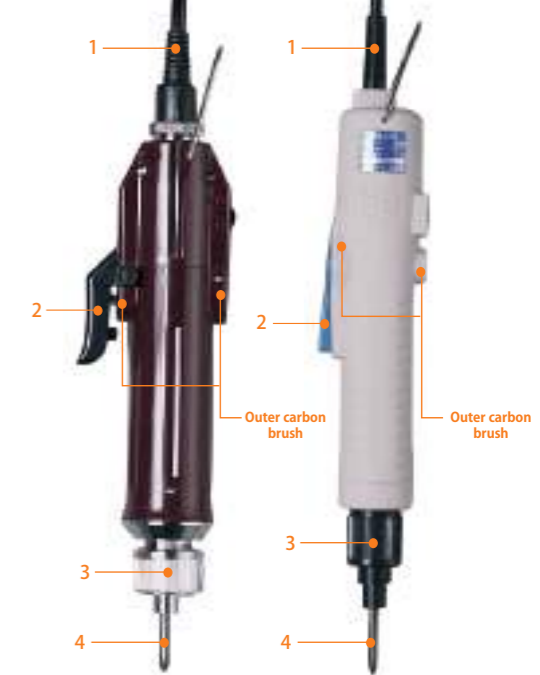
Brushless Screwdrivers

DC type AC type



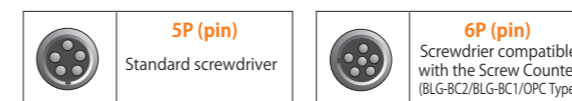
Brushed Screwdrivers

DC type AC type



1. Quick-release cord type (DC type)

The screwdriver cord features a quick release allowing easy maintenance. (The cord for the AC type cannot be detached.)



2. Start Type

- Lever start: trigger the lever gently to start.
- Push-to-start: push the screwdriver gently to start.
- Push and Lever: Switchable

3. Torque Adjustment Nut for fine tuning

The tightening torque can be steplessly adjusted across a wide range. Repeatable high precision provides reliable screw tightening.

4. Bits

The types of bits that can be connected to the screwdriver include the HIOS bit and hexagonal bit. Refer to the specification chart of each screwdriver for bit shape.

HIOS shank shape (bit socket) * Please purchase genuine HIOS bits.	H4(Φ 4)	
	H5(Φ 5)	
HEX shank shape (bit socket) * Please purchase standard sized HEX bits from commercial stores.	Width across flats: 6.35mm (1/4 HEX)	
	Width across flats: 5mm (5 HEX)	

External carbon brush (Brushed Screwdriver)

The design for an external carbon brush makes your brush replacement easier. A carbon brush usually lasts for approximately one million tightening actions (depending on operational conditions).

Icon guide

《Brushless Screwdrivers》

- Environmentally friendly brushless motor**
Without emission of carbon powder, providing a clean environment for electronic parts as well as the workplace. There is also no risk of ground fault.
- Remarkable reduction in heat generation of the screwdriver**
Because a brushless motor is employed, the heat generation of the screwdriver can be reduced remarkably and doesn't compromise performance.
- Safe and risk-free low voltage DC30V**
The low voltage design enables anyone to use it risk-free with easy maintenance.
- Lever and push start type (two-way)**
The starting procedure is simple and can be switched from the lever type to push-to-start type. * Depends on the model.
- Anti-electrostatic body case**
(Surface resistance is less than 3x10¹²Ω)
Anti-electrostatic resin is employed for the body case of the screwdriver to prevent the generation of static electricity. This makes the screwdriver suitable for assembly of precision equipment and electronic parts.

《Brushless Screwdrivers / Brushed Screwdrivers》

- RoHS compliant**
The screwdriver is RoHS compliant.
 - China RoHS compliant**
 - Anti-electrostatic**
Conductive resin is used throughout the body case, switch lever and screwdriver cord.
- 《International Standard Certifications》
- UL and cUL approved
 - CE declared
 - CCC certified

Selection Chart of Electric Screwdrivers

Please use this chart to select screwdrivers that suit your purpose.

Select the most appropriate models for use conditions.

For precision assembly

DC Screwdrivers

For heavy-duty production

AC Screwdrivers

For cell production

Portable Screwdrivers
(battery powered)

For automated assembly line

Screwdrivers for automation

Screw feeding system

Reciprocating Screwdrivers

Screwdriver Classification	Model name	Output Torque Range																			Unloaded Rotation Speed (r.p.m) (HI/LOW)	Screw Size (mm)		Applications			
		(kgf·cm)																				Machine Screw	Tapping Screw				
		0	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					18	19	20
DC type/Brushless	PG Series Standard	PG-3000	0.2-0.55																			980 / 680	1.7-2.3	2.0-2.3	Electrical components, automobile parts, pneumatic devices, etc.		
		PG-5000	0.4-1.2																			900 / 590	2.3-3.0	2.0-2.3			
		PG-7000	0.7-2.8																			960 / 630	2.6-5.0	2.6-4.0			
	BLG-BC1 Series Standard	BLG-4000BC2 BLG-4000BC1	0.1-0.55																			1,000 / 690	1.4-2.6	1.4-2.3	Cell phones, watches, cameras, TVs, glasses, optical pickups, PC, HDD, CD, car navigation systems, car audios, air conditioners, fan heaters, etc.		
		BLG-5000BC2 BLG-5000BC1	0.2-1.2																			1,000 / 690	2.0-3.0	2.0-3.0			
		BLG-5000BC2-15 BLG-5000BC1-15	0.3-1																			1,500 / 1,000	2.0-3.0	2.0-2.6			
		BLG-5000BC2-18 BLG-5000BC1-18	0.5-1.5																			1,800 / 1,200	2.0-3.0	2.0-2.6			
		BLG-5000BC2-HT BLG-5000BC1-HT	0.5-2																			730 / 490	2.0-4.0	2.0-3.0			
		BLG Series Standard	BLG-4000	0.1-0.55																			1,000 / 690	1.4-2.6		1.4-2.3	
	BLG-5000		0.2-1.2																			1,000 / 690	2.0-3.0	2.0-3.0			
	BLG-5000-15		0.3-1																			1,500 / 1,000	2.0-3.0	2.0-2.6			
	BL Series Standard	BL-2000 BL-2000SS*	0.02-0.2																			990 / 650	1.0-2.3	1.0-2.0	Cell phones, watches, cameras, glasses, hard discs, CD players, optical pickups, car navigation systems, car audios, VCRs, small calculators, etc.		
		BL-3000 BL-3000SS*	0.2-0.55 (BL-3000SS)																			980 / 680	1.7-2.3	2.0-2.3			
		BL-5000 BL-5000SS*	0.2-1.2																			900 / 590	2.0-3.0	2.0-3.0			
		BL-5000-15	0.3-1.2																			1,500 / 1,000	2.0-3.0	2.0-2.6			
BL-5020		0.5-2																			750 / 500	2.0-4.0	2.0-3.0				
BL-7000		0.7-2.8																			960 / 630	2.6-5.0	2.6-4.0				
DC type/Brushless	CL Series Standard	CL-2000	0.02-0.2																			680/490	1.0-2.3	1.0-2.0	Automobile parts, PC, printers, TVs, air conditioners, fan heaters, video game players, fax machines, communication equipment, copy machines, scanners, satellite antennas, satellite vides, door mirrors, toys, electronic clinical thermometers		
		CL-3000	0.03-0.2																			1,000 / 670	1.0-2.0	1.0-1.7			
		CL-4000	0.1-0.55																			1,000 / 690	1.4-2.6	1.4-2.3			
		CL-6000	0.2-1																			800 / 500	2.0-3.0	2.0-2.6			
		CL-6500	0.3-1.6																			900 / 600	2.0-4.0	2.0-3.0			
		CL-7000	0.3-2.5																			750 / -	2.0-5.0	2.0-4.0			
		CL-9000	1.2-5																			530	4.0-6.0	4.0-6.0			
DC type/Brushless	SS Series Impact absorbing	SS-2000	0.02-0.2																			680 / 490	1.0-2.3	1.0-2.0	Electric components, computer parts, automobile compressors, pneumatic devices		
		SS-3000	0.03-0.2																			1,000 / 670	1.0-2.0	1.0-1.7			
		SS-4000	0.1-0.45																			1,000 / 690	1.4-2.6	1.4-2.3			
		SS-6500	0.25-1.3																			900 / 600	2.0-3.0	2.0-3.0			
		SS-7000	0.3-2																			750 / -	2.0-4.0	2.0-4.0			
		DC type/Brushless	α Series Hi-speed rotation	α-4500	0.4-0.8																			1,700 / 1,200		2.0-3.0	2.0-2.6
α-5000	0.4-1.2																			1,000 / 700	2.0-3.0	2.0-3.0					
α-6500	0.5-1.8																			1,700 / -	3.0-4.0	2.6-3.0					
AC type/Brushless	VB Series Standard	VB-1510 (100V or 120V or 220-240V)	0.25-1.5																			970	2.0-4.0	2.0-3.0	lighting equipment, washing machine, cleaner, gas equipment, microwave, door mirror, electric automotive component, rear lamp, headlight, video game players, copying machine,		
		VB-1510-18 (100V or 120V or 220-240V)	0.2-1																			1,800	2.0-4.0	2.0-3.0			
		VB-1820 (100V or 120V or 220-240V)	0.4-1.8																			2,000	2.6-4.0	2.6-3.0			
		VB-2008 (100V)	0.4-2																			800	2.0-4.0	2.0-3.0			
		VB-3012 (100V or 120V or 220-240V)	0.5-3																			1,200	3.0-5.0	3.0-4.0			
		VB-3020 (100V)	1-3																			2,000	3.0-5.0	3.0-4.0			
		VB-4504 (100V or 120V or 220-240V)	1-4.5																			400	3.0-5.0	3.0-4.0			

* BL-SS is an impact-absorbing model.

Screwdriver Classification	Model name	Output Torque Range																			Unloaded Rotation Speed (r.p.m) (HI/LOW)	Screw Size (mm)		Applications			
		(kgf·cm)																				Machine Screw	Tapping Screw				
		0	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					18	19	20
AC type/Brushless	VBH Series Super hi-torque	VBH-1820PS (100V or 120V or 220-240V)	3-7																			470	5.0-6.0	5.0-6.0	Automobile parts, car audios, LCD car navigation displays, air conditioners, home lighting equipment, car door mirrors, tail lamps, headlights, gas appliances, vacuum cleaners, washing machines, video game players, VTR, communication equipment, copy machines, laser beam printers, microwave ovens, TVs, power tools, etc.		
		VBH-3012PS (100V or 120V or 220-240V)	4-10																			270	5.0-6.0	5.0-6.0			
AC type/Brushless	VZ Series Standard	VZ-1510 (100V)	0.15-1.5																			1,000	2.0-4.0	2.0-3.0	Copy machines, vending machines, large-size refrigerators, assembling of automobile interior parts, fax machines, fan heaters, TVs, air conditioners for industrial use, etc.		
		VZ-1820 (100V or 120V)	0.4-1.8																			2,000	2.6-4.0	2.6-3.0			
		VZ-3012 (100V or 120V)	0.9-3																			1,200	3.0-5.0	3.0-4.0			
		VZ-4506/4506PS (100V or 120V)/(100V)	1-4.5																			600	3.0-5.0	2.6-4.0			
		VZ-1812 (220V-240V)	0.4-1.8																			1,200	2.6-4.0	2.6-3.0			
		VZ-3007 (100V or 220V-240V)	0.9-3																			700	3.0-5.0	3.0-4.0			
		VZ-4504 (220V-240V)	1-4.5																			400	3.0-5.0	2.6-4.0			
		DC type/Brushless	VZH Series Super hi-torque	VZH-1820 (100V or 120V)	3-7																			470		5.0-6.0	5.0-6.0
VZH-3012 (100V or 120V)	4-10																			270	5.0-6.0	5.0-6.0					
DC type/Brushless	CD Series Portable	CD-4000	0.1-0.5																			1,000	1.4-2.6	1.4-2.3			
		CD-5000	0.4-1.2																			1,000	2.0-3.0	2.0-3.0			
		CD-6000	0.5-1.5																			1,300	2.6-4.0	2.6-4.0			
		CD-7000	0.5-1.8																			900	2.6-4.0	2.6-4.0			
DC type/Brushless	BLF Series For automated machine	BLF-2000	0.03-0.35																			HI 690-975 LOW 120-345	1.0-2.3	1.0-2.0	Automobile- and motorcycle-related components (car navigation systems, headlights, junction boxes, sensors, carburetor mounting, resin panel mounting)		
		BLF-5000	0.3-1																			HI 660-940 LOW 115-320	2.0-3.0	2.0-2.6			
		BLF-7000	0.7-2																			HI 495-735 LOW 150-450	3.0-4.0	3.0-4.0			
		BLF-7000X	0.7-2																			HI 495-735 LOW 150-450	3.0-4.0	3.0-4.0			
		BLF-7025X	1-2.5																			HI 400-600 LOW 120-350	3.0-4.0	3.0-4.0			
DC type/Brushless	CLF Series For automated machine	CLF-3000	0.03-0.15																			1,000 / 560	1.0-2.0	1.0-1.7	Cameras, cell phones, copy machines, TVs, audio equipment, home lighting equipment, air conditioners, health-care devices, switches, pneumatic devices, power meters, etc.		
		CLF-4000	0.1-0.35																			1,000 / 560	1.4-2.6	1.4-2.3			
		CLF-6000	0.3-0.6																			750 / 400	2.0-3.0	2.0-2.6			
		CLF-6500	0.4-1																			850 / 440	2.0-3.0	2.0-3.0			
		CLF-7000	0.5-1.5																			780 / 420	2.0-4.0	2.0-4.0			
	DC type/Brushless	αF Series For automated machine	αF-4500	0.4-0.6																			1,700 / 940	2.0-3.0	2.0-2.6		
			αF-5000	0.4-0.75																			1,100 / 600	2.0-3.0	2.0-3.0		
			αF-6500	0.5-1.1																			1,700 / 950	3.0-4.0	2.6-3.0		
			CL-816A	1.5-2.5																			550 / 310	3.0-4.0	3.0-4.0		
			CL-825A	2-4																			370 / 210	4.0-5.0	4.0-5.0		
DC type/Brushless	Reciprocating screwdriver AC type/Brushless	RD-4000	0.1-0.55																			1,000 / 690	1.4-2.6	1.4-2.3	Automobile parts, window frame parts, gas meters, electro-magnetic valves, seat belts, etc.		
		RD-4500	0.3-0.8																			1,700 / 1,200	2.0-3.0	2.0-2.6			
		RD-10	0.2-1																			1,500	2.0-4.0	2.0-3.0			
		RD-15	0.2-1.5																			1,000	2.0-4.0	2.0-3.0			
		RD-20	1-2																			1,600	3.0-5.0	3.0-4.0			
		RD-30	1-3																			1,000	3.0-5.0	3.0-4.0			

Brushless® Screwdriver with built-in torque sensor

PG Series (DC type)

Pass Guard System

Is that screw properly tightened? Pass Guard tightens, judges and records!

- The built-in torque sensor judges (OK/NG) for every screw fastening.
- The problems that are difficult to see such as insufficient torque, cross threaded and floating screw can be detected.
- All the data are recorded and saved in an external device.

Lever start type

PG-3000

Weight: 345g

PG-5000

Weight: 509g

PG-7000

Weight: 807g

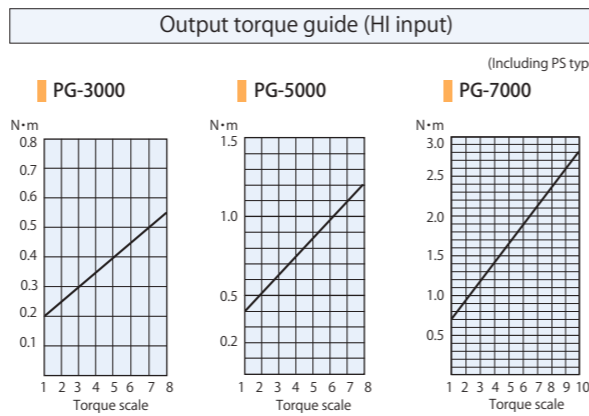
Control Unit (optional)

PG-01

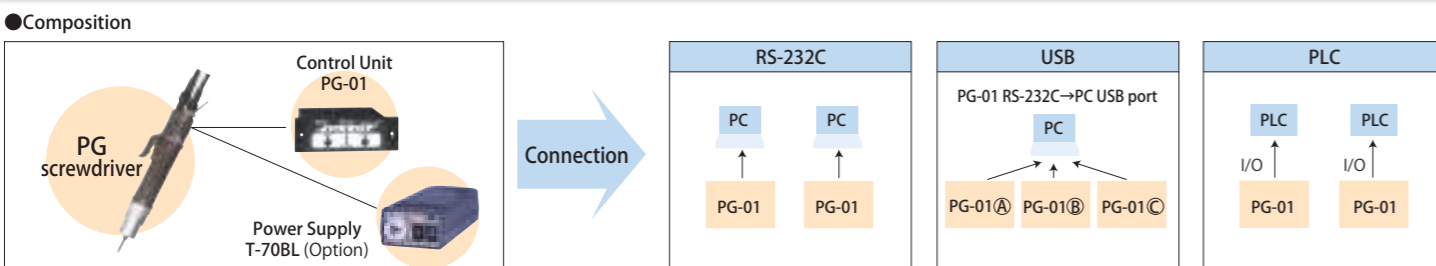
It reads the data from the torque sensor and judges OK/NG in real time.

PG Series Specifications

Model Name		PG-3000	PG-5000	PG-7000
Output Torque	N·m	0.2 - 0.55	0.4 - 1.2	0.7 - 2.8
Range	lbf·in	1.7 - 4.8	3.5 - 10	6.1 - 24
	(kgf·cm)	(2 - 5.5)	(4 - 12)	(7 - 28)
Torque Switching		Stepless adjustment	Stepless adjustment	Stepless adjustment
Unloaded Rotation	HI	980	900	960
	LOW	680	590	630
Screw Size	Machine Screw	1.7 - 2.3	2.3 - 3.0	2.6 - 5.0
	Tapping Screw	2.0 - 2.3	2.0 - 2.3	2.6 - 4.0
Bit	HIOS Shank	H4	H4	H5 and SHEX
Drive	HEX Shank	On request	On request	1/4HEX
Power Supply	T-70BL	○	○	○
Accessories	Bit (one each)	H4	+ # 0(∅2.5×40mm) + # 1(∅4.0×40mm) + # 2(∅4.0×40mm)	+ # 0(∅2.5×60mm) + # 1(∅5.0×60mm) + # 2(∅5.0×60mm)
		H5		
	Cord length(m)		2m(6P)	2m(6P)
	Sensor cord(m)		1.7m(8P)	1.7m(8P)
Others		Sampling software (Japanese version Windows XP Excel), RS232C cable 1 pc, USB cable 1 pc, AC adapter 1 pc (AC100V-240V compatible)		

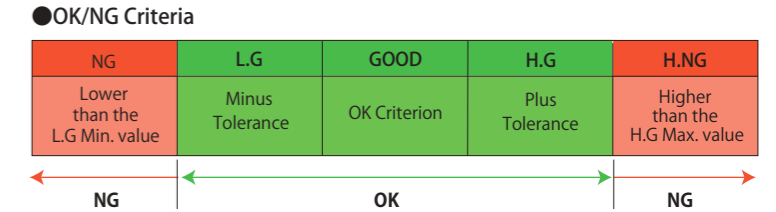
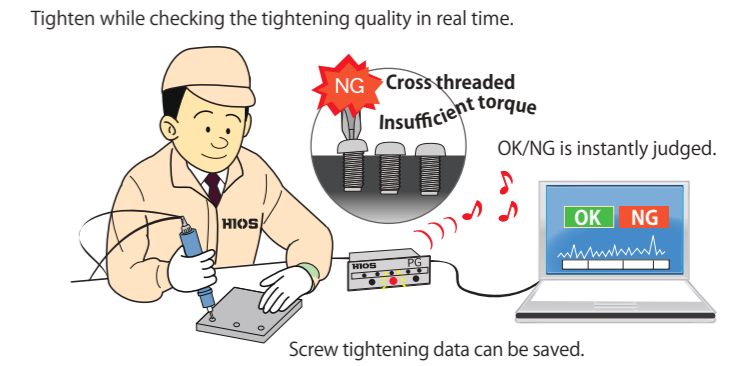


«Pass Guard System: Composition and Connection»

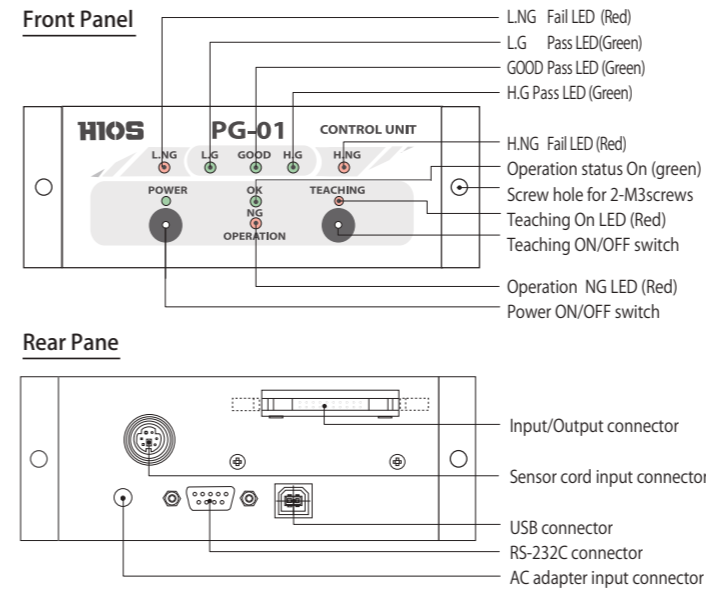


«Workflow of Pass Guard System Use»

- Setting the reference values for OK/NG criteria**
 - Determine the acceptable criteria (Teaching)**
The acceptance criteria are determined by conducting an actual fastening procedure. The torque value, minimum work time (Min), maximum work time (Max) are then saved.
 - Set the acceptable range (Percentage Setting)**
The acceptable range for torque, minimum work time (Min) and maximum work time (Max) can be selected from 0, 2, 5, 10, 15, 20%.
- Real operation**
Every screw fastening can be judged in real time.
- Judgement**
OK/NG results are confirmed with the LED light and buzzer of PG-01.
OKbuzzer sounds once (beep)
NGbuzzer sounds twice (beep, beep)
- Record and save the data with a PC**
As a standard feature, the measured data can be displayed both numerically and graphically with Excel. It is also possible to compose a customized program to meet customer's needs according to the current work environment.



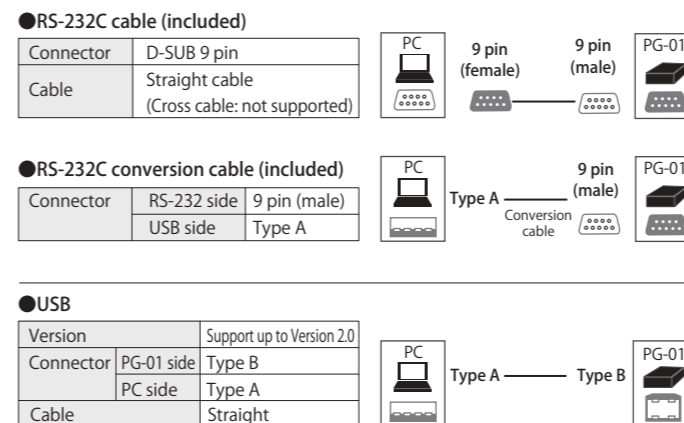
«PG-01 Components and Specifications»



●Specifications

Model	PG-01						
RS-232C Communication	Communication speed	Start Bit	Stop Bit	Data	Data format	Parity	Interface
	4800BPS	1Bit	1Bit	8Bit	ASCII	None	RS-232C
External Dimensions (mm)							
	* The above dimensions don't include protrusions.						
Weight(g)	520g						
AC Adaptor	Input: AC100V-240V (50 / 60 Hz), Output: DC12V						

«External Connection Cables»



«I/O Connector / Output: open connector»

I/O	Plus common/minus common shared, Output: sink type	
Connector specifications	Male connector (P/N: Hirose HIF3BA-20PA-2.54DS) External connector (P/N: Hirose HIF3BA-20D-2.54R)	
Type	Minus common (NPN supported)* Plus common PNP: not supported	

* An external connector is not included. Please purchase it at a commercial store.

Output	Pin No.	Output signal	Description
100mA max.	13	L.NG (Fail)	Torque is lower than the L.G Min. value.
	14	L.G (Pass)	Minus Tolerance
	15	GOOD (Pass)	OK Criterion
	16	H.G (Pass)	Plus Tolerance
	17	H.NG (Fail)	Torque is higher than the H.G Max.value.
DC0V	12	COM GND	—
Pins other than the above are not used.			

Brushless® Screwdriver Built-in Pulse Counter BLG-BC2 Series (DC Type)

熟練工 (Matsukiren)

No more rely operations experience and skill.

- Detect errors in screw fastening in real time with high accuracy by counting the pulse of the motor.
- Misplaced screws of different type or length, recessed screws or floating screws due to seized cables are now detected.
- Installed serial port (RS-232C) makes it possible to set the driver by remote control and record pulse values of each screw tightening for traceability.
- Direct teaching allows a simple setting.

Lever Start Type



Two-way Start System



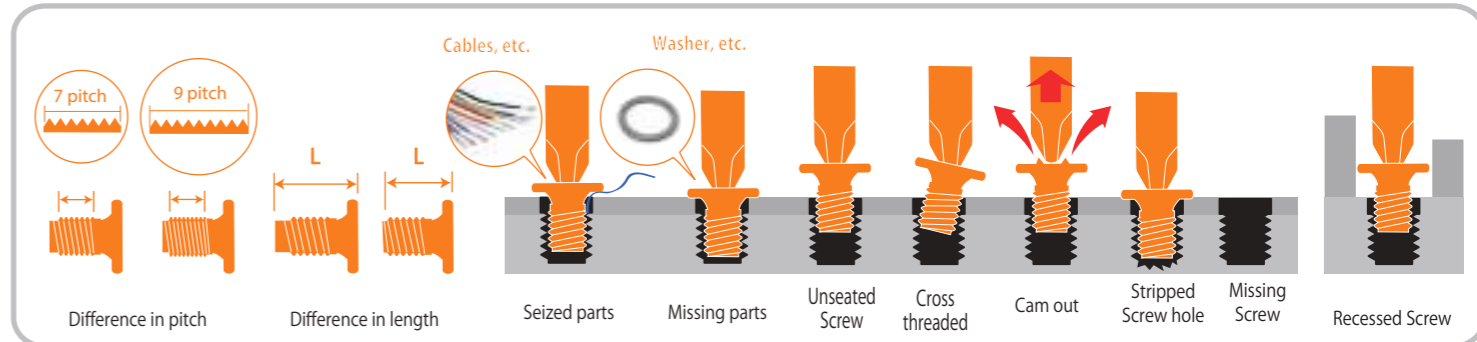
Note: CCC certified models have different specification and order codes from the standard models. Please contact HIOS distributors before ordering.

BLG-BC2 Series Specifications

Model name		BLG-4000BC2	BLG-5000BC2	BLG-5000BC2-15	BLG-5000BC2-18	BLG-5000BC2-HT	
Output torque range	N·m	0.1-0.55	0.2-1.2	0.3-1.0	0.5-1.5	0.5-2.0	
	lbf·in	0.9-4.8	1.7-10	2.6-10	4.3-13	4.3-17	
	(Kgf·cm)	(1-5.5)	(2-12)	(3-10)	(5-15)	(5-20)	
Torque switching		Stepless Adjustment	Stepless Adjustment	Stepless adjustment	Stepless Adjustment	Stepless Adjustment	
Unloaded Rotation	HI	1.000	1.000	1.500	1.800	730	
	LOW	690	690	1.000	1.200	-	
Speed (r.p.m) ±10%	Machine Screw	1.4-2.6	2.0-3.0	2.3-3.0	2.3-3.0	2.0-4.0	
	Tapping Screw	1.4-2.3	2.0-3.0	2.0-2.6	2.0-2.6	2.0-3.0	
Bit Drive	HIOS Shank	H4	H4	H4	H5 and 5HEX	H5 and 5HEX	
	HEX Shank	1/4HEX	H5 and 5HEX or 1/4HEX	H5 and 5HEX or 1/4HEX	1/4HEX	1/4HEX	
Power Supply	T-45BL	○	○	○*	-	○*	
	T-70BL	○	○	○*	○*	○*	
Accessories	Bit (one each)	H4	+ #0 (Ø2.5×40mm) + #1 (Ø4.0×40mm)	+ #1 (Ø4.0×40mm) + #2 (Ø4.0×40mm)	+ #1 (Ø4.0×40mm) + #2 (Ø4.0×40mm)	-	-
		H5	+ #1 (Ø5.0×60mm) + #2 (Ø5.0×60mm)	+ #1 (Ø5.0×60mm) + #2 (Ø5.0×60mm)	+ #1 (Ø5.0×60mm) + #2 (Ø5.0×60mm)	+ #1 (Ø5.0×60mm) + #2 (Ø5.0×60mm)	+ #1 (Ø5.0×60mm) + #2 (Ø5.0×60mm)
		1/4HEX	+ #1 (Ø5.0×50mm) + #2 (Ø5.0×50mm)	+ #1 (Ø5.0×50mm) + #2 (Ø5.0×50mm)	+ #1 (Ø5.0×50mm) + #2 (Ø5.0×50mm)	+ #1 (Ø5.0×50mm) + #2 (Ø5.0×50mm)	+ #1 (Ø5.0×50mm) + #2 (Ø5.0×50mm)
	Spring	White					
	Cord length (m)	2m(6P)					
L-shaped HEX wrench	Width across flats: 5mm, 1 pc						

Use only 2(HI) power outlet with the *models. These models may not perform properly on 1(LOW) power outlet.

Detectable errors with BLG-BC2



Accessories

Suction(Vacuum) Attachment for BLG Series

By negative pressure, the effort needed to pick up screws is reduced. This attachment can even pick up non-ferrous screws such as stainless steel screws by vacuuming, and improve operation efficiency. It also removes powder dust generated in screw fastening.

Order guide

(A),(B) and (C) below needed to be purchased separately.
* The size of (A) and (B) depends on the screw size. For more information, please refer to P. 59-60.

Model	(A) Mouthpiece model	(B) Bit length	(C) Suction attachment model
BLG-4000BC2		H4 60mm	BLGQ4-SET
BLG-5000BC2	F3-Standard 18mm	H4 40mm	BLQ5-SET/BLQ5-SET-ESD*
BLG-5000BC2-15		H4 60mm	BLQ5N-SET/BLQ5N-SET-ESD*

Note: The Suction Attachment cannot be used with 1/4HEX. * ESD is anti-electrostatic

Please contact HIOS distributors for the attachment for the BLG-5000BC2-18

Accessories

External Input/output cable BLG-BC2-3010

To use external I/O, the special cable with the sample application software is available as an option.

Related Products

External I/O Box BLG-IO-Pro1

Connection with JUKUREN BLG-BC2 provides simple control of fastening a screw!

- ① Detects screw fastening errors and can be interlocked with revolving lights.
- ② Operations can be coordinated with PC (the dedicated software).
- ③ No preparation of a program like PLC controls is required.
- ④ Driver operation control is possible depending on whether work is available or not.
- ⑤ The driver terminates operation automatically when screw fastening error occurs.

Basic Configuration

Screwdriver	I/OBOX	Power Supply
•BLG-4000BC2 •BLG-5000BC2 Series	BLG-IO-Pro1	•T-45BL •T-70BL

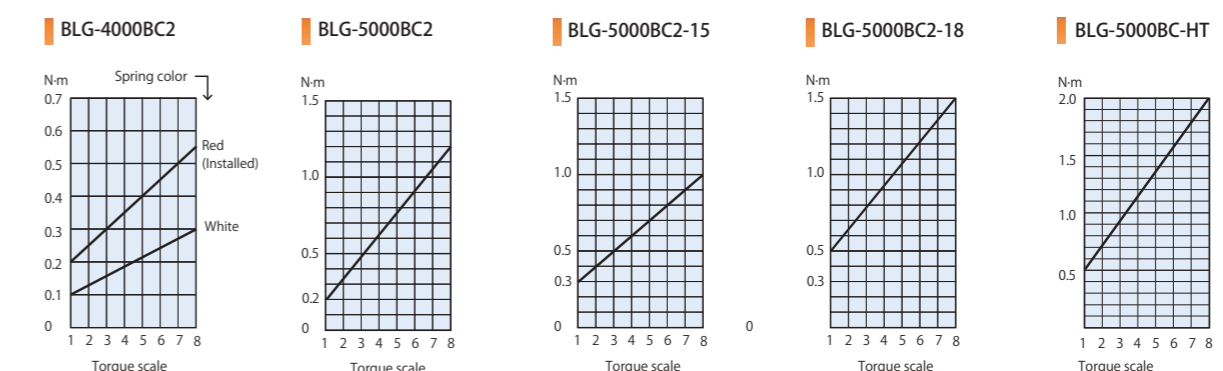
Vertical Screwdriver Operating Stand VMS-40/VMS-50

The stand keeps the screwdriver in a vertical position, allowing accurate screw fastening.

Compatible screwdrivers:
BLG-4000BC2
BLG-5000BC2 Series

See P.42 for details.

Output torque guide (HI input)



*There are two types of spring for torque adjustment: for HI (originally fixed to the unit) and for Low (accessory). Use one of them depending on your operating conditions.

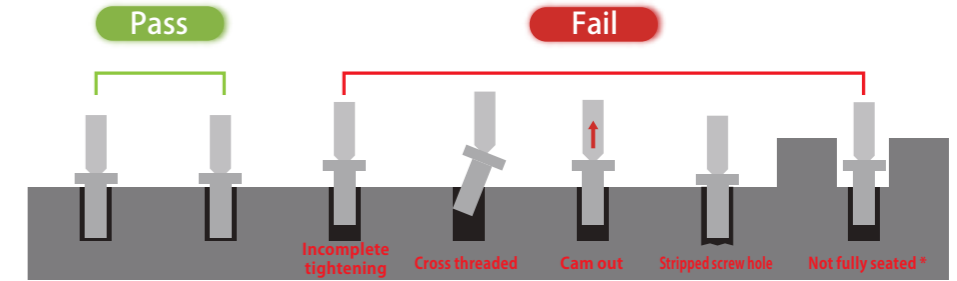
Brushless® Screwdriver
with a Built-in Screw Counter
BLG-BC1 BLG-BC1 Series
(DC Type)



No more overlooked tightening errors!

- It prevents human errors in operations! It supports accurate screw fastening and reduces the operator's fatigue.
- A conventional external screw counter is not required. This realizes low-cost introduction of new screwdrivers.
- The integration of the screwdriver and the counter is optimal for space-saving operations.

From now on, the screwdriver itself detects and notifies you of screw fastening errors.



*If a recess is deep, it is hard to visually notice a not fully seated screw from above.

Lever Start Type

Unit : mm

BLG-4000BC1



Two-way Start System

Unit : mm

BLG-5000BC1



Hi-speed rotation BLG-5000BC1-15



Hi-speed rotation BLG-5000BC1-18



Hi-torque BLG-5000 BC1-HT



Note: CCC certified models have different specification and order codes from the standard models. Please contact HIOS distributors before ordering.

Major features

- Counter ON/OFF** You can turn off the counter function and use the screwdriver as an ordinary one; then you can connect your own HIOS counter to it.
- Counter** You can set the number of fastener count from 1 to 99. Screw tightening skipping can be prevented.
- Buzzer and LED** The buzzer and LED notify you of a result of each screw fastening (Pass/fail).
- Prevention of miscout** It prevents miscout caused by a re-tightening or double fastening.
- Error detection** Screw fastening errors can be detected (e.g., incomplete tightening, cross threaded, cam-out, stripped screw hole, etc.).
- Cycle Totals** The total number of cycles resulting in a clutch activation.
- Count timer** The buzzer notifies you of completion of screw fastening and then reset the number of fastener count on the display.

Accessories

BLG-BC1 Accessories

Accessories

Accessories

Suction(Vacuum) Attachment for BLG Series

By negative pressure, the effort needed to pick up screws is reduced. This attachment can even pick up non-ferrous screws such as stainless steel screws by vacuuming, and improve operation efficiency. It also removes powder dust generated in screw fastening.

Order guide

(A),(B) and (C) below needed to be purchased separately.
* The size of (A) and (B) depends on the screw size. For more information, please refer to P.59-60.

Model	(A) Mouthpiece model	(B) Bit length	(C) Suction Attachment model
BLG-4000BC1		H4 60mm	BLGQ4-SET
BLG-5000BC1	F3-Standard 18mm	H4 40mm	BLQ5-SET/BLQ5-SET-ESD*
BLG-5000BC1-15		H4 60mm	BLQ5N-SET/BLQ5N-SET-ESD*

Note: The Suction Attachment cannot be used with 1/4HEX. * ESD is anti-electrostatic

Please contact HIOS distributors for the attachment for the BLG-5000BC1-18

Vertical Screwdriver Operating Stand

VMS-40/VMS-50

The stand keeps the screwdriver in a vertical position, allowing accurate screw fastening.



Compatible screwdrivers:
BLG-4000BC1
BLG-5000BC1 Series

▶ See P.42 for details.

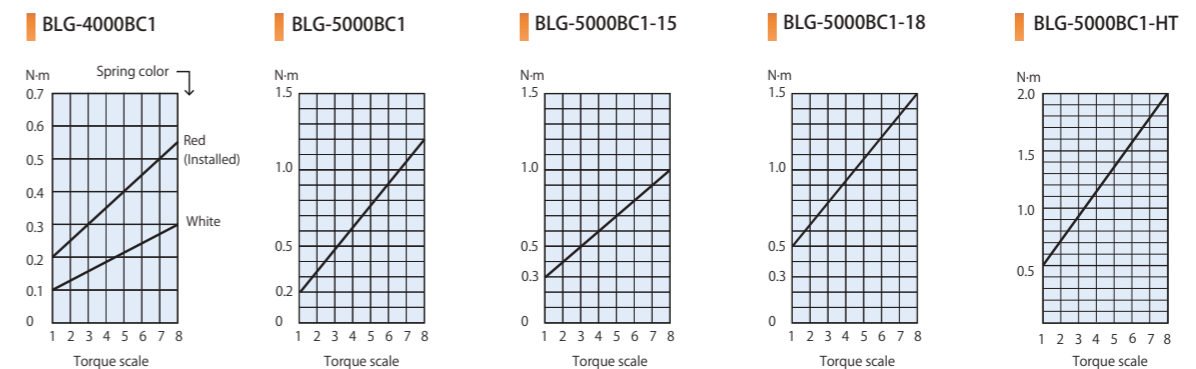
BLG-BC1 Series Specifications

Specifications

Model name	BLG-4000BC1	BLG-5000BC1	BLG-5000BC1-15	BLG-5000BC1-18	BLG-5000BC1-HT
Output torque range	N·m	0.1-0.55	0.2-1.2	0.3-1.0	0.5-1.5
	lbf·in	0.9-4.8	1.7-10	2.6-10	4.3-13
	(Kgf·cm)	(1-5.5)	(2-12)	(3-10)	(5-15)
Torque switching	Stepless Adjustment	Stepless Adjustment	Stepless adjustment	Stepless Adjustment	Stepless Adjustment
Unloaded Rotation	HI	1,000	1,000	1,500	1,800
	LOW	690	690	1,000	1,200
Screw Size (mm)	Machine Screw	1.4-2.6	2.0-3.0	2.3-3.0	2.3-3.0
	Tapping Screw	1.4-2.3	2.0-3.0	2.0-2.6	2.0-2.6
Bit Drive	HIOS Shank	H4	H4	H4	H5 and 5HEX
	HEX Shank	1/4HEX	H5 and 5HEX or 1/4HEX	H5 and 5HEX or 1/4HEX	1/4HEX
Power Supply	T-45BL	○	○	○★	○★
	T-70BL	○	○	○★	○★
Accessories	Bit (one each)	H4	+ #0 (∅2.5×40mm) + #1 (∅4.0×40mm)	+ #1 (∅4.0×40mm) + #2 (∅4.0×40mm)	+ #1 (∅4.0×40mm) + #2 (∅4.0×40mm)
		H5	+ #1 (∅5.0×60mm) + #2 (∅5.0×60mm)	+ #1 (∅5.0×60mm) + #2 (∅5.0×60mm)	+ #1 (∅5.0×60mm) + #2 (∅5.0×60mm)
		1/4HEX	+ #1 (∅5.0×50mm) + #2 (∅5.0×50mm) - (∅5.0×50mm)	+ #1 (∅5.0×50mm) + #2 (∅5.0×50mm) - (∅5.0×50mm)	+ #1 (∅5.0×50mm) + #2 (∅5.0×50mm) - (∅5.0×50mm)
	Spring	White			
Cord length (m)	2m(6P)	2m(6P)	2m(6P)	2m(6P)	2m(6P)
L-shaped HEX wrench		Width across flats: 5mm, 1 pc	Width across flats: 5mm, 1 pc	Width across flats: 5mm, 1 pc	Width across flats: 5mm, 1 pc

Use only 2(HI) power outlet with the ★models. These models may not perform properly on 1(LOW) power outlet.

Output torque guide (HI input)



*There are two types of spring for torque adjustment: for HI (originally fixed to the unit) and for Low (accessory). Use one of them depending on your operating conditions.

Brushless® Screwdriver BLG Series (DC Type)

Lever Start Type



Note: CCC certified models have different specification and order codes from the standard models. Please contact HIOS distributors before ordering.

BLG series Specifications

Model Name		BLG-4000	BLG-5000	BLG-5000-15	BLG-5000-18	BLG-5000-HT
Output Torque Range	N·m	0.1 - 0.55	0.2 - 1.2	0.3 - 1.0	0.5 - 1.5	0.5 - 2.0
	lbf·in	0.9 - 48	1.7 - 10	2.6 - 10	4.3 - 13	4.3 - 17
	(kgf·cm)	(1 - 5.5)	(2 - 12)	(3 - 10)	(5 - 15)	(5 - 20)
Torque Switching		Stepless Adjustment	Stepless Adjustment	Stepless Adjustment	Stepless Adjustment	Stepless Adjustment
Unloaded Rotation	HI	1,000	1,000	1,500	2,000	730
Speed (r.p.m) ±10%	LOW	690	690	1,000	1,400	—
Screw Size (mm)	Machine Screw	1.4 - 2.6	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 4.0
	Tapping Screw	1.4 - 2.3	2.0 - 3.0	2.0 - 2.6	2.0 - 2.6	2.0 - 3.0
Bit Drive	HIOS Shank	H4	H4	H4	H5 & 5HEX	H5 & 5HEX
	HEX Shank	1/4HEX	H5 and 5HEX or 1/4HEX	H5 and 5HEX or 1/4HEX	1/4HEX	1/4HEX
Power Supply	T-45BL	○	○	○★	—	○★
	T-70BL	○	○	○★	○★	○★
Accessories	Bit (one each)	H4	+ # 1 (Ø2.5×40mm) + # 1 (Ø4.0×40mm)	+ # 1 (Ø4.0×40mm) + # 2 (Ø4.0×40mm)	+ # 1 (Ø4.0×40mm) + # 2 (Ø4.0×40mm)	
		H5	+ # 1 (Ø5.0×60mm) + # 2 (Ø5.0×60mm)	+ # 1 (Ø5.0×60mm) + # 2 (Ø5.0×60mm)	+ # 1 (Ø5.0×60mm) + # 2 (Ø5.0×60mm)	+ # 1 (Ø5.0×60mm) + # 2 (Ø5.0×60mm)
		1/4HEX	+ # 1 (Ø5.0×50mm) + # 2 (Ø5.0×50mm)	+ # 1 (Ø5.0×50mm) + # 2 (Ø5.0×50mm)	+ # 1 (Ø5.0×50mm) + # 2 (Ø5.0×50mm)	+ # 1 (Ø5.0×50mm) + # 2 (Ø5.0×50mm)
	Spring	White spring				
Cord length (m)		1.5m(5P)	1.5m(5P)	1.5m(5P)	1.5m(5P)	1.5m(5P)
L-shaped HEX wrench			Width across flats: 5mm, 1pc	Width across flats: 5mm, 1pc	Width across flats: 5mm, 1pc	Width across flats: 5mm, 1pc

Use only 2(HI) power outlet with the ★models. These models may not perform properly on 1(LOW) power outlet.

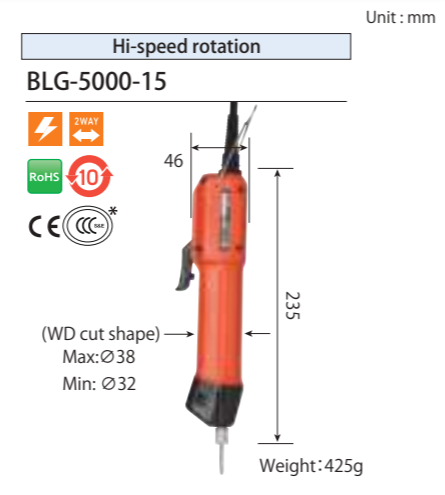
The New Industry Benchmark in Electric Torque Drivers

- The BLG series has the performance, quality and durability equivalent to existing brushless screwdrivers (e.g., BL series), plus better maintenance efficiency.
- You can smoothly switch from a brushed screwdriver (e.g., CL and a series) to a brushless screwdriver (e.g., BLG series) without significant cost increase.

Two-way (Push/Lever) Start Type



Two-way Start System



Specifications

Accessories

Suction(Vacuum) Attachment for BLG Series

By negative pressure, the effort needed to pick up screws is reduced. This attachment can even pick up non-ferrous screws such as stainless steel screws by vacuuming, and improve operation efficiency. It also removes powder dust generated in screw fastening.

Order guide

(A),(B) and (C) below needed to be purchased separately.
* The size of (A) and (B) depends on the screw size. For more information, please refer to P. 59-60.

Model	(A) Mouthpiece model	(B) Bit length	(C) Suction Attachment model
BLG-4000	F3-Standard 18mm	H4 60mm	BLGQ4-SET
BLG-5000		H4 40mm	BLQ5-SET/BLQ5-SET-ESD*
BLG-5000-15		H4 60mm	BLQ5N-SET/BLQ5N-SET-ESD*

Note: The Suction Attachment cannot be used with 1/4HEX. * ESD is anti-electrostatic

Please contact HIOS distributors for the attachment for the BLG-5000BC1-18

Variations

For use with HIOS Screw Counters

BLG-OPC

Models:
BLG-4000-OPC BLG-5000-OPC-18
BLG-5000-OPC BLG-5000-OPC-HT
BLG-5000-OPC-15

These models prevent skipping screw fastening in combination with the HIOS Screw Counter.

- They have a function to output positive rotation, reverse rotation and Torque-up (finish) signals.

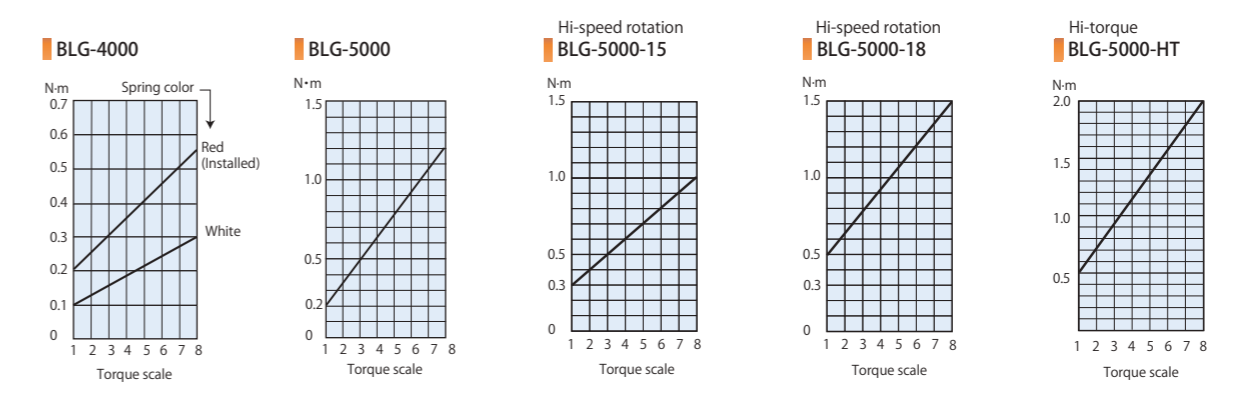
Compatible counters

Power supply with HIOS Screw Counter Separate Counter Compact Separate Counter

BLOP-STC3 **BLOP-SC1** **BLOP-SC3**

See P. 43-46 for details.

Output torque guide (HI input)



*There are two types of spring for torque adjustment: for HI (originally fixed to the unit) and for Low (accessory). Use one of them depending on your operation conditions.

Accessories

Vertical Screwdriver Operating Stand

VMS-40/VMS-50

The stand keeps the screwdriver in a vertical position, allowing accurate screw fastening.

Compatible screwdrivers:
BLG-4000BC1
BLG-5000 Series

See P.42 for details.

Related Products

I/O Signal Relay Box

BLOP-AF

A complete signal from the screwdriver can be easily extracted and used by connecting this Relay box to an external device such as a PLC.

Compatible screwdrivers:
BLG-4000 (OPC)
BLG-5000 Series (OPC)

See P.28 for details.

BLG - OPC Series I/O Signal Relay Box for Automation

BLOP-OST

By connecting this box to a set of the BL-OPC or BLG-OPC and its power supply, the driver can start / stop by inputting D-ACT signals into the CN3 connector with external devices.

Compatible screwdrivers:
BLG-4000 (OPC)
BLG-5000 Series (OPC)

See P.28 for details.

Brushless® Screwdriver

BL Series (DC Type)

The first Brushless Electric Torque driver in the world!

- There is no carbon powder emission and maintains a clean environment.
- Significant durability improvement considerably reduces maintenance cost.
- Reduces the temperature rise of the motor by about 30% and mitigates problems related to heating.
- Two types of start systems (push and lever) are available with one screwdriver (except BL-2000).
- High-speed rotation shortens screw fastening time and improves work efficiency.

Two-way Start System

BL-2000 (Lever Start)

anti-static electricity standard.
RoHS 10
CE CCC*

Impact absorbing
BL-2000SS

Weight: 254g

Dimensions: 172mm height, 26mm diameter.

Consumable parts are used for the switch.

BL-3000 Two-way(Push/Lever)

2WAY
RoHS 10
CE CCC*

Impact absorbing
BL-3000SS

Weight: 320g

Dimensions: 192mm height, 32.5mm diameter.

BL-5000 Two-way(Push/Lever)

2WAY
RoHS 10
CE CCC*

Impact absorbing
BL-5000SS

Hi-speed rotation
BL-5000-15

Hi-torque
BL-5020

Weight: 360g

Dimensions: 207mm height, 48.8mm diameter.

(WD cut shape) Max: 38mm, Min: 32mm.

BL-7000 Two-way(Push/Lever)

2WAY
RoHS 10
CE CCC*

Hi-torque
BL-7000HT

Weight: 640g

Dimensions: 239mm height, 57.5mm diameter.

(WD cut shape) Max: 40mm, Min: 36mm.

Note: CCC certified models have different specification and order codes from the standard models. Please contact your HIOS distributor before ordering.

BL Series Specifications

Specifications

Model Name	BL-2000 BL-2000SS	BL-3000 BL-3000SS *	BL-5000 BL-5000SS	BL-5000-15	BL-5020	BL-7000	BL-7000HT	
Output torque range	N·m: 0.02 - 0.2 lbf·in: 0.17 - 1.7 (kgf·cm): (0.2 - 2)	N·m: 0.2 - 0.55 0.2-0.35* lbf·in: 1.7 - 4.8 1.7 - 4.8* (kgf·cm): (2 - 5.5) (2-3.5)*	N·m: 0.2 - 1.2 lbf·in: 1.7 - 10 (kgf·cm): (2 - 12)	N·m: 0.3 - 1.2 lbf·in: 2.6 - 10 (kgf·cm): (3 - 12)	N·m: 0.5 - 2.0 lbf·in: 4.3 - 17.4 (kgf·cm): (5 - 20)	N·m: 0.7 - 2.8 lbf·in: 6.1 - 24 (kgf·cm): (7 - 28)	N·m: 0.7 - 3.5 lbf·in: 6.1 - 30 (kgf·cm): (7 - 35)	
Torque switching	Stepless Adjustment	Stepless Adjustment	Stepless Adjustment	Stepless Adjustment	Stepless Adjustment	Stepless Adjustment	Stepless Adjustment	
Unloaded Rotation	990	980	900	1,500	750	960	700	
Speed (r.p.m) ±10%	HI: 650 LOW: 650	HI: 680 LOW: 680	HI: 590 LOW: 590	HI: 1,000 LOW: 1,000	HI: 500 LOW: 500	HI: 630 LOW: 630	HI: 500 LOW: 500	
Screw Size	Machine Screw: 1.0 - 2.3 Tapping Screw: 1.0 - 2.0	Machine Screw: 1.7 - 2.3 Tapping Screw: 2.0 - 2.3	Machine Screw: 2.0 - 3.0 Tapping Screw: 2.0 - 3.0	Machine Screw: 2.0 - 3.0 Tapping Screw: 2.0 - 2.6	Machine Screw: 2.0 - 4.0 Tapping Screw: 2.0 - 3.0	Machine Screw: 2.6 - 5.0 Tapping Screw: 2.6 - 4.0	Machine Screw: 2.6 - 4.0 Tapping Screw: 2.6 - 4.0	
Bit Drive	HIOS Shank: H4 HEX Shank: -	HIOS Shank: H4 HEX Shank: 1/4HEX	HIOS Shank: H4 HEX Shank: H5 and 5HEX or 1/4HEX	HIOS Shank: H4 HEX Shank: H5 and 5HEX or 1/4HEX	HIOS Shank: H4 HEX Shank: H5 and 5HEX or 1/4HEX	HIOS Shank: H4 HEX Shank: H5 and 5HEX or 1/4HEX	HIOS Shank: H4 HEX Shank: H5 and 5HEX or 1/4HEX	
Power Supply	T-45BL: ○ T-70BL: ○	T-45BL: ○ T-70BL: ○	T-45BL: ○ T-70BL: ○	T-45BL: ○★ T-70BL: ○★	T-45BL: ○★ T-70BL: ○★	T-45BL: ○ T-70BL: ○	T-45BL: ○ T-70BL: ○	
Accessories	Bit (one each): H4 (+#0 (2.0x40mm), +#0 (2.5x40mm), H5 (+#1 (2.5x60mm), +#2 (2.5x60mm)), 1/4 HEX (+#1 (2.5x50mm), +#2 (2.5x50mm)) Spring: Yellow spring Cord length (m): 2m (5P) ESD design L-shaped HEX wrench: 2m (5P) ESD design	Bit (one each): H4 (+#0 (2.5x40mm), +#1 (2.5x40mm), H5 (+#1 (2.5x50mm), +#2 (2.5x50mm)), 1/4 HEX (+#1 (2.5x50mm), +#2 (2.5x50mm)) Spring: Yellow spring Cord length (m): 1.5m (5P) L-shaped HEX wrench: 1.5m (5P)	Bit (one each): H4 (+#1 (2.0x40mm), +#2 (2.0x40mm), H5 (+#1 (2.5x60mm), +#2 (2.5x60mm)), 1/4 HEX (+#1 (2.5x50mm), +#2 (2.5x50mm)) Spring: Yellow spring Cord length (m): 1.5m (5P) L-shaped HEX wrench: 1.5m (5P)	Bit (one each): H4 (+#1 (2.0x40mm), +#2 (2.0x40mm), H5 (+#1 (2.5x60mm), +#2 (2.5x60mm)), 1/4 HEX (+#1 (2.5x50mm), +#2 (2.5x50mm)) Spring: Yellow spring Cord length (m): 1.5m (5P) L-shaped HEX wrench: 1.5m (5P)	Bit (one each): H4 (+#1 (2.0x40mm), +#2 (2.0x40mm), H5 (+#1 (2.5x60mm), +#2 (2.5x60mm)), 1/4 HEX (+#1 (2.5x50mm), +#2 (2.5x50mm)) Spring: Yellow spring Cord length (m): 1.5m (5P) L-shaped HEX wrench: 1.5m (5P)	Bit (one each): H4 (+#1 (2.0x40mm), +#2 (2.0x40mm), H5 (+#1 (2.5x60mm), +#2 (2.5x60mm)), 1/4 HEX (+#1 (2.5x50mm), +#2 (2.5x50mm)) Spring: Yellow spring Cord length (m): 1.5m (5P) L-shaped HEX wrench: 1.5m (5P)	Bit (one each): H4 (+#1 (2.0x40mm), +#2 (2.0x40mm), H5 (+#1 (2.5x60mm), +#2 (2.5x60mm)), 1/4 HEX (+#1 (2.5x50mm), +#2 (2.5x50mm)) Spring: Yellow spring Cord length (m): 2m (5P) L-shaped HEX wrench: 2m (5P)	Bit (one each): H4 (+#1 (2.0x40mm), +#2 (2.0x40mm), H5 (+#1 (2.5x60mm), +#2 (2.5x60mm)), 1/4 HEX (+#1 (2.5x50mm), +#2 (2.5x50mm)) Spring: Yellow spring Cord length (m): 2m (5P) L-shaped HEX wrench: 2m (5P)

Use only 2(HI) power outlet with the ★models. These models may not perform properly on 1(LOW) power outlet.

Accessories and Variations

BL Accessories & Applicable Drivers

Suction(Vacuum) Attachment for BL Series

By negative pressure, the effort needed to pick up screws is reduced. This attachment can even pick up non-ferrous screws such as stainless steel screws by vacuuming, and improve operation efficiency. It also removes powder dust generated in screw fastening.

Order guide

(A),(B) and (C) below needed to be purchased separately.

* The size of (A) and (B) depends on the screw size. For more information, please refer to P. 59-60

Model	(A) Mouthpiece model	(B) Bit Length	(C) Suction Attachment model
BL-2000	F3-Standard 18mm	H4 60mm	CLQ2-SET/CLQ2-SET-ESD*
BL-3000	F3-Standard 18mm	H4 60mm	BLQ3N-SET/BLQ3N-SET-ESD*
BL-5000	F3-Standard 18mm	H4 40mm	BLQ5-SET/BLQ5-SET-ESD*
		H4 60mm	BLQ5N-SET/BLQ5N-SET-ESD*
BL-7000	F6-Standard 31mm	H5 80mm	BLQ7-SET/BLQ7-SET-ESD*

Note: The Suction Attachment cannot be used with 1/4HEX.

* ESD is anti-electrostatic

Suction + Anti-electrostatic

BLQ-ESD

Models: BLQ-3000ESD, BLQ-5000ESD, BLQ-5000ESD-15, BLQ-7000ESD

Clean Room

BLQ-CR

Models: BLQ-2000CR, BLQ-3000CR, BLQ-5000CR, BLQ-5000CR-15, BLQ-7000CR

Anti-electrostatic

BL-ESD

Models: BL-3000ESD, BL-5000ESD, BL-5000ESD-15, BL-5020ESD, BL-7000ESD, BL-7000HT

The screwdriver body is made from an anti-electrostatic material to prevent the generation of static electricity which is suitable for the assembly of precision equipment and electronic parts.

[Surface resistance: max. 10⁴Ω]

Clean Room + Anti-electrostatic

BLQ-CR-ESD

Models: BLQ-2000CR, BLQ-3000CR-ESD, BLQ-5000CR-ESD, BLQ-5000CR-ESD-15, BLQ-7000CR-ESD

In addition to anti-electrostatic, two vacuum units are installed in both the body and the Suction Attachment to remove powder dust generated in screw fastening.

[Class 100 equivalent]
[Surface resistance: max. 10⁴Ω]

For use with HIOS Screw Counter

BL-OPC

Models: BL-2000-OPC, BL-3000-OPC, BL-5000-OPC, BL-5020-OPC, BL-7000-OPC, BL-7000HT-OPC

These models prevent skipping screw fastening in combination with the HIOS Screw Counter.

They have a function to output positive rotation, reverse rotation and Torque-up (finish) signals.

Compatible Counters

Power supply with HIOS Screw Counter: BLOP-STC3

Separate Counter: BLOP-SC1

Compact Separate Counter: BLOP-SC3

See P. 43-46 for details.

Accessories & Applicable Screwdrivers

BL Accessories & Applicable Drivers

Pistol Attachment

PAB-70

This attachment converts a screwdriver to a pistol-style screwdriver, most suitable for horizontal screw fastening.

RoHS 10

Compatible screwdrivers: BL-7000 Series

I/O Signal Relay Box

BLOP-AF

A complete signal from the screwdriver can be easily extracted and used by connecting this Relay box to an external device such as a PLC.

RoHS 10

Compatible screwdrivers: BL-4000 (OPC), BL-5000 Series (OPC)

See P.28 for details.

BLG - OPC Series

I/O Signal Relay Box for Automation

BLOP-OST

By connecting this box to a set of the BL-OPC or BLG-OPC and its power supply, the driver can start / stop by inputting D-ACT signals into the CN3 connector with external devices.

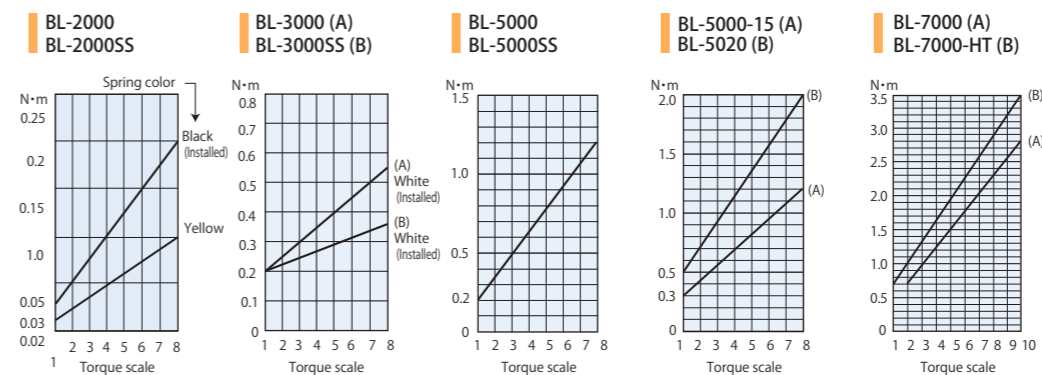
RoHS 10

Compatible screwdrivers: BL-4000 (OPC), BL-5000 Series (OPC)

See P.28 for details.

Output torque guide (HI input)

(Including PS type)



*There are two types of spring for torque adjustment: for HI (originally fixed to the unit) and for Low (accessory). Use one of them depending on your operating conditions.



Light torque, small screw applications .

- This screwdriver is specially designed to deliver accurate, low torque for fastening small sized screws.
- Compact and light-weight design makes it easy for female operators to use.
- Model CL-2000 has a coreless motor with an especially long life.
- With safety design running on low voltage and direct current, these screwdrivers can be used safely.



Standard to medium torque applications

- This screwdriver has been a long-selling product thanks to its operability, reliability and stability.
- With low DC voltage these screwdrivers can be used safely.
- The grip design helps operators to reduce fatigue caused by long hours operation.

Lever Start Type

Push-to-Start Type

Lever Start Type

Push-to-Start Type



CCC*
Note: CCC certified models have different specification and order codes from the standard models. Please contact HIOS distributors before ordering.

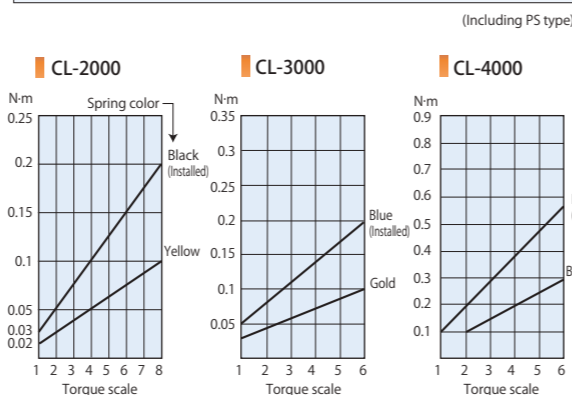
CCC*
Note: CCC certified models have different specification and order codes from the standard models. Please contact HIOS distributors before ordering.

Also, the body color of the CCC certified CL-6500/CL-6500PS/CL-7000/CL-7000PS is different from that of the standard models. The body color of the CCC certified models is available on the page "CCC certified models" on our website.

CL Series Specifications

Lever Start-Type Model		CL-2000	CL-3000	CL-4000
Push-to-Start-Type Model				CL-4000PS
Output	N·m	0.02 - 0.2	0.03 - 0.2	0.1 - 0.55
Torque Range	lbf·in	0.17 - 1.7	0.3 - 1.7	0.9 - 4.8
	(kgf·cm)	(0.2 - 2)	(0.3 - 2)	(1 - 5.5)
Torque Switching		Stepless adjustment	Stepless adjustment	Stepless adjustment
Unloaded Rotation	HI	680	1,000	1,000
Speed (r.p.m) ±10%	LOW	490	670	690
Screw Size (mm)	Machine Screw	1.0 - 2.3	1.0 - 2.0	1.4 - 2.6
	Tapping Screw	1.0 - 2.0	1.0 - 1.7	1.4 - 2.3
Bit Drive	HIOS Shank	H4	H4	H4
	HEX Shank	-	-	1/4HEX or 5HEX
Power Supply	CLT-45	○	○	○
	CLT-60	○	○	○
	CLT-100	○	○	○
	MC-70L	○	○	○
Accessories	Bit (one each)	H4	+ #0 (Ø2.0×40 mm) + #0 (Ø2.5×40 mm)	+ #0 (Ø2.5×40 mm) + #1 (Ø4.0×40 mm)
		1/4HEX		+ #0 (Ø5.0×50 mm) + #2 (Ø5.0×50 mm) - (Ø5.0×50 mm)
	Spring		Yellow	Gold
	Cord length (m)		1.5 m (5P)	1.5 m (5P)
	Carbon brush (Order code)			1 pair (A45-0420)

Output torque guide (HI input)

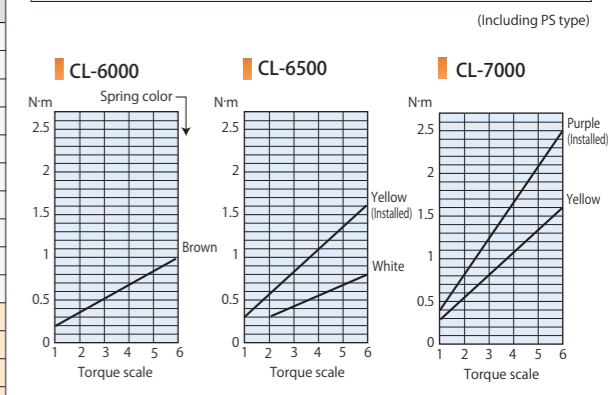


Notes:
● The carbon brush for CL-2000 is enclosed in the motor and cannot be replaced. Although the life of the carbon brush depends on use conditions, as a guide, if you tighten about 6,000 screws a day, you need to replace the carbon brush 3 to 4 years after you started using it. Please contact HIOS distributors for maintenance and repair.

CL Series Specifications

Lever Start-Type Model		CL-6000	CL-6500	CL-7000
Push-to-Start-Type Model		CL-6000PS	CL-6500PS	CL-7000PS
Output	N·m	0.2 - 1	0.3 - 1.6	0.3 - 2.5
Torque Range	lbf·in	1.7 - 8.8	2.6 - 14	2.6 - 22
	(kgf·cm)	(2 - 10)	(3 - 16)	(3 - 25)
Torque Switching		Stepless adjustment	Stepless adjustment	Stepless adjustment
Unloaded Rotation	HI	800	900	750
Speed (r.p.m) ±10%	LOW	500	600	-
Screw Size (mm)	Machine Screw	2.0 - 3.0	2.0 - 4.0	2.0 - 5.0
	Tapping Screw	2.0 - 2.6	2.0 - 3.0	2.0 - 4.0
Bit Drive	HIOS Shank	H5	H5	H5
	HEX Shank	1/4HEX or 5HEX	1/4HEX or 5HEX	1/4HEX or 5HEX
Power Supply	CLT-45	○	○	-
	CLT-60	○	○	○
	CLT-100	○	○	-
	MC-70L	○	○	○
Accessories	Bit (one each)	H5	+ #1 (Ø5.0×60 mm) + #2 (Ø5.0×60 mm)	+ #1 (Ø5.0×60 mm) + #2 (Ø5.0×60 mm)
		1/4HEX	+ #1 (5.0×50 mm) + #2 (5.0×50 mm) - (5.0×50 mm)	+ #1 (5.0×50 mm) + #2 (5.0×50 mm) - (5.0×50 mm)
	Spring		White	Yellow
	Cord length (m)		2 m (5P)	2 m (5P)
	Carbon brush (Order code)		1 pair (CL65-0490)	1 pair (CL65-0490)

Output torque guide (HI input)



The unloaded rotation speed (r.p.m.) in the specifications is measured when the screwdriver is operated with the HIOS standard power supply. Therefore, if you use another power supply or when input voltage varies, the rotation speed will also vary. Please refer to the value in the specifications only as a guide.

High-torque Brushed Screwdriver

CL Series (DC Type)

Push-to-Start Type

CL-9000 (with shockless stand)



Weight: 3,010g
(Driver Cord, Slide Arm : 2,360g)
(Pole, Stand Base : 650g)

CL Series Specifications

Push-to-Start Type Model	CL-9000	
Out put Torque Range	N·m	1.2 - 5
	lbf·in (kgf·cm)	10 - 43 (12 - 50)
Torque Switching	Stepless adjustment	
Unloaded Rotation Speed (r.p.m)± 5%	530	
Screw Size (mm)	Machine Screw	4.0 - 6.0
	Tapping Screw	4.0 - 6.0
Bit Drive	HEX shank 1/4HEX	
Power Supply	CLT-80	
Accessories	1/4HEX	+ #2 (Ø7.0×100mm) + #3 (Ø7.0 × 100mm)
	Stand ASSY	Pole, stand base, shockless rest, thumbscrew (1pc each)
	Arm ASSY	Shockless holder, slide arm with arm cap, turret, turret fixing screw (1pc each)
	Cord Length(m)	2m (5P)
	Carbon brush (Order code)	1 pair (CL9-0410)

High torque applications up to 5N·m (50kgf·cm).

- This driver can tighten high-torque required screws which are tightened by pneumatic screwdrivers.
- can always fasten screws with stable torque.
- The Shockless Stand absorbs reaction force created by the clutch.

Main Components of Shockless Stand

Unit : mm

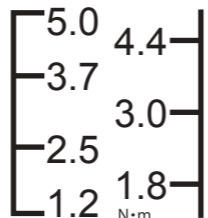
Weight: 1,300 g (body only)

Specifications

Slide arm length	530	
Effective sliding range	475	
Support rod height	570	
Stand base	Height	8
	Diameter of fixing bolt hole	Ø6
Distance between fixing bolt holes	52	(one side of the equilateral triangle)

Scale of Output Torque

A label that indicates output torque values is placed on the body of CL-9000.



Variations

CL Applicable Drivers

Suction(Vacuum)Attachment

CLQ

By negative pressure, the effort needed to pick up screws is reduced. This attachment can even pick up non-ferrous screws such as stainless steel screws by vacuuming, and improve operation efficiency. It also removes powder dust generated in screw fastening.

Order guide

(A),(B) and (C) below needed to be purchased separately .

* The size of (A) and (B) depends on the screw size. For more information, please refer to P. 59-60.

Model	(A) Mouthpiece model	(B) Bit length	(C) Suction Attachment model
CLQ-2000	F3-Standard 18mm	H4 60mm	CLQ2-SET/CLQ2-SET-ESD*
CLQ-3000	F3-Standard 18mm	H4 60mm	CLQ4-SET/CLQ4-SET-ESD*
CLQ-4000	F3-Standard 18mm	H4 60mm	CLQ4-SET/CLQ4-SET-ESD*
CLQ-6000	F6-Standard 31mm	H5 80mm	CLQ65-SET/CLQ65-SET-ESD*
CLQ-6500	F6-Standard 31mm	H5 80mm	CLQ65-SET/CLQ65-SET-ESD*
CLQ-7000	F6-Standard 31mm	H5 80mm	CLQ65-SET/CLQ65-SET-ESD*

(Including PS type)

*ESD is anti-electrostatic

Note: The Suction Attachment cannot be used with 1/4HEX .



Anti-electrostatic

CL-ESD



The screwdriver body is made from an anti-electrostatic material to prevent the generation of static electricity which is suitable for the assembly of precision equipment and electronic parts.

[Surface resistance: max. 10¹⁰Ω]

Noiseless Screwdriver

CL-NL



Electrical noise is more subdued than standard screwdrivers.

Models:	CL-2000ESD	CL-6000ESD
	CL-3000ESD	CL-6500ESD
	CL-4000ESD	CL-7000ESD

(Including PS Type)

(Including PS Type)

Related Products

Power supply with HIOS Screw Counter

Power supply with HIOS Screw Counter helps to prevent skipping screw fastening.



Compatible screwdrivers:
CL-2000 CL-3000 CL-4000 CL-6000
CL-6500 CL-7000 (Including PS Type)

Separate Counter

Separate Counter helps to prevent skipping screw fastening.



▶ See P. 43-45 for details.

Accessories

Accessories

Pistol Attachment

PA-65

This attachment converts a screwdriver to a pistol-style screwdriver, most suitable for horizontal screw fastening.



Compatible screwdrivers:
CL-6000, CL-6500, CL-7000 (Including PS Type)

Angle Attachment

ANGL-Z (For HIOS H5 and 5HEX drive)

ANGLX-Z (For 1/4 HEX drive)

This attachment is most suitable when the available space is very small for screw fastening. The attachment can be fitted to the tip of the screwdriver.



Compatible screwdrivers:
CL-6000, CL-6500, CL-7000 (Lever Type only)

Push-to-Start Grip Attachment

PS-1

PS-1-ESD

This attachment converts a screwdriver from lever start to push-to-start.



Compatible screwdrivers:
CL-4000

Brushed Screwdriver



For sensitive assemblies. Soft stop screwdrivers.

- Designed to minimize the effects of vibrations or impacts to the assembly parts.
- Optimal tool for assembly of hard disks, liquid crystal displays, high-density boards or other precision parts.
- SS-2000 has superb durability thanks to a coreless motor.
- SS Series is noiseless as standard.

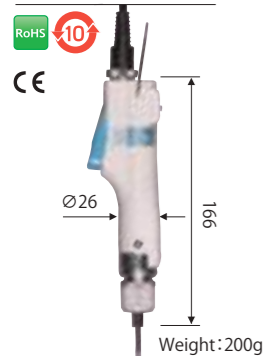
Lever Start Type

Lever Start Type

Push-to-Start Type

Push-to-Start Type

SS-2000



SS-3000



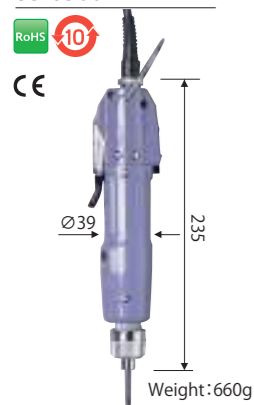
SS-4000



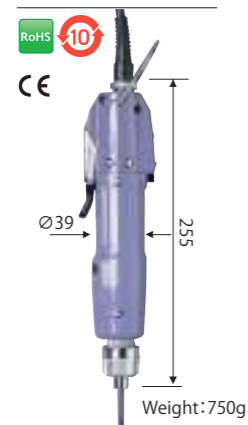
SS-4000PS



SS-6500

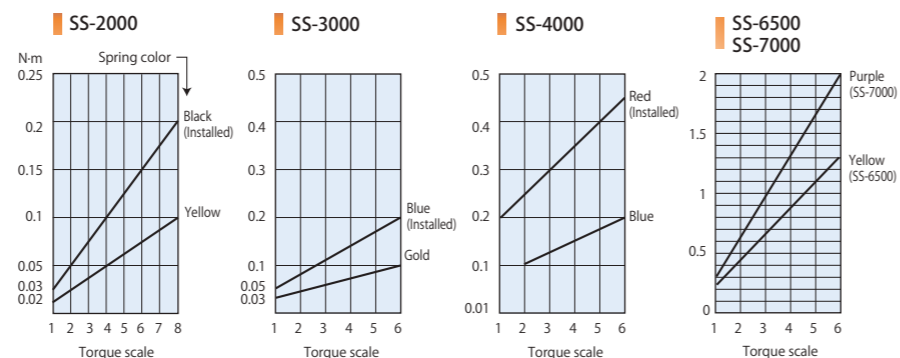


SS-7000



Output torque guide (HI input)

(Including PS type)



SS Series Specifications

Specifications

Lever Start-Type Model	SS-2000	SS-3000	SS-4000	SS-6500	SS-7000
Push-to-Start-Type Model			SS-4000PS		
Output	N·m 0.02 - 0.2	0.02 - 0.2	0.1 - 0.45	0.25 - 1.3	0.3 - 2
Torque Rang	lbf·in 0.17 - 1.7	0.3 - 1.7	0.9 - 3.9	2.2 - 11	2.6 - 17
	(kgf·cm) (0.2 - 2)	(0.3 - 2)	(1 - 4.5)	(2.5 - 13)	(3 - 20)
Torque Switching	Stepless adjustment	Stepless adjustment	Stepless adjustment	Stepless adjustment	Stepless adjustment
Unloaded Rotation	HI 680	1,000	1,000	900	750
Speed (r.p.m) ±10%	LOW 490	670	690	600	—
	Machine Screw 1.0 - 2.3	1.0 - 2.0	1.4 - 2.6	2.0 - 3.0	2.0 - 4.0
Screw Size(mm)	Tapping Screw 1.0 - 2.0	1.0 - 1.7	1.4 - 2.3	2.0 - 3.0	2.0 - 4.0
	Bit HIOS Shank H4	H4	H4	H5	H5
Drive	—	—	1/4HEX or 5HEX	1/4HEX or 5HEX	1/4HEX or 5HEX
Power Supply	CLT-45	○	○	○	—
	CLT-60	○	○	○	○
	CLT-100	○	○	○	○
	MC-70L	○	○	○	○
Accessories Bit (one each)	H4	+ #0 (Ø2.0×40 mm) + #0 (Ø2.5×40 mm)	+ #0 (Ø2.5×40 mm) + #1 (Ø4.0×40 mm)	+ #1 (Ø5.0×60 mm) + #2 (Ø5.0×60 mm)	+ #1 (Ø5.0×60 mm) + #2 (Ø5.0×60 mm)
	H5			+ #1 (Ø5.0×50 mm) + #2 (Ø5.0×50 mm)	+ #1 (Ø5.0×50 mm) + #2 (Ø5.0×50 mm)
	1/4HEX		+ #1 (Ø5.0×50 mm) + #2 (Ø5.0×50 mm) — (Ø5.0×50 mm)	+ #1 (Ø5.0×50 mm) + #2 (Ø5.0×50 mm) — (Ø5.0×50 mm)	+ #1 (Ø5.0×50 mm) + #2 (Ø5.0×50 mm) — (Ø5.0×50 mm)
Spring	Yellow	Gold	Blue		
Cord length (m)	1.5 m (5P)	1.5m (5P)	1.5m (5P)	2m (5P)	2m (5P)
Carbon brush (order code)		1pair (A45-0420)	1pair (CL4-0420)	1pair (CL65-0490)	1pair (CL65-0490)

Note: The carbon brush for SS-2000 is enclosed in the motor and cannot be replaced. Although the life of the carbon brush depends on use conditions, as a guide, if you tighten about 6,000 screws a day, you need to replace the carbon brush 3 to 4 years after you started using it. Please contact HIOS distributors for maintenance and repair.

The unloaded rotation speed (r.p.m.) in the specifications is measured when the screwdriver is operated with the HIOS standard power supply. Therefore, if you use another power supply or when input voltage varies, the rotation speed will also vary. Please refer to the value in the specifications only as a guide.

Variation

SS Applicable Drivers

Suction(Vacuum)Attachment

SSQ

By negative pressure, the effort needed to pick up screws is reduced. This attachment can even pick up non-ferrous screws such as stainless steel screws by vacuuming, and improve operation efficiency. It also removes powder dust generated in screw fastening.

Order guide

(A),(B) and (C) below needed to be purchased separately .

* The size of (A) and (B) depends on the screw size. For more information, please refer to P. 59-60.

Model	(A) Mouthpiece model	(B) Bit length	(C) Suction Attachment model
SSQ-2000	F3-Standard 18mm	H4 60mm	CLQ2-SET/CLQ2-SET-ESD*
SSQ-3000	F3-Standard 18mm	H4 60mm	CLQ4-SET/CLQ4-SET-ESD*
SSQ-4000	F3-Standard 18mm	H4 60mm	CLQ4-SET/CLQ4-SET-ESD*
SSQ-6500	F6-Standard 31mm	H5 80mm	CLQ65-SET/CLQ65-SET-ESD*
SSQ-7000	F6-Standard 31mm	H5 80mm	CLQ65-SET/CLQ65-SET-ESD*

(Including PS Type)

*ESD is anti-electrostatic

Note: The Suction Attachment cannot be used with 1/4HEX.

Anti-electrostatic SS-ESD



The screwdriver body is made from an anti-electrostatic material to prevent the generation of static electricity which is suitable for the assembly of precision equipment and electronic parts.

[Surface resistance: max. 10⁴Ω]

Models:
SS-2000ESD SS-6500ESD
SS-3000ESD SS-7000ESD
SS-4000ESD (Including PS Type)

Clean Room + Anti-electrostatic

SSQ-CR-ESD



In addition to anti-electrostatic, both the body and the Suction Attachment are tubed to remove powder dust generated in the body and in screw fastening.

[Class 100 equivalent]

[Surface resistance: max. 10⁴Ω]

Models:
SSQ-2000CR-ESD
SSQ-3000CR-ESD
SSQ-4000CR-ESD
SSQ-6500CR-ESD
SSQ-7000CR-ESD
(Including PS Type)

Related Products

Related Products

Power supply with HIOS Screw Counter CLT-70STC3

Power supply with HIOS Screw Counter helps to prevent skipping screw fastening.



Compatible screwdrivers:
SS-2000 SS-3000 SS-4000
SS-6500 SS-7000 (Including PS Type)

Separate Counter CLOP-SC1

Separate Counter helps to prevent skipping screw fastening.



▶ See P. 43-45 for details.

Accessories

Accessories

Pistol Attachment PA-65

This attachment converts a screwdriver to a pistol-style screwdriver, most suitable for horizontal screw fastening.



Compatible screwdrivers:
SS-6500, SS-7000 (Including PS Type)

Push-to-Start Grip Attachment

PS-1 PS-1-ESD

This attachment converts a screwdriver from lever start to push-to-start.



Compatible screwdrivers:
SS-4000

(Image of fitting)