HIOS®

Brushless Driver
BLG-4000
BLG-5000
BLG-5000-15
BLG-5000-20
BLG-5000-HT

BLG-BC1*
(BC1:With Built-in screwdriver)

BLG-OPC
(OPC: For Screw Counter)

*Operation Manual for BLG-BC1 series is attached with a product.

Operation Manual
(As of November 2013)

Hios Inc.

■ **Names of Parts**

BLG-4000 (lever start type)

Driver cord (5P)

Driver cord plug
The shapes of both plugs
are the same (5P)

BC1, OPC cord plug (6P)

Hanger

Driver connector

FOR/REV switch
FOR: Forward
OFF: Neutral
REV: Reverse

Joint ring

REV

FOR

Switch lever
(Driver rotates on pressing the switch lever)

Torque adjustment scale

Torque adjustment nut

Joint shaft collar

Protective cover
for the torque
adjustment nut
(be removed by
turning it CCW)

Protective cover for the
torque adjustment nut can
be removed by turning it anticlock wise

Bit
(HIOS shank)

BLG-5000 (Lever or Push Start)
Selectable by the Switch.

Driver cord plug
The shapes of both plugs
are the same (5P)

BC1, OPC cord plug (6P)

Marking between
"Lever" and "Push
start selection SW.
L ←→ P
See page 4, how to
do it.

Driver
connector

FOR/REV switch
FOR: Forward
OFF: Neutral
REV: Reverse

Hanger

HIOS

BLG-5000

REV

FOR

Switch lever
(Driver rotates on press-
ing the switch lever)

Torque adjust-
ment scale

Joint shaft collar

Bit
(HIOS shank)
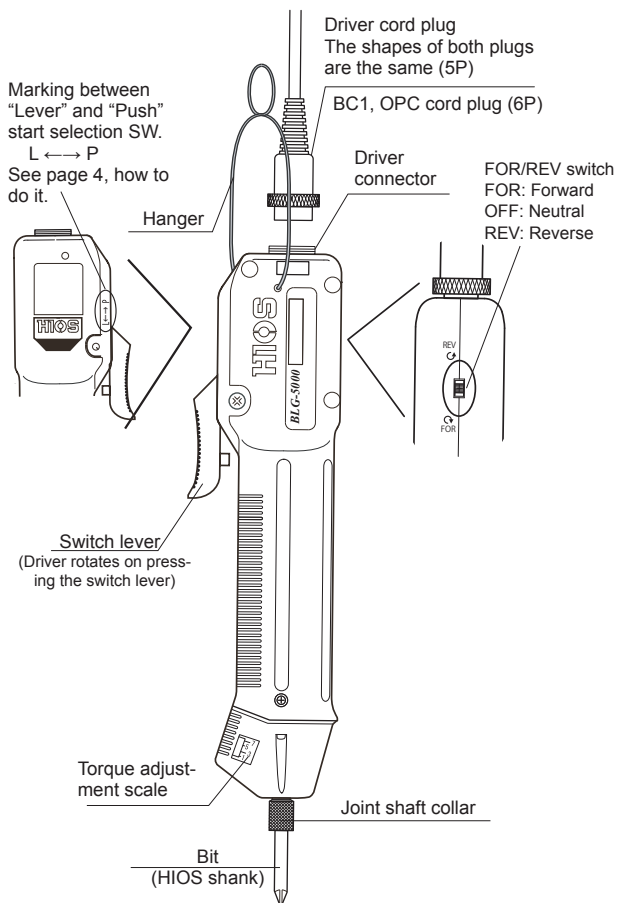
Accessories

● Bits
● Torque adjustment spring
  There are 2 torque adjusting springs for BLG-4000.
  In the BLG-4000, stronger spring (Red) is installed.
  If you want to use weaker spring then replace with
  accessory (White) spring.
  Select the sprig depends on your fastening torque.
● Hex nut L wrenches (for BLG-5000, BC1, OPC)

■ **Specifications** BLG-series

Model			BLG-4000 BLG-4000BC1 BLG-4000-OPC	BLG-5000 BLG-5000BC1 BLG-5000-OPC
Output torque range	N•m		0.1 - 0.55	0.2 - 1.2
	lbf•in		0.8 - 4.8	1.7 - 10
	(kgf•cm)		(1 - 5.5)	(2 - 12)
Torque switching			Stepless adjustment	
Unloaded rotation speed (r.p.m) ±10%		HI	1,000	1,000
		LOW	690	690
Screw size (mm)	Machine screw		1.4 - 2.6	2.0 - 3.0
	Tapping screw		1.4 - 2.3	2.0 - 3.0
Weight (g)			370	425
Bit type	HIOS Shank (Standard)		H4	H4
	Hexagonal Shank		1/4HEX	H5 & 5HEX or 1/4HEX
Power Supply*	T-30BL		◯	
	T-70BL		◯	◯

| Model			BLG-5000-15 BLG-5000BC1-15 BLG-5000-OPC-15	BLG-5000-20 BLG-5000BC1-20 BLG-5000-OPC-20	BLG-5000-HT BLG-5000BC1-HT BLG-5000-OPC-HT
Output torque range	N•m		0.3 - 1	0.3 - 0.8	0.5 - 2
	lbf•in		2.6 - 8.8	2.6 - 7	4.4 - 17.7
	(kgf•cm)		(3 - 10)	(3 -8)	(5 - 20)
Torque switching			Stepless adjustment		
Unloaded rotation speed (r.p.m) ±10%		HI	1,500	2,000	730
		LOW	940	1,400	490
Screw size (mm)	Machine screw		2.3 - 3.0	2.3 - 3.0	2.0 - 4.0
	Tapping screw		2.0 - 2.6	2.0 - 2.6	2.0 - 3.0
Weight (g)			425	425	425
Bit type	HIOS Shank (Standard)		H4	H4	H5 & 5HEX
	Hexagonal Shank		H5 & 5HEX or 1/4HEX	H5 & 5HEX or 1/4HEX	1/4HEX
Power Supply*	T-30BL				
	T-70BL		◯	◯	◯

* Circler (◯) indicate that the power supply can be used with the perspective tool.

■ **External Dimensions**

BLG-4000
Grip ⌀32.7

Length 206mm

BLG-5000
Grip ⌀38

Length 235mm
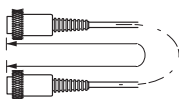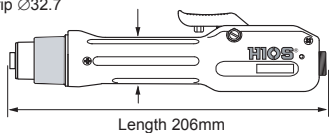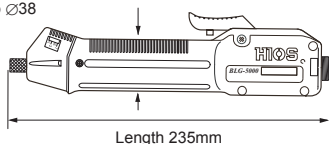
・Driver cord length
BLG-4000,
BLG-5000:1.5m(5P)

BLG-4000BC1
BLG-4000-OPC
BLG-5000BC1
BLG-5000-OPC:2m(6P)

Unit:mm

■ **Power Supplies**

The Brushless Driver must be operated together with a Power Supply.

Powering the Brushless Driver with the Hios T-30BL and the T-70BL Power Supply will insure operation of the driver at its full capacity.

● **BLG driver and Power Supply combinations**

| Power Supply Model	Max.number of drivers	
	T-30BL	T-70BL
BLG-4000	1	1
BLG-4000BC1	1	1
BLG-4000-OPC	1	1
BLG-5000		1
BLG-5000BC1		1
BLG-5000-OPC		1

■ **Operations**

Pre-operating preparation

1. Connect the power cord plug to AC outlet.
2. Turn the power switch to "I", and check if the LED light is lit.

   If the LED light is not lit, inquiry to the distributor. After confirming that the LED light is lit, set the power switch to "0", OFF.
3. Connect the driver cord to the power source.
4. How to change to "Push" start.

   Unscrew the "Switch lever shaft screw" and then take off the "Switch Lever". Using sharp parts, such as tweezers, move the selection SW to "P" (push) near "L ←→P" mark.

Switch lever shaft screw

Switch Lever

"L←→P" select switch is at the side of this section.
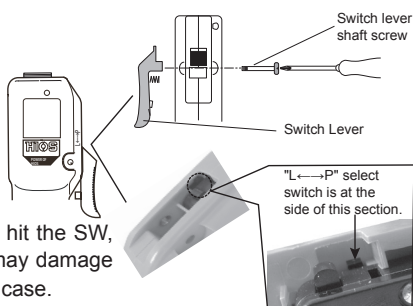
Note: Do not press or hit the SW, otherwise you may damage the SW or body case.

● Operating procedure

1. Attach a bit to the driver.
2. Turn on the power switch and set the power output setting to "1" or "2".

   Output display setting of each power supply
   - T-30BL   2: (30V), 1: (20V)
   - T-70BL   2: (30V), 1: (20V)
3. Set the FOR/REV switch of the driver to "FOR" (forward rotation).
4. Set the tightening torque of the driver by torque adjustment nut.
5. Start the driver.
   - After placing the bit end on the screw head, press the switch lever. The driver will start and the screw will be tightened on the component.
6. When the screw is tightened with the torque value set to the driver, the clutch works and the rotation stops immediately.
7. To loosen the tightened screw, set the FOR/REV switch to "REV" (reverse rotation). The screw will be loosened after a few impacts.

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Attaching a bit

Insert bit

Insert joint shaft collar in the driver for BLG-4000

⚠ While attaching or detaching a bit, turn off the power switch or pull out the driver cord from the driver to disconnect the power.

● BLG-4000

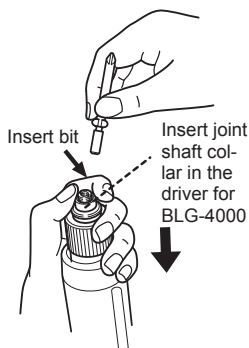For BLG-4000, pull-down the "Joint-shaft collar" towards the body case of it and insert the bit.

● BLG-5000

For BLG-5000, pull-up the "Joint-shaft collar" and insert the bit.

● Check that the bit is fixed firmly.

● Use genuine parts for Hios Shank H4 ($\varnothing$4) or H5 ($\varnothing$5).

How to adjust the torque

BLG-4000 has two torque adjustment springs: for high torque measurement, use the spring installed in the driver (red spring), and for lower torque measurement, use the spring attached to the driver (white spring). Use either of the springs according to work type.

For torque setting, the "Output torque guide" can be used as a guideline to get the rough torque value.

● The torque can be adjusted by adjusting the spring pressure in the torque adjustment nut. The torque adjustment nut can be tightened or loosened by squeezing or relaxing it, respectively.

How to adjust the torque

● **BLG-4000**

If you already know the screw tightening torque value, by referring to the guide, set the nut so that the scale line comes just above the desired torque value scale (1 to 8).
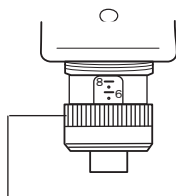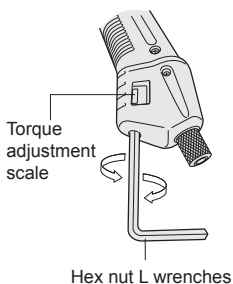

Torque adjustment nut can be turned and moved manually with this ring

● **BLG-5000**

Using the "Allen wrench", set the torque referring the torque adjust scale "1 to 8".

Try to fasten and find the right position of the scale.

● Test the screw tightening with the set position and until you find the appropriate torque value.

Torque adjustment scale

Hex nut L wrenches

Rotation speed

The standard power output of the driver is set to 30V.

Power output setting display

T-30BL 2: 30V, 1: 20V

T-70BL 2: 30V, 1: 20V

To decrease the rotation speed according to work type, set 20V as the power output.

Using the screw counter

You can use BLG-4000-OPC or BLG-5000-OPC by connecting it to the power supply BLOP-STC3 with screw counter or to the separate counter BLOP-SC1, BLOP-SC3. For details of handling, please refer to the operation manual of the screw counter to be used.

● Power supply with screw counter BLOP-STC3
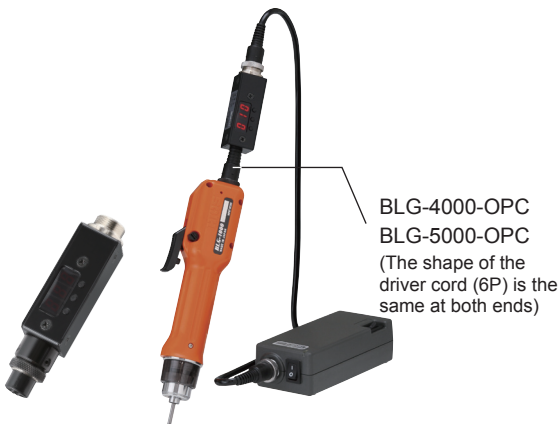 (Single power point)

BLG-4000-OPC
BLG-5000-OPC
(The shape of the driver cord (6P) is the same at both ends)

● Separate counter BLOP-SC1 (Single power point)

Brushless driver
External power supply T-30BL/T-70BL

Separate counter
BLOP-SC1

BLG-4000-OPC
BLG-5000-OPC
(The shape of the
driver cord (6P) is the
same at both ends)

● Mini separate counter BLOP-SC3

BLG-4000-OPC
BLG-5000-OPC
(The shape of the
driver cord (6P) is the
same at both ends)

Note: Use spring balancer with BLOP-SC3.
Do NOT use BLG-4000 or 5000 horizontally with BLOP-SC3.

● Before requesting our repair service, troubleshoot according to the following table:

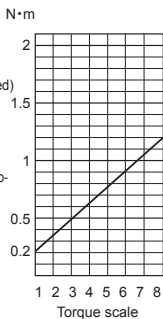| Problem	Cause and solution
Bit falls off or cannot be installed	• Are you using the bit suitable to your model? Please check in the usage table. • Have you installed the bit properly? Check the description in the operation manual for installing the bit. • If any of the above is not the case, or the problem cannot be solved, stop operation immediately and contact your distributor for repair.
Weak force, cannot tighten the screw sufficiently	• Are you using HIOS genuine parts and specified springs? • Check the torque value again in the "Output torque guide" for the driver. • If any of the above are not the case, or the problem cannot be solved, stop operation immediately and contact your distributor for repair.
Driver does not rotate.	• Check the power supply. Refer to the "Pre-operating preparation" on this paper. • If the above is not the case, or the problem cannot be solved, stop operation immediately and contact your distributor for repair.

● Use the HIOS torque meter to check the screw tightening torque.
  • Use HP series for electric driver torque setting.
  • Use HDP series for measuring screw loosening torque and retightening torque.
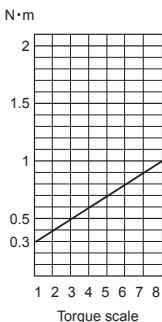
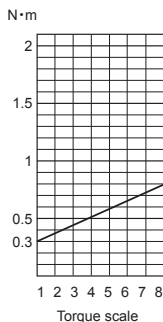# ■ **Output torque guide** (HI input)

BLG-4000
BLG-4000BC1
BLG-4000-OPC

N・m

0.7
0.6 — Red (Installed)
0.5
0.4
0.3 — White (Accessory)
0.2
0.1

1 2 3 4 5 6 7 8
Torque scale

BLG-5000
BLG-5000BC1
BLG-5000-OPC

N・m

2
1.5
1
0.5
0.2

1 2 3 4 5 6 7 8
Torque scale

BLG-5000-15
BLG-5000BC1-15
BLG-5000-OPC-15

N・m

2
1.5
1
0.5
0.3

1 2 3 4 5 6 7 8
Torque scale

BLG-5000-20
BLG-5000BC1-20
BLG-5000-OPC-20

N・m

2
1.5
1
0.5
0.3

1 2 3 4 5 6 7 8
Torque scale

BLG-5000-HT
BLG-5000BC1-HT
BLG-5000-OPC-HT

N・m

2
1.5
1
0.5

1 2 3 4 5 6 7 8
Torque scale