



Brushless<sup>®</sup> Screwdriver

## **BLG Series**

**BLG-4000**

**BLG-5000**

BLG-5000-15

BLG-5000-18

BLG-5000-HT

**BLG-BC1\***

(BC1: With Built-in screwdriver)

**BLG-BC2 / ZERO1\***

(BC2/ZERO1: With Built-in screwdriver & Pulse system)

**BLG-OPC**

(OPC: For Screw Counter)

\* Operation Manual for BLG-BC1, BLG-BC2 and BLG-ZERO1 series is attached with a product.

Operation Manual

(As of June 2019)

**HIOS Inc.**

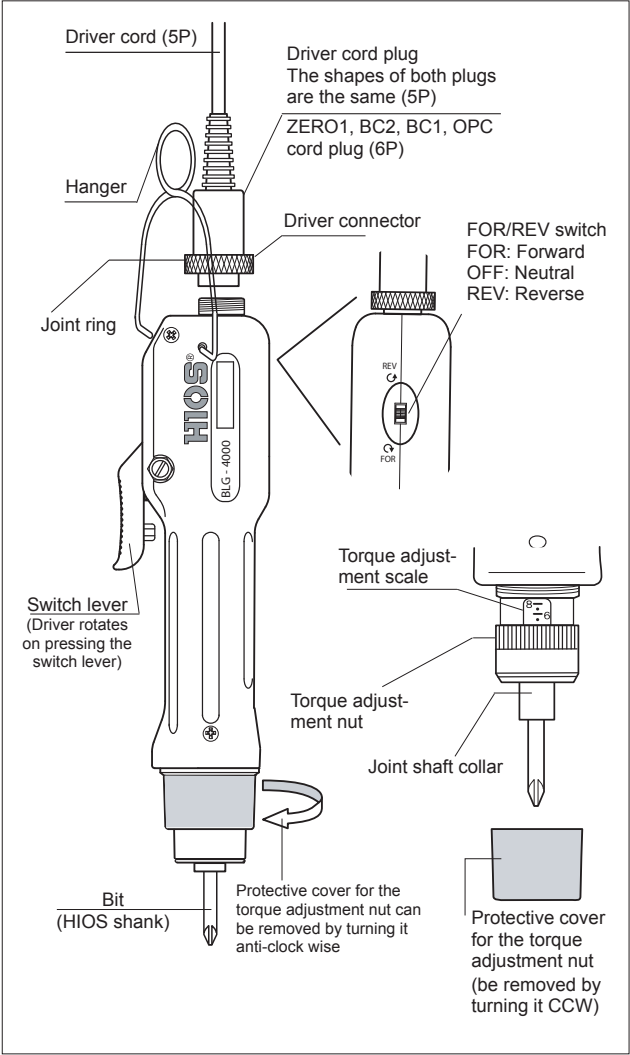
1-35-1 Oshiage, Sumida-ku Tokyo, Japan 131-0045

TEL: +81-3-6661-8821

FAX: +81-3-6661-8828

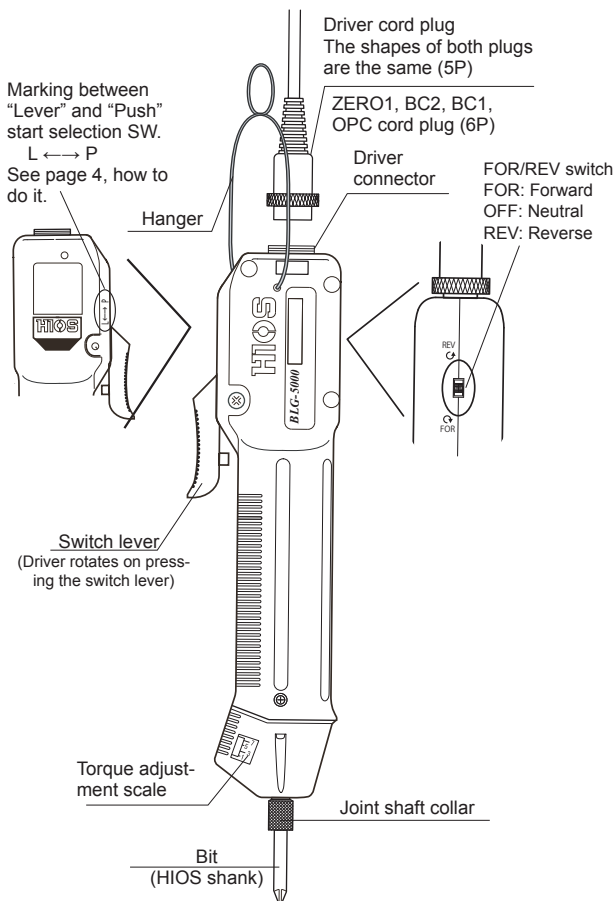
# ■ Names of Parts

## BLG-4000 (lever start type)



## BLG-5000 ( Lever or Push Start)

Selectable by the Switch.



## 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 spring depends on your fastening torque.
- Hex nut L wrenches (for BLG-5000, ZERO1, BC2, BC1, OPC)

## ■ Specifications BLG-series

| Model                                |                       | BLG-4000<br>BLG-4000ZERO1<br>BLG-4000BC1<br>BLG-4000BC2<br>BLG-4000-OPC | BLG-5000<br>BLG-5000ZERO1<br>BLG-5000BC1<br>BLG-5000BC2<br>BLG-5000-OPC |
|--------------------------------------|-----------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Output Torque Range                  | N•m                   | 0.1 - 0.55                                                              | 0.2 - 1.2                                                               |
|                                      | lbf•in                | 0.9 - 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 Drive                            | HIOS Shank (Standard) | H4                                                                      | H4                                                                      |
|                                      | Hexagonal Shank       | 1/4HEX                                                                  | H5 and 5HEX or 1/4HEX                                                   |
| Power Supply                         | T-45BL                | ○                                                                       | ○                                                                       |
|                                      | T-70BL                | ○                                                                       | ○                                                                       |

| Model                                |                       | BLG-5000-15<br>BLG-5000ZERO1-15<br>BLG-5000BC1-15<br>BLG-5000BC2-15<br>BLG-5000-OPC-15 | BLG-5000-18<br>BLG-5000ZERO1-18<br>BLG-5000BC1-18<br>BLG-5000BC2-18<br>BLG-5000-OPC-18 | BLG-5000-HT<br>BLG-5000ZERO1-HT<br>BLG-5000BC1-HT<br>BLG-5000BC2-HT<br>BLG-5000-OPC-HT |
|--------------------------------------|-----------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Output Torque Range                  | N•m                   | 0.3 - 1.0                                                                              | 0.5 - 1.5                                                                              | 0.5 - 2.0                                                                              |
|                                      | lbf•in                | 2.6 - 10                                                                               | 4.3 - 13                                                                               | 4.3 - 17                                                                               |
|                                      | (kgf•cm)              | (3 - 10)                                                                               | (5 - 15)                                                                               | (5 - 20)                                                                               |
| Torque Switching                     |                       | Stepless Adjustment                                                                    |                                                                                        |                                                                                        |
| Unloaded Rotation Speed (r.p.m) ±10% | HI                    | 1,500                                                                                  | 1,800                                                                                  | 730                                                                                    |
|                                      | LOW                   | 1,000                                                                                  | 1,200                                                                                  | —                                                                                      |
| 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 Drive                            | HIOS Shank (Standard) | H4                                                                                     | H5 and 5HEX                                                                            | H5 and 5HEX                                                                            |
|                                      | Hexagonal Shank       | H5 and 5HEX or 1/4HEX                                                                  | 1/4HEX                                                                                 | 1/4HEX                                                                                 |
| Power Supply                         | T-45BL                | ○ *                                                                                    | —                                                                                      | ○ *                                                                                    |
|                                      | T-70BL                | ○ *                                                                                    | ○ *                                                                                    | ○ *                                                                                    |

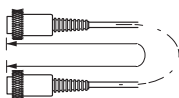
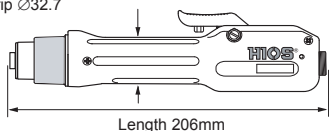
**(Note)** Use only 2(HI) power outlet with the \* models.

These models may not perform properly on 1(LOW) power outlet.

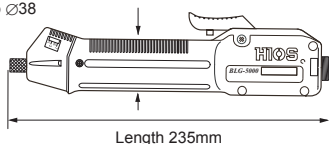
- Circler (○) indicate that the power supply can be used with the perspective tool.

## ■ External Dimensions

BLG-4000  
Grip Ø32.7



BLG-5000  
Grip Ø38



- Driver cord length  
BLG-4000,  
BLG-5000:1.5m(5P)
- BLG-4000BC1,BC2,ZERO1,OPC  
BLG-5000BC1,BC2,ZERO1,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-45BL 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-45BL                | T-70BL |
| BLG-4000             | 1                     | 1      |
| BLG-4000ZERO1        | 1                     | 1      |
| BLG-4000BC1          | 1                     | 1      |
| BLG-4000BC2          | 1                     | 1      |
| BLG-4000-OPC         | 1                     | 1      |
| BLG-5000 Series      | 1*                    | 1      |
| BLG-5000ZERO1 Series | 1*                    | 1      |
| BLG-5000BC1 Series   | 1*                    | 1      |
| BLG-5000BC2 Series   | 1*                    | 1      |
| BLG-5000-OPC Series  | 1*                    | 1      |

\* Not applicable to BLG-5000ZERO1-18, BLG-5000BC2-18, BLG-5000BC1-18, BLG-5000-OPC-18 and BLG-5000-18.

## ■ Operations

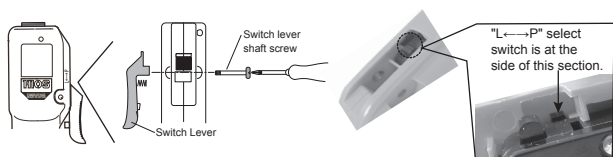
### Pre-operating preparation

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.



**Note:** Do not press or hit the SW, otherwise you may damage the SW or body case.

Do not use the screwdriver with the switch lever shaft screw removed. It may cause a malfunction.

### ● 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
  - 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.

## Attaching a bit



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**

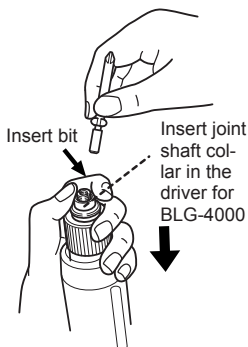
For BLG-4000, pull-down the “Joint-shaft collar” towards the body case of it and insert the bit.

- **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 (Ø4) or H5 (Ø5).



## 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.

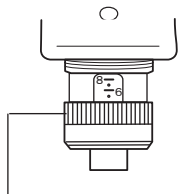
For torque setting, the “Output torque guide” can be used as a guideline to get the rough torque value.

- 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).



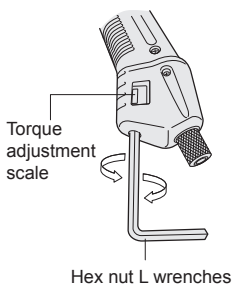
Torque adjustment nut can be turned and moved manually with this ring

### ● **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.



### Rotation speed

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

Power output setting display

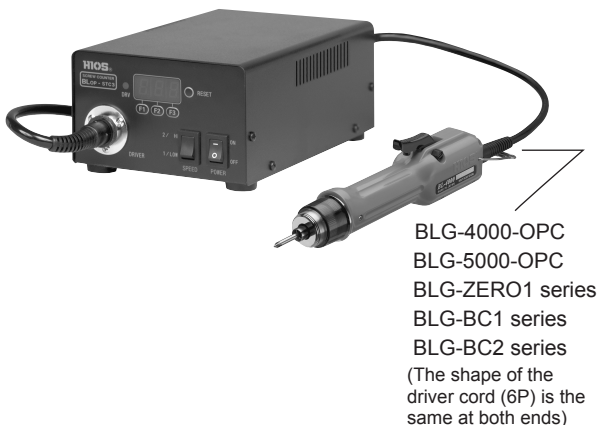
2: 30V, 1: 20V

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. 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)

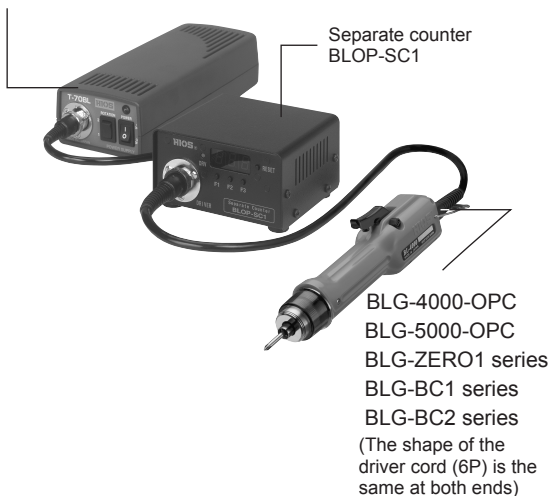




● Separate counter BLOP-SC1 (Single power point)

Brushless driver

External power supply T-45BL/T-70BL



Notice:

When this unit is used in combination with the existing HIOS external counter, the driver counter does not synchronized with the external counter. So, use them based on the external counter function.

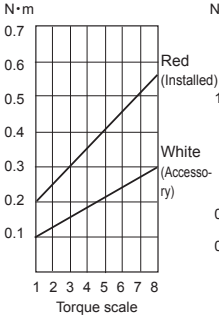
- Before requesting our repair service, troubleshoot according to the following table:

| Problem                                           | Cause and solution                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bit falls off or cannot be installed              | <ul style="list-style-type: none"> <li>• Are you using the bit suitable to your model?<br/>Please check in the usage table.</li> <li>• Have you installed the bit properly?<br/>Check the description in the operation manual for installing the bit.</li> <li>• If any of the above is not the case, or the problem cannot be solved, stop operation immediately and contact your distributor for repair.</li> </ul> |
| Weak force, cannot tighten the screw sufficiently | <ul style="list-style-type: none"> <li>• Are you using HIOS genuine parts and specified springs?</li> <li>• Check the torque value again in the “Output torque guide” for the driver.</li> <li>• If any of the above are not the case, or the problem cannot be solved, stop operation immediately and contact your distributor for repair.</li> </ul>                                                                |
| Driver does not rotate.                           | <ul style="list-style-type: none"> <li>• Check the power supply.<br/>Refer to the “Pre-operating preparation” on this paper.</li> <li>• If the above is not the case, or the problem cannot be solved, stop operation immediately and contact your distributor for repair.</li> </ul>                                                                                                                                 |

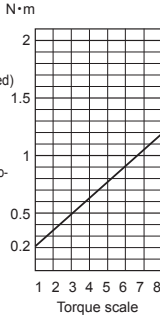
- Use the HIOS torque meter to check the screw tightening torque.
  - Use HP series for electric driver torque setting.
  - Use HDP series for measuring screw loosening torque and retightening torque.

## ■ Output torque guide (HI input)

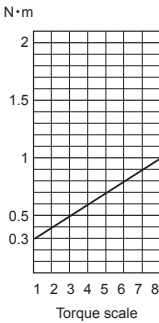
BLG-4000  
BLG-4000ZERO1  
BLG-4000BC1  
BLG-4000BC2  
BLG-4000-OPC



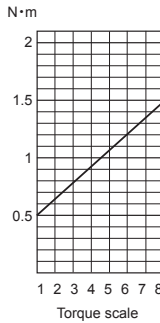
BLG-5000  
BLG-5000ZERO1  
BLG-5000BC1  
BLG-5000BC2  
BLG-5000-OPC



BLG-5000-15  
BLG-5000ZERO1-15  
BLG-5000BC1-15  
BLG-5000BC2-15  
BLG-5000-OPC-15



BLG-5000-18  
BLG-5000ZERO1-18  
BLG-5000BC1-18  
BLG-5000BC2-18  
BLG-5000-OPC-18



BLG-5000-HT  
BLG-5000ZERO1-HT  
BLG-5000BC1-HT  
BLG-5000BC2-HT  
BLG-5000-OPC-HT

