



## Brushless Screwdriver

# VB Series

## Operation Manual

(May 2019)

### Transformerless Screwdriver

#### **100V**

VB-1510/VB-1510PS/VB-1510-18/VB-1510PS-18/  
VB-1820/VB-1820-PS/VB-3012/VB-3012PS/  
VB-3020/VB-3020PS/  
VB-4504/VB-4504PS with Shockless Stand

#### **120V**

VB-1510/VB-1510PS/VB-1510-18/VB-1510PS-18/  
VB-1820/VB-1820PS/VB-3012/VB-3012PS/  
VB-4504/VB-4504PS/VB-4504PS with Shockless Stand

#### **220-240V**

VB-1510/VB-1510PS/VB-1510-18/VB-1510PS-18/  
VB-1820/VB-1820PS/VB-3012/VB-3012PS/  
VB-4504/VB-4504PS/VB-4504PS with Shockless Stand

# WARNING

When using electric tools, the following basic safety precautions should always be adhered to in order to reduce the risk of fire, electric shock or personal injury:

## READ ALL INSTRUCTIONS

### **1. Keep Work Area Clean.**

Cluttered areas and benches can result in injuries.

### **2. Consider Work Area Environment.**

Don't expose tools to rain. Don't use tools in damp or wet locations.

Keep work area well lit.

Never use the tool in an area with dangerous objects present. (gasoline, benzene, thinner, gas glue, etc.)

### **3. Secure Work.**

Use clamps or a vice to hold work piece. It's safer than using your hand and it frees up both hands required to operate the tool.

### **4. Guard Against Electric Shock.**

Prevent body contact with grounded surfaces such as pipes, radiators, ranges and refrigerator enclosures.

### **5. Keep Away From Children.**

Do not allow visitors to use the tool. All visitors should be kept away from work area.

### **6. Store Idle Tools.**

When not in use, tools should be stored in a dry and high or locked-up place out of reach of children.

### **7. Do Not Force The Tool.**

The tool will operate better and safer at the rate for which it was designed.

### **8. Remove Adjusting Keys And Wrenches.**

Make a habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.

### **9. Use The Correct Tool.**

Use the tool for the correct work for its rated power and design.

### **10. Dress Properly.**

Do not wear loose clothing or jewelry as they can be caught in moving parts.

Wear protective headwear to contain long hair.

### **11. Use Safety Glasses.**

Also use a face or dust mask if the operation involves dust.

### **12. Do Not Abuse The Cord.**

Never carry the tool by its cord or pull it to disconnect from the power outlet.

Keep the cord away from heat, oil and sharp edges.

### **13. Do Not Overreach.**

Maintain proper footing and balance at all times.

### **14. Maintain Tools With Care.**

Keep tools sharp and clean for better and safer performance.

Follow instructions for lubricating and changing accessories.

To use the tool for an extended period of time safely, perform periodical inspections on the tool and if damaged, request repairs by authorized service facility.

Keep hands dry, clean and free from oil and grease.

Inspect extension cords periodically and replace if damaged.

### **15. Disconnect Tools.**

When the tool is not in use, such as attaching and removing the bit, changing the Carbon Brush, inspection or cleaning, disconnect the tool from the power outlet.

### **16. Avoid Unintentional Starting.**

Ensure that the switch is off when plugging in.

Do not carry the tool with finger on the switch.

### **17. Stay Alert.**

Always remain vigilant., use common sense, and do not operate the tool when

you are tired.

### **18. Check Damaged Parts.**

Before using the tool further, a damaged protective cover or other parts should be carefully checked to determine whether the tool will operate correctly and perform as designed. Check the alignment, binding, damage, and mounting of any moving parts. Protective covers or other parts that are damaged should be properly repaired or replaced by an authorized technician or service facility unless otherwise indicated elsewhere in this instruction manual.

### **19. Extension Cords For Outdoor Use.**

When the tool is used outdoors, use only extension cords marked for outdoor use."

## **CAUTIONS IN OPERATION**

1. This Screw Driver is integral unit consisting of Screw Driver parts and cord parts.

If there are any problems, do not disassemble the tool.

Stop operations and have the tool repaired immediately.

2. Never lubricate the tool with aerosol oil or similar lubricants. Doing so may result in expensive repairs.

3. Do not drop, hit or abuse the tool. Doing so may cause problems such as cracks or damage.

4. Never use chemicals to wipe the body cover.

5. Use only under the correct voltage (220-240V).

Never use with the higher voltages.

6. Do not pull the AC cord when unplugging from the power outlet.

Doing so may cause the wire to become severed.

7. To avoid dragging the AC cord on floor, use the Spring Balancer to hang the AC cord.

8. For safety use, do not set the torque adjusting nut higher than 10 on the torque adjusting scale.

9. Use the tool intermittently: (ex: 0.5sec.on/4.5sec.off)

10. Do not tighten more than 720 tapping screws in an hour.

11. This tool is not for tightening wood screws.

12. Never change the forward ↔ reverse direction immediately while the motor is running.

13. If the tool is not being used, set the start switch and Forward/off/Reverse switch to "OFF" position and unplug the AC cord plug.

## **GROUNDING INSTRUCTIONS**

The tool should be grounded while in use to protect the operator from electric shock.

The tool is equipped with a three-conductor cord and two-prong grounding-type plug to fit the proper grounding-type receptacle.

The green (or green and yellow) conductor in the cord is the grounding wire.

## **SAVE THESE INSTRUCTIONS**

We thank you for your purchase of HIOS Electric Screw Driver.

## **SUMMARY**

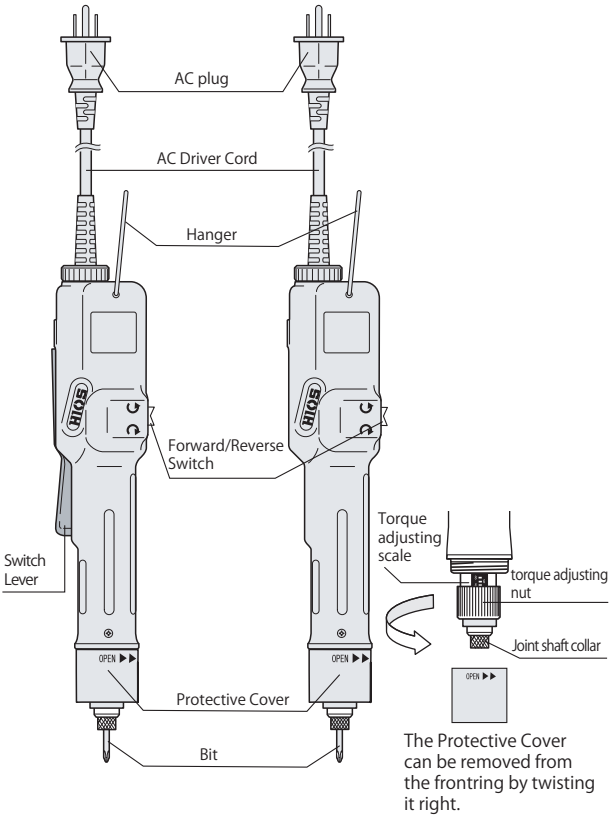
The VB Brushless Driver uses a high-performance brushless motor for maintenance free and reliable screw fastening operations. A clean working environment can be achieved as the driver does not output any harmful carbon particles.

There is little heat generated from the motor, meaning there are very few heat-related problems when using the driver for extended periods of time.

The brushless motor is the optimum choice when considering the working environment and work quality.

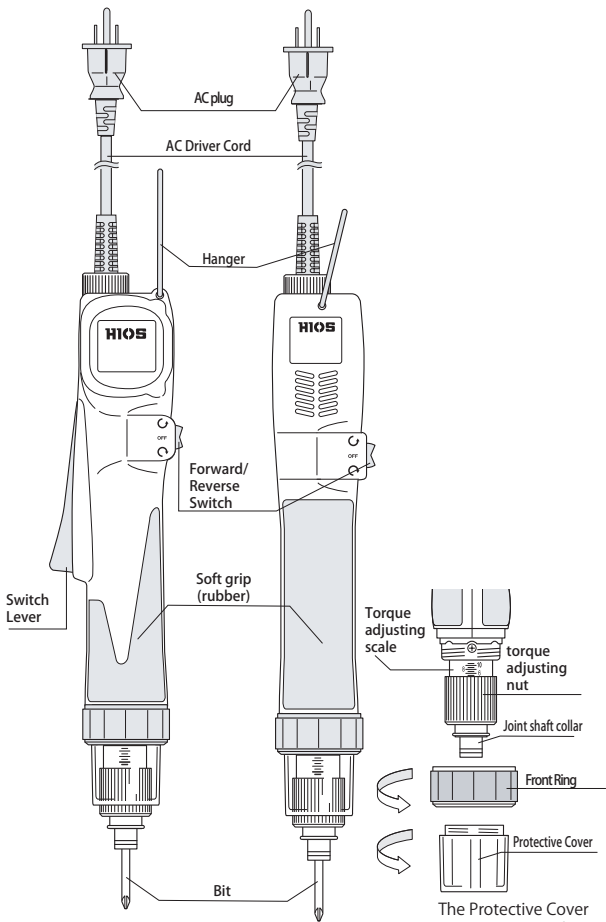
The VB Brushless Driver case is made of anti-static plastic to prevent the generation of static electricity.

# Parts Name



**Lever Start Type**  
VB-1510

**Push to Start Type**  
VB-1510PS



The Protective Cover can be removed from the front ring by twisting it right.

**Lever Start Type**

- VB-1820
- VB-3012
- VB-3020
- VB-4504

**Push to Start Type**

- VB-1820PS
- VB-3012PS
- VB-3020PS
- VB-4504PS

# Specifications

\*1 Lever Start Model

\*2 Push-to-Start Model

\*3 The value of power consumption is an approximative estimate.

## AC Input Power 100V

| Model                                | VB-1510<br>VB-1510PS     | VB-1510-18<br>VB-1510PS-18               | VB-1820<br>VB-1820PS | VB-3012<br>VB-3012PS | VB-3020<br>VB-3020PS | VB-4504PS<br>(with socketless stand) |
|--------------------------------------|--------------------------|--|----------------------|----------------------|----------------------|--------------------------------------|
| Power Consumption(W)*3               | 20W                      |  |                      | 40W                  |                      |                                      |
| Output Torque Range                  | N·m<br>0.25-1.5          | 0.2-1                                    | 0.4-1.8              | 0.5-3                | 1-3                  | 1-4.5                                |
|                                      | lbf·in<br>2.2-13         | 2.2-8.7                                  | 3.5-16               | 4.3-26               | 8.7-26               | 8.7-26                               |
| Torque Switching                     | Stepless Adjustment      |  |                      |                      |                      |                                      |
| Unloaded Rotation Speed (r.p.m) ±10% | 970                      | 1,800                                    | 2,000                | 1,200                | 2,000                | 400                                  |
| Screw Size (mm)                      | Machine Screw<br>2.0-4.0 | 2.6-4.0                                  | 2.6-3.0              | 3.0-5.0              |                      |                                      |
|                                      | Tapping Screw<br>2.0-3.0 | 2.6-3.0                                  | 3.0-4.0              |                      |                      |                                      |
| Dimensions (mm)                      | Grip<br>Ø33              | Ø39*1                                    |                      |                      |                      | Ø45<br>(Noncircular shape)           |
|                                      |                          | Max. Ø41, Min. Ø39 (Noncircular shape)*2 |                      |                      |                      |                                      |
|                                      |                          |  |                      |                      |                      |                                      |
| Weight (g)                           | Length                   | 255                                      | 263*1                | 286*2                | 286                  |                                      |
|                                      |                          | 526                                      | 750                  | 1,430                | 1,430                |                                      |
|                                      |                          |  |                      |                      |                      |                                      |
| Bit Drive                            | HIOS                     | H4                                       | H5 and SHEX          |                      |                      |                                      |
|                                      | HEX                      | - H5 and SHEX<br>- 1/4HEX                | 1/4HEX               | 1/4HEX               | 1/4HEX               | 1/4HEX                               |
| AC Screwdriver Cord length           | 3m                       |  |                      |                      |                      |                                      |

## AC Input Power 120V

| Model                                | VB-1510<br>VB-1510PS     | VB-1510-18<br>VB-1510PS-18 | VB-1820<br>VB-1820PS | VB-3012<br>VB-3012PS                     | VB-4504<br>VB-4504PS | VB-4504PS<br>(with sockless stand) |
|--------------------------------------|--------------------------|----------------------------|----------------------|--|----------------------|------------------------------------|
| Power Consumption(W)*3               | 20W                      |                            |                      | 40W                                      |                      |                                    |
| Output Torque Range                  | N.m<br>0.25-1.5          | 0.2-1                      | 0.4-1.8              | 0.5-3                                    | 1-4.5                |                                    |
|                                      | lbf.in<br>2.2-13         | 2.2-8.7                    | 3.5-16               | 4.3-26                                   | 8.7-26               |                                    |
| Torque Switching                     | Stepless Adjustment      |                            |                      |  |                      |                                    |
| Unloaded Rotation Speed (r.p.m) ±10% | 970                      | 1,800                      | 2,000                | 1,200                                    | 400                  |                                    |
| Screw Size (mm)                      | Machine Screw<br>2.0-4.0 | 2.6-4.0                    | 2.6-3.0              | 3.0-4.0                                  | 3.0-5.0              |                                    |
|                                      | Tapping Screw<br>2.0-3.0 | 2.6-3.0                    | Ø39*1                | 3.0-4.0                                  |                      |                                    |
| Dimensions (mm)                      | Grip Length              | Ø33                        | 255                  | Max. Ø41, Min. Ø39 (Noncircular shape)*2 |                      | Ø45<br>(Noncircular shape)         |
|                                      |                          |                            |                      | 263*1                                    |                      |                                    |
|                                      |                          |                            |                      | 286*2                                    |                      |                                    |
| Weight (g)                           | 526                      |                            | 750                  |  | 1,430                |                                    |
|                                      | HIOS                     | H4                         | H5 and SHEX          |  | -                    |                                    |
| Bit Drive                            | HEX                      | - H5 and SHEX<br>- 1/4HEX  |                      | 1/4HEX                                   | 1/4HEX               |                                    |
| AC Screwdriver Cord length           | 3m                       |                            |                      |  |                      |                                    |

## AC Input Power 220-240V

|                                      |                          |                                 |  |                      |                      |                                    |
|--------------------------------------|--------------------------|---------------------------------|--|----------------------|----------------------|------------------------------------|
| Model                                | VB-1510<br>VB-1510PS     | VB-1510-18<br>VB-1510PS-18      | VB-1820<br>VB-1820PS                                 | VB-3012<br>VB-3012PS | VB-4504<br>VB-4504PS | VB-4504PS<br>(with sockless stand) |
| Power Consumption(W) <sup>*3</sup>   | 25W                      |                                 | 40W  | 32W                  |                      |                                    |
| Output Torque Range                  | N•m<br>2.2-13            | 0.2-1<br>0.2-1                  | 0.4-1.8<br>2.2-8.7                                   | 0.5-3<br>3.5-16      | 4.3-26               | 1-4.5<br>8.7-26                    |
| Torque Switching                     | Stepless Adjustment      |                                 |  |                      |                      |                                    |
| Unloaded Rotation Speed (r:p.m) ±10% | 970                      | 1,800                           | 2,000  | 1,200                | 400                  |                                    |
| Screw Size (mm)                      | Machine Screw<br>2.0-4.0 | 2.6-4.0                         |  | 3.0-5.0              |                      |                                    |
|                                      | Tapping Screw<br>2.0-3.0 | 2.6-3.0                         |  | 3.0-4.0              |                      |                                    |
| Dimensions (mm)                      | Grip Length              | Ø33                             | Max. Ø41, Min. Ø39 (Noncircular shape) <sup>*2</sup> | Ø39 <sup>*1</sup>    |                      | Ø45<br>(Noncircular shape)         |
|                                      |                          |                                 |  | 263 <sup>*1</sup>    |                      |                                    |
|                                      |                          |                                 |  | 286 <sup>*2</sup>    |                      |                                    |
| Weight (g)                           | 526                      |                                 | 750  |                      | 1,430                |                                    |
|                                      | HIOS<br>HEX              | H4<br>- H5 and SHEX<br>- 1/4HEX | H5 and SHEX<br>1/4HEX                                |                      | -<br>1/4HEX          |                                    |
| AC Screwdriver Cord length           | 3m                       |                                 |  |                      |                      |                                    |



# Usage Procedure

1. Attach the bit to the driver.
2. Set the fastening torque for the driver unit with torque adjusting nut.
3. Turn the FOR/OFF/REV switch to OFF and connect the driver power plug to an AC power outlet.
4. Turn the switch to either FOR or REV, start the driver, and check the direction of rotation.



## **Caution**

When starting the driver, it is extremely dangerous to pinch the bit end with your fingers or push on the bit end. Never touch the rotating bit.

5. Operate the clutch until the screw is tightened to the set torque value, then stop the driver.
6. When loosening a tightened screw, turn the FOR/OFF/REV switch to REV, and loosen in the reverse direction.  
(If the screw does not come loose, tighten the torque adjustment nut to increase the torque before trying again.)

# Torque Adjustment Procedure

1. Remove the torque adjustment protective cover.
2. If the screw fastening torque is already known, set the torque adjustment nut to the appropriate Level
3. Operate the driver so that the screw is tightened, and check the tightness of the screw after the driver stops automatically.
4. If the screw is too loose, slide the torque adjustment nut upwards to increase the fastening torque. Repeat this process to determine the appropriate tightness.

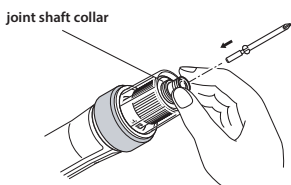


# Attaching the Bit

## **Caution**

When attaching the bit, always ensure that the driver FOR/OFF/REV switch is set to "OFF", or that the driver power plug has been removed from the AC power outlet so that there is no power within the driver.

To install the bit, pull the joint shaft collar at the end of the driver upwards and insert the bit. Check that the bit does not come loose after you have inserted it.



## If Repairs are Requested

Check the items listed in the table below, and if a malfunction is found, contact your store of purchase of our company.

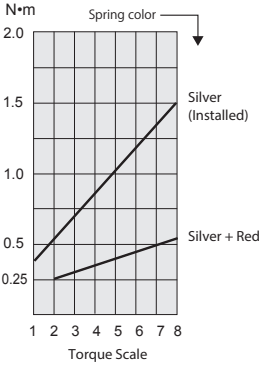
Always include your warranty card when sending in the driver for repairs.

| Symptoms  | Cause and Treatment  |
|---|--|
| The driver motor sometimes fails to operate               | - Is the cord severed?<br>Stop any work and request repairs.                             |
| The driver is weak and cannot tighten screws sufficiently | - Is the torque setting at the correct position?<br>Refer to the output torque guidance. |

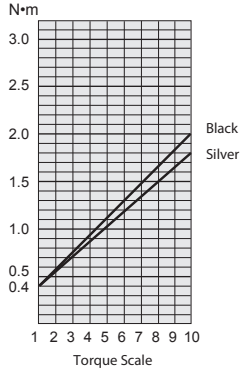
# Approximate Guidance of Output Torque

(Including PS type)

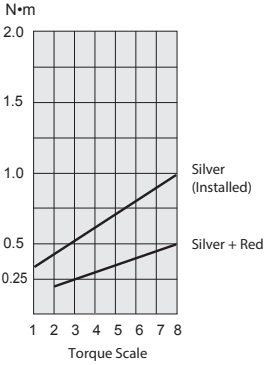
**VB-1510  
VB-1510PS**



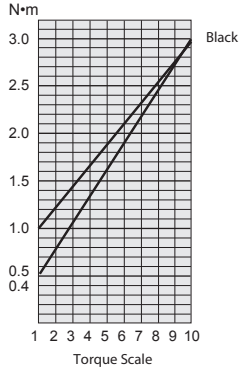
**VB-1820 (Silver)  
VB-2008 (Black)**



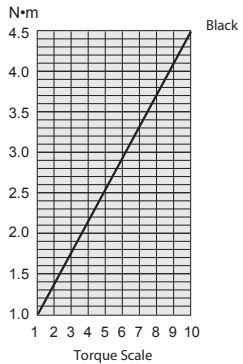
**VB-1510-18  
VB-1510PS-18**



**VB-3012 (Black)  
VB-3020 (Black)**



**VB-4504PS**



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