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**QUALITY ASSEMBLY TOOLS**

***Full-auto shut off brushed electric screwdrivers***

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## **Instruction Manual**

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**Applicable Models: AT-2000, AT-3000, AT-4000, AT-4500,**

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- *Thank you* for purchasing the CHP electric screwdriver. In order to ensure maximum performance and product life, **please read this manual before operating your screwdriver.**

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# 1. General Safety Warnings



**WARNING:** Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. Keep this manual readily accessible for reference.

## ■ Working area safety

- Keep working area clean and well lit.
- Do not operate power tools in the presence of flammable liquids, gases or dust.
- Keep the power tool away from children.

## ■ Electrical safety

### To avoid risk of electric shock:

- Never modify the plug in any way.
- Do not expose the power tool to wet conditions.
- Do not pull or damage the power cord.
- Use suitable extension cord when operating outdoor.
- Use a residual current device (RCD) when operating in a damp location.

## ■ Personal safety

### To avoid injury during operation:

- Do not use the power tool when under influence of drugs, alcohol or medication.
- Ensure that the switch is in OFF/Neutral position before connecting the power source.
- Keep proper footing and balance at all time.
- Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts.

# 2. Care/Maintenance

- Use the appropriate power tool for the application. Do not force the power tool.
- Do not use the power tool if the switch is malfunctioning.
- Disconnect the power source before making adjustments, changing accessories or storing the tool.
- Keep the tool away from children or untrained personnel.
- Periodically check for any misalignment or binding of moving parts, breakage of parts and any other condition that may affect the operation.
- Keep the screw bits clean before and after use.
- Only use compatible power supplies and accessories.

# 3. Read Before Use

- Use the correct voltage: Carefully check the voltage shown on the power supply and this manual. Only plug the unit into a power source of the correct voltage.
- Determine the appropriate torque range: choose the correct screwdriver for the appropriate torque. Avoid long-term usage under high torque setting to extend the product life. (The recommended torque value is between scales 1-8 on the engraving ring.)
- Check the driver condition: If the power cord is damaged, it should be immediately unplugged and replaced to avoid electric shocks or short circuit.
- Ensure proper working environment: do not use in high temperature, high humidity environments or near flammable materials.
- When plugging in or unplugging the power cord, hold the plug firmly. Never pull on the cord.
- Hold power tool by its insulated gripping surface.
- Make sure the work piece isn't conducting any form of electricity before operation.

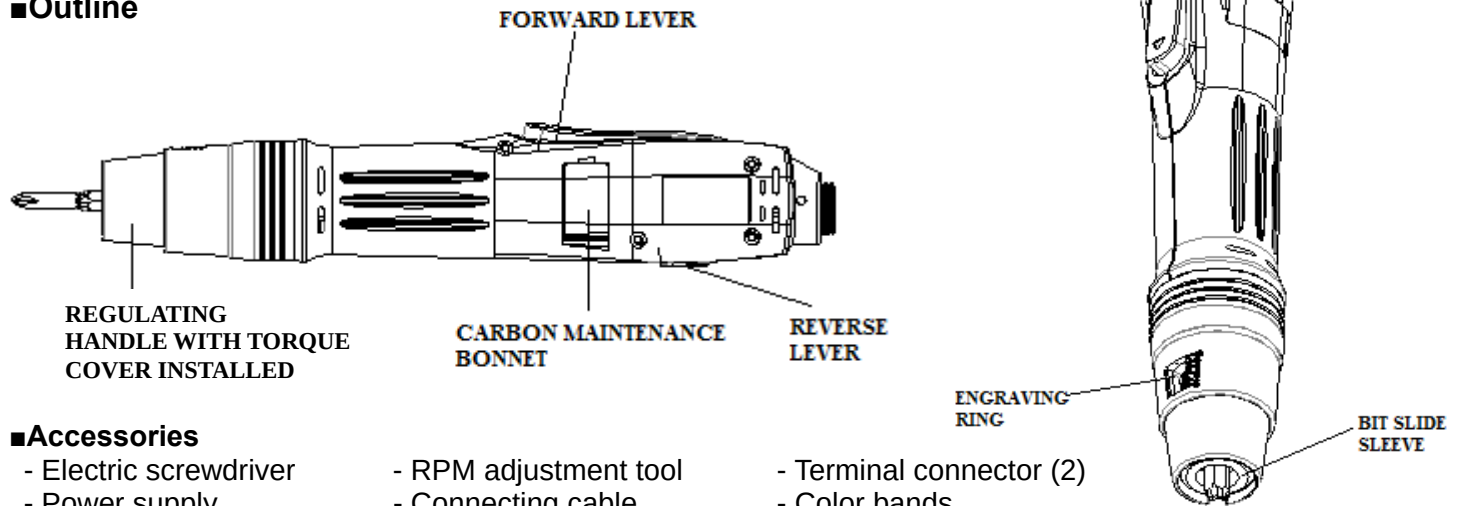
## 4. Declaration of Conformity (CE)

We, American Hakko Products, Inc., hereby declare that the products described in this manual (Electric Screwdriver) are in conformity with the following Directive(s)/Standardization document(s):

Machinery Directive 2006/42/EC  
EMC Directive 2014/30/EU

## 5. Product Information

### ■Outline



### ■Accessories

- Electric screwdriver
- Power supply
- Power cord
- RPM adjustment tool
- Connecting cable
- Bits(2)
- Terminal connector (2)
- Color bands
- Replacement carbon brush(2)
- Instruction manual

### ■Specifications

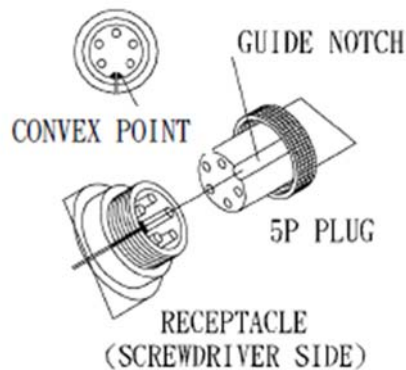
| Model                         |                             | AT-2000               | AT-3000               | AT-4000               | AT-4500               |
|-------------------------------|-----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Power source                  |                             | 35VDC                 |                       |                       |                       |
| Torque range<br>kgf-cm/lbf-in |                             | 0.3~2.0/<br>0.26~1.7  | 0.5~5.0/<br>0.43~4.3  | 1.0~6.0/<br>0.87~5.2  | 1.5~10.0/<br>1.30~8.7 |
| No load speed rpm             |                             | 450-700               | 450-700               | 450-700               | 450-700               |
| Torque setting                |                             | Stepless              |                       |                       |                       |
| Available<br>Screw            | Machine<br>Screw<br>mm / in | 1.0~2.2/<br>0.04~0.09 | 1.0~2.6/<br>0.04~0.10 | 1.4~2.6/<br>0.06~0.10 | 2.0~3.0/<br>0.08~0.12 |
|                               | Tapping<br>Screw<br>mm / in | 1.0~2.0/<br>0.04~0.08 | 1.0~2.3/<br>0.04~0.09 | 1.4~2.3/<br>0.06~0.09 | 2.0~2.6/<br>0.08~0.10 |
| Weight g / lb                 |                             | 380g/0.83lb           |                       |                       |                       |
| Length mm / in                |                             | 217mm/8.5in           |                       |                       |                       |
| Available bit shank           |                             | 1/4" Hex shank        |                       |                       |                       |
| Power consumption<br>(W)      |                             | 59.5W                 |                       |                       |                       |
| Available power<br>supply     |                             | APS-351B, AM-45       |                       |                       |                       |

## ■Power supply

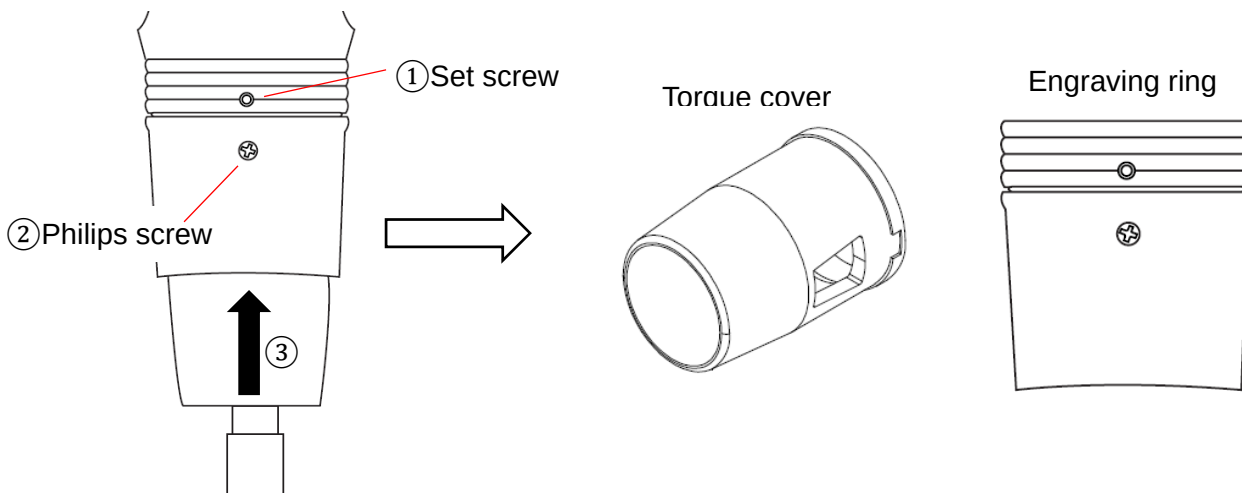
| Model    | Volume (mm) |       |        | Load Voltage (AC) | Output Voltage (DC) | Weight (g) | Safety Approved           | Feature                                                                                                                                                                   |
|----------|-------------|-------|--------|-------------------|---------------------|------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | Length      | Width | Height |                   |                     |            |                           |                                                                                                                                                                           |
| APS-351B | 164         | 64    | 42     | 100-240V          | 25-35V              | 300        | CB,CE,UL(CUL), ROHS,REACH | <ul style="list-style-type: none"> <li>•Adjustable stepless output voltage</li> <li>•Available Input Voltage 110-240VAC</li> <li>•Automatic device application</li> </ul> |
| AM-45    | 172         | 84    | 61     | 100-240V          | 25-35V              | 450        | CB,CE,UL(CUL), ROHS,REACH | <ul style="list-style-type: none"> <li>•Screw fastening check</li> <li>•Screw counting</li> </ul>                                                                         |

## 6. Operation

- Connect the power cord to the driver as shown below, twist the knob on the power cord to secure it onto the driver. Do not force the connection as this can cause damage to the driver and power cord.



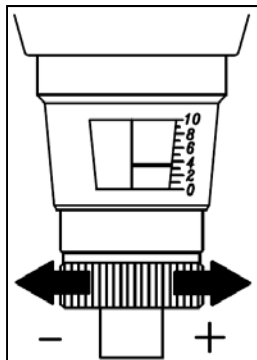
- To avoid accident and injury, check driver's torque setting, and make sure that the work piece is fixed firmly before operating.
- Change torque settings: The driver comes with torque cover installed to prevent tampering of torque setting. To remove the torque cover, first loosen the set screw located at the end of the front cover with included allen key and remove the entire cover by turning it counterclockwise. Remove the Philips screw on the cover and push out the inner torque cover from the back end. Reinstall the remaining cover, and now you will have access to change the torque setting.



- Use the regulating handle to set the torque. Turning it clockwise into the casing will increase the torque. Turning it counterclockwise out of the casing will decrease the torque.

**Note:** The engraved markings on the engraving ring are for reference only and does not indicate actual torque output. Torque output can only be determined by repeated testing with a torque meter. To prevent your torque setting from being tempered, optional torque cover is available which covers and secures the regulating handle.

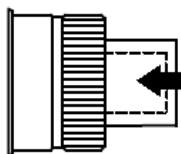
**Illustration of torque setting**



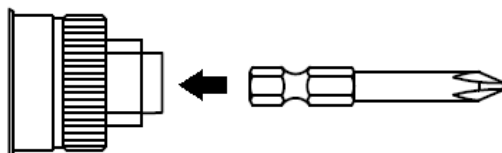
- Bit insertion: press the slide sleeve into the screwdriver and insert an appropriate bit. When the slide sleeve is released, the bit will be automatically locked.

**Illustration of insertion of bits**

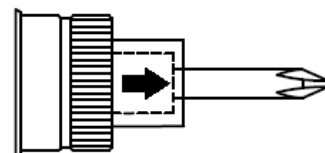
**Figure 1**



**Figure 2**



**Figure 3**



#### **Fastening and removing screw:**

To drive a screw, press the “Forward” trigger. To remove a screw, press the “Reverse” lever. If both “Forward” and “Reverse” levers are pressed at the same time, the screwdriver will not rotate.

**Note:** Do not change the running direction during operation. Always switch the direction after the screwdriver has completely stopped.

- Secure screwdriver during operation: During operation, hang the screwdriver securely (from balancer) in order to prevent damage to driver and power cord.
- When the selected torque is reached: The driver features internal clutch assembly. When a screw is fastened and the selected torque has been reached, the clutch assembly will automatically disengage and a “click” sound will be heard. At this point, even if the “Forward” trigger is pressed, the power to the motor will be automatically cut-off.

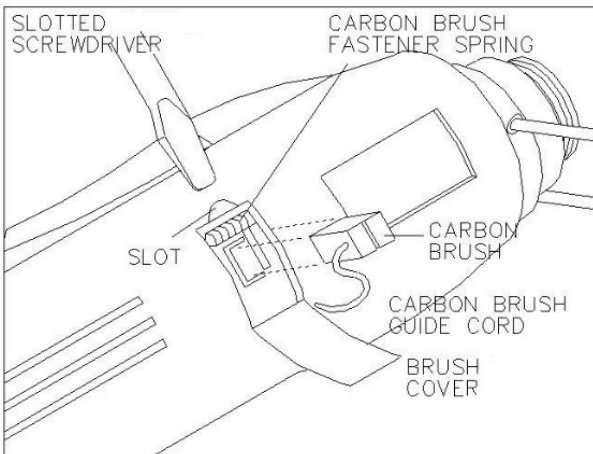
**Note:** When driving screws, grasp the driver firmly as recoils generated by the clutch can be strong.

- When removing screws: If a previously driven screw cannot be removed using the same torque that it was driven with, raise the torque setting. When turning the regulating handle, use the number of “click” sounds as reference so that the torque setting can be changed back afterwards.
- Operation Frequency: Suggested duty cycle: 0.5s/3.5s (ON/OFF). Total screws: 7000pcs/8hours. To avoid damage to the screwdriver and to prolong the product life, do not exceed the suggested operational frequency

- **Overloading Operation:** If the operator discovered the handle overheating or the revolutions plunging rapidly while fastening, it means that the screwdriver is overloaded. Please change to a torque screwdriver with higher power or reduce the frequency of fastening to prolong the lifespan of the screwdriver.
- If the screwdriver has operated for a long period, or if excessive current surges are experienced, the screwdriver may overheat. In this case it will switch off automatically. When the heat has dispersed, normal operation can be resumed.

### Replace the Carbon Brush:

As illustrated below, insert a slotted hand screwdriver with 2~4mm head edge into the slot and open the carbon brush cover. Unscrew the contact plate and lift the carbon brush fastener spring. Loosen and pull the carbon brush guide cord to remove the carbon brush (Do not remove the insulation tape on the brush cover). Insert a new carbon brush and then follow the above steps in reverse order.



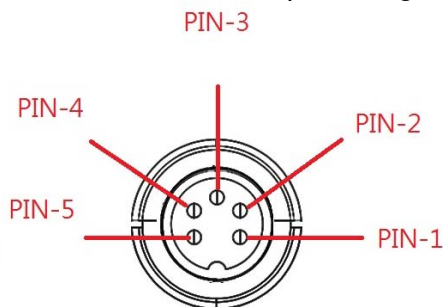
- Unplug the driver before changing the carbon brush.  
Only use factory specified carbon brush.
- The notch direction on the carbon brush surface must follow the illustration.

## 7. Troubleshooting

If the screwdriver does not work properly, check the list below. If you cannot solve the problem do not open the unit. Contact one of our authorized agents as soon as possible.

### If the screwdriver does not run

- Check the power supply:
  - Check that the power supply is inserted properly and Check voltage (DC) between pin 1(-) and pin 4(+).  
If there are no output voltage, replace the power supply.



- Check for any open or short circuit in the power cord. If an open or short circuit is found, change the power cord.

- Check whether the plug is inserted properly and the outlet has power.

- Check if the carbon brush is damaged or worn out.

*Inspect method: open the carbon brush cover and use an insulated rod to gently press the brush. If the screwdriver resumes rotating, the carbon brush has reached the end of its service life and must be replaced immediately.*

- Check that the switches are working properly.

#### **If the screwdriver is not rotating normally**

- There is a protective circuit within the power supply. Please wait 3 to 5 seconds after turning on the power supply and the indicator light turn green.
- If the motor runs intermittently during “Forward” operation, try “Reverse” operation, or rotate the bit shaft 90 degrees until a “click” sound is heard, then re-attempt “Forward” operation.
- Long-term usage causes the motor’s commutator to wear down. In this case, it must be replaced. (Please contact our customer service)

#### **If the bit falls out easily or wobbles**

- Check that the bit matches our specifications. If not, change the bit to one that does.
- Check that the bit is inserted tightly into two guide channels within the bit shaft. If not, remove the bit and re-insert it tightly.
- If the bit tends to wobble, remove the bit, rotate it 60 or 180 degrees and re-insert it.

#### **If the screwdriver doesn’t stop when the selected torque is reached**

- Excessive torque setting can cause the screw to strip threads, as a result the clutch will not activate.
- Make sure the correct size bit is chosen for the application.
- The brake circuit or the sensor may be damaged and needs repair. (Please contact our customer service)
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## **8. After Use**

- Storage and maintenance: when the unit is to be stored for a long period, remove the power supply and bit, open the carbon brush cover and blow out any accumulated carbon brush dust with compressed air, and wipe the exterior clean. Store the screwdriver carefully in a dry, dust-free place away from direct sunlight. Store the bit in grease. To ensure continued serviceability, periodically check and maintain the screwdriver.

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