

**Minimo<sup>®</sup>**

RUBRON HEAD

H313

OPERATION MANUAL

**MINITOR CO., LTD. JAPAN**

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Products are subject to change without notice.

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**MINITOR CO., LTD. JAPAN**

## Introduction

Thank you for purchasing Minimo ONE Series Ver. 3 Rubron Head.

Read this manual carefully for your safety prior to use.  
 Along with this manual, read manuals of Motor, Power Pack and foot switch, if used, carefully for your understanding of each function.  
 Keep this manual in place reach to easily.  
 Download this manual from our website if lost.

## Precautions

- This manual indicates symbols and signal words intending to avoid dangerous operation and handling for potential hazards and accident that could result in personal injury or damage to the product.

## Warning and Caution

Possible hazards and damages by wrong handling are classified as Warning and Caution in accordance with seriousness of risk.



### Warning

Operation causing of significant and dangerous accident possibly resulting in death or serious injury.



### Caution

Operation possibly causing of injury or physical damage on the product.

#### Warning

- **Do not press ON button on DC MOTOR selector and hand selector while collet chuck is in open.**
  - Motor may be overheated by energization in condition that motor is locked and may cause of fire and / or malfunction.
- **Confirm if handpiece works properly after turning DC MOTOR selector or hand selector on.**
  - May cause of fire and / or electric shock by overheating motor in case motor was not working.  
Cause motor does not work: collet chuck in open, malfunction of handpiece, motor or power pack, etc.
- **Wear protective glasses for eye protection and respirator to prevent from dust.**
  - May cause of unexpected damage due to chip and dust.
- **In case abnormal noise, smoke and / or bad smell occurred, turn power switch off and unplug AC power cord.**
  - May cause of fire and / or electric shock.
- **Do not disassemble and / or remodel.**
  - May cause of fire, electric shock and / or malfunction.
  - May cause of significant influence on safety and performance.
- **Communication spark may occur while motor is rotating. Do not use the products near inflammable and explosive material such as thinner and gasoline.**
  - May cause of fire and / or malfunction.
- **Hold motor (handpiece) tight when turning switch on.**
  - May cause of injury and damage on tool by bouncing of motor (handpiece).
- **Do not touch rotating object such as Sentan Tool, collet chuck, etc. during operation.**
  - May cause of injury and damage on tool.

#### Caution

- **Do not use this product under environment generating corrosive gas . (chlorine gas, hydrogen sulfide, sulfuric acid gas, etc.)**
  - May cause of fire, electric shock and / or malfunction.
- **Use this product in condition without condensation.**
- **Use this product within temperature from 0°C to 40°C.**
- **Keep this product away from children.**
- **Do not drop and / or hit this product.**
- **Prevent dust, oil, water, etc. from entering inside. If liquid and / or foreign substances entered, turn power switch off, unplug AC power cord and ask us for repairing.**
- **Unplug AC power cord for your safety while replacing carbon brushes and other parts.**

## 1. Standard Accessories

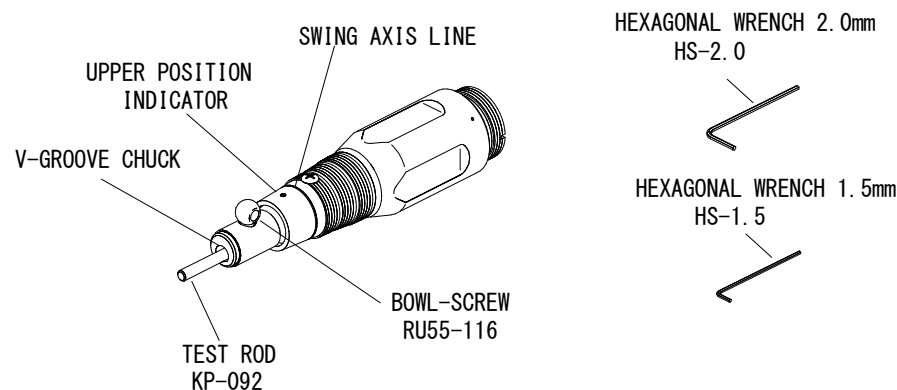
- ◇ LOCK-SCREW M4x5 (AKM4X5) . . . . . 1pc.
- ◇ HEXAGONAL WRENCH 2.0mm (HS-2.0) . 1pc.
- ◇ HEXAGONAL WRENCH 1.5mm (HS-1.5) . 1pc.

RATED SPEED : 8,000min<sup>-1</sup>  
 RATED ELECTRODE EXTENSION : 60mm

Applicable Motors: KM213L, KM113G

The accessories are subject to change without any notice.

## 2. Names



### 3. Attaching to the motor

- 1) Insert the head onto the motor with placing the claw of the head in a groove of the motor.
- 2) Tighten the joint ring to secure the head in position.

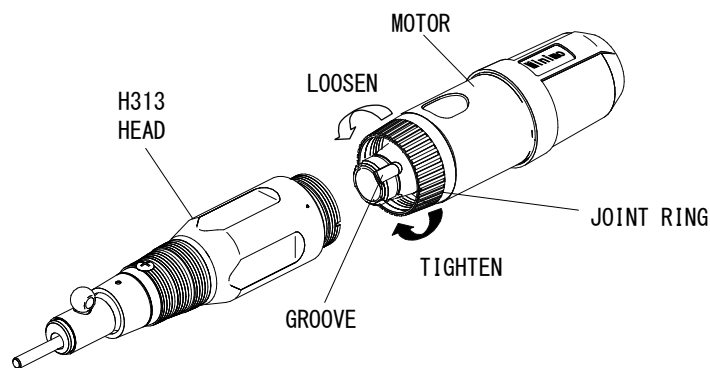


Fig.1

### 4. Changing the SENTAN tools

- 1) Loosen the BOWL-SCREW with a hexagonal wrench remove the test rod or SENTAN tool.
- 2) Insert a desired SENTAN tool in the V-GROOVE CHUCK.
- 3) Tighten the BOWL-SCREW securely.

\*The shank diameter of SENTAN tool to be able to chuck is  $\phi 1.5-4.7\text{mm}$

\*Make sure the tools is set firmly.

\*If the BOWL-SCREW is inconvenient for your work, substitute with the LOCK-SCREW M4x5 provided for an accessory. The hexagonal wrench (HS-1.5) is to use tightening and loosening the LOCK-SCREW.

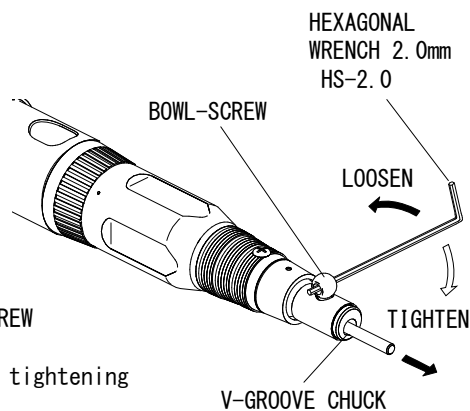


Fig.2

**CAUTION** Always keeps the power OFF ON the POWERPACK when changing the tools.

### 5. Adjusting the swing

- 1) Remove the head housing by turning counterclockwise. (see fig.3)  
The other parts are remaining attached to the motor.
- 2) Loosen the LOCK-SCREW with the hexagonal wrench (HS-1.5). (see fig.4)
- 3) Adjust the red line on the ECCENTRIC SHAFT (The KNURLED KNOB) to the scale on the main shaft.
- 4) Tighten the LOCK-SCREW with the hexagonal wrench.
- 5) Set the head housing back by turning clockwise.

\*Make sure the head housing is set firmly.

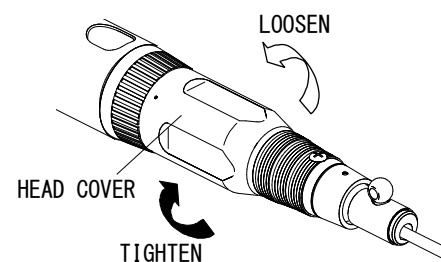


Fig.3

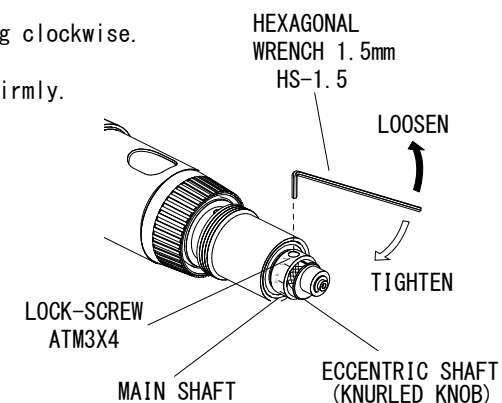


Fig.4

<Calculation for the swing>

$$\text{AMPLITUDE OF SWING} = \frac{V \times L}{23} \text{ [mm]} \quad (\text{see Fig.5})$$

V: The scale reading on the MAIN SHAFT

L: Length from the swing axis line to the top of the SENTAN tool [mm]

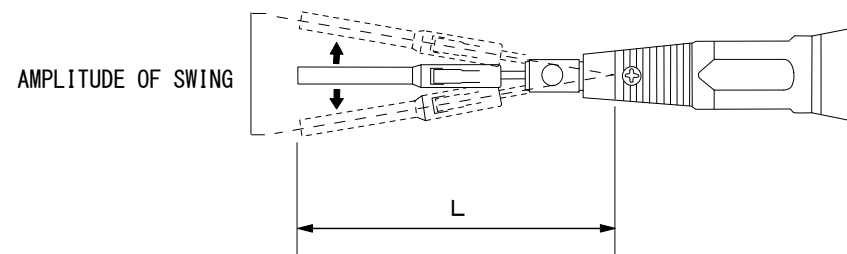


Fig.5

## 6. Maintenance

- The chips and dust may collect in the V-GROOVE CHUCK.  
Clean it by blowing air or vacuum out with removing the tool from the chuck after use.
- When the handpiece gets dirt, wipe out with the cloth moistened with lukewarm water or detergent.

## 7. Trouble Shooting

Trouble	Check	Remedy
Motor does not run.	Power switch of power pack is OFF.	Turn power switch of power pack ON.
	Carbon brushes are consumed.	Replace carbon brushes to specified ones.
	Collet chuck of handpiece is in open position.	Close collet chuck of handpiece.
Hand switch does not work.	Handpiece is controlled by external signal on power pack.	Control handpiece by external signal. Avoid controlling by external signal.
	Foot switch is connected.	Control by foot switch only.
Overheating while motor is running.	Dust, etc. are stuck on handpiece.	Remove dust, etc.
	Handpiece is used with excessive load.	Use motor within range of white LED indicating range of use on load meter.
High vibration and / or abnormal noise from handpiece.	Same malfunction is occurred in low rotation speed.	Ask for repairing.

If you still have a trouble after applying remedy, malfunction is considered. Ask for repairing.  
If you have any question or need further assistance, please contact the store you purchased or us.