

## 7. REPLACE THE CARBON BRUSHES

WHEN THE CARBON BRUSHES ARE WORN OUT, THE MOTOR ROTATION MAY BECOME UNSTABLE OR EVEN BECOME NOT ROTATE AT ALL. IN THIS CASE, THE CARBON BRUSHES SHOULD BE REPLACED. WHEN REPLACING, BOTH SIDES OF THE CARBON BRUSHES SHOULD BE REPLACED WITH NEW ONES. THE STEPS TO REPLACE THE CARBON BRUSHES ARE AS FOLLOWS;

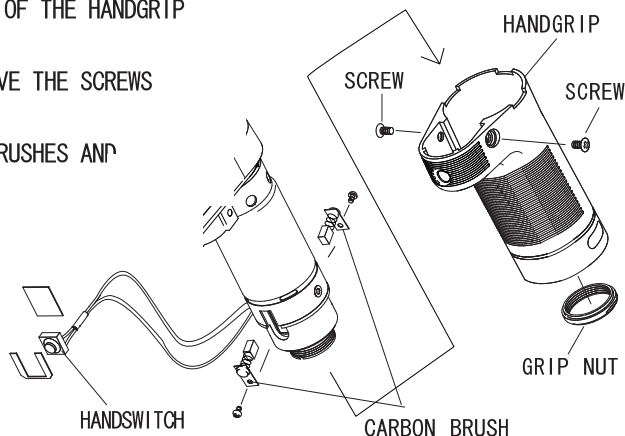
① UNPLUG THE CURLED CORD AND REMOVE SCREWS ON THE HANDGRIP

AND THE GRIP NUT AT THE BOTTOM OF THE HANDGRIP BY THE SPANNER OF 19mm.

② TAKE OFF THE HANDGRIP AND REMOVE THE SCREWS ON THE BRUSH TERMINALS.

③ REPLACE THEM WITH NEW CARBON BRUSHES AND TIGHTEN THE SCREWS BACK.

④ PUT THE MOTOR HOUSING BACK IN THE HANDGRIP WITH CARE TO PLACE THE HANDSWITCH IN POSITION. THEN, TIGHTEN THE SCREWS AND GRIP NUT BACK.



## 8. MAINTENANCE

① LUBRICATION

RECIPRON REQUIRES LUBRICATION WITH A FEW DROPS OF LIGHT SPINDLE OIL THROUGH THE LUBRICATION GATE, AT INTERVALS OF 8 HOURS TOTAL OPERATING TIME.

② CLEANING

WHEN DUST COLLECTS UNDER THE BODY COVER, CLEAN IT WITH A DRY BUSH, OR IF NECESSARY, A MOISTENED CLOTH WITH DETERGENT.

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# INSTRUCTION MANUAL

RE11/RE21

RECIPRON

READ FOLLOWING INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING TO USE.

ALSO READ THE INSTRUCTION MANUAL OF THE HEAD PART AS WELL.

KEEP THIS MANUAL ALWAYS IN THE VICINITY OF USE FOR YOUR REFERENCE.

BEFORE USING THE UNIT, CHECK IF THERE ARE ANY DAMAGES ON THE UNIT DUE TO TRANSPORT CONDITIONS. IF ANY DAMAGES ARE FOUND, CONTACT OUR MINIMO DEALER.

## SAFETY PRECAUTIONS

**⚠ WARNING** (INDICATES THAT INCORRECT OPERATION PRESENTS SIGNIFICANT DANGER OF ACCIDENT RESULTING IN DEATH OR SERIOUS INJURY TO THE USER.)

- WEAR AN APPROPRIATE EYE PROTECTION AND A DUST PROTECTING MASK WHEN USING THE HANDPIECE.
- TURN OFF THE MAIN SWITCH IMMEDIATELY AND UNPLUG THE AC CABLE WHEN ONE OR MORE OF THE FOLLOWINGS ARE RECOGNIZED. SMOKING; NASTY SMELL; STRANGE NOISE.
- DO NOT DISASSEMBLE AND REMODEL THE UNIT. ANY ACCIDENT OR MALFUNCTION CAUSED BY DISASSEMBLING AND/OR REMODELING WILL NOT BE COVERED BY OUR RESPONSIBILITY.
- IT GENERATES SPARKS INSIDE THE MOTOR WHEN IT IS RUNNING. NEVER USE THE UNIT WHERE INFLAMMABLE AND/OR EXPLOSIVE GASES MAY EXIST.
- WHEN TURNING ON THE POWER SWITCH, HOLD THE HANDGRIP FIRMLY.
- DO NOT TOUCH ANY REVOLVING BODIES SUCH AS BELT AND PULLEY.

**⚠ CAUTION** (INDICATES THAT INCORRECT OPERATION PRESENTS POSSIBILITY OF INJURY TO THE USER OR DAMAGE TO THE UNIT.)

- DO NOT USE THE UNIT IN EXCESSIVELY HUMID PLACE. THE CONDENSATION OF VAPOR ON AND/OR INSIDE OF THE UNIT CAUSES A MALFUNCTION OF THE UNIT, A SHORT CIRCUIT, FIRE OR AN ELECTRIC SHOCK
- DO NOT USE THE UNIT WHERE CORROSIVE GASES AND CHEMICALS POSSIBLY EXIST.
- THE AMBIENT TEMPERATURE SHOULD BE IN THE RANGE OF 0° ~ 40° C
- KEEP THE UNIT AWAY FROM CHILDREN.
- AVOID ANY HEAVY IMPACT TO THE UNIT. DO NOT DROP!
- KEEP ALL LIQUIDS SUCH AS OIL, WATER, AND ETC. OFF THE UNIT. THIS MAY CAUSE A MALFUNCTION OF THE UNIT, CATCH FIRE AND/OR GET AN ELECTRIC SHOCK.
- DO NOT USE COUNTERCLOCKWISE ROTATION. THE DRIVING PULLEY MAY BREAK OFF.

**AN EASY-TO-USE RECIPROCATING MOVEMENT. IDEAL FOR FILING AND LAPPING.**

We have two types of RECIPRON with the difference of their stroke.

MODEL	STROKE	FREQUENCY
RE 1 1	0 ~ 8 mm	260 ~ 3,500/min
RE 2 1	0 ~ 2 mm	460 ~ 7,000/min

## 1. PACKING LIST

- ◇ RE11/RE21 RECIPRON . . . . . 1PC.
- ◇ SET SCREW 4x8 (AKM4x8) . . . . . 1PC.
- ◇ CARBON BRUSH (KE-580B) . . . 1SET (2PC.)
- ◇ CURLED CORD (CC711) . . . . . 1PC.
- ◇ HEXAGONAL WRENCH (HS-2.0) . . . . . 1PC.

## 2. NAMES OF PARTS

- ① V-SHAPED SPINDLE
- ② BOWL SCREW
- ③ LUBRICATE GATE
- ④ BODY COVER
- ⑤ COVER LOCK SCREW
- ⑥ KNURLED KNOB
- ⑦ HAND SWITCH
- ⑧ CURLED CORD
- ⑨ HEXAGONAL WRENCH
- ⑩ HANDGRIP
- ⑪ GRIP NUT

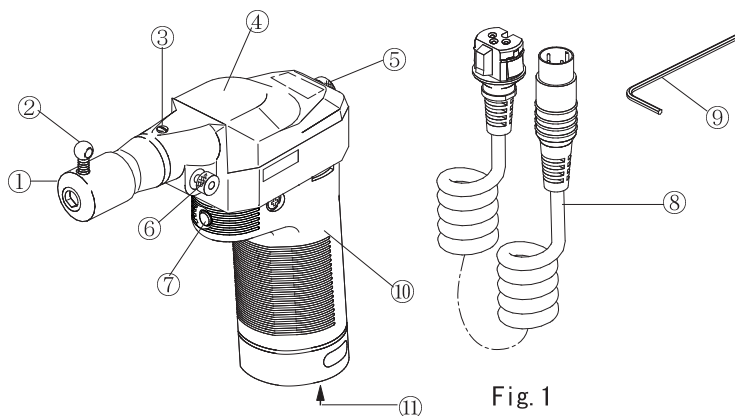


Fig. 1

## 3. OPERATION

### HAND SWITCH

PUSH THE HAND SWITCH ⑦ TO TURN ON, AND ANOTHER PUSH FOR TURNING OFF THE MOTOR.

- \* THE HAND SWITCH WILL BE FUNCTIONED ONLY WITH CONNECTING THE UNIT TO OUR ONE SERIES AND SEVEN SERIES POWER PACK. ONE SERIES POWER PACKS ARE AS FOLLOWS;  
C101, 111, 121, C301, 311, 321, P201, 211, 221, C10M, C11M, C12M  
WHEN CONNECTING TO OUR SEVEN SERIES POWER PACKS, THE POWER SWITCH ON THE POWER PACK HAS TO BE AT "HANDPIECE" SIDE. (THE DETAIL IS ON THE SEVEN SERIES POWER PACK MANUAL.) THE SEVEN SERIES POWER PACKS ARE AS FOLLOWS;  
C710, 711, 712, C730, 731, 732, P7101, 7111, 7121, C7301, 7311, 7321, P750, 751, 752
- \* NEVER LET ANY LIQUID SUCH AS WATER, OIL AND SO ON, PENETRATES INTO THE SWITCH.

## 4. CHANGING THE SENTAN TOOL

THE SENTAN TOOL IS TO BE FIXED BY THE BOWL SCREW. THE SHANK DIAMETERS FROM  $\phi 2.0 \sim \phi 6.35\text{mm}$  ARE ABLE TO BE SET. IF THE BOWL SCREW IS SOMEWHAT BOTHER YOU, USE SET SCREW (4x8) INSTEAD.

- ◇ TO MOUNT AND DISMOUNT THE SENTAN TOOL;  
TO SET THE SENTAN TOOL IS SIMPLY INSERT THE TOOL AND TIGHTEN THE BOWL SCREW.  
TO REMOVE THE TOOL IS JUST LOOSEN THE SCREW.

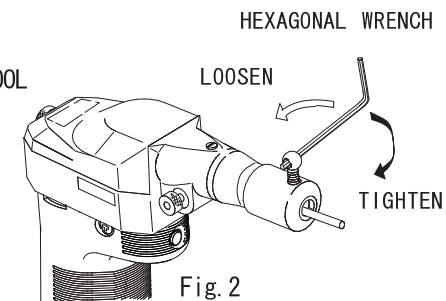


Fig. 2

## 5. ADJUST THE STROKE AMPLITUDE

THE AMPLITUDE OF THE STROKE CAN BR SET BY CHANGING THE GRADUATION SCALE ON THE ECCENTRIC COLLAR. 0mm ~ 8mm FOR RE11; 0mm ~ 2mm FOR RE21.

- ① REMOVE THE UPPER COVER BY LOOSENING THE COVER SCREW.
- ② LOOSEN THE SET SCREW AT THE SIDE OF THE MARKER.  
(SEE Fig. 3)
- ③ ADJUST THE MATCHING MARK TO A DESIRED GRADUATION.  
THE STROKE IS GRADUATED IN MILLIMETERS.  
THEN TIGHTEN THE SET SCREW TO SET.
- ④ PUT THE UPPER COVER BACK IN POSITION.

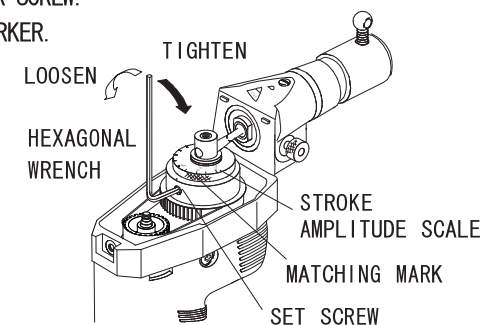


Fig. 3

## 6. FREE AND LOCK MECHANISM

THE SPINDLE CAN BE SPINNED FREELY TOGETHER WITH RECIPROCATING MOVEMENT BY CONTROLLING THE KNURLED KNOB. (SEE Fig. 4)

- ① FREE  
TURN THE KNURLED KNOB COUNTERCLOCKWISE FOR THE SPINDLE TO BE FREE TO SPIN.
- ② LOCK  
TURN THE KNURLED KNOB CLOCKWISE FOR THE SPINDLE AT A DESIRED PHASE ANGLE TO BE LOCKED.

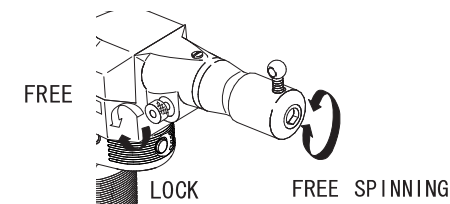


Fig. 4