

Eco 450



Features

- Automatic safety overload protection system
- Variable speed control pedal(FS60N)
- Less noise, less vibration



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 40,000 RPM
- Weight : 1.6 kg
- Dimensions : W141 x D186 x H97(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

New N7



Features

- Automatic safety overload protection system
- Dust-proof cover for switch
- On/Off Foot Switch
- Variable speed control pedal



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 40,000 RPM
- Weight : 1.7 kg
- Dimensions : W115 x D147 x H96(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

New N2



Features

- Automatic safety overload protection system
- Dust-proof cover for switch
- On/Off Foot Switch
- Variable speed control pedal



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 40,000 RPM
- Weight : 1.2 kg
- Dimensions : W115 x D147 x H96(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

K38



Features

- MAX 8hours (MH20)
- LI-ION battery(rechargeable)
- Digital speed display window
- LED display for battery charging level
- Automatic System
 - power save / FWD-REV
 - overload protection(warning signal)
- On/Off Foot Switch



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 30,000 RPM
- Weight : 277 g
- Dimensions : W67 x D128 x H30(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

K35



Features

- Digital speed display window
- Auto - cruise control (in case of connection variable speed control)
- Automatic System
 - power save / FWD-REV
 - overload protection (warning signal)
- Variable speed control pedal
- On/Off Foot Switch



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 35,000 RPM
- Weight : 1.13 kg
- Dimensions : W120 x D120 x H75(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

Escort II pro



Features

- Powerful performance with low noise & vibration
- Built-in handpiece cradle and bit stand
- Automatic safety overload protection system
- Comfortable
- One-touch change of driving direction during operation
- Variable speed control pedal
- On/Off Foot Switch



white



blue



pink



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 35,000 RPM
- Weight : 1.45 kg
- Dimensions : W140 x D155 x H90(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

Escort III



Features

- Powerful and excellent performance with low noise & vibration
- One-touch change of driving direction efficient operation
- On/Off Foot Switch



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 35,000 RPM
- Weight : 1.23 kg
- Dimensions : W112 x D147 x H77(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

Marathon-4



Features

- Powerful and excellent performance with low noise & vibration
- 4 stage speed control
- One-touch change of driving direction efficient operation
- On/Off Foot Switch



Specifications control box only

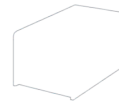
- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 35,000 RPM
- Weight : 1.16 kg
- Dimensions : W112 x D147 x H77(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

M4 mini



Features

- Powerful performance with low noise & vibration
- Easy direction change
- On/Off Foot Switch
- 4 stage speed control



white



blue



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 35,000 RPM
- Weight : 1.0 kg
- Dimensions : W78 x D126 x H69(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

M3 Champion



Features

- Built-in handpiece cradle and bit stand
- Forward&reverse direction switch
- On-off foot Switch



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 35,000 RPM
- Weight : 1.23 kg
- Dimensions : W118 x D156 x H78(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

M3 Mighty



Features

- Built-in handpiece cradle and bit stand
- Forward&reverse direction switch
- On-off foot Switch



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- speed : MAX 35,000 RPM
- Weight : 1.26 kg
- Dimensions : W118 x D156 x H89(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand



Equipments

SDE-SM110

hammer handpiece



- 5,000 Strokes/min.
- Control function of Impact Force
- D.C 30V

SDE-LS200

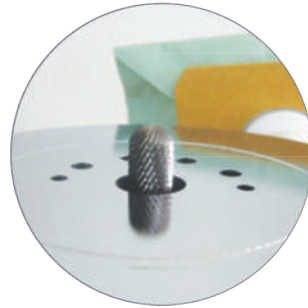
laboratory lathe spindle



- Max.speed: 28,000 rpm
- Compatible Automatic Spindle with laboratory alloy grinders

Marathon-20

center grinder



- **Max.Speed: 3,200 rpm**
- Grinding plaster model
- Grinding edge part of plaster model with an upper acetal plate
- Human-friendly dust collecting system
- Tools can easily change
- Good & effective design

Marathon-103

surveyor



▲ Surveyor tool pin set

- Precise instrument with exact movement
- Easy exchangeable system (spindle, model table, cone former and plaster)
- Excellent finished surface
- Variable application possible
- Surveyor tools available

Marathon-37

cartridge warmer



- Maintains painless temperature with 37°C (98.6 °F)
- Effective for painless injection

memo

A series of horizontal dashed lines for taking notes, spanning the width of the page below the 'memo' header.





Spare parts

Collet sleeve



Collet chuck
Standard

brushless



Special coated



Collet chuck

brush



Spindle chuck



Spindle assy

brushless



Spindle assy

brush

H37L1 / H37LN



Spindle assy

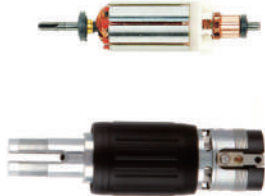
brush

H35SP1



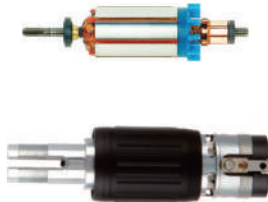
Armature

SH37LN
(Bearing Ø4)



Armature

H37L1
H35SP1
(Bearing Ø3)



Armature

M33Es



BLDC Motor

brushless

(A) 50,000 rpm



(B) 60,000 rpm



Carbon brush

H37L1 / SH37L(M45)



M300Es / M30Es



Ball Bearing

brushless



814



1360

Ball Bearing

brush



1260



830



1480



1040



1030

Lab. Air Tubine
Foot Switch



Variable Speed
Foot Pedal



On / Off Foot Switch



Cord brushless



Cord brush



Handpiece Stand



**Chuck Joint
Wrench**

brush

**Chuck
Wrench**

brush

brushless

**Spanner**

brushless

**Maintenance & Repair**

brush

brushless



User guide

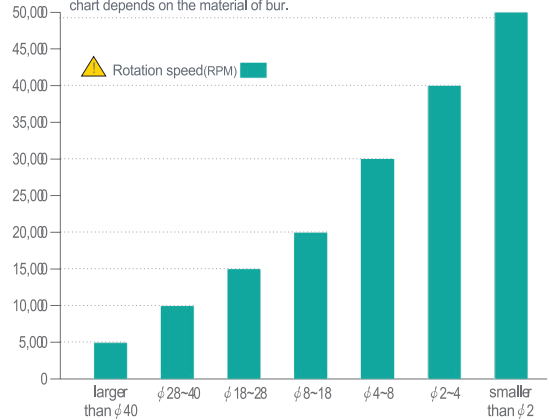
(For safety & efficiency)

* Precaution

1. Do not operate a micromotor with a bent, asymmetrical or damaged bur. Must operate it with a standard bur.
2. Do not start the motor at a high rotation speed.
Start from the low speed and change it slowly to the desired speed.
3. For your safety, do not exceed the rotation speed according to the type of bur.
4. Do not try to open/close the chuck handle during operation.
5. Clean the motor after use.

* Allowable rotation speed

Do not exceed the allowable rotation speed according to the type of bur for your safety. Allowable rotation speed according to the type of bur may be slightly different from the chart depends on the material of bur.



※ This chart for allowable rotation speed can be slight different depending on bur materials or type



1 Check the product if everything is set before use.



2 Do not drop the product.
Dropping the motor may damage ball bearing or weaken durability of the motor



3 Check the product if there is any flaw, crack, or faulty adhesion before use.



4 In order to take the bur out of the handpiece, release the chuck handle(shift to the left side, R) to open the collect chuck. Make sure to close the collect chuck(shift to the right side, S) before use



5 Do not exceed the maximum speed.



6 Wear a safety goggles/shield and mask to protect your face from cutting and grinding works



7 Check if the product is overheated when you use it at the maximum speed for long. When it gets overheated, you must stop the product and cool it down before use.



8 If the product works abnormally, stop the product immediately and contact your dealer for repair.



9 For safety, make sure to read and understand the operation manual carefully before use.



10 Do not customize the product.



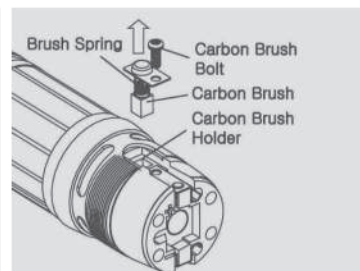
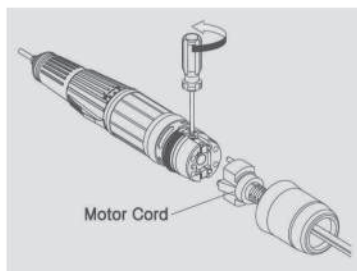
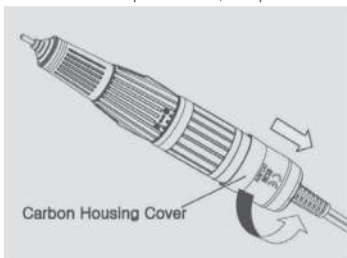
11 Avoid exposing the product to high temperature and humidity. Daily inspection & maintenance are required.



12 Make sure to turn off the product after use. Leaving the product turned on is very dangerous and may cause overheating.

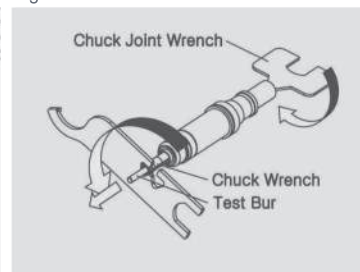
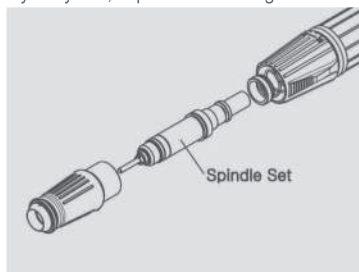
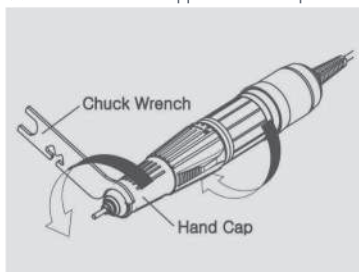
Replacing Carbon Brushes

1. Turn off the power of the Control Unit and remove the Carbon Housing Cover and the Motor Cord from the rear of the handpiece
2. Take off Carbon Brush Bolts using a screwdriver(+) and remove worn-out Carbon Brushes.
3. While replacing by new ones, the Brush Spring needs to get jammed in the Carbon Brush Holder
4. Assemble the handpiece.
5. Run the handpiece at 20,000rpm for 30minutes under no load condition before use.



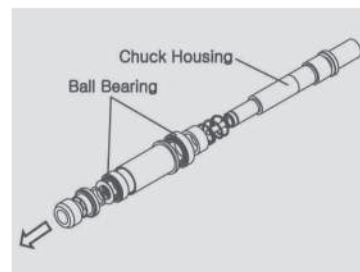
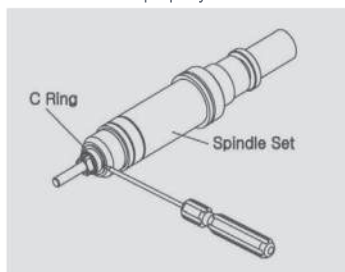
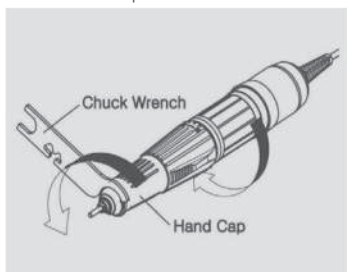
Replacing the Collect Chuck

1. Turn the Hand Cap counterclockwise using the Chuck Wrench until the Hand Cap and the Spindle Set get disassembled.
 2. Keep turning it counterclockwise until the collect chuck gets disassembled.
 3. After replacing a new Collect Chuck, assemble the handpiece.
 4. Run the handpiece under no load condition to check if it works properly before use.
- ※ Collect chuck is supposed to be replaced every 2-3 years, depends on working hours or loading conditions



Replacing Ball Bearings

1. Disassemble the Hand Cap and the Spindle Set.
2. Remove the C Ring from the front of the Chuck Housing to disassemble Ball bearings and other parts.
3. Assemble other parts, replace it with new Ball Bearings, and install the C Ring.
4. Connect the Hand Cap and the Spindle Set.
5. Run the handpiece under no load condition to check if it works properly before use.



Replacing Ball Bearings(SH300S)

1. After removing a bur, please open a handle of the handpiece. After that start to disassemble.
2. Disassembling nose-cone and bearing housing by wrench. After that pulling the bearing out.
3. Disassembling a handle and cam and related parts. After that pulling a joint shaft out.
4. Disassembling connector and related parts of joint shaft. After that pulling the bearing out.
5. Replacing bearing by inverse order of disassembly. It will require to apply removable glue on nose cone, bearing housing.
6. Run the handpiece under no load state and confirm proper replacement, and then use.

