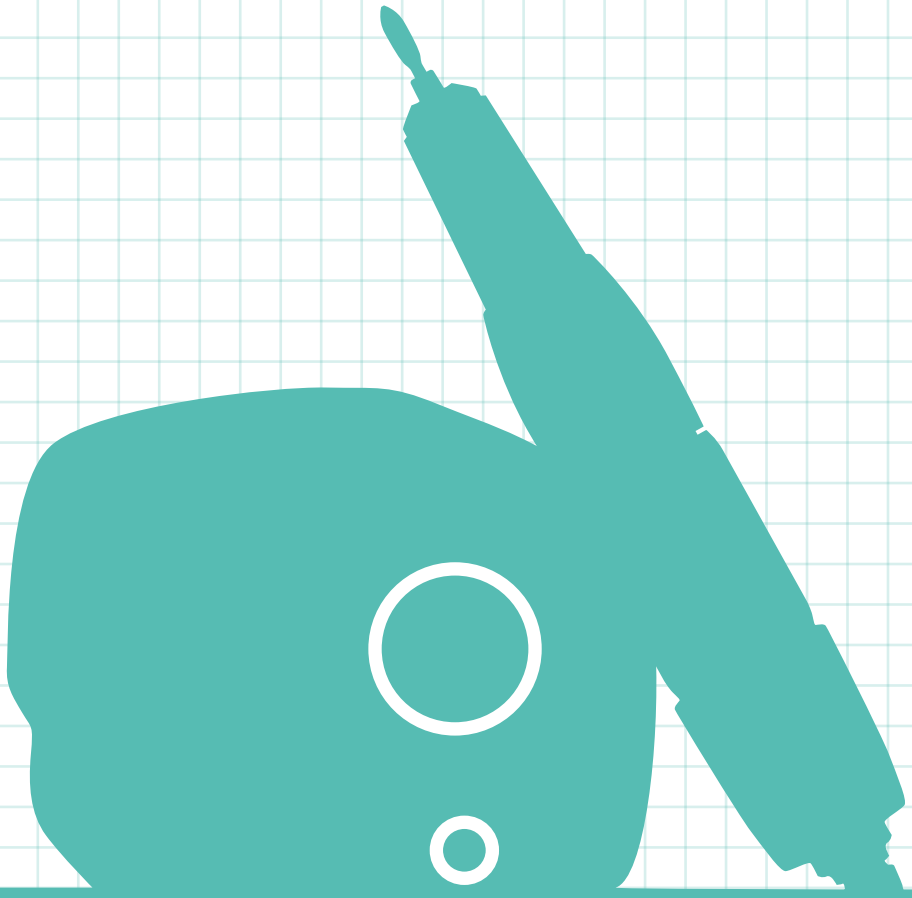
Made in KOREA

marathon

2019 / 2020



saeyang

Welcome to SAEYANG

Thank you for your interest and support for our products.

We, Saeyang Microtech, has continued to grow since its foundation in 1976 specialized in manufacturing micro-handpieces for laboratory and dental field with enjoying a good reputation from overseas more than 100 countries as well as Korea.

The most important thing is superior quality of our products and through this, we always do our best for customer satisfaction as our top priority. Also we focus on developing new products by advanced technical innovation in R&D center and launching at least more than two models in the market with ongoing investments for new facilities each year.

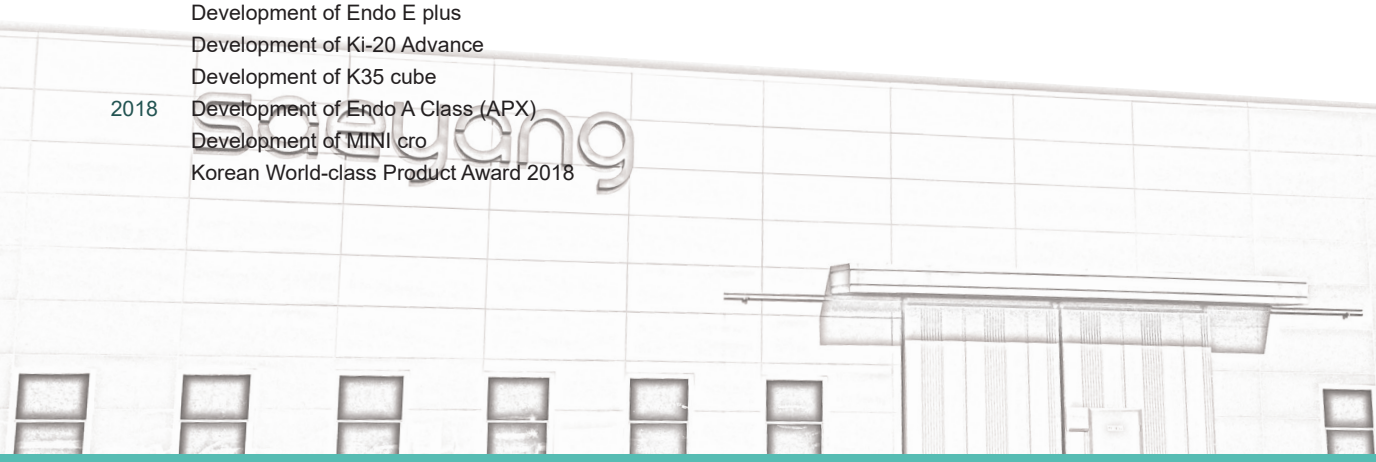
We exhibit at overseas famous exhibitions more than 18 times in the United States, Germany, France, Spain, UK, Italy, H.K and China. During those exhibitions, we have a good opportunity to establish mutual trust and confidence with our buyers over 100 countries.
Saeyang will always do our best to listen to any needs and requirements of the customer.

Thank you for your continued support.

President & CEO
Jung Pil Shin

SAEYANG History

1976 Company Established
1977 Registered manufacturing of medical equipment.
1987 Registered trading business
1989 Registered Korea medical equipment cooperative association
1991 Registered of designs for engine for dental laboratory
1998 Certified ISO 9001 from TUV (Germany)
1999 Certified CE Mark from TUV (Germany)
2000 Certified Venture enterprise for high technology
2001 Awarded official Superior Exporting Firm
2001 Awarded Leading Enterprise
2002 Certified CE Mark of New item “Escort”
2003 Registered manufacturing Brushless motor
2003 Certified CE Mark of “Marathon Multi 600” Brushless motor
2004 Established R&D center
2004 Certified CE Mark of New item “Marathon N7&N2”
2005 Certified CE Mark of New item “Marathon HANDY700 Series” Brush/Brushless motor
2005 Awarded official best Exporting Firm
2006 Moved into a new factory
2006 Certified PSE from TUV
2006 Opening Ceremony of a new factory as well as the 30th anniversary
2008 Certified ISO 9001 : 2000 from SGS (U.K)
Certified ISO 13485 : 2003 from SGS (U.K)
Certified Directive 93/42/EEC from SGS (U.K)
2010 Certified CE Mark of New item “Endo e class”
2011 Development of Endo a class
2012 Dental contra angle
2013 Developed Implant Motor
2013 Certified FDA (Endo Motor)
2014 60,000RPM Handpiece Developed
2014 20:1 Optic Handpiede Developed
2015 Certified FDA CFDA(Implant Motor)
2015 Awarded Grand Prize for 2015 Best Company in Daegu City
2016 Awarded for Exporting US$ 20 million
Awarded for Daegu Star Company
2017 Factory expansion
Development of Endo E plus
Development of Ki-20 Advance
Development of K35 cube
2018 Development of Endo A Class (APX)
Development of MINI cro
Korean World-class Product Award 2018



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B.L.D.C.

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Marathon Products Line-up

Laboratory Air turbine

mat-300W
Water

mat-300A
Air

Air turbine handpiece

Water Air

Brushless micromotor

SDE BM50S1 SDE BM40S1

Brush micromotor

E-Type Motor

SDE S40 SDE H38L SDE SM45C SDE SH37LN SDE SH37L(M45) SDE H37L1 SDE H35SP1 SDE H37LSP SDE H37SP SDE H200 SDE SH300S SDE MH20 SDE M33E SDE M33Es SDE M300Es

Brushless control box

Multi 600
(60,000 rpm)

Multi 600

Handy 700
(60,000 rpm)

Handy 700

Handy Eco

Brush control box

Multi 600
(Duo)

Handy 702

Eco 450

New N7

New N2

K38
(Standard / Clip type)

MINI cro
(Clip type)

K35

K35 cube

Escort Ⅱ pro

Escort Ⅲ

Marathon-4

M4 mini

M3 Champion

M3 Mighty

Air Turbine

mat-300w
marathon
bar
psi
MAT-H300W
MADE IN KOREA
NO. 19010001

Air Turbine Handpiece

mat-H300W

Air tutbine handpiece **(Water)**

- Dimensions : L124 x Ø17 (mm)
- Speed : 320,000 rpm
- Weight : 85.5g
- Air Pressure : 2.5 - 3.0 bar

mat-H300A

Air tutbine handpiece **(Air)**

- Dimensions : L131 x Ø17 (mm)
- Speed : 320,000 rpm
- Weight : 60g
- Air Pressure : 2.0 - 2.5 bar

mat-300W water

Features

- Compact size
- Speed control pedal
- Easy to control of water rate and air pressure
- Simple chuck-handle system
- Less noise and vibration

Specifications control box only

· Air pressure	: 2.5 - 3.0 bar
· Weight	: 1.7 kg
· Speed	: MAX 320,000 RPM
· Dimensions	: W234 x D99 x H190(mm)
· Contents	: Control unit, Handpiece, Foot control

mat-300A air

Features

· Compact size
· Speed control pedal
· Easy to control of air pressure
· Simple chuck-handle system
· Less noise and vibration

Specifications control box only

· Air pressure	: 2.0 - 2.5 bar
· Weight	: 1.15 kg
· Speed	: MAX 320,000 RPM
· Dimensions	: W100 x D103 x H182(mm)
· Contents	: Control unit, Handpiece, Foot control

memo

BLDC

Brushless Micromotors

SDE-BM50S1

- Dimensions : L160 x Ø27 (mm)
- Speed : 1,000 - 50,000 rpm
- Max. Torque : 7.8 Ncm
- Weight : 231g
- Cord length : 1.5m

SDE-BM40S1

- Dimensions : L160 x Ø27 (mm)
- Speed : 1,000 - 40,000 rpm
- Max. Torque : 8.5 Ncm
- Weight : 231g
- Cord length : 1.5m

Multi600 60K

Features

· Digital speed display window
· Less noise, less vibration
· Excellent durability
· Knee-control type
· Self-diagnosis function
· Auto-cruise function
· Variable speed control pedal (FS60N)

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 100W
· Speed	: MAX 60,000 RPM
· Weight	: 3.1 kg
· Dimensions	: W122 x D268 x H237(mm)
· Contents	: Control unit, Handpiece, Foot control, Handpiece stand

Multi600 50K

Features

- Digital speed display window
- Less noise, less vibration
- Excellent durability
- Knee-control type
- Self-diagnosis function
- Auto-cruise function
- Variable speed control pedal (FS60N)

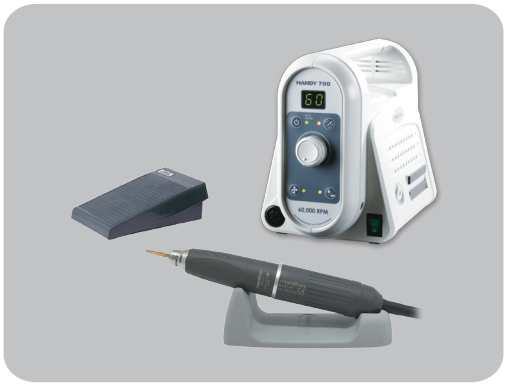
Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 100W
· Speed	: MAX 50,000 RPM
· Weight	: 3.1 kg
· Dimensions	: W122 x D268 x H237(mm)
· Contents	: Control unit, Handpiece, Foot control, Handpiece stand

Handy700 60K

Features

- Digital speed display window
- Maximum speed set mode possible
- Less noise, less vibration
- Excellent durability
- Self-diagnosis function
- Auto-cruise function
- Variable speed control pedal (FS60N)
- Handpiece cradle attached
- Magnetic bur holder attached
- Easy-carry with handle



Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 100W
· Speed	: MAX 60,000 RPM
· Weight	: 2.7 kg
· Dimensions	: W137 x D232 x H180(mm)
· Contents	: Control unit, Handpiece, Foot control, Handpiece stand

Handy700 50K

Features

- Digital speed display window
- Maximum speed set mode possible
- Less noise, less vibration
- Excellent durability
- Self-diagnosis function
- Auto-cruise function
- Variable speed control pedal (FS60N)
- Handpiece cradle attached
- Magnetic bur holder attached
- Easy-carry with handle

Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- Electric power : 100W
- Speed : MAX 50,000 RPM
- Weight : 2.7 kg
- Dimensions : W137 x D232 x H180(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

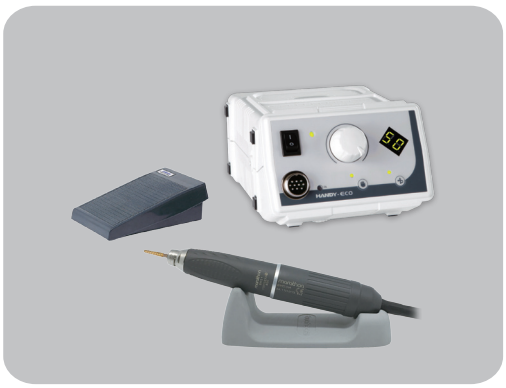
Handy Eco

Features

· Automatic safety overload protection system
· Digital speed display window
· Variable speed control pedal (FS60N)
· Can be laid on the side

▲ Digital

▲ Laid on the side
for narrow space



Specifications control box only

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

D C

MIN
MAX
H/F
F/E

Brush Micromotors

SDE-S40

- Dimensions : L150 x Ø30 (mm)
- Speed : 0 - 40,000 rpm
- Max. Torque : 5.0 Ncm
- Weight : 220g
- Cord length : 1.5m

SDE-H38L

- Dimensions : L151 x Ø30 (mm)
- Speed : 0 - 35,000 rpm
- Max. Torque : 3.5 Ncm
- Weight : 200g
- Cord length : 1.5m

SDE-SM45C

- Dimensions : L155 x Ø30 (mm)
- Speed : 0 - 40,000 rpm
- Max. Torque : 4.5 Ncm
- Weight : 230g
- Cord length : 1.5m

SDE-SH37LN

- Dimensions : L152 x Ø28(mm)
- Speed : 0 - 40,000 rpm
- Max. Torque : 4.5 Ncm
- Weight : 201g
- Cord length : 1.5m

SDE-SH37L(M45)

- Dimensions : L154 x Ø30(mm)
- Speed : 0 - 40,000 rpm
- Max. Torque : 4.5 Ncm
- Weight : 202g
- Cord length : 1.5m

SDE-H37L1

- Dimensions : L155 x Ø30(mm)
- Speed : 0 - 35,000 rpm
- Max. Torque : 3.2 Ncm
- Weight : 201g
- Cord length : 1.5m

SDE-H35SP1

- Dimensions : L152 x Ø28(mm)
- Speed : 0 - 35,000 rpm
- Max. Torque : 3.2 Ncm
- Weight : 201g
- Cord length : 1.5m

SDE-H37LSP

- Dimensions : L154 x Ø30 (mm)
- Speed : 0 - 35,000 rpm
- Max. Torque : 3.2 Ncm
- Weight : 202g
- Cord length : 1.5m

SDE-H37SP for surveyor

- Dimensions : L154 x Ø30 (mm)
- Speed : 0 - 35,000 rpm
- Max. Torque : 3.2 Ncm
- Weight : 202g
- Cord length : 1.5m

SDE-H200

- Dimensions : L129 x Ø22 (mm)
- Speed : 0 - 30,000 rpm
- Max. Torque : 1.6 Ncm
- Weight : 143g
- Cord length : 1.5m

SDE-SH300S

- Dimensions : L135 x Ø23 (mm)
- Speed : 0 - 30,000 rpm
- Max. Torque : 1.6 Ncm
- Weight : 135g
- Cord length : 1.5m

SDE-MH20(30K)

- Dimensions : L120 x Ø20 (mm)
- Speed : 0 - 30,000 rpm
- Max. Torque : 1.3 Ncm
- Weight : 121g
- Cord length : 1.5m

E-Type Motors

SDE-M33E

- Dimensions : L109 x Ø25 (mm)
- Speed : 0 - 35,000 rpm
- Max. Torque : 2.7 Ncm
- Weight : 137g
- Cord length : 1.5m

SDE-M33Es

- Dimensions : L99 x Ø25 (mm)
- Speed : 0 - 35,000 rpm
- Max. Torque : 3.2 Ncm
- Weight : 109g
- Cord length : 1.5m

SDE-M300Es

- Dimensions : L97 x Ø23 (mm)
- Speed : 0 - 30,000 rpm
- Max. Torque : 2.4 Ncm
- Weight : 86g
- Cord length : 1.5m

Multi 600 Duo

Features

· Brushless & brush micromotor / Dual control system
· Digital speed display window
· Less noise, less vibration
· Excellent durability
· Self-diagnosis function
· Auto-cruise function
· Variable speed control pedal (FS-60N)

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 50W
· Speed	: MAX 50,000 RPM
· Weight	: 3.1 kg
· Dimensions	: W122 x D268 x H237(mm)
· Contents	: Control unit, Handpiece, Foot control, Handpiece stand

Handy 702

Features

- Digital speed display window
- Less noise, less vibration
- Excellent durability
- Self-diagnosis function
- Auto-cruise function
- Handpiece cradle attached
- Magnetic bur holder attached
- Easy-carry with handle
- Variable speed control pedal (FS-60N)

▲ Collet chuck change

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 100W
· Speed	: MAX 40,000 RPM
· Weight	: 2.7 kg
· Dimensions	: W137 x D232 x H180(mm)
· Contents	: Control unit, Handpiece, Foot control, Handpiece stand

Eco 450

Features

· Automatic safety overload protection system
· Less noise, less vibration
· Can be laid on the side
· Variable speed control pedal (FS-60N)

▲ Laid on the side
for narrow space

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 50W
· 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 (SFP-27)
· Variable speed control pedal (FS-60)

▲ **Dust - proof cover**

Specifications **control box only**

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 50W
· 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 (SFP-27)
· Variable speed control pedal (FS-60)

▲ Dust - proof cover

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 40W
· Speed	: MAX 35,000 RPM
· Weight	: 1.2 kg
· Dimensions	: W115 x D147 x H96(mm)
· Contents	: Control unit, Handpiece, Foot control, Handpiece stand

K38

white pink blue black

Features

- Standard type / Clip type
- 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 (SFP-27)

2019 NEW VERSION

What's different

STANDARD VERSION

2019 NEW VERSION

▲ case color match

Specifications control box only

- Power supply : DC 12V
- Electric power : 24W
- Speed : MAX 30,000 RPM
- Weight : 277 g
- Dimensions : W67 x D128 x H30(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand, Holder (optional), Cradle(optional)

MINI cro

white pink hot pink blue black

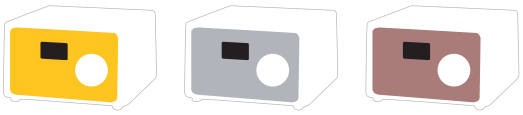
Features

- Clip type
- LI-ION battery (rechargeable)
- Speed display LED [white >> sky blue >> blue >> pink]
- Overload protection
- FWD-REV
- Pause button
- Battery remaining indicator

Specifications control box only

- Power supply : DC 12V
- Electric power : 24W
- Speed : MAX 30,000 RPM
- Weight : 225 g
- Dimensions : W65 x D147 x H25(mm)
- Contents : Control unit, Handpiece, Handpiece stand Holder (optional), Cradle(optional)

K35

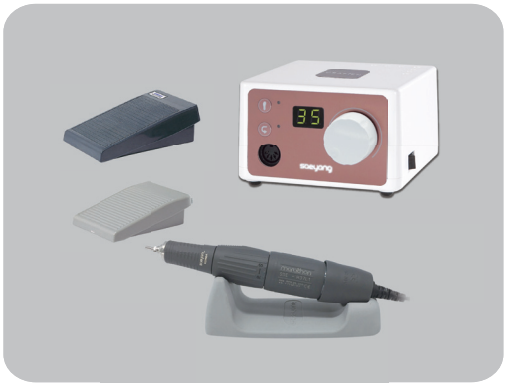


yellow silver rose gold

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 (FS-60)
- On/Off foot switch (SFP-27)

▲ Digital



Specifications control box only

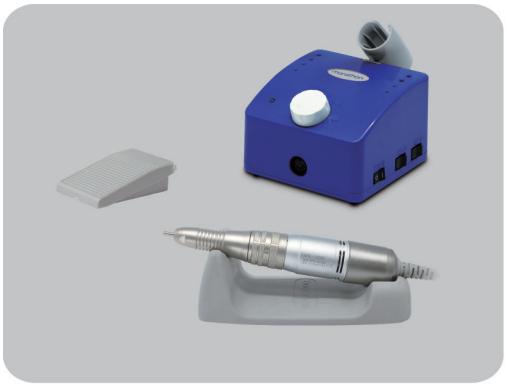
- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- Electric power : 40W
- Speed : MAX 35,000 RPM
- Weight : 1.13 kg
- Dimensions : W120 x D120 x H75(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

K35 *Cube*

white pink hot pink blue black

Features

- Non - stage speed control volume dialing system
- Built-in handpiece cradle and bit stand
- Forward&reverse direction switch
- On/Off foot switch (SFP-27)



Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- Electric power : 45W
- Speed : MAX 35,000 RPM
- Weight : 1.3 kg
- Dimensions : W120 x D120 x H85(mm)
- Contents : Control unit, Handpiece, Foot control, Handpiece stand

Escort Ⅱ pro

white pink red blue black

Features

- Powerful performance with low noise & vibration
- Built-in handpiece cradle and bit stand
- Automatic safety overload protection system
- Forward&reverse direction switch
- Variable speed control pedal (FS-60N)
- On/Off foot switch (SFP-27)

STANDARD VERSION | 2019 NEW VERSION

2019 NEW VERSION

What's different

▶ Automatic switching 110/220 volts			
▶ Air holes on the controller is extended			
▶ Power switch	FRONT	▶▶	BACK
▶ Forward/Reverse switch	FRONT	▶▶	SIDE
▶ Hand/Foot switch	BACK	▶▶	SIDE
▶ Handpiece holder	1	▶▶	2
▶ Fuse	OUTSIDE	▶▶	INSIDE
▶ Variable speed control pedal	SFP-73 6pin	▶▶	FS-60N 5pin
▶ On/Off foot switch	SFP-22 6pin	▶▶	SFP-27

Specifications control box only

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- Electric power : 45W
- Speed : MAX 35,000 RPM
- Weight : 1.25 kg
- Dimensions : W134 x D154 x H82.4(mm)
- Contents : Control unit, Handpiece, Foot control, Handpeice stand

Escort Ⅲ

Features

· Powerful and excellent performance with low noise & vibration
· Forward&reverse direction switch
· On/Off foot switch (SFP-27)

▲ Collet chuck change

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 40W
· 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

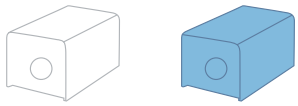
· Powerful and excellent performance with low noise & vibration
· 4 stage speed control
· Forward&reverse direction switch
· On/Off foot switch (SFP-27)

▲ Handcap open (H35SP1)

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 40W
· 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
- Forward&reverse direction switch
- 4 stage speed control
- Compact size
- On/Off foot switch (SFP-27)

▲ **Collet chuck change**

Specifications **control box only**

- Power supply : AC100 - 120V or 200 - 240V 50/60 Hz
- Electric power : 40W
- 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

white blue pink black

Features

· Built-in handpiece cradle and bit stand
· Forward&reverse direction switch
· On/Off foot switch (SFP-27)

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 45W
· 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

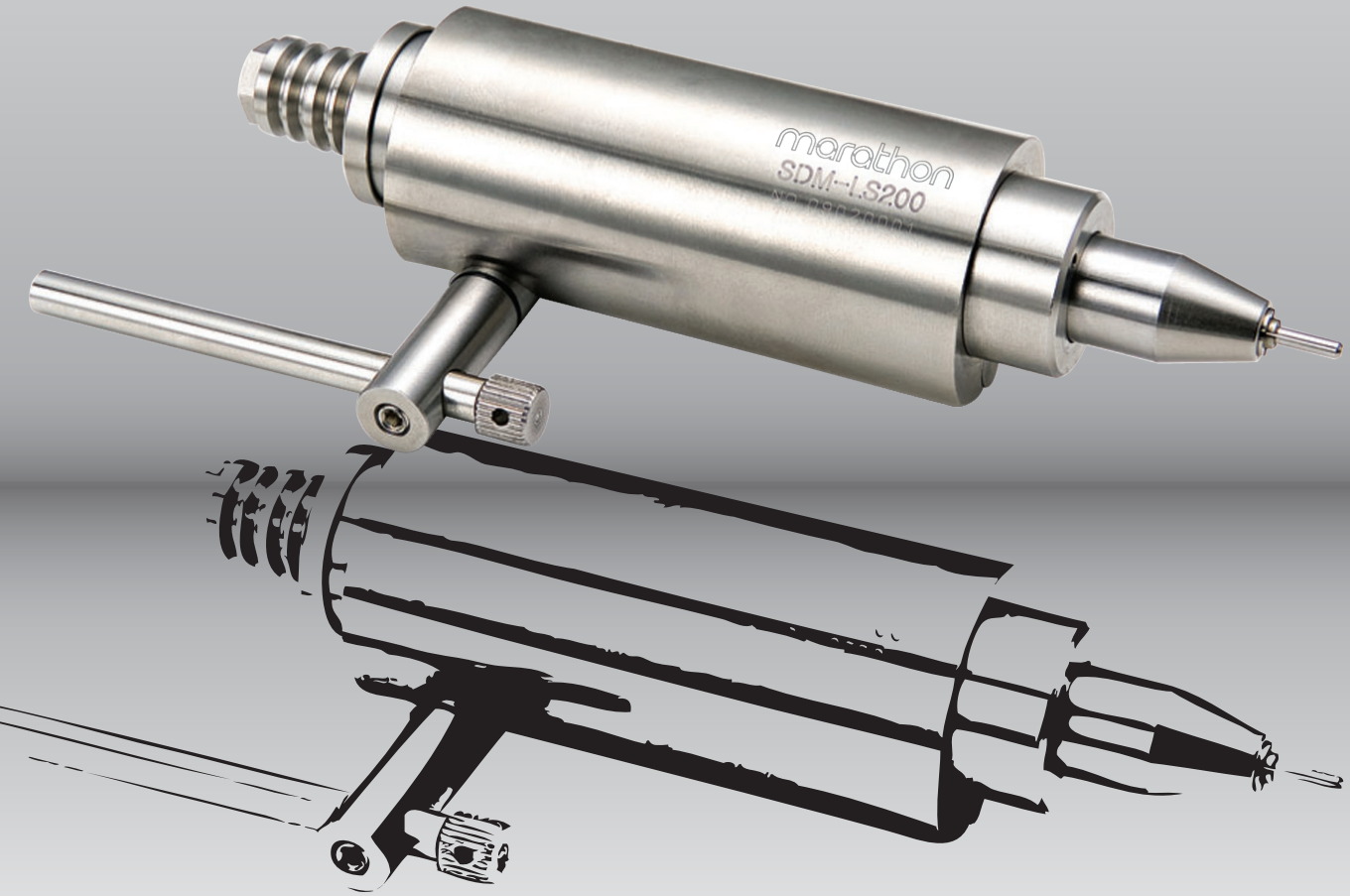
Features

· Built-in handpiece cradle and bit stand
· Forward&reverse direction switch
· On/Off foot switch (SFP-27)

Specifications control box only

· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 45W
· Speed	: MAX 35,000 RPM
· Weight	: 1.26 kg
· Dimensions	: W118 x D156 x H89(mm)
· Contents	: Control unit, Handpiece, Foot control, Handpiece stand

memo


marathon
SDM--LS200

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

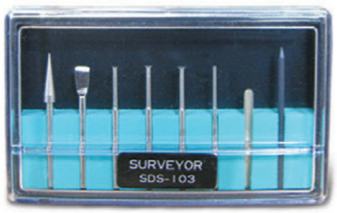
center grinder

- **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 & effecive design

Marathon-103

surveyor

◀ H37SP



▲ 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

Spare parts

Collet sleeve

Collet chuck Standard brushless

Collet chuck brush

Spindle chuck

Collet chuck Air turbine

Air turbine Cartridge Air

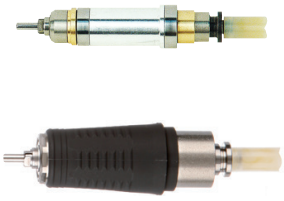
Air turbine Cartridge Water

Spindle assy brushless

SDM-BM50S1 / SDM-BM40S1

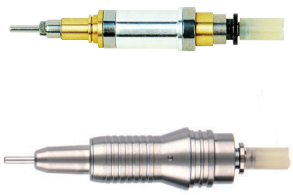
Spindle assy brush

SDM-H37L1 / SDM-H37LN

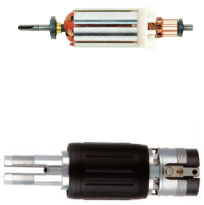


Spindle assy brush

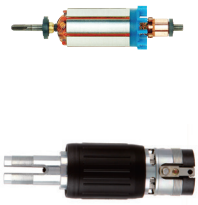
SDM-H35SP1



Armature
SDM-SH37LN
(Bearing Ø4)



Armature
SDM-H37L1
SDM-H35SP1
(Bearing Ø3)



Armature
SDM-M33Es

Armature
SDM-M33E

BLDC Motor brushless
SDM-BM50S1

Carbon brush brush

Ball Bearing brushless

814 1360

Ball Bearing brush

1260 1060 830

1480 1040 1030

Ball Bearing Air turbine

Variable Speed Foot Pedal

FS-60 / FS-60N / SFP-73

On / Off Foot Switch

SFP-27 / SFP-22 / SFP-20N

Air turbine Foot Switch

MAT-F300

Handpiece Stand

Cord brushless

Cord brush

Straight / Curling

Charger Cord

New K38 / MINI cro

Bur Inserting Tool Air turbine

MAT-H300A / MAT-H300W

Handpiece Tube Air turbine

(A) MAT-300A

(B) MAT-300W

Chuck Joint Wrench brush

Chuck Wrench brush brushless

Spanner Air turbine

(A) (B)

(A) Ø3.5 (B) Ø9.5

Spanner

SM110

(A) (B)

(A) Ø5 (B) Ø9

Maintenance & Repair tool box

brushless

brush

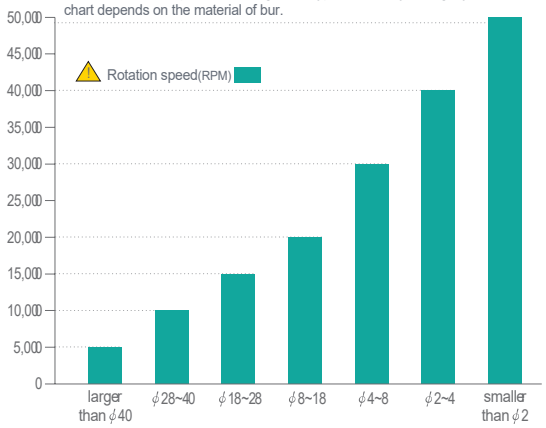
User guide
(For safety & efficiency)

✻ 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

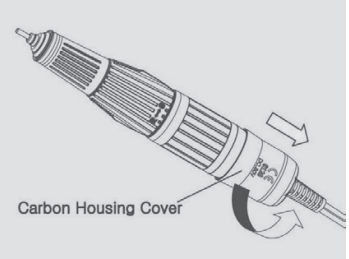
Avoid exposing the product to high temperature and humidity. Daily inspection & maintenance are required.

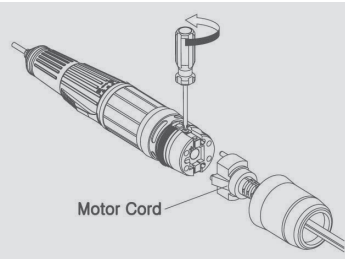
12

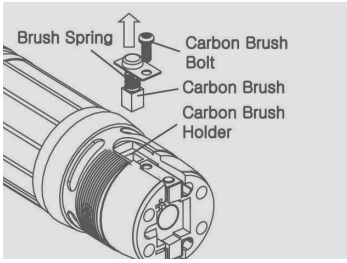
Make sure to turn off the product after use. Leaving the product turned on is very dangerous and may cause overheating.

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.



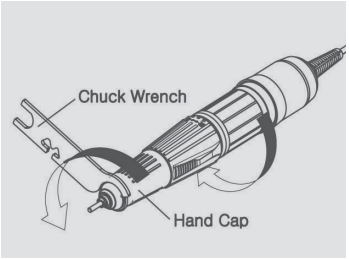


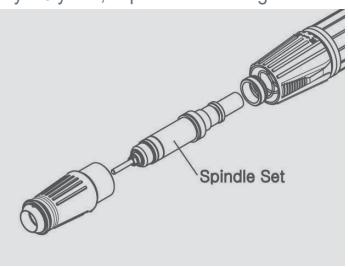


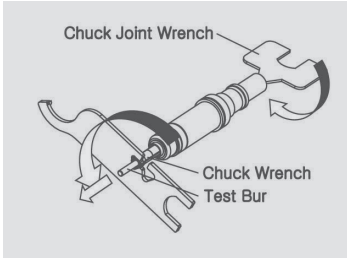
Replacing the Collect Chuck

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

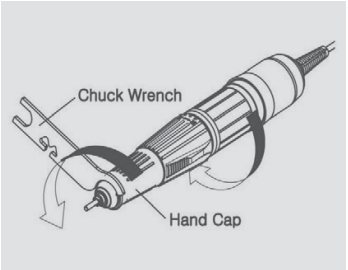


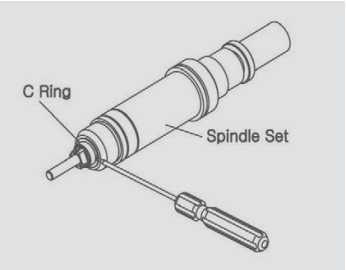


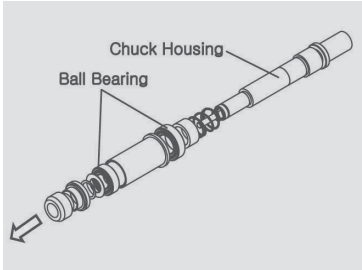


Replacing Ball Bearings

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.

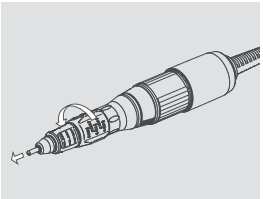


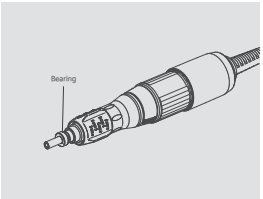


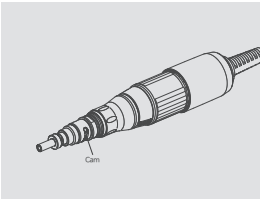


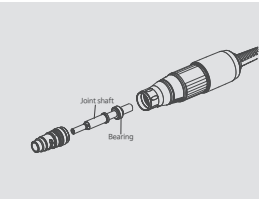
Replacing Ball Bearings(SH300S)

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.









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