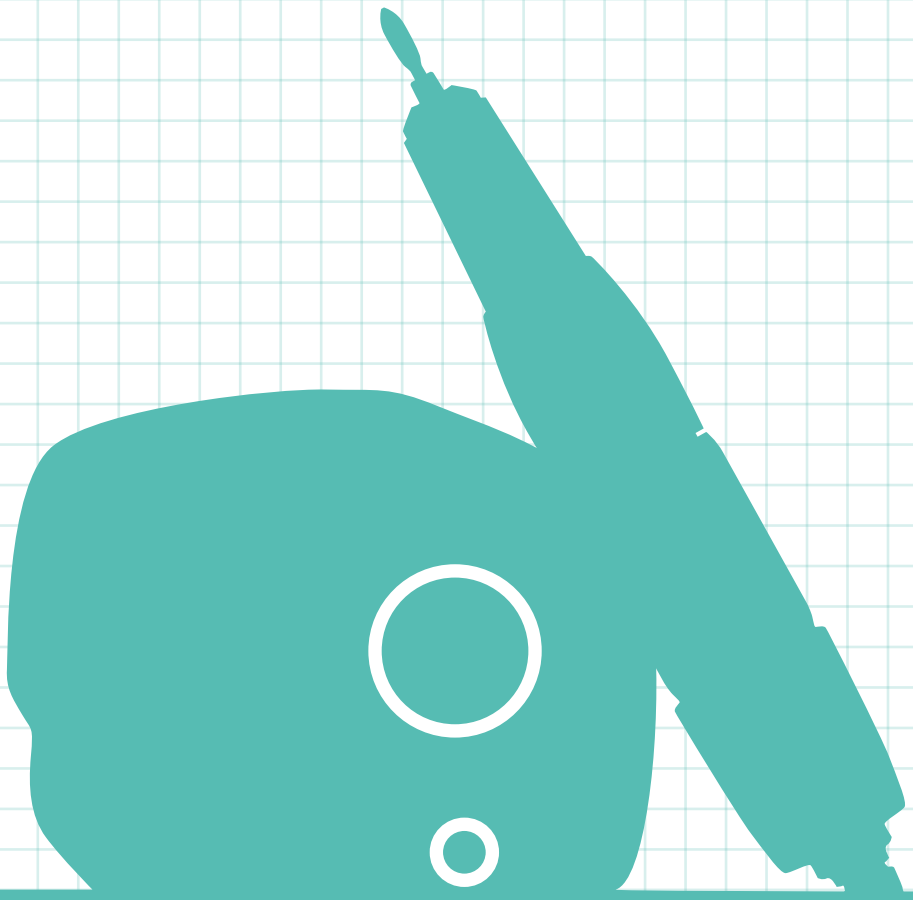
Made in KOREA

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.

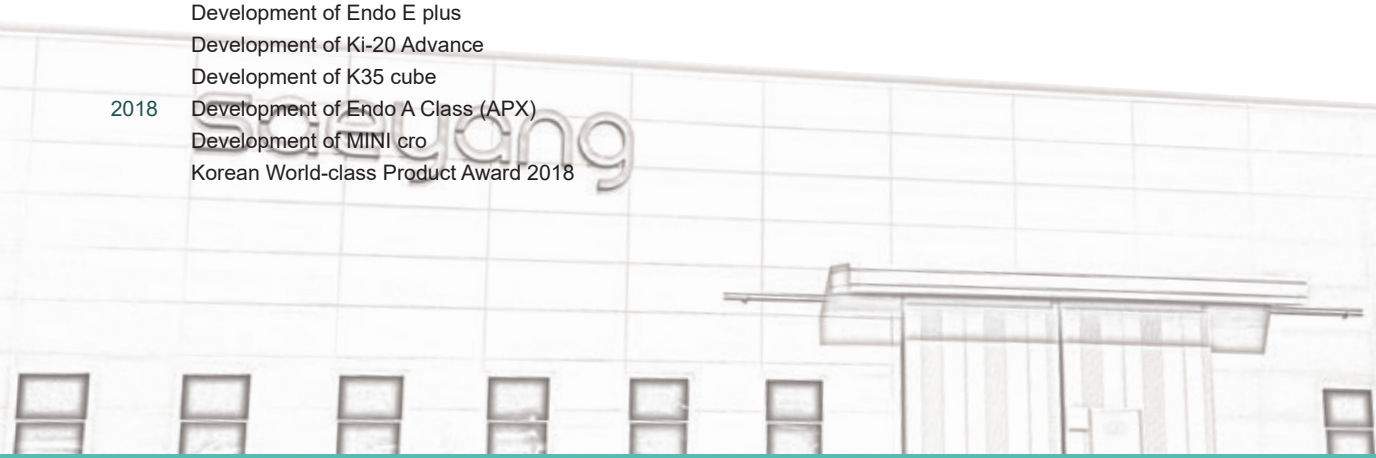
Thank you for your continued support.

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



Contents

Air Turbine

Air turbine Handpiece	p.8
mat-300W	p.9
mat-300A	p.10

B.L.D.C.

Brushless micromotors	p.14
Multi 600 60k	p.15
Multi 600 50k	p.16
Handy 700 60k	p.17
Handy 700 50k	p.18
Handy Eco	p.19

D.C.

Brush micromotors	p.22
Multi 600 Duo	p.26
Handy 702	p.27
Eco 450	p.28
New N7	p.29
New N2	p.30
K38 (Standard / Clip type)	p.31
MINI cro (Clip type)	p.32
K35	p.33
K35 cube	p.34
Escort Ⅱ pro	p.35
Escort Ⅲ	p.36
Marathon-4	p.37
M4 mini	p.38
M3 Champion	p.39
M3 Mighty	p.40

Equipments

SDE-SM110, SDE-LS200	p.44
Marathon-20, Marathon-103	p.45
Marathon-37	p.46

Spare parts

Spare parts	p.50

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



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

E-Type Motor



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
MAT-H300W
MADE IN KOREA

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

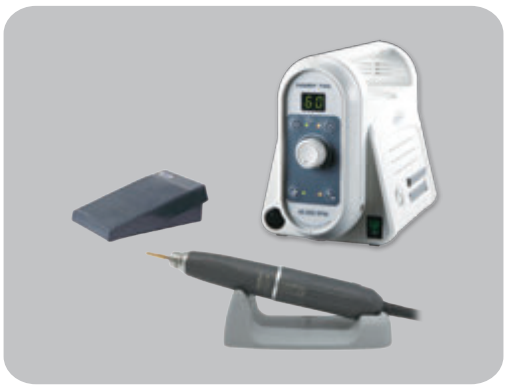
· Power supply	: AC100 - 120V or 200 - 240V 50/60 Hz
· Electric power	: 100W
· Speed	: MAX 50,000 RPM
· Weight	: 3.1 kg
· Dimensions	: W122 x D268 x H237(mm)
· Contents	: Control unit, Handpiece, Foot control, Handpiece stand

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



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

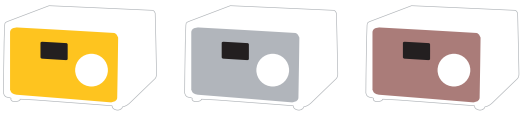




Specifications control box only

· 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



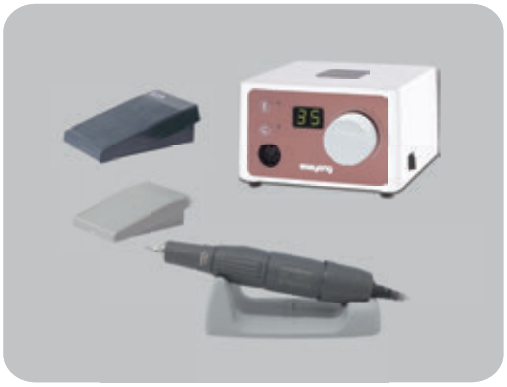
Features

· 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*

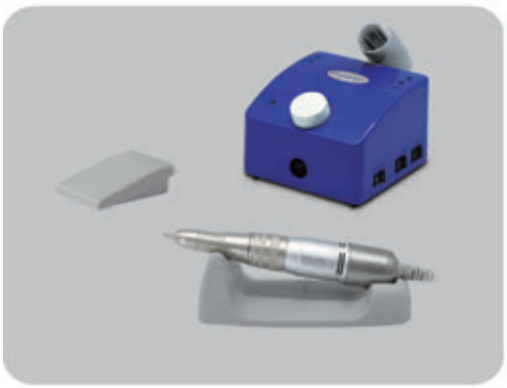


white pink hot pink blue black

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 ▶▶ FS-60N
- ▶ On/Off foot switch SFP-22 ▶▶ 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)





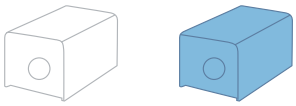
▲ Handcap open (H35SP1)



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



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)



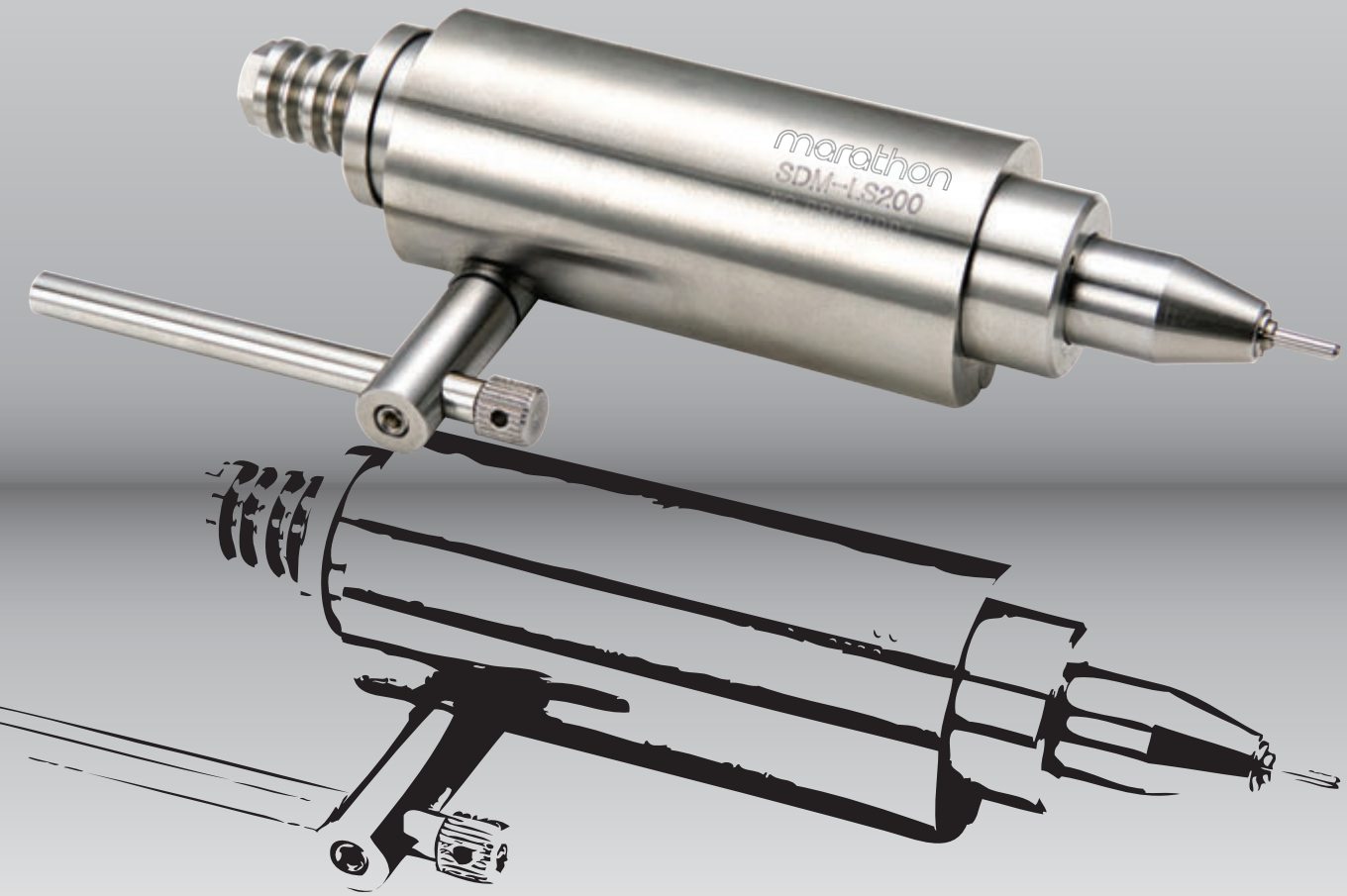


Specifications control box only

· 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 brushless Standard



Collet chuck brush



Spindle chuck



Collet chuck Air turbine



Air turbine Air Cartridge



Air turbine Water Cartridge



Spindle assy brushless

SDM-BM50S1 / SDM-BM40S1



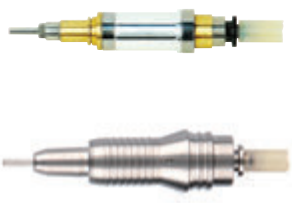
Spindle assy brush

SDM-H37L1 / SDM-H37LN



Spindle assy brush

SDM-H35SP1



Armature
SDM-SH37LN
(Bearing Ø4)



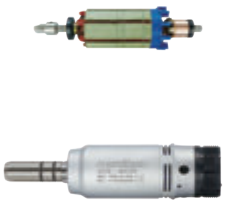
Armature
SDM-H37L1
SDM-H35SP1
(Bearing Ø3)



Armature
SDM-M33Es



Armature
SDM-M33E



BLDC Motor brushless
SDM-BM50S1



Carbon brush brush



Ball Bearing brushless



Ball Bearing brush

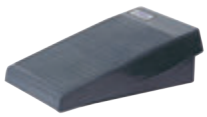


Ball Bearing Air turbine



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



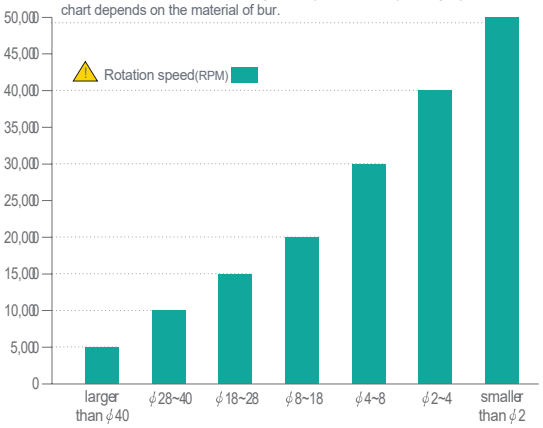
User guide
(For safety & efficiency)

✻ 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.

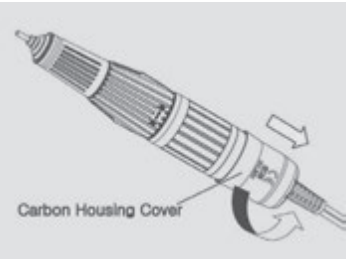
10 
Do not customize the product.

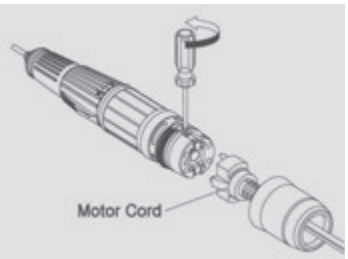
11 
Avoid exposing the product to high temperature and humidity. Daily inspection & maintenance are required.

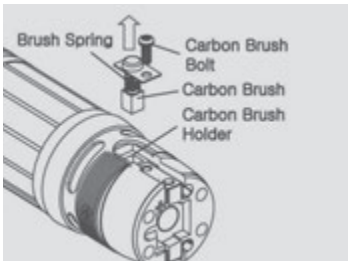
12 
Make sure to turn off the product after use.
Leaving the product turned on is very dangerous and may cause overheating.

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.



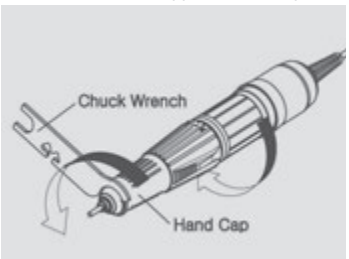


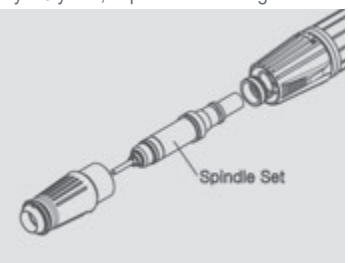


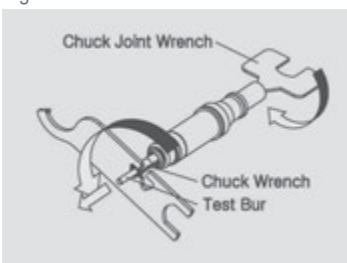
Replacing the Collect Chuck

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

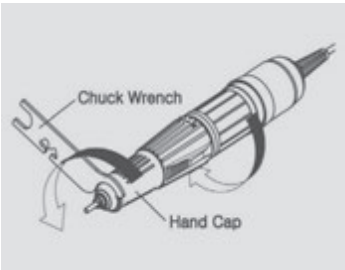


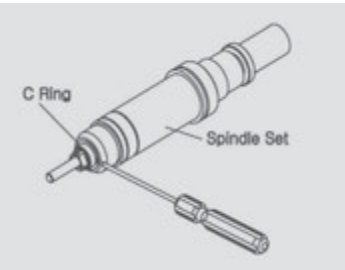


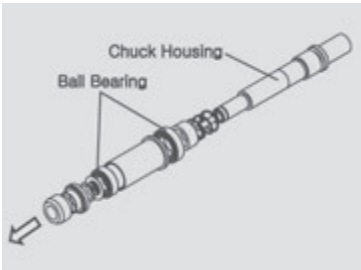


Replacing Ball Bearings

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.

