

# Emax **EVO**lution



## Maximized Evolution

Evolutionary Five Identities of New Emax EVOlution

*"Tough Torque Brushless Motor"*

*"Flashing Live Load Indicator"*

*"Auto-Cruise Control"*

*"FIXPEED Function"*

and

*"STYLE"*



## Advanced High Performance **Control Unit**

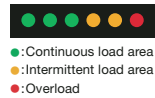
### Advanced Control Function

Upgraded Digital Display.  
**EVOLUTION** on Speed Control Volume with Flash Load Indicator.



Motor speed digital display

Load Meter



### Diversity for work efficiency

2 Motors of A and B can be connected, and select the suited motor for work situation.

\*Simultaneous motor operation is not allowable



### Memory Speed Function FiXpeed®

An exclusive new feature of the Emax EVOLUTION, the FiXpeed® system allows everyone easily to fix speed of motor A and B independently prior to operate. For example motor A can be set to maintain the speed set by the FiXpeed® system while motor B has variable control using a foot controller. This function brings for unprecedented workability.

### Advanced User Friendly Design

New Industrial Design.  
**EVOLUTION** from Tower-type solid E-Max to User-oriented Identity. Design meets Performance.



### Auto Cruise Function

The control unit is equipped with an Auto Cruise Function. While using foot control for work, anyone could fix the motor at any speed by the embedded motor switch. Once speed is set, foot pedal control is not required. This function eliminates foot fatigue during operation.

#### Forward / Reverse Select Switch

Forward/Reverse rotation can be selected.

#### ø12mm Speed Control Volume

Easy to operate by one finger

#### Memory Speed Function FiXpeed®

#### Motor B ON/OFF Function

#### Motor A ON/OFF Function

### Emax EVOLUTION Control Unit

Code No.	Model	Specifications
<b>8224</b> (120V)	NE249 120	<ul style="list-style-type: none"> <li>Weight : 2.3 kg</li> <li>Power Source : AC120/230V, 50-60Hz</li> <li>Dimensions : W130 x D254 x H97 mm</li> </ul>
<b>8227</b> (230V)	NE249 230	

Accessories : Handpiece Holder : 1 pc., Handpiece Stand : 1 pc.  
Power Supply Cord : 1 pc.

# Handpiece System

## NAKANISHI Smart Switch

The switch provides a click sensation. A confirmation tone is reacted by the control unit when the switch is operated. The motor type is distinguishable by the switch color.



## One Touch Tool Changing

- Ring Type (IR-310)  
Easy twist open/close chuck

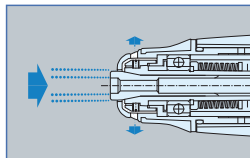


## Various Collet Chuck Size

Various sizes ranging from ultra-small diameter (0.3 mm) are available for each attachment. Furthermore, collet replacement can be easily performed without spanner.

## Special Dust Protection Mechanism (patented)

The chuck section of Emax EVOLution has a special built-in dust protection mechanism that prevents entry of foreign materials such as chips, and provides superior durability as well.



## 2 Types of Motors

Provides choice of various applications.

- Standard Type Motor 1,000~40,000 min<sup>-1</sup> (ENK-410S) Blue
- Torque Type Motor 1,000~25,000 min<sup>-1</sup> (ENK-250T) Green

**\*Exclusive use for Emax EVOLution**

Emax EVOLution and Electer E-max have different motor cord pin configurations.



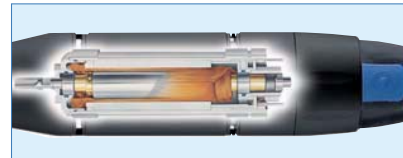
Emax EVOLution



Electer E-max

## Excellent Durability

- High performance brushless motor eliminates the need of changing carbon brushes.
- RPM variation is minimal even when load changes. Allowing difficult and stable cutting in stress free motion. Suitable performance for finish grinding.
- Provides superior quietness and smoothness from low speed to high speed.

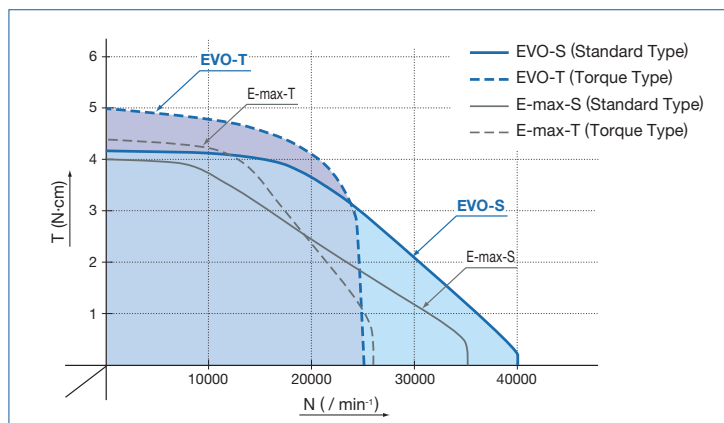


## 17 Type of Attachments for All Type of Applications

Capable of infinite applications with 14 different handpieces and 3 types of intermediate attachments.

*\*Interchangeable with attachments from the E-max and ROTUS system.*

## Emax EVOLution vs E-max Torque Characteristic



## Emax EVOLution STANDARD SET



Capable for wide range of applications. An excellent total balance in motor performance and dimension against required rotational speed.

1,000~40,000 min<sup>-1</sup>

\* New Ring Type IR-310 is the standard attachment for Emax EVOLution standard set EV410-120, EV410-230.

Code No.	8233 (120V) 8225 (230V)	Model	EV410-120 (120V) EV410-230 (230V)
		Attachment	IR-310
		Motor	ENK-410S
Standard Equipment	Micro Grinder (IR-310+ENK-410S) : 1 pc. Collet Chuck ø3.0 mm (CHH-3.0), ø2.35 mm (CHH-2.35) : 1 pc. each Control Unit (NE249) : 1 pc. Handpiece Holder : 1 pc. Handpiece Stand : 1 pc. Power Supply Cord : 1 pc. Spanner (7 x 5.1) : 1 pc. Pin Spanner (K-233) : 2 pc. L Shaped Spanner : 1 pc.		

## Emax EVOLution TORQUE SET



For heavy duty and larger tools, Torque type promises to extend operation ranges.

1,000~25,000 min<sup>-1</sup>

\* New Ring Type IR-310 is the standard attachment for Emax EVOLution torque set EV250-120, EV250-230.

Code No.	8234 (120V) 8226 (230V)	Model	EV250-120 (120V) EV250-230 (230V)
		Attachment	IR-310
		Motor	ENK-250T
Standard Equipment	Micro Grinder (IR-310+ENK-250T) : 1 pc. Collet Chuck ø3.0 mm (CHH-3.0), ø2.35 mm (CHH-2.35) : 1 pc. each Control Unit (NE249) : 1 pc. Handpiece Holder : 1 pc. Handpiece Stand : 1 pc. Power Supply Cord : 1 pc. Spanner (7 x 5.1) : 1 pc. Pin Spanner (K-233) : 1 pc. L Shaped Spanner : 1 pc.		

Code No.	Model
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## System Chart

### Attachment



Ring Type

**1147** IR-310

40,000 min<sup>-1</sup> Max. (\*1) 40,000 min<sup>-1</sup> Max. (\*2)



Lever Type

**1005** IH-300

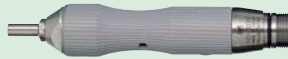
40,000 min<sup>-1</sup> Max. (\*1) 40,000 min<sup>-1</sup> Max. (\*2)



Straight Type

**2811** IG-400

40,000 min<sup>-1</sup> Max. (\*1) 40,000 min<sup>-1</sup> Max. (\*2)



6 mm Torque Type (\*3)

**1016** HG-200

30,000 min<sup>-1</sup> Max. (\*1) 27,000 min<sup>-1</sup> Max. (\*2)



Long Type

**1017** BMH-300

35,000 min<sup>-1</sup> Max. (\*1) 35,000 min<sup>-1</sup> Max. (\*2)



90° Mini Angle Type

**1012** MFC-300S

15,000 min<sup>-1</sup> Max. (\*1) 15,000 min<sup>-1</sup> Max. (\*2)



90° Mini Angle Type (Very Small Head)

**1013** MFC-300M

15,000 min<sup>-1</sup> Max. (\*1) 15,000 min<sup>-1</sup> Max. (\*2)



90° Angle Type

**1006** IC-300

35,000 min<sup>-1</sup> Max. (\*1) 20,000 min<sup>-1</sup> Max. (\*2)



45° Angle Type

**1014** KC-300

35,000 min<sup>-1</sup> Max. (\*1) 20,000 min<sup>-1</sup> Max. (\*2)



LUSTER  
(Reciprocating motion)

**1302** LS-100

30,000 min<sup>-1</sup> Max. (\*1) 30,000 min<sup>-1</sup> Max. (\*2)



MINI-LUSTER (Reciprocating motion)

**1307** ML-8

35,000 min<sup>-1</sup> Max. (\*1) 30,000 min<sup>-1</sup> Max. (\*2)



SWING-LUSTER (Right to left motion)

**1380** SLS-16

35,000 min<sup>-1</sup> Max. (\*1) 24,000 min<sup>-1</sup> Max. (\*2)



Hammer Action Type

**8060** HA-500

20,000 min<sup>-1</sup> Max. (\*1) 16,000 min<sup>-1</sup> Max. (\*2)



FINE BELT SANDER

**1146** KBS-101

35,000 min<sup>-1</sup> Max. (\*1) 35,000 min<sup>-1</sup> Max. (\*2)

### Speed Reducer·Extension Joint



Extension Joint

**1015** CN-01

35,000 min<sup>-1</sup> Max. (\*1) 35,000 min<sup>-1</sup> Max. (\*2)



1/4 Speed Reducer

**1009** RG-01

30,000 min<sup>-1</sup> Max. (\*1) 30,000 min<sup>-1</sup> Max. (\*2)



1/15 Speed Reducer

**1010** RG-02

30,000 min<sup>-1</sup> Max. (\*1) 30,000 min<sup>-1</sup> Max. (\*2)

May be connected between the motor and the attachment when required increased torque.

### Motor

#### Exclusive use for Emax EVOLution



- Standard Type Motor with Cord  
1,000~40,000 min<sup>-1</sup>

**8086** ENK-410S



- Torque Type Motor with Cord  
1,000~25,000 min<sup>-1</sup>

**8087** ENK-250T

### Control Unit



Emax EVOLution Control Unit

**8224** (120V) NE249 120

**8227** (230V) NE249 230



LUSTER  
(Reciprocating motion)  
Built-in Motor

**1483** NLS-110

30,000 min<sup>-1</sup> Max. (\*1) 30,000 min<sup>-1</sup> Max. (\*2)

\* Can be used for Emax series attachments, reducers, and extension joint

\* When using Emax EVOLution, be careful for Maximum Allowable Speed.

\* Never connect to Emax Series motor NK-351, NK-261 and NK-151.

\* 3 : Use 6mm torque Type HG-200 to connect ENK-250T

#### Exclusive use for Emax EVOLution

\*Maximum Allowable Speed, continuous use may change depending on the material being cut and other application variables.

\*1 : Maximum Allowable Speed, intermittent use.  
\*2 : Maximum Allowable Speed, continuous use.

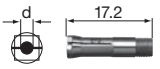
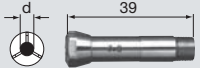
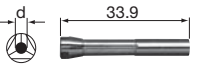
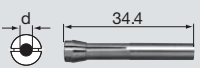
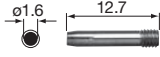
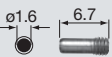
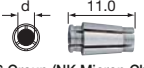
## Emax EVOLUTION Attachments

Product	Description	Specifications	Model	Code No.
	Emax EVOLUTION Control Unit	<ul style="list-style-type: none"> <li>Weight : 2.3 kg</li> <li>Power Source : AC 120/230V, 50-60Hz</li> <li>Dimensions : W130 x D254 x H97 mm</li> </ul>	NE249 120	8224 (120V)
			NE249 230	8227 (230V)
 Exclusive use for Emax EVOLUTION	Standard Type Motor with Cord	<ul style="list-style-type: none"> <li>Weight : 90 g (w/o Cord)</li> <li>Max. Torque 4.3 cN·m</li> <li>with Straight Cord 1.5m</li> <li>Max. Power : 73W</li> <li>Speed : 1,000~40,000 min<sup>-1</sup></li> <li>Accessory : Pin Spanner (K-233) 1 pc.</li> </ul>	ENK-410S	8086
 Exclusive use for Emax EVOLUTION	Torque Type Motor with Cord	<ul style="list-style-type: none"> <li>Weight : 147 g (w/o Cord)</li> <li>Max. Torque 4.8 cN·m</li> <li>with Straight Cord 1.5m</li> <li>Max. Power : 76W</li> <li>Speed : 1,000~25,000 min<sup>-1</sup></li> </ul>	ENK-250T	8087
	Ring Type Attachment	<ul style="list-style-type: none"> <li>Weight : 92 g</li> <li>Collet Chuck : ø3.0 mm (CHH-3.0), ø2.35 mm (CHH-2.35)</li> <li>Accessory : Spanner (7 x 5.1) 1 pc. Pin Spanner (K-233) 1 pc. L Shaped Spanner 1 pc.</li> </ul> <p>40,000 min<sup>-1</sup> Max. (*1) 40,000 min<sup>-1</sup> Max. (*2)</p>	IR-310	1147
	Lever Type Attachment	<ul style="list-style-type: none"> <li>Weight : 62 g</li> <li>Collet Chuck : ø3.0 mm (CHH-3.0), ø2.35 mm (CHH-2.35)</li> <li>Accessory : Spanner (7 x 5.1) 1 pc. Pin Spanner (K-233) 1 pc.</li> </ul> <p>40,000 min<sup>-1</sup> Max. (*1) 40,000 min<sup>-1</sup> Max. (*2)</p>	IH-300	1005
	Straight Type Attachment	<ul style="list-style-type: none"> <li>Weight : 55 g</li> <li>Collet Chuck : ø3.0 mm (NKM6-3.0)</li> <li>Chuck Nut (CHN-6)</li> <li>Accessory : Spanner (9 x 9), (15 x 17) 1 pc. each Bar Wrench (PCR-30) 1 pc.</li> </ul> <p>40,000 min<sup>-1</sup> Max. (*1) 40,000 min<sup>-1</sup> Max. (*2)</p>	IG-400	2811
	6 mm Torque Type Attachment	<ul style="list-style-type: none"> <li>Weight : 210 g</li> <li>Collet Chuck : ø6.0 mm (CHG-6.0)</li> <li>Accessory : Spanner (10 x 10) 1 pc. Bar Wrench (K-212) 1 pc. Pin Spanner (K-233) 1 pc.</li> </ul> <p>* Use 6mm torque Type HG-200 to connect ENK-250T 30,000 min<sup>-1</sup> Max. (*1) 27,000 min<sup>-1</sup> Max. (*2)</p>	HG-200	1016
	Long Type Attachment for Deep Hole Grinding ø13 mm	<ul style="list-style-type: none"> <li>Weight : 156 g</li> <li>Collet Chuck : ø3.0 mm (CHM-3.0)</li> <li>Accessory : Spanner (7 x 5.1), (6 x 4.5) 1 pc. each Pin Spanner (K-233) 1 pc.</li> </ul> <p>35,000 min<sup>-1</sup> Max. (*1) 35,000 min<sup>-1</sup> Max. (*2)</p>	BMH-300	1017
	90° MINI ANGLE TYPE Attachment for Chamfering Deep Hole (Very Small Head)	<ul style="list-style-type: none"> <li>Weight : 47 g</li> <li>Speed Reduction Ratio : 10/11</li> <li>Collet Chuck : ø1.6 mm (K-253)</li> <li>Accessory : Chuck Wrench (K-232) 1 pc. Pin Spanner (K-233) 1 pc.</li> </ul> <p>15,000 min<sup>-1</sup> Max. (*1) 15,000 min<sup>-1</sup> Max. (*2)</p>	MFC-300M	1013
	90° MINI ANGLE TYPE Attachment for Chamfering Deep Hole	<ul style="list-style-type: none"> <li>Weight : 50 g</li> <li>Speed Reduction Ratio : 10/11</li> <li>Collet Chuck : ø1.6 mm (K-252)</li> <li>Accessory : Chuck Wrench (K-232) 1 pc. Pin Spanner (K-233) 1 pc.</li> </ul> <p>15,000 min<sup>-1</sup> Max. (*1) 15,000 min<sup>-1</sup> Max. (*2)</p>	MFC-300S	1012
	90° ANGLE Attachment	<ul style="list-style-type: none"> <li>Weight : 45 g</li> <li>Standard Accessories (Rubber Pad, Paper Disk)</li> <li>Collet Chuck : ø3.0 mm (CHC-3.0)</li> <li>Accessory : Standard Accessories 1 set. Chuck Wrench (K-231) 1 pc. Pin Spanner (K-233) 1 pc.</li> </ul> <p>35,000 min<sup>-1</sup> Max. (*1) 20,000 min<sup>-1</sup> Max. (*2)</p>	IC-300	1006
	45° ANGLE Attachment	<ul style="list-style-type: none"> <li>Weight : 45 g</li> <li>Standard Accessories (Rubber Pad, Paper Disk)</li> <li>Collet Chuck : ø3.0 mm (CHC-3.0)</li> <li>Accessory : Standard Accessories 1 set. Chuck Wrench (K-231) 1 pc. Pin Spanner (K-233) 1 pc.</li> </ul> <p>35,000 min<sup>-1</sup> Max. (*1) 20,000 min<sup>-1</sup> Max. (*2)</p>	KC-300	1014


## Emax EVOLution Attachments

Product	Description	Specifications	Model	Code No.
	<b>MINI-LUSTER Attachment</b> (Pencil-Type Polisher) (Reciprocating motion)	<ul style="list-style-type: none"> <li>Weight : 130 g</li> <li>Max. tool shank diameter <math>\phi</math>3.2mm, Screw clamp type.</li> <li>Stroke range (fixed) : 0.8mm</li> <li>Accessory : Standard Accessories 1 set</li> <li>35,000 min<sup>-1</sup> Max. (*1) 30,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>ML-8</b>	<b>1307</b>
	<b>SWING-LUSTER Attachment</b> (Pencil-Type Polisher) (Right to Left motion)	<ul style="list-style-type: none"> <li>Weight : 127 g</li> <li>Reciprocating Stroke (Variable) : 0~9,000 times/min.</li> <li>Stroke range (Variable) : 0~1.6mm</li> <li>Max. tool shank diameter <math>\phi</math>5.0mm, Screw clamp type.</li> <li>Accessory : Standard Accessories 1 set</li> <li>35,000 min<sup>-1</sup> Max. (*1) 24,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>SLS-16</b>	<b>1380</b>
	<b>Hammer Attachment</b> for Engraving and Ornament Processing Work	<ul style="list-style-type: none"> <li>Weight : 95 g</li> <li>Stroke Times : 25~5,000 times/min.</li> <li>Stroke Spring Pressure : 4.4~7.1N (Ring Adjustment Type)</li> <li>Accessory : Spanner (7 x 5.1) 1 pc., Bar Wrench (K-212) 1 pc., Oil and nozzle, Hammer Bit (For replacement) 2 pcs.</li> <li>20,000 min<sup>-1</sup> Max. (*1) 16,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>HA-500</b>	<b>8060</b>
	<b>FINE BELT SANDER Attachment</b>	<ul style="list-style-type: none"> <li>Weight : 350 g</li> <li>Belt Speed : 0~825 m/min.</li> <li>Belt Size : 4, 6, 8 mm</li> <li>Accessory : 8, 6, 4mm Belts Allen Wrench (3mm) : 1 pc.</li> <li>35,000 min<sup>-1</sup> Max. (*1) 35,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>KBS-101</b>	<b>1146</b>
 <p>Exclusive use for Emax EVOLution</p>	<b>LUSTER Attachment</b> (Pistol-Type Polisher) (Reciprocating motion) <b>Built-in Motor</b>	<ul style="list-style-type: none"> <li>Weight : 800 g</li> <li>Max. Torque 17.2 cN·m</li> <li>with Straight Cord 1.5m</li> <li>Stroke Range : 0~6mm (variable)</li> <li>Max. tool shank diameter <math>\phi</math>6.4mm, Screw clamp type.</li> <li>Reciprocating Stroke (variable) : 0~7,600 times/min</li> <li>Accessory : Standard Accessories 1 set Lubrication Oil, Lubrication Nozzle for LUSTER</li> <li>30,000 min<sup>-1</sup> Max. (*1) 30,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>NLS-110</b>	<b>1483</b>
	<b>LUSTER Attachment</b> (Pistol-Type Polisher) (Reciprocating motion)	<ul style="list-style-type: none"> <li>Weight : 680 g</li> <li>Stroke Range : 0~6mm (variable)</li> <li>Max. tool shank diameter <math>\phi</math>6.4mm, Screw clamp type.</li> <li>Reciprocating Stroke (variable) : 0~7,600 times/min</li> <li>Accessory : Standard Accessories 1 set Lubrication Oil, Lubrication Nozzle for LUSTER</li> <li>30,000 min<sup>-1</sup> Max. (*1) 30,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>LS-100</b>	<b>1302</b>
	<b>EXTENSION JOINT</b>	<ul style="list-style-type: none"> <li>Weight : 83 g</li> <li>Pin Spanner (K-233) : 1 pc.</li> <li>35,000 min<sup>-1</sup> Max. (*1) 35,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>CN-01</b>	<b>1015</b>
	<b>1/4 SPEED REDUCER</b>	<ul style="list-style-type: none"> <li>Weight : 68 g</li> <li>Pin Spanner (K-233) : 1 pc.</li> <li>30,000 min<sup>-1</sup> Max. (*1) 30,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>RG-01</b>	<b>1009</b>
	<b>1/15 SPEED REDUCER</b>	<ul style="list-style-type: none"> <li>Weight : 93 g</li> <li>Pin Spanner (K-233) : 1 pc.</li> <li>30,000 min<sup>-1</sup> Max. (*1) 30,000 min<sup>-1</sup> Max. (*2)</li> </ul>	<b>RG-02</b>	<b>1010</b>






### Collet Chuck

Product	Inside Diameter : ød	Fit to	Model	Code No.
 CHC Group	ø1.6	IC-300, KC-300	CHC-1.6	<b>90416</b>
	ø2.35		CHC-2.35	<b>90492</b>
	ø3.0		CHC-3.0	<b>90430</b>
	ø3.175		CHC-3.175	<b>90493</b>
 CHG Group	ø2.35	HG-200	CHG-2.35	<b>91192</b>
	ø3.0		CHG-3.0	<b>91130</b>
	ø3.175		CHG-3.175	<b>91193</b>
	ø6.0		CHG-6.0	<b>91160</b>
	ø6.35		CHG-6.35	<b>91196</b>
	ø1.0, ø1.5, ø2.0, ø2.5, ø4.76		CHG-□□	—
	ø1.6, ø4.0, ø5.0			
	 CHH Group	ø2.35	IH-300, IR-310	CHH-2.35
ø3.0		CHH-3.0		<b>90630</b>
ø3.175		CHH-3.175		<b>90693</b>
ø1.0, ø1.5, ø2.0, ø2.5		CHH-□□		—
ø1.6				
 CHM Group	ø1.0	BMH-300	CHM-1.0	<b>90910</b>
	ø1.6		CHM-1.6	<b>90916</b>
	ø2.0		CHM-2.0	<b>90920</b>
	ø2.35		CHM-2.35	<b>90992</b>
	ø3.0		CHM-3.0	<b>90930</b>
	ø3.175		CHM-3.175	<b>90993</b>
 MFC-300S	ø1.6	MFC-300S	K-252	<b>90316</b>
 MFC-300M	ø1.6	MFC-300M	K-253	<b>90016</b>
 NKM6 Group (NK Micron Chuck)	ø2.35	IG-400	NKM6-2.35	<b>92030</b>
	ø3.0		NKM6-3.0	<b>92092</b>
	ø3.175		NKM6-3.175	<b>92093</b>

### Chuck Nut

Product	Description	Fit to	Model	Code No.
 Chuck Nut	Chuck Nut	IG-400 (for NKM6 Group)	CHN-6	<b>2104</b>

### Parts

Product	Description	Fit to	Model	Code No.
 Straight Cord : 1.5 m <with Switch>		ENK-410S (Standard Type Motor)	ENKCD-410S	<b>8088</b>
		ENK-250T (Torque Type Motor)	ENKCD-250T	<b>8089</b>
 Power Supply Cord		Control Unit : Emax EVolution NE249	K-269	<b>1484</b>
 Foot Control ON-OFF and speed change can be accomplished.		Control Unit : Emax EVolution NE249	FC-64	<b>8106</b>
 Handpiece Holder		Control Unit : Emax EVolution NE249	K-273	<b>8107</b>
 Handpiece Stand			K-274	<b>8104</b>

