

Optimal Microprocessor Control

Ultimate 500 is very user friendly due to the NSK unique highperformance microprocessor. Optimal control of the micromotor is assured, even when cutting a variety of materials such as metals, gypsum and resin. Bur chatter and jumping has been eliminated. This allows more precise and smooth cutting and polishing. The unit automatically senses which micromotor is connected (UM50T or UM50C) so that the characteristics of either micromotor are fully utilized.

Eco-Friendly Design

Due to the new electronic circuit design, power consumption is minimized. Power losses are so small that no heat generation occurs and, as a result, a radiating fan is not required.

Auto Speed Function

The unit is provided with auto speed function to set and maintain the rotation speed during long work periods. Foot fatigue is eliminated.

Compliance with EMC and Other Safety Standards

NSK considers passive performance is important. Ultimate 500 complies with the world's most rigorous European EMC* standards. It has been designed to be very safe in electromagnetic terms, so as to curb generation of jamming electromagnetic waves which may cause a failure or malfunction in other equipment, and so as not to be affected by external electromagnetic waves.
*EMC (Electromagnetic Compatibility)

Other Features

- Self-Diagnosis Function
- Smooth Operation
- Audible Check System
- Easy-to-operate Display Panel
- Maintenance Mode Setting
- Digital Speed Display 500 / 500D / 500K
- Error Code Display Function
- Connection Jack for air turbine handpiece 500D / 500K / 500F



UM500SB Translucent Blue

Sets

MODEL	ORDER CODE	SET
UM500SBT Bench Type : Translucent Blue / Torque set	Y140-557 (120V) Y140-558 (230V)	UM500SB UM50T FC-40
UM500SBC Bench Type : Translucent Blue / Compact set	Y140-560 (120V) Y140-561 (230V)	UM500SB UM50C FC-40
UM500LGT Bench Type : Light Gray / Torque set	Y140-551 (120V) Y140-552 (230V)	UM500LG UM50T FC-40
UM500LGC Bench Type : Light Gray / Compact set	Y140-554 (120V) Y140-555 (230V)	UM500LGB UM50C FC-40
ULTIMATE 500D UM500DSBT Translucent blue/Torque set a sample of standard sets • Control Unit (UM500DSBT) • Motor Handpiece (UM50T 2M) • Foot Control (FC-40)		
UM500DSBT Tower Type : Translucent Blue / Torque set	Y140-749 (230V)	UM500DSB UM50T 2M FC-40
UM500DSBC Tower Type : Translucent Blue / Compact set	Y140-750 (230V)	UM500DSB UM50C 2M FC-40
ULTIMATE 500K UM500KLGT Light Gray/Torque set a sample of standard sets • Control Unit (UM500KLG) • Motor Handpiece (UM50T 2M)		
UM500KLGT Knee Type : Light Gray / Torque set	Y140-664 (120V) Y140-666 (230V)	UM500KLG UM50T 2M FC-40
UM500KLGC Knee Type : Light Gray / Compact set	Y140-665 (120V) Y140-667 (230V)	UM500KLG UM50C 2M FC-40
ULTIMATE 500F UM500FLGT Light Gray/Torque set a sample of standard sets • Control Unit (UM500FLG) • Motor Handpiece (UM50T 2M)		
UM500FLGT Floor Type : Light Gray / Torque set	Y140-770 (120V) Y140-769 (230V)	UM500FLG UM50T 2M
UM500FLGC Floor Type : Light Gray / Compact set	Y140-774 (120V) Y140-773 (230V)	UM500FLG UM50C 2M

Spare Parts

MODEL	PRODUCTS	ORDER CODE
UM500SB Control Unit Bench type / Translucent blue (Includes AC electrical cord, handpiece stand and handpiece holder)		Y140-716 (120V) Y140-718 (230V)
UM500LG Control Unit Knee type / Light gray (Includes AC electrical cord, handpiece stand and handpiece holder)		Y140-715 (120V) Y140-717 (230V)
UM500DSB Control Unit Tower type / Translucent blue (Includes AC electrical cord and handpiece stand)		Y140-747 (230V)
UM500KLG Control Unit Knee type / Light gray (Includes AC electrical cord and handpiece stand)		Y140-704 (120V) Y140-705 (230V)
UM500FLG Control Unit Floor type (Includes AC electrical cord and handpiece stand)		Y140-778 (120V) Y140-777 (230V)
UM50T Motor handpiece Torque type (Includes 1.2 m cord and 2 different wrenches)		Y140-562
UM50C Motor handpiece Compact type (Includes 1.2 m cord and 2 different wrenches)		Y140-563
UM50T 2M Motor handpiece Torque type (Includes 2 m cord and 2 different wrenches)		Y140-670
UM50C 2M Motor handpiece Compact type (Includes 2 m cord and 2 different wrenches)		Y140-671
UM50TM Motor Torque type (Includes 1.2 m cord)		E113
UM50CM Motor Compact type (Includes 1.2 m cord)		E187
UM50EM Motor E type (Includes 1.2 m cord)		E192
UM50TM 2M Motor 2M Torque type (Includes 2 m cord)		E113-002
UM50CM 2M Motor 2M Compact type (Includes 2 m cord)		E187-002
UHR50T Attachment Torque type		H165
UHR50C Attachment Compact type		H189
FC-40 Foot Control (For 500 / 500D)		Z056
Handpiece Stand Wrench is not included		Z095-201
Suspension Handpiece Cradle (For Ultimate 500)		Z083
Chuck - 2.35A		H203-A180
Handpiece Holder		Y900-071
Wrench for Locking Rotation		H124-751
Wrench for Adjusting Chuck		K015-751
TA50 Turbine Adaptor (For 500K / 500F)		U375
Bracket Set (For 500D / 500K)		U364-090

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All NSK handpieces are built to have excellent durability against repeated autoclaving at temperatures of 135°C.

Expect Perfection®

Specifications are subject to change without notice.

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ULTIMATE 500 SERIES FROM NSK HIGH PERFORMANCE BRUSHLESS MICROMOTOR



the world standard



ULTIMATE 500 Series

Speed : 1,000~50,000 min⁻¹

Best Power in its class
250 W

Smallest and Lightest in its class
148mm / 185gms



Torque Compact E-type

Torque Micromotor & Cord

MODEL	ORDER CODE
UM50T	Y140-562

- Speed : 1,000~50,000 min⁻¹
- Max. power : 250W
- Max. torque : 6.7Ncm
- Dimensions : L164 x ø29 (mm)
- Weight : 230g (Cord not included)
- Cord length : 1.2m

Compact Micromotor & Cord

MODEL	ORDER CODE
UM50C	Y140-563

- Speed : 1,000~50,000 min⁻¹
- Max. power : 140W
- Max. torque : 6.0Ncm
- Dimensions : L148 x ø27 (mm)
- Weight : 185g (Cord not included)
- Cord length : 1.2m

ISO E-Type Micromotor & Cord

MODEL	ORDER CODE
UM50EM	E192

- Speed : 1,000~50,000 min⁻¹
- Max. power : 140W
- Max. torque : 6.0Ncm
- Dimensions : L91 x ø27 (mm)
- Weight : 120g (Cord not included)
- Cord length : 1.2m

Long Term Durability

The high power brushless motor does not require replacement of carbon brushes. NSK in-house load testing has proven the durability of continuous use for more than 5,000 hours.



Precision Technology

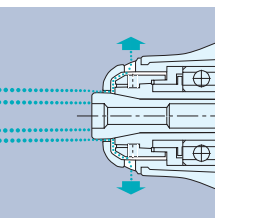
NSK super precision technology ensures the bur concentricity of 0.02 mm or less.

Lowest Noise and Vibration

The hermetically enclosed brushless motor reduces the noise level by 20% compared to other conventional models. This results in a quieter and more comfortable work environment.

Special Dust-Proof Mechanism

The handpiece has a Patented built-in dust-proof system to prevent the infiltration of debris into the bearings.



Ergonomically Designed

The grip is ergonomically designed. The light weight and excellent balance characteristics dramatically reduce hand fatigue during extended applications.



ULTIMATE 500

Bench Top System

The World Standard Laboratory Micromotor System Ultimate 500 has globally earned an excellent reputation. This is the result of exceptional performance, reliability and durability due to the super precision technology, and long term experience of NSK. Smart high tech appearance in two colors-translucent blue and light gray.



- Features**
- Speed : 1,000~50,000 min⁻¹
 - Eco-Friendly Design
 - Self-Diagnosis Function
 - Easy-to-operate Display Panel
 - Digital Speed Display
 - Optimal control by Microprocessor
 - Auto Speed Function
 - Maintenance Mode Setting
 - Audible Function Check
 - Error Code Display Function

- Specifications**
- Power Supply : AC120V or 230V 50/60Hz
 - Weight : 2.6kg
 - Dimensions : W172 x D230 x H94 (mm)

* Not able to connect with an air turbine handpiece

Ultimate 500 Standard Packs

Torque Micromotor System		Compact Micromotor System	
MODEL	ORDER CODE	MODEL	ORDER CODE
UM500SBT (120V)	Y140-557	UM500SBC (120V)	Y140-560
UM500SBT (230V)	Y140-558	UM500SBC (230V)	Y140-561

Contents
• Control unit • Micromotor • Foot control • handpiece Stand

Torque Micromotor System		Compact Micromotor System	
MODEL	ORDER CODE	MODEL	ORDER CODE
UM500LGT (120V)	Y140-551	UM500LGC (120V)	Y140-554
UM500LGT (230V)	Y140-552	UM500LGC (230V)	Y140-555

Contents
• Control unit • Micromotor • Foot control • handpiece Stand

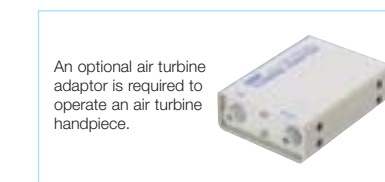
ULTIMATE 500D

Bench Top Tower System

Space-saving Tower Type control unit, Ultimate 500D provides more space on the bench top. By adding the optional air turbine adaptor to the unit, an air turbine handpiece can be used in addition to the electric micromotor. The control unit may also be mounted on the wall by using an optional bracket.

- Features**
- Speed : 1,000~50,000 min⁻¹
 - Optimal Control by Microprocessor
 - Capability to operate an air turbine handpiece
 - Eco-Friendly Design
 - Auto Speed Function
 - Self-Diagnosis Function
 - Audible Function Check
 - Easy-to-operate Display Panel
 - Maintenance Mode Setting
 - Digital Speed Display
 - Error Code Display Function

- Specifications**
- Power Supply : AC120V or 230V 50/60Hz
 - Weight : 3.1kg
 - Dimensions : W81 x D270 x H230 (mm)



By using the optional wall bracket, the control unit can be mounted on a wall.

Ultimate 500D Standard Packs

Torque Micromotor System		Compact Micromotor System	
MODEL	ORDER CODE	MODEL	ORDER CODE
UM500DSBT (230V)	Y140-749	UM500DSBC (230V)	Y140-750

Contents
• Control unit • Micromotor • Foot control • handpiece Stand

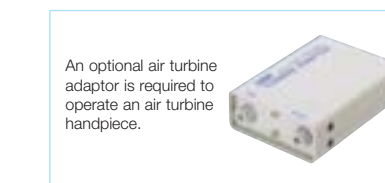
ULTIMATE 500K

Knee Control System

Ultimate 500K is the knee control model of the Ultimate 500 series. The Ultimate 500K model is controlled via the knee pad located on the side of the unit. This function allows off bench top mounting, creating additional work space.

- Features**
- Speed : 1,000~50,000 min⁻¹
 - Optimal Control by Microprocessor
 - Capability to operate an air turbine handpiece
 - Eco-Friendly Design
 - Auto Speed Function
 - Self-Diagnosis Function
 - Audible Function Check
 - Easy-to-operate Display Panel
 - Maintenance Mode Setting
 - Digital Speed Display
 - Error Code Display Function

- Specifications**
- Power Supply : AC120V or 230V 50/60Hz
 - Weight : 3.0kg
 - Dimensions : W98 x D270 x H230 (mm)



Ultimate 500K Standard Packs

Torque Micromotor System		Compact Micromotor System	
MODEL	ORDER CODE	MODEL	ORDER CODE
UM500KLGT (120V)	Y140-664	UM500KLGK (120V)	Y140-665
UM500KLGT (230V)	Y140-666	UM500KLGK (230V)	Y140-667

Contents
• Control unit • Micromotor • handpiece Stand

Turbine Adaptor TA50



Install the turbine adaptor TA50 to activate an air turbine handpiece. It is possible to operate an air turbine handpiece in addition to the electric micromotor via the one foot control / knee control. The air turbine adaptor TA50 can also be installed on the Ultimate 500 Tower type, Knee type and Floor type. Operation of the air turbine or electronic micromotor is activated by the touch of one switch.

- | MODEL | ORDER CODE |
|-------|------------|
| TA50 | U375 |
- Turbine adaptor
 - W75 x D100 x H30 mm

ULTIMATE 500F

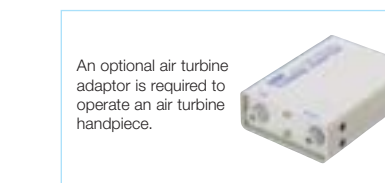
Floor Type Foot Control System

Ultimate 500F is located on the floor. Speed, and all other functions, are controlled via the foot control.

- Features**
- Speed : 1,000~40,000 min⁻¹
 - Capability to operate an air turbine handpiece
 - Optimal Control by Microprocessor
 - Eco-Friendly Design
 - Auto Speed Function
 - Audible Function Check
 - Self-Diagnosis Function

* Ultimate 500F maximum speed is preset to 40,000 min⁻¹

- Specifications**
- Power Supply : AC120V or 230V 50/60Hz
 - Weight : 3.5kg
 - Dimensions : W230 x D209 x H99 (mm)



Ultimate 500F Standard Packs

Torque Micromotor System		Compact Micromotor System	
MODEL	ORDER CODE	MODEL	ORDER CODE
UM500FLGT (120V)	Y140-770	UM500FLGC (120V)	Y140-774
UM500FLGT (230V)	Y140-769	UM500FLGC (230V)	Y140-773

Contents
• Control unit • Micromotor • handpiece Stand

