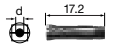









EsPERT 500 COLLET CHUCK & PARTS

Collet Chuck

* Please ask the details of size.

Product	Description	CAT. No.	Model	Inside Diameter : ϕd	Fit to
 17.2	CHC Group ※ $\phi 1.0$ - $\phi 2.0$ mm every 0.1 mm	90492	CHC-2.35	$\phi 2.35$	EIC-300, EKC-300
		90430	CHC-3.0	$\phi 3.0$	
		90493	CHC-3.175	$\phi 3.175$	
		91192	CHG-2.35	$\phi 2.35$	
 39	CHG Group ※ $\phi 0.5$ - $\phi 5.9$ mm every 0.1 mm	91130	CHG-3.0	$\phi 3.0$	EHG-400
		91193	CHG-3.175	$\phi 3.175$	
		91160	CHG-6.0	$\phi 6.0$	
		91196	CHG-6.35	$\phi 6.35$	
		90692	CHH-2.35	$\phi 2.35$	
90630	CHH-3.0	$\phi 3.0$			
90693	CHH-3.175	$\phi 3.175$			
 23.5	CHS Group ※ $\phi 0.8$ - $\phi 2.9$ mm every 0.1 mm	90592	CHS-2.35	$\phi 2.35$	ERA-270
		90530	CHS-3.0	$\phi 3.0$	
		90593	CHS-3.175	$\phi 3.175$	

Parts

Product	Description	CAT. No.	Model	Specifications
	Foot Pedal	1440	FC-40	• Variable Speed Control Foot Pedal
	Sequence Cord	1577	ENKCD-SQ	• Can be put ON-OFF and be controlled speed from an external controller (2 m)
	EsPERT 500 Handpiece Stand	8104	Z095201	
	EsPERT 500 Compact Motor Cord	9093	ENKCD-50C	• Compact Motor Cord • 1.5 m Long
	EsPERT 500 Torque Motor Cord	9094	ENKCD-50T	• Torque Motor Cord • 1.5 m Long



ULTRA-PRECISION BRUSHLESS MICRO-GRINDER

EsPERT 500

High-Power, High-Speed,
Ergonomically Designed



*Order by catalogue number. • Specifications may be changed without notice.

Nakanishi's Industrial Brand Name and
Logo have changed from **NSK** to **NAKANISHI**

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PR-K175E Ver.3 07.03.03.A

Espert 500

ESPERT500 SERIES

Evolutionary New Design High-Performance Brushless **Micro Grinder**

The Espert 500 brushless motor takes motor technology to an even higher level. The new state of the art motor has dramatically increased efficiency and torque output. The microprocessor based control unit provides optimal control of the motors and allows for increased flexibility in this multi-function system.

Speed : 1,000-50,000 min⁻¹

Speed is steplessly variable from 1,000-50,000 min⁻¹. Smooth and powerful torque is delivered at both high and low speeds. The extremely high maximum speed of 50,000 min⁻¹ allows high precision micro-machining.

2 Types of Motors

Very high torque from compact motors.

NAKANISHI Smart Switch Color

- Compact Type (ENK-500C) 140W Blue
- Torque Type (ENK-500T) 200W Gray

NAKANISHI Smart Switch

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

NAKANISHI Smart Switch



Excellent Durability

High performance brushless motor eliminates the need to change carbon brushes. NAKANISHI's internal load test has proven continuous use for more than 5,000 hours.*1



High Precision

NAKANISHI's ultra-precision technology ensures bur concentricity of 0.02 mm or less, which allows for very high precision finishing.

Simple Screw on Attachments

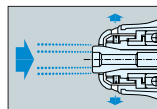


Low Noise, Low Vibration

The brushless motor and incorporated cooling fan have reduced the vibration and noise levels models,** resulting in a quieter, more comfortable work environment. Dramatically compared with conventional.

Special Dust-Proof Mechanism

This handpiece has a patented built-in-dust protection system to prevent the infiltration of dust and debris into the front bearings. This NAKANISHI patented design assures long-term durability.



10 Types of Attachments Available

All of the Espert 400 system attachments are available** for use with this system. 9 different types of attachments and 1 speed reducer making an almost infinite number of applications possible.

Wide Range of Collet Chucks Available

Collet sizes range from a tiny 0.3 mm up, with a wide variety of sizes available. Tools can be changed without the use of any spanners.

Micro Grinder & Handpiece Stand

This specially designed micromotor stand allows easy pick-up and set-down of the micro-grinder. Strong, but soft to the touch, the micro-grinder stand contains convenient, integrated storage compartments for adjustment spanners and a spare chuck.



Optimal Control via Microcomputer

The operation of all Espert 500 functions is controlled by a high performance microcomputer (CPU) that is programmed with NAKANISHI's proprietary technology. NAKANISHI's CPU has direct control of the brushless micro-grinder allowing smooth and highly precise cutting and polishing of a wide variety of materials. Bur "chatter" has been eliminated. The system automatically senses which micromotor is attached (ENK-500C or ENK-500T) and self adjusts to provide optimum micro-grinder performance.

Eco-Friendly Design

The electronic circuits are designed using NAKANISHI's proprietary technology to meet eco-friendly expectations by minimizing power consumption. Since power demands are minimal, no significant heat is generated and no cooling fan is required.**

Auto Cruise Function

The control unit is equipped with an auto cruise function that operates the micro-grinder at a preset speed without the need to use the foot pedal. This function eliminates foot fatigue during prolonged operation.

Memory Speed Function FIXpeed®

An exclusive new feature of the Espert 500 system, the FIXpeed® system allows the user to independently preset the speed of motor A and motor B. 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 pedal. This function allows for unprecedented flexibility.

Simplified Hand and Foot Pedal Control

You no longer need to push a switch on the control unit to switch between hand and foot pedal control. If you want to operate the motor handpiece by hand simply push the NAKANISHI Smart Switch, if you want to use foot pedal control simply depress the foot pedal.

Compliance with EMC and other Safety Standards

NAKANISHI has given considerable thought to 'behind the scenes' performance. The Espert 500 system complies with the world's most rigorous EMC* standards. In electromagnetic terms, it has been designed to be very safe so as to curb the generation of electromagnetic interference (noise), which may cause failure or malfunctions in other equipment. The Espert 500 system will not be affected by external electromagnetic interference. The Espert 500 system also complies with the strict European safety standard EN61010-1. Operator safety is always NAKANISHI's highest priority.

*EMC (Electromagnetic Compatibility)

A/B 2 Motors Can Be Connected

High Quality Metallic Silver Body

Other Features

- Self Check Function (Maintenance Mode)
- Smooth Operation
- Operation Check Sound
- Highly Visible and easy to operate front panel
- 2-Digit Digital Display
- Error Code Display Function

*1 NAKANISHI's internal endurance tests
 *2 Running at 40,000 min⁻¹ compared to Espert 400 System
 *3 Espert 400 System motors can not be used
 *4 Compared to Espert 400 System



ESPERT 500 Control Unit

CAT. No.	Model	Specifications
9793 (120V)	NE96	• Power Source : AC120/230V, 50-60Hz • Dimensions : W172 x D230 x H94 mm • Weight : 2.6 kg • Accessories : Handpiece Stand : 1 pc. Handpiece Holder : 1 pc.
9794 (230V)		

Espert 500

ESPERT500 SERIES

Espert 500 Standard Set (Ring Type)

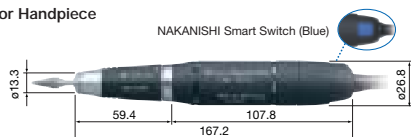


- High Power System. Max. Output 140W
- Speed Range : 1,000-50,000 min⁻¹
- Microprocessor controlled for optimal motor control
- Hand Switch [NAKANISHI Smart Switch]
- Memory Speed Function [FIXspeed®]

CAT.No.	9881 (120V) 9882 (230V)	Model	ES50C-HR
Attachment	EHR-500	Motor	ENK-500C
Unit	NE96		
Standard Accessories	Control Unit (NE96) : 1 pc. Compact Motor Handpiece (ENK50C-HR) : 1 pc. Collet Chuck ø3.0 mm (CHH-3.0), ø2.35 mm (CHH-2.35) : 1 pc. each Handpiece Holder : 1 pc. Handpiece Stand : 1 pc. Spanner (7 x 5.1) : 1 pc. Pin Spanner : 1 pc. L-Spanner (Ø) : 1 pc.		

Espert 500 Compact Motor Handpiece

Speed Range	1,000-50,000 min ⁻¹
Max. Output	140W
Weight	210 g excluding cord



CAT.No.	9091	Model	ENK50C-HR
Attachment	EHR-500	Motor	ENK-500C
Standard Accessories	Collet Chuck ø3.0 mm (CHH-3.0), ø2.35 mm (CHH-2.35) : 1 pc. each Spanner (7 x 5.1) : 1 pc. Pin Spanner : 1 pc. L-Spanner (Ø) : 1 pc.		

Espert 500 Torque Set (Ring Type)

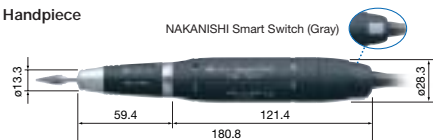


- Highest Power in Class. Max. Output 200W
- Speed Range : 1,000-50,000 min⁻¹
- Microprocessor controlled for optimal motor control
- Hand Switch [NAKANISHI Smart Switch]
- Memory Speed Function [FIXspeed®]

CAT.No.	9883 (120V) 9884 (230V)	Model	ES50T-HR
Attachment	EHR-500	Motor	ENK-500T
Unit	NE96		
Standard Accessories	Control Unit (NE96) : 1 pc. Compact Motor Handpiece (ENK50T-HR) : 1 pc. Collet Chuck ø3.0 mm (CHH-3.0), ø2.35 mm (CHH-2.35) : 1 pc. each Handpiece Holder : 1 pc. Handpiece Stand : 1 pc. Spanner (7 x 5.1) : 1 pc. Pin Spanner : 1 pc. L-Spanner (Ø) : 1 pc.		

Espert 500 Torque Motor Handpiece

Speed Range	1,000-50,000 min ⁻¹
Max. Output	200W
Weight	250 g excluding cord



CAT.No.	9092	Model	ENK50T-HR
Attachment	EHR-500	Motor	ENK-500T
Standard Accessories	Collet Chuck ø3.0 mm (CHH-3.0), ø2.35 mm (CHH-2.35) : 1 pc. each Spanner (7 x 5.1) : 1 pc. Pin Spanner : 1 pc. L-Spanner (Ø) : 1 pc.		

System Chart



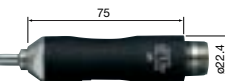
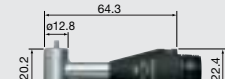
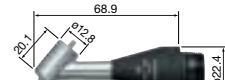


CAT. No.	Model
Attachment	
Ring Type	
9090	EHR-500
Lever Type	
1515	EHL-401
6 mm Torque Type	
1552	EHG-400
90° Angle Type	
1525	EIC-300
45° Angle Type	
1526	EKC-300
90° Angle Torque Type	
1551	ERA-270
LUSTER (Reciprocating motion)	
1516	ELS-100
MINI-LUSTER (Reciprocating motion)	
1554	EML-8
FINE BELT SANDER	
1145	EBS-101
Speed Reducer	
• 1/4 Speed Reducer	
1553	ERG-01B
Motor	
• Compact Motor and Cord	
9088	ENK-500C
• Torque Motor and Cord	
9089	ENK-500T
Control Unit	
• Espert 500	
9793 (120V)	NE96
9794 (230V)	

Espert 500 Motor




Product	Description	CAT. No.	Model	Specifications
	Compact Type Motor	9088	ENK-500C	<ul style="list-style-type: none"> • 1,000-50,000 min⁻¹ • Incorporates the NAKANISHI Smart Switch for easy on/off operation • Small, lightweight, high-speed brushless DC motor • Weight : 115 g excluding cord • Output Power : 140W • Max. Torque : 6.0 cN·m • Cord Length : 1.5 m
	Torque Type Motor	9089	ENK-500T	<ul style="list-style-type: none"> • 1,000-50,000 min⁻¹ • Incorporates the NAKANISHI Smart Switch for easy on/off operation • High-power, high-torque, high-speed brushless DC motor • Weight : 160 g excluding cord • Output Power : 200W • Max. Torque : 8.7 cN·m • Cord Length : 1.5 m



Espert 500 Attachments


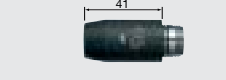
Product	Description	CAT. No.	Model	Specifications
	Ring Type Attachment	9090	EHR-500	<ul style="list-style-type: none"> Manufactured with micron level precision for high accuracy and high reliability Slim, lightweight design allows for fine finishing of delicate parts Ring Type one touch bur release Weight : 94 g Standard Collet ø3.0 (CHH-3.0), ø2.35 (CHH-2.35) Optional Collets (CHH Group) Spanner (7 x 5.1) : 1 pc. Pin Spanner : 1 pc. • L Spanner (9) : 1 pc. 40,000 min¹ Max. (#2)
	Lever Type Attachment	1515	EHL-401	<ul style="list-style-type: none"> Manufactured with micron level precision for high accuracy and high reliability Slim, lightweight design allows for fine finishing of delicate parts Lever Type one touch bur release Weight : 70 g Standard Collet ø3.0 (CHH-3.0), ø2.35 (CHH-2.35) Optional Collets (CHH Group) Spanner (7 x 5.1) : 1 pc. 40,000 min¹ Max. (#2)
	6 mm Torque Type Attachment	1552	EHG-400	<ul style="list-style-type: none"> Large up to ø6 mm shank tool capacity Spanner collet release for simple tool change Weight : 110 g Standard Collet ø6.0 (CHG-6.0) Optional Collets (CHG Group) Spanner (10 x 10) : 1 pc. Bar Wrench (K-212) : 1 pc. 40,000 min¹ Max. (#1) 30,000 min¹ Max. (#2)
	90° Angle Attachment	1525	EIC-300	<ul style="list-style-type: none"> Ideal for finishing with rubber pads Capable of applications for rough cutting to mirror finishing Speed Reduction Ratio : 3/4 Weight : 54g Standard Accessories : Rubber Pad, Paper Disk Standard Collet ø3.0 (CHC-3.0) Optional Collets (CHC Group) Spanner (20 x 24) : 1 pc. Chuck Wrench (K-231) : 1 pc. 40,000 min¹ Max. (#1) 20,000 min¹ Max. (#2)
	45° Angle Attachment	1526	EKC-300	<ul style="list-style-type: none"> Ideal for finishing with rubber pads Perfect for finishing bottom surfaces and other tight, hard to reach areas Speed Reduction Ratio : 3/4 Weight : 54g Standard Accessories : Rubber Pad, Paper Disk Standard Collet ø3.0 (CHC-3.0) Optional Collets (CHC Group) Spanner (20 x 24) : 1 pc. Chuck Wrench (K-231) : 1 pc. 40,000 min¹ Max. (#1) 20,000 min¹ Max. (#2)
	90° Angle Torque Attachment	1551	ERA-270	<ul style="list-style-type: none"> Ideal for finishing with rubber pads Large gear for better durability and high load capacity Perfect for finishing bottom surfaces and other tight, hard to reach areas Speed Reduction Ratio : 1/1.5 • Weight : 107g Standard Collet ø3.0 (CHS-3.0) Optional Collets (CHS Group) Spanner (8 x 5), (7 x 5.1), (20 x 24) : 1 pc. each 40,000 min¹ Max. (#1) 20,000 min¹ Max. (#2)
	LUSTER Attachment (Reciprocating Motion Polishing Finisher)	1516	ELS-100	<ul style="list-style-type: none"> High Power, Large Stroke, reciprocating polisher Rubber Grip dramatically reduces vibration caused by reciprocating motion Perfect for finishing, such as lapping and polishing, streamlines finishing of mold cavities Weight : 680 g • Stroke : 0-6 mm Reciprocating Speed : 0-7,600 times/min Various tools and holders included Max. Tool Shank ø6.4 mm (screw type) Allen Wrench (2 mm) : 1 pc. Lubrication Oil Lubrication Nozzle for LUSTER 30,000 min¹ Max. (#1)

Espert 500 Attachments

Product	Description	CAT. No.	Model	Specifications
	MINI-LUSTER Attachment (Pencil-Type Reciprocating Polishing Finisher)	1554	EML-8 (Stroke 0.8 mm)	<ul style="list-style-type: none"> High Speed reciprocating polisher for rapid finishing of small surfaces The lightweight pencil type design makes it very controllable Ideal for small, tight areas such as tight corners, ribs, etc. Reciprocating Speed : 0-10,000 strokes/min Weight : 130 g • Various tools and holders included Max. Tool Shank ø3.2 mm (screw type) Allen Wrench (1.5 mm) : 1 pc. 30,000 min¹ Max. (#2)
	FINE BELT SANDER Attachment	1145	EBS-101	<ul style="list-style-type: none"> Very high belt speed, ideal for applications from deburring to radius finishing Adjustable Belt Angle Belt Speed : 0-940 m/min Weight : 355 g Belt Sizes 4, 6, 8 mm wide x 300 mm long Wide selection of belts available Various Belts included Allen Wrench (3 mm) : 1 pc. 40,000 min¹ Max. (#1) 30,000 min¹ Max. (#2)
	Speed Reducer (1/4)	1553	ERG-01B	<ul style="list-style-type: none"> Connects between the motor and the attachment 1/4 speed reduction, 4 times increase in torque Weight : 65 g 40,000 min¹ Max. (#1) 30,000 min¹ Max. (#2)

Espert 500 Adaptors

*ELECTER E-max and ROTUS attachments can be connected using these adaptors

Product	Description	CAT. No.	Model	Specifications
	Extension Adaptor	1518	ECN-011	<ul style="list-style-type: none"> The Adaptor can be used with the attachments for E-max and ROTUS you already have. Speed Ratio 1:1 Weight : 31 g 40,000 min¹ Max. (#1) 30,000 min¹ Max. (#2)
	Speed Reducer (1/4)	1517	ERG-01	<ul style="list-style-type: none"> The Speed Reducer can be used with the attachments for E-max and ROTUS you already have. 1/4 speed reduction, 4 times increase in torque Weight : 62 g 40,000 min¹ Max. (#1) 30,000 min¹ Max. (#2)

