

**NSK**



Powerful Partners®



**NSK**

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Premium Turbines

**Ti-Max**  
**X**

# Premium Quality

The Satisfaction of Knowing You Own The Best



## The Design Brief for The New NSK Ti-Max X High Speed Turbine Handpiece Range was Very Direct –

Design and produce the world's premium quality high performance turbine handpiece that is in total harmony with the human hand, exceeds Professional expectations, and is outstanding in comparison to all others.

The automated micro precision capability of the latest NSK production technology now allows real time production of innovative handpiece designs. Tolerances of less than 1,000th of a millimetre can be built into handpiece components resulting in higher performance, increased torque, virtual silent operation and extended durability. The introduction of an innovative, automatically pressure regulated, dual air jet to the turbine maximises the effect of the air stream direct to the turbine. Torque is dramatically increased and higher speed performance is achieved while turbine rotation noise is virtually eliminated. Ceramic bearings are stable in autoclave conditions and operate quietly and reliably.

The selection of solid Titanium for the handpiece body provides the advantages of bio-compatibility, corrosion resistance, lightest weight and remarkable strength. Titanium gives the handpiece body a stylish, yet durable, design. It provides the perfect ergonomic adaptation to the human hand form and responds precisely to the exact movements of the hand while increasing the tactile sense. Ti-Max X Premium Quality is a reality.



# Premium Technology

## The Pursuit of Perfection That is Beyond The Usual

The driving force behind NSK product development is the actual realization of a positive contribution to global healthcare. The Ti-Max X was initially created from a significant number of market based comments relevant to actual treatment scenarios. The application of the innovative Dual air jet turbine system results in higher torque output, while allowing the handpiece to operate in virtual silence. Drive air pressure is automatically regulated to the correct pressure required to effectively operate the turbine rotor. The patented NSK Clean Head System, built into the handpiece head, prevents the retraction of airborne micro-organisms and oral fluids into the turbine each time the turbine rotation is stopped. The advanced, industrial strength NSK Cellular Glass Optic ensures an illuminated field of view of 25,000 LUX during treatment. Finally, the NSK Quattro Water Spray produces a total cooling effect, which allows treatment to be carried out in a clinically safe environment.



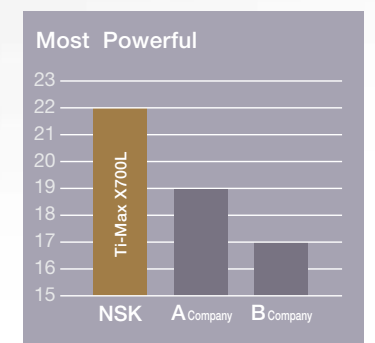
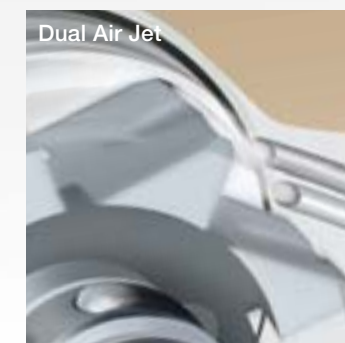
# Premium Performance

## The New Level of Torque – and Silence

The new dual air jet delivers efficient and effective drive air, contributing to the combination of powerful cutting power and a smooth operating performance. The considerable enhancement of realistic torque levels, while maintaining a virtual silent operating level, is conducive to a gentle therapeutic environment and contributes to a reduction in patient stress during treatment. The internal pressure regulating valve ensures that rotation speed is controlled through the supply of correct air pressure, preventing excessive rotation and contributing to increased durability.

## High Torque with Low Operating Noise: Doubling The Benefits of The Dual Air Jet

The handpiece's high torque is a result of a new drive system that efficiently runs the uniquely designed rotor recycling air expelled by the dual air jet. Combined with the cooling effect of the NSK Quattro Water Spray, these twin benefits allow a stable and constant cutting action. Furthermore, the dual air jet low operating sound ensures that the patient can be treated in a gentle and relaxing environment.



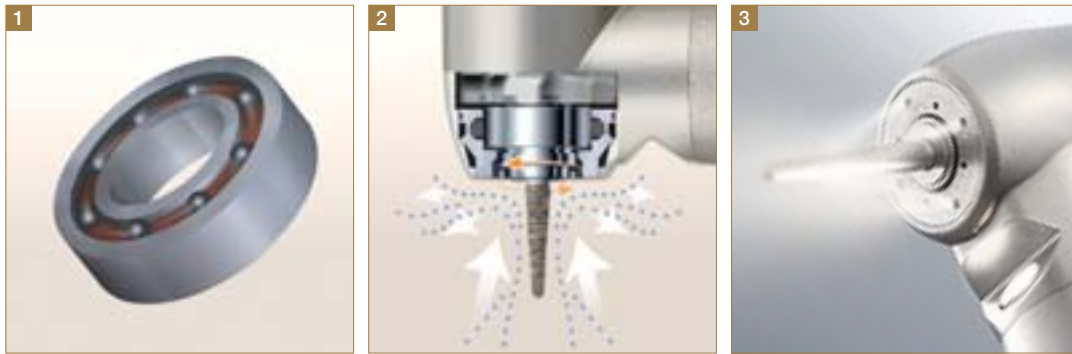
\*as of February, 2006

# Premium Comfort

## An Intricate Balance of Gentleness and Strength

The secret of this handpiece's comfort and ease of use lies in its gentle approach to both you and your patient. From the start our intention was to absolutely integrate this handpiece range with the human hand form in the most natural way possible. The structure of the handpiece was designed exhaustively so as to take advantage of the Premium quality of the feel and operability of the Titanium body. This has produced a handpiece with tactile sensitivity that appears to be an extension of the user's hand, allowing precise and delicate treatment. The turbine has been designed while always considering the fusion of functionality and design, resulting in a powerful tool for a variety of treatments. The handpiece combines a smooth cutting ability with long lasting durability, while retaining a lightweight and well balanced body.





### 1 Ceramic Bearings

Using lightweight, durable ceramic bearings means less friction and centrifugal force on the bearing cartridge, dramatically extending bearing life. At high speeds, the rotor mechanism can be maintained at the upper most limit, ensuring the turbine can be run at a quieter operating noise.

### 2 Clean Head System

The patented NSK Clean Head System is a special mechanism designed to prevent air retraction, thereby preventing the entry of oral fluids, viruses, and other foreign material into the handpiece head. An additional advantage of the Clean Head System is to prolong the life of the turbine bearings by blocking the entry of micro-contaminants into the turbine head.

### 3 Quattro Water Spray

The NSK Quattro Water Spray effectively cools the entire surface of the bur with a high cooling effect, leaving no areas untreated.



### 4 Solid Titanium Body\*

NSK successfully combines years of research and the most advanced production technology to bring the solid titanium handpiece to your hands. Titanium is lighter by 30% than stainless steel, more durable and highly corrosion resistant. Improved tactile sense, together with well-balanced shape, helps you to work more efficiently in most precise application and in prolonged session. □

### 5 Cellular Glass Optics

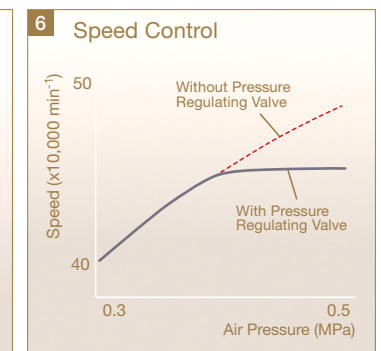
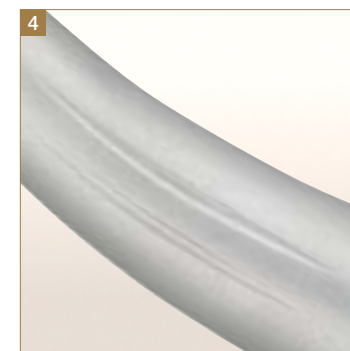
The handpiece uses a glass optical rod to efficiently transmit light. Emitting light at a level of 25,000 LUX, the handpiece allows treatment to be carried out stress free by illuminating the entire operative field. The cellular rod also displays remarkable durability and will not deteriorate from repeated autoclave sterilisation, or under similar harsh conditions.

### 6 Pressure Regulating Valve

The internal pressure regulating valve maintains a stable supply of pressure to the handpiece head section, preventing premature deterioration of the rotor due to excessive rotation.

# Premium Benefits

A Higher Level of Excellence:  
Outstanding Professionals Technology







\*Only external body component is titanium.



Photo indicates, from left: X700L / X600L / X500L

# Ti-Max X Series Handpiece Range

Connect Direct to NSK FlexiQuik Couplings

Coupling Type	NSK FlexiQuik Couplings 					
Head Type	Miniature Head*1		Standard Head		Torque Head	
Products						
Model	X500L	X500	X600L	X600	X700L	X700
Order Code	P495	P861	P496	P862	P497	P863
Light Power	25,000 LUX	Non-Optic	25,000 LUX	Non-Optic	25,000 LUX	Non-Optic
Speed*2	Max. 450,000 min <sup>-1</sup>		Max. 440,000 min <sup>-1</sup>		Max. 360,000 min <sup>-1</sup>	
Head Size	ø 10.3 x H11.3 mm		ø 11.2 x H13.4 mm		ø 13.2 x H13.4 mm	
Power	17 W		21 W		22 W	

\*1 Use only short shank burs. Bur may come off easily when a long type bur is used with in a mini head.

\*2 Slight variations in the number of revolutions may arise as a result of the condition of the connector joint and unit exhaust.



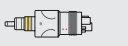
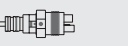






# Ti-Max X Series Handpiece Range

Connect Direct to Other Brand's Couplings



Photo indicates, from left: X700KL / X700SL / X700WL / X700BL

Coupling Type	KaVo® MULTiflex LUX® 			Sirona® Quick Coupling 			W&H® Roto Quick® 			Bien-Air® Unifix® 		
	Miniature Head*1	Standard Head	Torque Head	Miniature Head*1	Standard Head	Torque Head	Miniature Head*1	Standard Head	Torque Head	Miniature Head*1	Standard Head	Torque Head
Products	Photo : X700KL 			Photo : X700SL 			Photo : X700WL 			Photo : X700BL 		
Model	X500KL	X600KL	X700KL	X500SL	X600SL	X700SL	X500WL	X600WL	X700WL	X500BL	X600BL	X700BL
Order Code	P857	P858	P859	P840	P841	P842	P846	P847	P848	P843	P844	P845
Light Power	25,000 LUX			25,000 LUX			25,000 LUX			25,000 LUX		
Speed*2	Max. 450,000 min <sup>-1</sup>	Max. 440,000 min <sup>-1</sup>	Max. 360,000 min <sup>-1</sup>	Max. 450,000 min <sup>-1</sup>	Max. 440,000 min <sup>-1</sup>	Max. 360,000 min <sup>-1</sup>	Max. 450,000 min <sup>-1</sup>	Max. 440,000 min <sup>-1</sup>	Max. 360,000 min <sup>-1</sup>	Max. 450,000 min <sup>-1</sup>	Max. 440,000 min <sup>-1</sup>	Max. 360,000 min <sup>-1</sup>
Head Size	ø 10.3 x H11.3 mm	ø 11.2 x H13.4 mm	ø 13.2 x H13.4 mm	ø 10.3 x H11.3 mm	ø 11.2 x H13.4 mm	ø 13.2 x H13.4 mm	ø 10.3 x H11.3 mm	ø 11.2 x H13.4 mm	ø 13.2 x H13.4 mm	ø 10.3 x H11.3 mm	ø 11.2 x H13.4 mm	ø 13.2 x H13.4 mm
Power	16 W	18 W	19 W	16 W	18 W	19 W	16 W	18 W	19 W	16 W	18 W	19 W

We offer 3 types of head for each coupling, equally for NSK FlexiQuik coupling. Photo indicates, from left: Standard type / Miniature type / Torque type



\*1 Use only short shank burs. Bur may come off easily when a long type bur is used with in a mini head.

\*2 Slight variations in the number of revolutions may arise as a result of the condition of the connector joint and unit exhaust.

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