

Motor

Star® ETorque™

Motor User Manual

CAUTION: Federal law restricts this device to sale by or on the order of a dentist.



www.dentalez.com

ETorque Motor
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All trade mark referred to this manual are property of their respective owners.

Manufactured For:



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Table of Contents

1 Important Information	4
Applied Symbols.....	4
Safety Precautions	6
Indications for Use.....	8
2 Reprocessing Methods	10
Cleaning	10
Disinfection.....	11
Packaging	11
Sterilization.....	12
Storage	13
3 Installation and Commissioning	14
4 Operation	15
5 Maintenance.....	17
6 Specifications	19
7 Spare Parts	21
8 Conditions of Installation.....	22
9 Warranty.....	23








1 Important Information

Dear Customer,
We hope that you will enjoy using your new quality product. In order to ensure that you can work in a trouble-free, economical and safe manner, please comply with the instructions below.

Applied Symbols

Appearing In the manual / on the product		On the packaging	
	Indicates a hazardous situation that can lead to serious injury or death		Handle with care
	Indicates a hazardous situation that can lead to property damage or minor to moderate injury		Keep dry
	Important Information		Maximum stacking load
	Situation which can result in injury or danger to persons, when the instructions are not followed.		Temperature range
	Important information for users and technicians		Humidity

1 Important Information

Appearing In the manual / on the product		On the packaging	
	Instructions for disposal		Atmospheric pressure
	Steam-sterilizable up to 135 °C (275 °F)		Quantity
	Manufacturer		
	Observe instructions for use		
	Follow instructions for use!		

Modifications and improvements to the product as a result of new technical developments are possible.
This does not imply any right to retrofitting of existing units.

1 Important Information

The manufacturer assumes no responsibility for damage arising through:

- Failure to follow or observe our operating/use, maintenance and/or installation instructions.
- Use of incorrect information.
- Improper use.
- Repairs from non-authorized parties.



NOTICE

Repair and maintenance work - apart from the activities described in this operator's manual - may be performed only by qualified technical staff!

- In the event of modifications by third parties, the warranty becomes null and void.
- Only use original parts and spare parts as prescribed by DentalEZ.



Disposal of equipment and accessories at the end of their service lives:

On the basis of EC Directive 2012/19/EU on Waste Electrical and Electronic Equipment, we would like to point out that this product is currently in compliance with the labeling requirements but is not yet subject to the disposal requirements of this Directive. However, the unit may be disposed of in Europe in special waste management centers. Additional information can be obtained from the manufacturer or your dental supplier.

Safety Precautions



WARNING

Risks caused by electromagnetic fields (pacemakers)

The functions of implanted systems (such as pacemakers) can be influenced by electromagnetic fields.

Ask patients if they have any implantable medical devices before starting treatment!

1 Important Information



⚠️ WARNING Electricity

Electrical shock with incorrect connection of a third-party system to the dental motor.

When installing and operating the dental motor with treatment equipment and devices from other manufacturers, observe the provisions in "Protection against electrical shock," "Leakage current," and "Non-grounding the application part" in accordance with IEC 60601-1.



⚠️ WARNING

Electric micro motors generate significantly more power than traditional air turbines and air motors. Poorly maintained, worn, damaged or misused handpieces may generate frictional heat capable of causing serious burn injuries to the patient. Heat generation may occur quickly and without prior warning. Handpieces must be properly maintained according to the specified maintenance schedule and inspected for signs of wear prior to each use.



⚠️ WARNING Risk caused by the lack of control equipment

Hazards can arise if control equipment is not available for changing the speed and the direction of rotation.

- The connected dental treatment unit must have control equipment for changing the speed and direction of rotation.
- Observe all safety, reliability and performance hazards in any other instruction manuals of other parts being used with these motors.



⚠️ WARNING Endangerment to the practitioner and patient

You must stop using the device immediately in the event of damage, irregular running noises, excessive vibrations, unusual generation of heat or if the drill bit is not firmly gripped.

The dental motor must be cleaned, serviced and stored dry if it is to be put into extended storage.

1 Important Information



NOTICE Risk due to incorrectly stored motor!

Damage to the dental motor from dropping

- After treatment, place the dental motor in the handpiece holder of the delivery unit.



NOTICE Damage to the dental motor!

- Never put an attachment on a running dental motor!



NOTICE

Only trained personnel are authorized by the manufacturer to repair and maintain the dental motor.



Any claim under warranty shall be excluded if defects or the consequences thereof are due to manipulation or modifications to the product by the customer or by any third parties not authorized.

Indications for Use

This dental motor is as a drive:

- Only intended for dental treatment. Any other type of use or alteration to the product is impermissible and can be hazardous.
- Intended to be used by trained dental professionals for use in dentistry for restoration, prophylaxis and endodontic procedures.
- A medical device according to relevant national statutory regulations.

This dental motor:

- Includes a low-voltage electric dental motor in accordance with ISO 11498 type 2.
- Is not approved for use in areas with an increased risk of explosion.

1 Important Information

According to these provisions, the dental motor is only to be used by an experienced user for the described application in accordance with:

- The applicable health and safety regulations.
- The applicable accident prevention regulations.
- This operator's manual.

According to these regulations, the user is required to:

- Only use equipment which is free of faults and works properly.
- Only use the equipment for the proper purpose.
- Protect you, the patient and third parties from danger.
- Use appropriate precautions when using this device to prevent cross contamination of bloodborne pathogens.

2 Reprocessing Methods

THE DENTAL MOTOR AND ATTACHMENTS **MUST** BE STERILIZED BEFORE FIRST USE AND AFTER EACH PATIENT!

Processing Methods - According to ISO 17664

Preparation at the site of use



CAUTION Hazard from non-sterile products

Avoid possible infection hazards from contamination of dental motors.

Always wear appropriate personal protective equipment.

Remove residual cement, composite or blood at the site of use.

The dental motor must be dry when transporting it to be prepared.

Do not place the dental motor in a solution.

The dental motor should be prepared as close to the treatment time as possible.

Cleaning



NOTICE Malfunctions caused by cleaning in ultrasonic units!

Do not use an ultrasonic cleaner to process as this can damage the device and void the warranty!

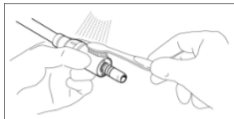
Only clean manually!

Clean the surface

Necessary accessories:

- Tap water 30°C ± 5°C (86°F ± 41°F) or a 60 to 70% alcohol solution
- Brush, such as a medium-hard toothbrush

2 Reprocessing Methods



Clean the interior

No internal cleaning is stipulated for this dental motor.

Disinfection

Disinfection is not intended for this dental motor.

! CAUTION

Steam Sterilization of the dental motor is required after cleaning.

Packaging

(If required by national requirements)

! NOTICE

The sterilization bag must be large enough for the dental motor so that the bag is not stretched.

The quality and use of the packaging of the items to be sterilized must satisfy the applicable standards and be appropriate for sterilizing.

Wrap the dental motor separately in a sterilizable package!

2 Reprocessing Methods

Sterilization

Sterilization in a sterilizer compliant with EN 13060



NOTICE Contact corrosion from moisture can occur!

Immediately remove the product from the steam sterilizer after the sterilization cycle is complete!

The dental motor has a max. temperature resistance of 138°C (280.4°F).



Note:

The dental motor is autoclavable with three different validated methods (wrapped or unwrapped):

- Autoclave with three pre-vacuum cycles (B-cycle) for at least 4 minutes at 134°C ± 1°C (273.2°F ± 33.8°F)
or
- Autoclave with pressure-pulse method (S-cycle) for at least 3.5 minutes at 134°C ± 1°C (273.2°F ± 33.8°F)
or
- Autoclave using the gravitation method for at least 90 minutes at 121°C ± 1°C (249.8°F ± 33.8°F)

Pursuant to U.S. and Canadian standards:

Dynamic Air Removal Wrapped	132 °C (270 °F)	Minimum sterilization time = 4 minutes
Dynamic Air Removal Wrapped	134 °C (273 °F)	Minimum sterilization time = 3.5 minutes
Dynamic Air Removal Wrapped	135 °C (275 °F)	Minimum sterilization time = 3 minutes

Follow the manufacturer's operating manual.

The drying time is at least 10 minutes.

2 Reprocessing Methods

Storage

Prepared dental motors should be stored protected germ-free from dust in a dry, dark and cool room.



Note:

Observe the expiration date of the sterilized item.

3 Installation and Commissioning



CAUTION Possible hazard caused by non-sterile products

Danger of infection to the practitioner and patient.
The dental motor must be sterilized before first use and after each use.



NOTICE Damage caused by contaminated and moist cooling air!

Contaminated and moist cooling air can cause malfunctions and premature bearing wear. In general, ensure that a dry, clean and uncontaminated supply of cooling air is provided in accordance with EN ISO 7494-2.



WARNING Burning hazard caused by hot dental motor

When the dental motor overheats, burning in the oral area can occur.
Never contact soft tissue with the dental motor!
The user should monitor the motor and the contra angle handpiece used with it for possible overheating.



NOTICE Damage of the dental motor!

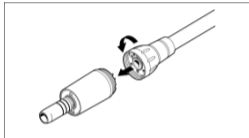
Never plug an instrument on a running dental motor!

4 Operation

Connection with the motor tube: Mounting

Lightly coat the O-rings on the motor tube with a lubricant spray.

Push the dental motor onto the supply hose until it clicks home and secure it with a nut connector.



NOTICE

A dental motor that is not connected correctly can become loose from the supply hose and become disconnected. Before each treatment, check that the dental motor is safely connected to the supply hose by gentle pulling on the dental motor.

Connection with the supply hose: Disconnection

Separate the dental motor from the supply hose in axial direction by loosening the nut connector.

NOTICE

Loss of functionality!



Pressing the footswitch while connecting or disconnecting the dental motor can cause damage to the dental motor and to the supply hose.

Do not connect or disconnect the dental motor while the footswitch is operating.

4 Operation

Cooling



WARNING

Risk due to insufficient quantities of water for spray cooling

If the supply of cooling water is insufficient then this can cause the tooth to heat up.
A water supply of at least 50ml/min is required for the spray cooling.



WARNING

Risk due to insufficient quantities of cooling air for the dental motor

If the supply of cooling air is insufficient then this can cause the dental motor to heat up.
Adjust cooling air at delivery unit to deliver 3.5 – 6.0 NI/min.

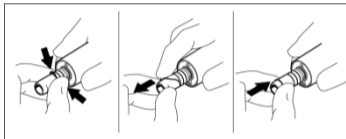
5 Maintenance

Check for malfunctions

The dental motor heats up and gets excessively hot when running without a load:

O-ring missing on the supply hose:

O-ring missing on the coupling:



- Check the amount of cooling air
- Replace the O-ring
- Replace the O-ring

5 Maintenance



NOTICE Missing or damaged O-rings!

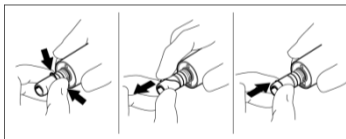
If the O-rings are missing or damaged, malfunctions and premature failure can occur. Check that all O-rings are present and undamaged on the coupling.

Exchange the O-rings on the instrument coupling

Note:

The O-rings on the instrument coupling must only be oiled with a cotton wool bud that has been coated with lubricant spray. Such as Star Electric Handpiece Spray.

Squeeze the O-ring between your fingers until its shape resembles a bow. Slide the O-ring to the front and remove it. Insert new O-rings into the grooves.



NOTICE Risks caused by incorrect care of the O-rings!

Incorrect care of the O-rings on the dental motor can cause malfunctions or complete failure of the device. Do not use Vaseline or other types of grease or oil.

6 Specifications

Motor speed range:	100 – 40,000 rpm
Motor power:	max. 60 W
Motor voltage:	max. 22 V AC
Output torque:	max. 3.5 Ncm
Operation mode:	Duty cycle (0.5 on / 9 off) minutes
Max. current of the LED:	250 mA
Air outlet of the coupling (cooling air):	3.5 – 6.0 l/min
Spray air pressure:	1 – 2.5 bar (14.5 – 36.2 psi)
Spray water pressure:	0.8 – 2.0 bar (11.6 – 29.0 psi)
Weight:	62 g (0.136 lbs)
Dimensions:	31.7 x 22 mm (1.25 x 0.87 inch)
Rotation:	clockwise / counter-clockwise
Sound level:	< 40 dBA
Connection of attachments:	ISO 3964 short

Ambient Conditions

Location:	Permitted in interior rooms
Ambient temperature:	10 – 40 °C (50 – 104 °F)
Relative humidity:	30 – 75%
Max. altitude:	2,000 m

6 Specifications



Storage and Transport Conditions

NOTICE Hazard from starting the dental motor after very cold storage. The dental motor cannot function. Avoid potential hazard from starting the dental motor from cold storage.

Products that are very cold must be warmed to 20 – 25°C (68 – 77°F) before use.

Ambient temperature:

Transport: -30 to 70 °C (-22 to 158 °F)

Storage: 0 to 40 °C (32 to 104 °F)

Relative humidity:

5 – 95%

Air pressure:

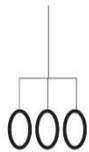
700 – 1,060 hPa

Keep dry!

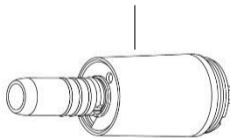
We reserve the right to make technical modifications.

7 Spare Parts

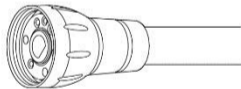
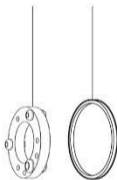
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8 Conditions of Installation



Instructions for installation of the dental motor

- The dental motor is only intended to operate with ETorque control units or for installation in dental treatment units.
- Follow all terms and specifications of the operator's manual.
- The dental motor is classified as an accessory to dental products.
- When installing and mounting to dental treatment units observe the provisions of national regulations and law.
- The safety inspection of the motor in accordance to EN 60601-1 and EN 60601-1-2 has been conducted in conjunction with the dental treatment units.
- Only use the dental motor with a control unit with current limiter.

9 Warranty

Limited Warranty

For a period of three years, **DentalEZ** guarantees that the **ETorque**, when manufactured by **DentalEZ** in new and unused condition, will not fail during normal service due to defects in material and workmanship that are not due to apparent abuse, misuse, or accident. The three years warranty will cover the performance of all components of the unit except consumables, provided that the product is being used and maintained according to the description in the operator's manual.

In the event of failure due to such defects during this period of time, the exclusive remedies shall be repair or replacement, at **DentalEZ**'s option and without charge, of any defected part(s) (except gaskets, seals, O-rings and couplings), provided **DentalEZ** is notified in writing within thirty (30) days of the date of such a failure and further provided that the defective part(s) are returned to **DentalEZ** prepaid. This warranty shall be considered to be validated, if the product is accompanied by the original purchase invoice from the authorized **DentalEZ** dealer, and such invoice identifies the item by serial number and clearly states the date of purchase. No other validation is acceptable.

After three years, all **DentalEZ** warranties and other duties with respect to the quality of the product shall be conclusively presumed to have been satisfied. All liability, therefore, terminate, and no action or breach of any such warranty or duty may thereafter be commenced against **DentalEZ**.

Any express warranty not provided hereon and any implied warranty or representation as to performance, and any remedy for breach of contract which, but for this provision, might arise by implication, operation of law, custom of trade or course of dealing, including any implied warranty of merchantability or of fitness for particular purpose with respect to all and any products manufactured by **DentalEZ** is excluded and disclaimed by **DentalEZ**. If you would like to learn more about **DentalEZ** products and features, visit our website at www.dentalez.com.



WARRANTY REGISTRATION

PLEASE VISIT THE WEBSITE BELOW TO REGISTER YOUR STARDENTAL PRODUCT. THIS WILL ENSURE PROPER REGISTRATION AND PROMPT AND ACCURATE SERVICE SHOULD ANY OF YOUR PURCHASES NEED EVALUATION OR REPAIR DURING THE WARRANTY PERIOD.

www.dentalez.com/warranty