T1 / T2 / T3 / T4 highspeed handpiece

for Sirona, KaVo, W&H, NSK MachLite and NSK QD-J connection and fixed connection

Operating Instructions
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1 Before you begin …

The T1 / T2 / T3 / T4 turbine corresponds with the provisions of state-of-the-art technology. The T1 / T2 / T3 / T4 turbine complies with the ISO 14457 and ISO 9168 standards.

The units, the product is connected to, must comply with the requirements of IEC 60601-1.

1. Read the operating instructions before using the T1 / T2 / T3 / T4 turbine.

2. Use the T1 / T2 / T3 / T4 turbine only for the purposes described in the operating instructions.

3. Follow the hygiene regulations, work safety regulations, and accident prevention measures that apply to the T1 / T2 / T3 / T4 turbine.

Intended Use

The turbines of the T1 / T2 / T3 / T4 Turbine family are intended for:

- Preparation of cavities and crowns
- Removal of carious material
- Removal of fillings
- Processing of tooth and restoration surfaces
- Reducing hard tooth structure

Contraindications

None

Target group

This product is intended only for use by trained dental personnel in dental practices and laboratories.

Scope of validity of operating instructions

These operating instructions are applicable for the following turbines:

- T1 from serial no. 600 000
- T2 from serial no. 600 000
- T3 from serial no. 600 000
- T4

1.1 Structure of the document

1.1.1 Labeling of information

Warnings

➢ To prevent injuries, please observe all warnings.

Warnings are labeled as follows:

DANGER! indicates a danger leading to death or serious injury if not avoided.

WARNING! indicates a danger that may lead to death or serious injury if not avoided.

CAUTION! indicates a danger that may lead to injury if not avoided.

Instructions for use

➢ To prevent material damage and additional expenses, please observe all instructions for use.

Instructions for use are labeled as follows:

NOTICE! indicates measures for the prevention of material damage.
IMPORTANT: indicates information on the avoidance of additional expenses and other important information.

Tip: indicates information for facilitating work.

1.1.2 Formats and symbols

The formats and symbols used in this document have the following meaning:

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>Prerequisite Requests you to do something.</td>
</tr>
<tr>
<td>1.</td>
<td>First action step</td>
</tr>
<tr>
<td>2.</td>
<td>Second action step</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>➢</td>
<td>Alternative action</td>
</tr>
<tr>
<td>＿</td>
<td>Result</td>
</tr>
<tr>
<td>➢</td>
<td>Individual action step</td>
</tr>
</tbody>
</table>

Use of formats and symbols [→ 5]. Identifies a reference to another text passage and specifies its page number.

• List Identifies a list.

1.2 Service life of Sirona instruments

When used as intended:

- Non-moving parts of Sirona instruments have a typical service life of approx. 5 years
- Moving parts of Sirona instruments have a typical service life of approx. 3 years
- Non-moving parts have a typical service life of 3 years
- Moving parts have a typical service life of 1.5 years

No warranty claim can be inferred here, as wear may occur earlier or later than indicated above depending on use, frequency of sterilization, and frequency of maintenance.
2 Safety information

Obligations of the user

- Use only fault-free materials that do not deviate from the specified data [→ 8].
- Protect yourself, patients, and others against any foreseeable dangers. To do this, follow the safety information.
- Comply with the Intended use of the equipment.
- You should always keep these operating instructions within reach for further reference.

Preventing the spread of infections and cross contamination

Prevent the spread of infections and cross contamination between patients, users, and third parties. Sterilize equipment after each patient.

Take the appropriate hygiene measures, e.g. wear protective gloves.

Prevention of eye damage

The LED is in risk class 2 according to the IEC 62471:2006 standard. The LED emits optical radiation that is potentially hazardous and may be harmful to the eyes! Potential damage to the retina from the blue light emission. Do not stare at the LED for longer periods of time while in operation.

Malfunction or damage

Discontinue use immediately in case of malfunction, unusual or different sounds or damage. Damaged turbines may cause injury. Notify the dental depot or the manufacturer.

Potential explosion hazard

Do not use this product in areas subject to explosion hazards.

Repair

Do not attempt to repair the turbine yourself.

The replacement of bearings can lead to sudden failures and injuries to patients due to the different levels of wear of the newer and older components. Safe operation is not guaranteed when repairs are performed incorrectly. For repairs, contact the dental depot or the manufacturer.

Spare and accessory parts

Use only original Sirona parts or parts approved by Sirona. Safe operation is not guaranteed for parts that have not been approved by Sirona.

First aid measures in the case of lubricant accidents

General information: Immediately remove any clothing soiled by the product.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: If skin irritation continues, consult a doctor.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: If symptoms persist consult doctor.

For details download the T1 Material Safety Data Sheet from the Sirona homepage: www.sirona.com

If you have any questions, please contact your dental depot or the manufacturer.
3 Technical description

3.1 Task

The T1 / T2 / T3 / T4 turbine is used to power dental instruments with an FG shank.

The quick coupling is used for media supply and connection to the supply hose and features convenient turnability.

3.2 Structure of T1 turbine

| A | Turbine head (here: Boost) |
| B | Push button |
| C | Cooling spray outlet |
| D | Opening of chuck system |
| E | Light aperture |

3.3 Structure of T2 / T3 turbines

| A | Turbine head (here: Boost) |
| B | Push button |
| C | Cooling spray outlet |
| D | Opening of chuck system |
| E | Light aperture (only for T2 turbine) |
| F | Handpiece sleeve |

3.4 Mounting T3 / T4 highspeed handpiece with fixed connection

| A | Turbine head |
| B | Push button |
| C | Opening of chuck system |
| D | Cooling spray outlet |
| E | Fixed connection (in this case: Midwest/ISO 4-hole) |
3.5 Technical data

Turbine T1 / T2 / T3 / T4

<table>
<thead>
<tr>
<th>Available head sizes:</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTROL</td>
<td>x</td>
<td>x</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Boost</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>mini</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Racer</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Light function</td>
<td>x</td>
<td>x</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Back-suction stop in the head housing</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Back suction stop in the spray water area</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Pushbutton cover clamping system</td>
<td>FG</td>
<td>FG</td>
<td>FG</td>
<td>FG</td>
</tr>
</tbody>
</table>

Turbine head

<table>
<thead>
<tr>
<th>No-load speed in rpm</th>
<th>CONTROL</th>
<th>Boost</th>
<th>mini</th>
<th>Racer</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 000 ± 30 %</td>
<td>370 000 ± 10 %</td>
<td>400 000 ± 10 %</td>
<td>400 000 ± 10 %</td>
<td></td>
</tr>
<tr>
<td>Maximum torque in Nmm</td>
<td>∼ 1.8</td>
<td>∼ 2.0</td>
<td>∼ 1.6</td>
<td>∼ 2.2 (T3) / ∼ 1.6 (T4)</td>
</tr>
</tbody>
</table>

Friction grip burr instrument

<table>
<thead>
<tr>
<th>Shank standard</th>
<th>CONTROL</th>
<th>Boost</th>
<th>mini</th>
<th>Racer</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 1797-1</td>
<td>ISO 1797-1</td>
<td>ISO 1797-1</td>
<td>ISO 1797-1</td>
<td></td>
</tr>
<tr>
<td>Shank diameter in mm</td>
<td>1.59 - 1.60</td>
<td>1.59 - 1.60</td>
<td>1.59 - 1.60</td>
<td>1.59 - 1.60</td>
</tr>
<tr>
<td>Maximum total length in mm</td>
<td>25</td>
<td>25</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>Maximum working diameter in mm (ISO 2157)</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Treatment center

<table>
<thead>
<tr>
<th>Driving air pressure in bar (flowing, dry, and clean)</th>
<th>T1 / T2 / T3</th>
<th>T3 with fixed connection</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.7 - 3.0</td>
<td>2.3 - 3.3</td>
<td>2.1 - 2.3</td>
<td></td>
</tr>
<tr>
<td>Driving air consumption in NL/min</td>
<td>48 ± 5</td>
<td>52 ± 12</td>
<td>43 ± 4</td>
</tr>
<tr>
<td>Return air pressure in bar</td>
<td>&lt; 0.3</td>
<td>&lt; 0.3</td>
<td>&lt; 0.15</td>
</tr>
<tr>
<td>Spray air pressure in bar</td>
<td>∼ 2.7</td>
<td>∼ 2.3</td>
<td>∼ 2.7</td>
</tr>
<tr>
<td>Spray air flow in NL/min</td>
<td>&gt; 2.5</td>
<td>&gt; 2.5</td>
<td>&gt; 2.5</td>
</tr>
<tr>
<td>Spray water pressure in bar</td>
<td>∼ 2.0</td>
<td>2.0 ± 0.2</td>
<td>2.0 ± 0.2</td>
</tr>
<tr>
<td>Water content in spray</td>
<td>&gt; 50 ml/min</td>
<td>&gt; 50 ml/min</td>
<td>&gt; 50 ml/min</td>
</tr>
</tbody>
</table>
The indicated pressures can be checked by a service engineer with a star tester that is placed between the supply hose and the quick coupling.

### Quick couplings (Sirona)

<table>
<thead>
<tr>
<th>Connection</th>
<th>Quick coupling R</th>
<th>Quick coupling F</th>
<th>Quick coupling B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>6-hole</td>
<td>6-hole</td>
<td>4-hole</td>
</tr>
<tr>
<td>Driving air return</td>
<td>with return airflow</td>
<td>without return airflow</td>
<td>without return airflow</td>
</tr>
<tr>
<td>Spray water control</td>
<td>on the coupling</td>
<td>on the coupling</td>
<td>-</td>
</tr>
<tr>
<td>Back suction stop</td>
<td>in the spray water area</td>
<td>in the spray water area</td>
<td>in the spray water area</td>
</tr>
<tr>
<td>Light function</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Lamp voltage (lamp with dark brown socket)</td>
<td>3.6 V</td>
<td>3.6 V</td>
<td>-</td>
</tr>
<tr>
<td>Lamp voltage (LED)</td>
<td>3.6 V</td>
<td>3.6 V</td>
<td>-</td>
</tr>
</tbody>
</table>


### Turbine connection types available

<table>
<thead>
<tr>
<th>Connection type available for</th>
<th>T1 turbine</th>
<th>T2 turbine</th>
<th>T3 turbine</th>
<th>T4 turbine</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/F quick coupling (Sirona)</td>
<td>x</td>
<td>x</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quick coupling B</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Multiflex LUX (KaVo) quick coupling</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>ROTO QUICK (W&amp;H) quick coupling</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>MachLite/Phatelus (NSK) quick coupling</td>
<td>-</td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>QD-J (NSK) quick coupling</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Midwest/ISO 4-hole fixed connection</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Borden/ISO 2/3-hole fixed connection</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Borden/ISO 2-hole fixed connection</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
</tr>
</tbody>
</table>
3.7 **Product labeling**

- **Washer-disinfector** for thermal disinfection at the temperature specified
- **Sterilizable in a steam sterilizer (autoclave)** at the temperature specified
- **Manufacturing date**
- **Serial number**
4 Preparation

4.1 Initial start-up and longer breaks in use

✔ The turbine is only able to reach full power if indicated operating pressures are set [→ 8]. If necessary have the pressures checked by a service engineer with a star tester that is placed between the supply hose and the quick coupling.

➢ Sterilize the turbine and accessory parts prior to startup.
➢ Clean and maintain the turbine after longer breaks in use.

4.2 Prior to starting the work day

➢ Purge the water and air channels for 20-30 seconds.

4.3 Before each patient

1. Purge the water and air channels for 30 seconds.
2. Attach the turbine [→ 12].
3. Insert the burr instrument [→ 14].
4. Set a sufficient amount of cooling water (> 50 ml/min) [→ 14].
5. Use filtered water only (< 50 µm).
6. Check the nozzles for blockages and lime deposits, for example, and clean the nozzles if necessary [→ 20].

CAUTION! Insufficient cooling leads to overheating of the preparation site and damage to the tooth substance. Ensure that the water content is > 50 ml/min.
5 Operation

**NOTICE!** Use only burrs and diamond polishers that are sharp and undamaged. Use clean burrs and diamond polishers to avoid dirt in the clamping system.

**CAUTION!** A loose or partially removed burr instrument can detach itself from the head or break off. This may cause injury! Therefore, use the turbine only if the burr instrument is inserted at least 10 mm and is clamped securely in place.

**CAUTION!** Insufficient cooling leads to overheating of the preparation site and damage to the tooth substance. Ensure that the water content is > 50 ml/min.

**CAUTION!** Do not pull the patient’s cheek back with the handpiece while the turbine is rotating. This would actuate the pushbutton, thus creating a risk of burning the patient’s oral mucosa.

**CAUTION!** Potentially hazardous optical radiation may cause harm to the eyes. Do not stare at the LED for longer periods of time while in operation.

5.1 Connecting the Sirona quick coupling to the supply hose

1. Attach the quick coupling (B) to the supply hose, noting the various tube diameters.
2. Screw the cap nut (C) tight. Secure the quick coupling using the key (A).

5.2 Replacing the turbine

**CAUTION!** Do not remove the handpiece while the turbine is running.

5.2.1 Turbine with Sirona or KaVo connection

**Attaching the turbine**

➢ Insert the turbine until it audibly clicks into place.

**Removing the turbine**

✔ The turbine is at a standstill.
➢ Hold the quick coupling and the hose nut firmly and pull the turbine while turning it slightly. Do not pull on or hold the supply hose.
5.2.2 Turbine with W&H connection

Attaching the turbine
➢ Insert the turbine until it audibly clicks into place.

Removing the turbine
✔ The turbine is at a standstill.
➢ Press the markings (A) on the W&H quick coupling and pull the turbine while turning it slightly. Do not pull on or hold the supply hose.

5.2.3 Turbine with NSK MachLite connection

Attaching the turbine
➢ Insert the turbine until it audibly clicks into place.

Removing the turbine
✔ The turbine is at a standstill.
➢ Slide back the sleeve (A) on the quick coupling toward the supply hose and pull the turbine while turning it slightly. Do not pull on or hold the supply hose.

5.2.4 Turbine with NSK QD-J connection

Attaching the turbine
➢ Slide back sleeve (A) on the quick coupling toward the supply hose and insert the turbine.

Removing the turbine
✔ The turbine is at a standstill.
➢ Slide back the sleeve on the quick coupling toward the supply hose and detach the turbine while turning it slightly. Do not pull on or hold the supply hose.

5.2.5 Highspeed handpiece with fixed connection

Connecting the highspeed handpiece
1. Attach the highspeed handpiece to the supply hose, observing the various tube diameters.
2. Screw the screw cap (A) hand-tight. Hold the highspeed handpiece securely when doing this.

Removing the highspeed handpiece
1. Unscrew and remove the screw cap.
2. Pull the highspeed handpiece off of the supply hose.
5.3 Inserting and removing burr instruments

**IMPORTANT:** Check the push button to make sure it moves freely!

**NOTICE!** Use only undamaged burrs and diamond polishers that are sharp and undamaged. Use clean burrs and diamond polishers to avoid dirt in the clamping system.

**CAUTION!** A loose or partially removed burr instrument can detach itself from the head or break off. This may cause injury! Therefore, use the turbine only if the burr instrument is inserted at least 10 mm and is clamped securely in place.

**Inserting the friction grip burr instrument**

✔ The turbine is at a standstill.
1. Press the button and slide the burr instrument in until it reaches the stop.
2. Pull on the burr instrument to check that it is firmly attached.

**Removing the friction grip burr instrument**

✔ The burr instrument must not be moving.
➢ Press the button and remove the burr instrument.

5.4 Adjusting the cooling spray

➢ Adjust the cooling spray for the highspeed handpiece with fixed connection at the treatment unit.
➢ Adjust the cooling spray for quick coupling B at the treatment center.
➢ Adjust the cooling spray for QD-J quick coupling (NSK) at the treatment center.
➢ Adjust the flow rate of the cooling water using the control ring (A) (> 50 ml/min).

**Tip:** You can measure the amount of cooling water with a measuring cup and watch.

**Water flow rate**

**R/F (Sirona) quick coupling:** The maximum water flow is set when the control ring clicks into place.

**KaVo quick coupling:** The maximum water flow is set when the two markings face each other.

**MachLite quick coupling (NSK):** The maximum water flow is set when the control ring clicks audibly into place.
Follow-up

6.1 After each treatment session

NOTICE! Condition immediately, or at the latest, one hour after treatment.

NOTICE! Only use Sirona T1 spray.

✔ The burr instrument must not be moving.
✔ Wear appropriate protective clothing.

1. Purge the water and air channels on the treatment center for 30 seconds.

2. Remove the burr instrument with tweezers.

3. Pre-disinfect directly at the treatment center [→ 16].

4. Remove the turbine.

5. Transport the turbine to the hygiene room in a suitable transport container.


7. Spray the turbine [→ 17].

8. Sterilize the turbine and the accessories [→ 19].
7 Conditioning

7.1 Conduct pre-disinfection

✔ Wear appropriate protective clothing.
✔ All disinfectants must be approved in your country and have proven bactericidal, fungicidal and virucidal properties. Only use disinfectants with no protein-fixing properties.

1. Spray the surface with disinfectant.
2. Wipe the disinfectant off with a cloth.

For further processing, the turbine should be dry and free of residue.

In the USA and Canada, for example, you can use:

- CAVICIDE®
- CAVIWIPES ™

Please observe the manufacturer's instructions for using instrument disinfectants.

7.2 Automated cleaning and disinfecting ...

NOTICE! Do not carry out automated cleaning of the quick couplings.

7.2.1 ... with cleaning and disinfection equipment

The turbine can also be cleaned and disinfected in suitable cleaning and disinfection equipment.

The cleaning and disinfection equipment used must be approved by its manufacturer for the cleaning and disinfection of dental instruments and comply with EN ISO 15883-1 (e.g. 95°C (203°F) and 10 min. holding time).

For further details, refer to the operating instructions supplied with the unit.

✔ The turbine is conditioned with a cleaning and disinfection device.

1. Check whether the turbine is clean after conditioning under good lighting (min. 500 lux) and color rendering index (min. 80 Ra).
2. If it is still dirty, repeat the process.

For further processing, the turbine should be dry and free of residue.

3. Blow the turbine out with max. 3 bar.
4. Maintain mechanical parts manually [→ 17].
5. Maintain the push button chuck manually [→ 18].
6. Pack the turbine in packaging material suitable for sterilization and storage. e.g. paper/plastic composite packaging.
7. Sterilize the adapter [→ 19].
7.3 Manual cleaning and disinfection

NOTICE! Condition immediately, or at the latest, one hour after treatment.

NOTICE! *Never* clean in an ultrasound bath!

NOTICE! *Never* immerse in disinfectant solution!

NOTICE! Only use Sirona T1 spray.

IMPORTANT: Use a soft, clean, and disinfected brush for cleaning.

7.4 Manual maintenance

7.4.1 Maintenance of mechanical parts

**Intervals**

- At least every noon and evening
- Prior to each sterilization
- After every thermal disinfection without integrated maintenance
- During a longer preparation (> 10 minutes)

**Required accessories**

- A Sirona connection spray adapter
- B KaVo connection spray adapter
- C W&H connection spray adapter
- D NSK MachLite connection spray adapter
- E NSK QD-J connection spray adapter
- F Morita connection spray adapter
- G Yoshida connection spray adapter
- H T1 Spray

NOTICE! Only use Sirona T1 spray.

**Process**

**Highspeed handpiece without fixed connection**

✔ The spray adapter is disinfected.
✔ The O-rings on the spray adapter are intact.

1. Fit the spray adapter onto the nozzle of the spray can.
2. Insert the turbine as far as it will go and hold it in place.
3. Spray into the turbine for 1-2 seconds.
   IMPORTANT: Hold the spray can upright.
4. Wipe any spray that comes out with a disinfection cloth.
5. Repeat the process until the spray is clear.
Highspeed handpiece with fixed connection

✔ The black nozzle insert is in the spray can tube.
1. Take the highspeed handpiece off of the supply hose [→ 13].
2. Insert the nozzle of the spray can in the driving air tube. Hold the highspeed handpiece securely with a cloth when doing this.
3. Spray into the turbine for 1-2 seconds.
   IMPORTANT: Hold the spray can upright.
4. Wipe any spray that comes out with a disinfection cloth.
5. Repeat the process until the spray is clear.

7.4.2 Care of the push button chuck

Use T1 spray on the push button chuck to remove deposits and ensure proper functioning of the clamping system.

Interval

• At least once a week

Required accessories

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Black nozzle insert</td>
</tr>
<tr>
<td>B</td>
<td>T1 spray</td>
</tr>
</tbody>
</table>

NOTICE! Only use Sirona T1 spray.

Procedure

✔ The turbine is cleaned and disinfected.
1. Press the turbine head with the chuck firmly against the spray can nozzle.
2. Spray the chuck for 1 - 2 seconds.
   IMPORTANT: Hold the spray can upright.
3. Wipe any spray that comes out with a disinfection cloth.
7.5 Sterilizing

Intervals:
- Prior to initial operation
- Prior to every other use

Process

✔ The turbine is cleaned and disinfected.
✔ Turbine maintenance is complete.
✔ If necessary, the turbine can be sterilized in packaging suitable for sterilization and storage, e.g. paper/plastic composite packaging or container.
➢ Sterilize the turbine in the steam sterilizer with saturated water vapor.

Temperature: 135 °C (275° F)
Overpressure: 2.13 bar (30.89 psi)

<table>
<thead>
<tr>
<th>Item</th>
<th>Exposure time at 135 °C (275° F)</th>
<th>Drying time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrapped instruments</td>
<td>10 minutes</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Unwrapped instruments</td>
<td>3 minutes</td>
<td>0 - 1 minutes</td>
</tr>
</tbody>
</table>

Gravity displacement steam sterilizers are permitted.

NOTICE! Do not exceed 140°C (284°F), even during the drying phase.

After sterilizing

1. Remove the turbine from the steam sterilizer immediately.
   CAUTION! The turbine will be hot. This may cause burns!
   NOTICE! Do not immerse the turbine in cold water to speed up the cooling process. This will damage your turbine!
2. Store all turbines so that they are protected from contamination.
3. Sterilize again once the storage period has elapsed.
8 Maintenance

Elastomers, e.g. O-rings, must be replaced depending on their degree of wear.

8.1 Maintenance of cooling spray nozzles

If your tap water is very hard, lime deposits may constrict or completely block the cooling spray nozzles.
1. Carefully clean the nozzle openings by running a cleaning wire through them.
2. Let the turbine run briefly with cooling spray.

8.2 Testing the FG clamping system

Interval

Test the FG clamping system at least once a month.

Required accessories

Chuck tester

Process

✔ The expiry date of the chuck tester (A) has not elapsed.
1. Insert the chuck tester into the FG clamping system [→ 14].
2. Tighten the chuck tester until the marking ring appears (withdrawal force: 22 N)

Does the chuck tester slide out of the chuck before the marking ring appears?

CAUTION! The chuck is defective and the secure fit of the burr instrument is not guaranteed. This may cause injury!
1. Do not use the product.
2. Have the clamping system replaced by a workshop authorized by Sirona.

Tip: Record the time and result of the check for your own information.

8.3 Servicing Sirona quick coupling

8.3.1 Replacing O-rings

1. Remove the defective O-ring.
2. Slide the tool (A), with the new O-ring attached, to just in front of the corresponding groove (B).
3. Insert the O-ring in the groove. Do not use any sharp objects.
4. Spray T1 oil lightly onto the O-rings.

NOTICE! Do not use Vaseline or silicone grease on the O-rings.
8.3.2 Replacing the compression ring

In order to guarantee proper functioning of the "back suction stop in the spray water duct", we recommend replacing the compression ring (C) every six months.

1. Purge the spray water duct at the maximum water flow.
2. Slide the tool, with the new compression ring attached, to just in front of the corresponding groove (C).
3. Insert the compression ring. Do not use any sharp objects.
4. Check that the ring fits snugly all the way around and is not twisted.

8.3.3 Replacing the halogen lamp/LED

CAUTION! The lamp can be hot. Risk of burns! Allow the lamp to cool down.

1. Remove the turbine.
2. Unscrew the cap (B).
3. Remove the defective halogen lamp/LED (A).
4. Insert the new halogen lamp/LED. Ensure the proper position of the contact surfaces.
   NOTICE! Pressing on the lens can destroy the LED. Therefore, please use the installation tool (C) provided to insert the LED.
5. Wipe the bulb of the halogen lamp with a clean cloth.
6. Unscrew the cap from the quick coupling.
7. Check the light function of the quick coupling.

Does the LED not light up?

➢ Remove the LED and re-insert it after rotating it 180° around its own axis.

8.3.4 Replacing the spray water cartridge

Required accessories

- Spray water cartridge
- T1 spray

If the spray water cartridge leaks or is clogged.

1. Remove the quick coupling from the supply hose.
2. Remove the sealing washer (B).
3. Click the control ring into the maximum water flow. The spray water cartridge (A) can be replaced only in this position.
4. Remove the spray water cartridge.
5. Spray oil lightly onto the new spray water cartridge.
6. Insert the new spray water cartridge.
7. Note the position of the bulging side (C) when fitting the sealing washer.
8.3.5 Replacing the felt strip (quick coupling F)

Replace the felt strip if the oil-laden return air that escapes is soiled. We recommend replacing the felt strip at least every three months.

1. Click the control ring into the maximum water flow.
2. Place the coupling upright on a firm, flat surface supported by the screw-on cap and firmly push the control ring (C) downward until it disengages.
   \textbf{NOTICE!} Note that the balls (A) and springs (B) may drop out.
3. Replace the contaminated felt strip (D).
4. Click the control ring back into position, taking care to keep the balls and springs in place.
## Spare parts and consumables

Use only original Sirona parts or parts approved by Sirona.

<table>
<thead>
<tr>
<th>REF</th>
<th>NAME</th>
<th>REF</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>59 01 665</td>
<td>T1 spray (6 x 250 ml cans)</td>
<td>59 40 291</td>
<td>Halogen lamp (dark brown base)</td>
</tr>
<tr>
<td>33 27 793</td>
<td>Chuck tester</td>
<td>24 00 232</td>
<td>Cleaning wire for spray nozzles</td>
</tr>
</tbody>
</table>

### Turbine with Sirona connection

<table>
<thead>
<tr>
<th>REF</th>
<th>NAME</th>
<th>REF</th>
<th>NAME</th>
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</thead>
<tbody>
<tr>
<td>59 41 802</td>
<td>Spray adapter</td>
<td>18 91 840</td>
<td>O-ring for spray adapter</td>
</tr>
<tr>
<td>41 75 803</td>
<td>Replacement kit for quick coupling:</td>
<td>41 74 343</td>
<td>Tool for O-rings and compressed rings</td>
</tr>
<tr>
<td></td>
<td>• 10 O-rings</td>
<td>89 16 645</td>
<td>Screw-on cap for R/F coupling</td>
</tr>
<tr>
<td></td>
<td>• 2 compressed rings</td>
<td>59 41 794</td>
<td>Wrench for quick coupling</td>
</tr>
<tr>
<td></td>
<td>• 1 tool for O-rings and compressed rings</td>
<td>63 14 558</td>
<td>LED for R/F coupling</td>
</tr>
<tr>
<td>89 17 262</td>
<td>Spring coupling F</td>
<td>41 76 603</td>
<td>Control ring coupling F</td>
</tr>
<tr>
<td>34 20 742</td>
<td>2.5 mm Ø ball for coupling F</td>
<td>41 76 389</td>
<td>Felt strip coupling F</td>
</tr>
<tr>
<td>89 16 629</td>
<td>Sealing washer for R/F quick coupling</td>
<td>77 43 444</td>
<td>Spray water cartridge for R/F coupling</td>
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</tbody>
</table>

### Turbine with KaVo connection

<table>
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<th>REF</th>
<th>NAME</th>
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</thead>
<tbody>
<tr>
<td>54 56 954</td>
<td>Spray adapter (KaVo)</td>
<td>18 90 842</td>
<td>O-rings (small) for spray adapter</td>
</tr>
<tr>
<td>18 91 444</td>
<td>O-ring (large) for spray adapter</td>
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### Turbine with W&H connection

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</thead>
<tbody>
<tr>
<td>54 56 970</td>
<td>Spray adapter (W&amp;H)</td>
<td>41 83 849</td>
<td>O-ring (small) for spray adapter</td>
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<tr>
<td>70 23 542</td>
<td>O-ring (large) for spray adapter</td>
<td>54 57 515</td>
<td>Tool for replacing lamps</td>
</tr>
<tr>
<td>54 56 871</td>
<td>Lamp holder</td>
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### Turbine with NSK connection

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<tr>
<th>REF</th>
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<th>REF</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>58 62 243</td>
<td>Spray adapter (QD-J)</td>
<td>58 67 911</td>
<td>Spray adapter (NSK ML)</td>
</tr>
<tr>
<td>41 83 856</td>
<td>O-ring (large) for spray adapter (QD-J)</td>
<td>58 74 958</td>
<td>O-ring set (NSK ML)</td>
</tr>
<tr>
<td>70 41 734</td>
<td>O-rings (small) for spray adapter (QD-J)</td>
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<td></td>
</tr>
</tbody>
</table>

### Highspeed handpiece with fixed connection

<table>
<thead>
<tr>
<th>REF</th>
<th>NAME</th>
<th>REF</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>58 61 765</td>
<td>Sealing washer, 4-hole</td>
<td>59 50 121</td>
<td>Sealing washer 2/3-hole</td>
</tr>
<tr>
<td>64 08 384</td>
<td>Sealing washer, 2-hole</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10 Storage and transport conditions

- Protect from moisture
- Relative humidity
- Air pressure
- Temperature

Sensitive contents

After a severe change in temperature, allow sufficient time for acclimatization.
Disposal

- According to current information, the product does not contain any substances that are hazardous to the environment.
- Disinfect the product prior to disposal.
- Observe the applicable disposal regulations for your area.
We reserve the right to make any alterations which may be required due to technical improvements.