

BA ULTIMATE

BA 695 Dental Air Turbine Handpiece
BA 688



English

Operating Instructions

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1 Before you begin ...

The BA 695 / BA 688 turbine corresponds with the provisions of state-of-the-art technology. The BA 695 / BA 688 turbine complies with the ISO 14457 and ISO 9168 standards.

1. Read the operating instructions before using the BA 695 / BA 688 turbine.
2. Use the BA 695 / BA 688 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 BA 695 / BA 688 turbine.

Intended Use

The BA 695 / BA 688 turbine is used to treat dental disease and injuries. The treatment involves the rotary processing of hard and soft tooth substance and dental prostheses (crowns, fillings, bridges, etc.).

Contraindications

None

Target group

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

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.

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

Instructions for use are labeled as follows:

Instructions for use

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:

<ul style="list-style-type: none">✓ Prerequisite1. First action step2. Second action step or <ul style="list-style-type: none">➤ Alternative action <ul style="list-style-type: none">↪ Result➤ Individual action step	Requests you to do something.
Use of formats and symbols [→ 8].	Identifies a reference to another text passage and specifies its page number.
<ul style="list-style-type: none">• List	Identifies a list.

1.2 Service life

When used as intended:

- Non-moving parts have a typical service life of 5 years
- Moving parts have a typical service life of 3 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.

Obligations of the user

Preventing the spread of infections and cross contamination

Malfunction or damage

Potential explosion hazard

2 Safety information

- Use only fault-free materials that do **not** deviate from the specified data [→ 15].
- 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.

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.

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.

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

Repair

Do **not** attempt to repair the turbine yourself.

The BA instrument is the result of a precise development and must **not** be disassembled by third parties. In the case of service or repair work, please send the instrument in an assembled state to B.A. International Ltd. or to a service center approved by B.A. International.

Spare and accessory parts

Use only original parts produced by the manufacturer.

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

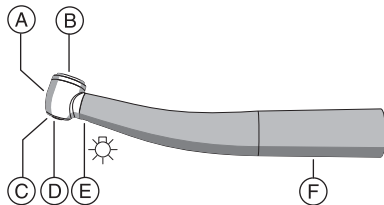
3 Technical description

3.1 Task

The BA 695 / BA 688 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 Design of the BA ULTIMATE



A	Turbine head (in this case: Power)
B	Push button
C	Cooling spray outlet
D	Opening of chuck system
E	Light aperture
F	Handpiece sleeve

3.3 Technical data

Turbine

		BA 695	BA 688
Available head sizes:			
	Power	~ 22W	-
	Mini	-	~ 19W
Light function		x	x
Back-suction stop in the head housing		x	x
Back suction stop in the spray water area		x	x
Pushbutton cover clamping system		FG	FG

Turbine head

	Power	Mini
No-load speed in rpm	360 000 ± 10 %	400 000 ± 10 %
Maximum torque in Nmm	~ 2.0	~ 1.6






Friction grip bur instrument

	Power	Mini
Shank standard	ISO 1797-1	ISO 1797-1
Shank diameter in mm	1.59 - 1.60	1.59 - 1.60
Maximum total length in mm	25	21
Maximum working diameter in mm (ISO 2157)	2.1	2.1

Treatment center

	BA 695 / BA 688
Driving air pressure in bar (flowing, dry, and clean)	2.7
Driving air consumption in NI/min	48 ± 5
Return air pressure in bar	< 0.3
Spray air pressure in bar	~ 2.7
Spray air flow in NI/min	> 2.5
Spray water pressure in bar	~ 2.0
Water content in spray	> 50 ml/min

3.4 Turbine connection types available

	Connection type available for
	R/F quick coupling (Sirona)
	Multiflex LUX (KaVo) quick coupling
	ROTO QUICK (W&H) quick coupling
	Unifix L (Bien-Air) quick coupling
	PTLCL (NSK) quick coupling

3.5 Production data

HSI HIBC code

H658 M 675LN 1 / \$ S 07 00001

(A) (B) (C)

A	Product label code (in this case: 675LN 1)
B	Year of manufacture (in this case: 2007)
C	Serial number (in this case: 00001)

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 [→ 15]. 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 30 seconds.

4.3 Before each patient

1. Purge the water and air channels for 30 seconds.
2. Attach the turbine [→ 23].
3. Insert the bur [→ 25].
4. Set a sufficient amount of cooling water (> 50 ml/min) [→ 27].
5. Use filtered water only (< 50 µm).
6. Check the nozzles for blockages and lime deposits, for example, and clean the nozzles if necessary.

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

5 Operation

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

⚠ CAUTION! A loose or partially removed bur can detach itself from the head or break off. This may cause injury! Therefore, use the turbine only if the bur 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 > 50ml/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.

IMPORTANT: For application details and operating data of the different preparation tools, please refer to the information provided by the manufacturer.

5.1 Connecting the turbine

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

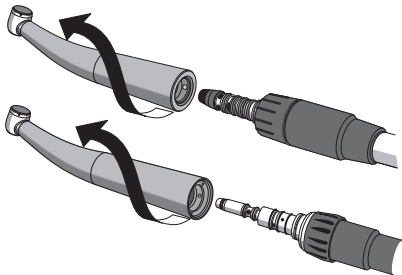
5.1.1 Turbine with Sirona or KaVo connection

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.



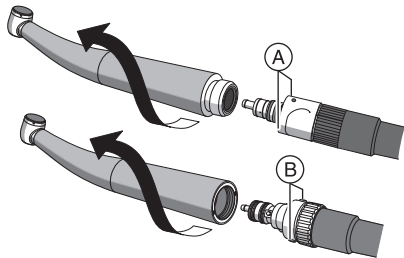
5.1.2 Turbine with W&H or Bien-Air connection

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) of the W&H quick coupling or the pushbuttons (B) on the Bien-Air quick coupling and remove the turbine, turning it slightly. Do **not** pull on or hold the supply hose.



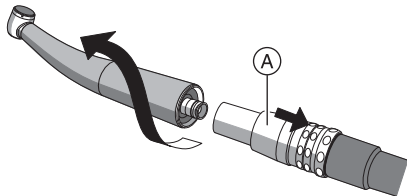
5.1.3 Highspeed handpiece with NSK PTLCL connection

Attaching the turbine

- Insert the turbine until it audibly clicks into place.

Removing the turbine

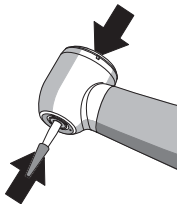
- ✓ The turbine is at a standstill.
- Slide back the sleeve (A) on the quick coupling toward the supply hose and pull the turbine while turning it slightly. Do **not** pull on or hold the supply hose.



5.2 Inserting and removing burs

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

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



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

Inserting the friction grip bur

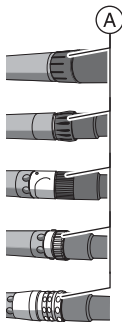
✓ The turbine is at a standstill.

1. Press the button and slide the bur in until it reaches the stop.
2. Pull on the bur to check that it is firmly attached.

Removing the friction grip bur

✓ The bur must not be moving.

➤ Press the button and remove the bur.



5.3 Adjusting the cooling spray

- 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.

W&H quick coupling: The minimum water flow is set when the red line and the red dot are facing each other.

Turn the control ring to the left or right for the maximum water flow.

Bien-Air quick coupling: The minimum water flow is set when the control ring is rotated right to the stop.

The maximum flow is set when the control ring is rotated left to the stop.

PTL CL quick coupling (NSK): The water flow is adjusted to its maximum setting when the control ring perceptibly snaps into place.

6 Follow-up

6.1 After each treatment session

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

- ✓ The bur 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 bur with tweezers.
- 3. Pre-disinfect directly at the treatment center [→ 31].
- 4. Remove the turbine.
- 5. Transport the turbine to the hygiene room in a suitable transport container.

6. Conduct automatic conditioning. Manual conditioning [→ 33] is possible in exceptional cases if the national/local regulations are followed.
7. Spray the turbine [→ 35].
8. Sterilize the turbine and the accessories [→ 39].

6.2 At the end of the work day

- Spray the turbine [→ 35].

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

BA 695 / BA 688 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.

✓ BA 695 / BA 688 is conditioned with a cleaning and disinfection device.

1. Check whether BA 695 / BA 688 is clean after processing.
2. If it is still dirty, repeat the process.

↪ For further processing, BA 695 / BA 688 should be dry and free of residue.

3. Blow BA 695 / BA 688 out with max. 3 bar.
4. Maintain mechanical parts manually [→ 35].
5. Maintain the push button chuck manually [→ 38].
6. Pack BA 695 / BA 688 in packaging material suitable for sterilization and storage. e.g. paper/plastic composite packaging.
7. Sterilize the adapter [→ 39].

7.3 Manual cleaning and disinfection

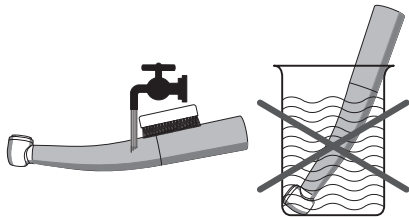
NOTICE! Condition immediately, or at the latest, one hour after treatment.

NOTICE! Never clean in an ultrasound bath!

NOTICE! Never immerse in disinfectant solution!

NOTICE! Using sprays from other manufacturers can reduce the product's service life. Only use BA Ultimate Spray.

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



- ✓ 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. Brush the turbine under running water ($< 38\text{ }^{\circ}\text{C}$, $< 100\text{ }^{\circ}\text{F}$, at least drinking water quality) and good lighting (min. 500 lux) and color rendering index (min. 80 Ra) until no more dirt can be seen, for at least 10 seconds.
 2. Flush the drive channels with spray.
 3. Clean and disinfect spray channels with suitable agents and adapters according to manufacturer's instructions.
 4. Blow spray channels with suitable adapters out with 2.5 - 3 bar until no more moisture displaces, but at least 10 seconds.
 5. Conduct thermal disinfection or unwrapped steam sterilization.
 6. Maintain mechanical parts manually [\rightarrow 35].
 7. Maintain the push button chuck manually [\rightarrow 38].

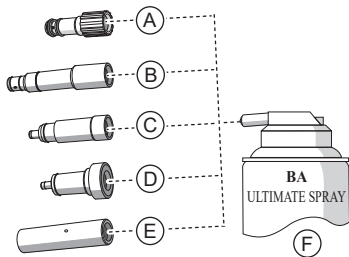
8. Pack the turbine in packaging material suitable for sterilization and storage. e.g. paper/plastic composite packaging.
9. Sterilize the adapter [→ 39].

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)



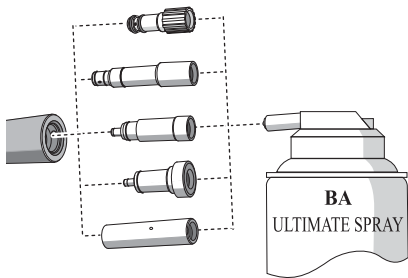
Required accessories

- A Sirona connection spray adapter
- B KaVo connection spray adapter
- C W&H connection spray adapter
- D Bien-Air connection spray adapter
- E NSK PTLCL connection spray adapter
- F BA Ultimate Spray

NOTICE! Using sprays from other manufacturers can reduce the product's service life. Only use BA Ultimate Spray.

Process

- ✓ 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.

7.4.2 Care of the push button chuck

To remove deposits and ensure proper functioning of the clamping system, the pushbutton chuck must be maintained with BA Ultimate Spray.

Interval

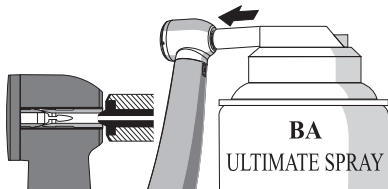
- At least once a week

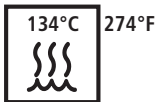
Required accessories

BA Ultimate 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

- ✓ 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.

Overpressure: 2.04 bar (29.59 psi)

Temperature: 134° C (274° F)


Holding time: 3 min

Approved steam sterilizers are those that fulfill the requirements of either EN 13060, class B or EN 13060, class S and which are also suitable for the sterilization of highspeed handpieces.

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 Testing the FG clamping system

Interval

Test the FG clamping system at least once a month.

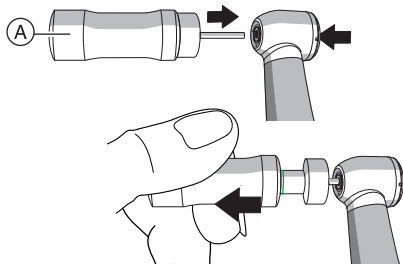
Required accessories

Chuck tester


Process

✓ The expiry date of the chuck tester (A) has **not** elapsed.

1. Insert the chuck tester into the FG clamping system [→ 25].
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 bur 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 B.A. International.

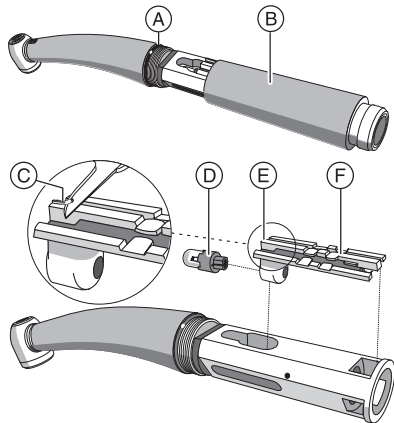
Tip: Record the time and result of the check for your own information.

8.2 Replacing the bulb in the handpiece

For turbines with W&H or Bien-Air connection, the bulb is located in the turbine handpiece.

Highspeed handpiece with W&H connection:

 **CAUTION!** The bulb may be hot. This may cause burns! Allow the bulb to cool down.

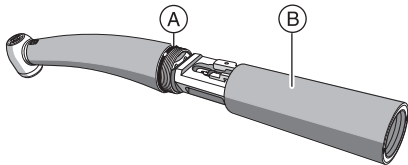


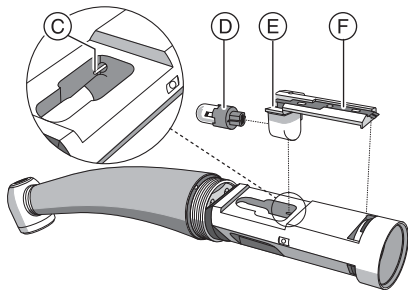
1. Detach the turbine from the quick coupling.
2. Unscrew the back (B) of handpiece sleeve and remove it.
3. Check the O-ring (A) for damage and replace it if necessary.
4. Lift the lamp holder (F) at the head end (E) and remove it.
5. Tap the defective bulb (D) out of its base.
6. Insert the new bulb. Ensure the proper position of the contact surface.
7. Wipe the bulb with a clean cloth.
8. Insert the lamp holder.
When using a new lamp holder, remove the small bar (C) before insertion.
9. Screw the handpiece sleeve back on.

Highspeed handpiece with Bien-Air connection:

⚠ CAUTION! The bulb may be hot. This may cause burns! Allow the bulb to cool down.

1. Detach the turbine from the quick coupling.
2. Unscrew the back (B) of the handpiece sleeve and remove it.
3. Check the O-ring (A) for damage and replace it if necessary.





4. Lift the lamp holder (F) at the corner (E) with a fingernail and remove it.

NOTICE! Take care that the contact pin (C) does **not** become bent or damaged at the coupling fitting.

5. Pull the defective bulb (D) out of the socket.
6. Insert the new bulb. Ensure the proper position of the contact surface.
7. Wipe the bulb with a clean cloth.
8. Insert the lamp holder. In doing so, pay attention to the contact pin.
9. Screw the handpiece sleeve back on.

Änderungen im Zuge technischer Weiterentwicklung vorbehalten.

We reserve the right to make any alterations which may be required due to technical improvements.

Sous réserve de modifications dues au progrès technique.

Reservados los derechos de modificación en virtud del progreso técnico.

Riservato il diritto di modifiche dovute al progresso tecnico.

Wijzigingen in het kader van de technische ontwikkeling voorbehouden.

CE
0476



Consult
Instructions
For Use



Fragile,
handle
with care



Keep dry



Manufacturer



Date of
manufacture



Can be
sterilized



Catalogue
number



Serial
number



ATTENTION



Relative
humidity



Air
pressure



Tempe-
rature

D3560.201.09.02.09 05.2016

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