

You can consult the instructions in another language at:
<https://www.aerodam360.com/instructions/>

WARNINGS AND PRECAUTIONS

Read the instructions before using this device.

HANDLING: BE CAREFUL! Read the coupling instructions to avoid breakage!

Aerodam is a technically designed system that must be handled with care, as it offers maximum performance with minimum size.

This device must only be used in accordance with these user's manual.

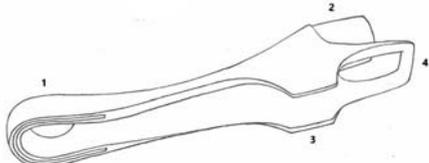
The manufacturer accepts no liability for damage resulting from improper use and/or from uses not covered by these instructions.

PRODUCT INFORMATION

USER: Qualified professionals (dentists and stomatologists)

TARGET POPULATION: The same as for the use of turbines.

INTENDED PURPOSE: Reduction of aerosol cross-contamination in the dental clinic due to dental turbine ejections.



1. Suction ring
2. Outlet nozzle
3. Turbine attachment wings
4. Fulcrum loop

FUNCTIONING PRINCIPLES

AeroDam is a device that attaches to the dental turbine on one side and to the suction hose connector on the other. Its perimeter design with respect to the turbine head allows maximum proximity to the source of the aerosols without leaving exposed flanks. AeroDam captures the aerosol flow emitted by the turbine, that has been deflected onto the tooth surface or surfaces opposing that flow (dental mirror surface or inside the oral cavity, when the flow direction is not perpendicular to the tooth surface). The proximity of the surface in opposition to the direct flow favours the efficiency of the system. The device is designed so that the airflow forms a dam with a toroidal vortex structure within which the aerosol is confined.

ERGONOMICS

AeroDam is a product suitable for any type of qualified professional, which is essential in "solo practice" without an assistant, as a practical solution to the problem of aerosols.

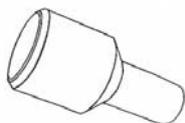
Grip: The morphology of the device allows the middle part of the turbine handle to be held directly with the thumb and middle finger. The index finger rests on an area on the back of the device that is tactilely recognisable by the fingertip. The grip provides absolute stability and control over the whole unit.

Safety: The integrated control over aerosol aspiration rules out clashes with large suction cannulas, operated by assistants for the same purpose, and eliminates risks for the patient.

Ubiquity: One of the objectives of the design of the device has been to minimise its volume, so as not to interfere with oral structures and the antagonist arch, thus maintaining efficiency in the intended purpose.

VERSATILITY

AeroDam fits most of the existing turbines up to a maximum head diameter of 12.5mm, with a 90-degree angle. AeroDam is designed for turbine handles with an angle of 15 degrees or more. As with most turbines, the apex of this angle should be approximately one third of the total length of the handle from the head.



Adapter for use with thin hose

Aerodam fits most wide suction hose connectors with 16mm bore. With the included adapter it can also be fitted to a slim hose connector with 11mm bore.

OPERATING CONDITIONS

Although AeroDam is effective under varying conditions, its effectiveness is optimised by the following recommendations:

1. Suction. The higher the suction volume, the better the efficacy. A high-volume evacuation system (> 250 l/min) is recommended. Performance is optimised with the use of a large suction hose.
2. Turbine. It is recommended to use triple spray or higher, in good maintenance condition and well directed. It is equally advisable to use a lighted turbine. Moreover, it is recommended to choose the lowest air pressure indicated by the manufacturer.

HYGIENE AND STERILISATION

The AeroDam must be carefully cleaned after each use in order to remove any residues. The device tolerates the hygiene and surface disinfection systems common in the dental field (hypochlorite, alcohols, aldehydes, detergents). After proper hygiene, an autoclave cycle is necessary to ensure sterilisation. The biocompatible plastic material with which it is made resists 300 moist heat sterilisation at 134°C. The device is delivered in a non-sterile state and must be sterilised before each use. The thin hose adapter can only be cold sterilised.

STORAGE AND EXPIRATION

No special storage measures are required. The material is resistant to abrasion. No expiry date is foreseen, although it is recommended to use it within 5 years from the date of manufacture.

RECYCLING

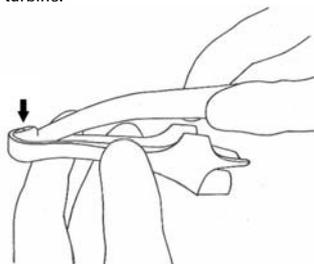
The constituent material of the product is a recyclable plastic. At the end of its useful life, dispose of it at the appropriate recycling location.

INSTRUCTIONS FOR USE

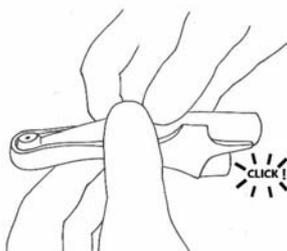
Remove the instrument from the packaging and examine it. If there are any abnormalities, return it to your supplier. Always consider patient safety when using the product. Users are responsible for the control of operation, maintenance, and inspection of this product. Do not modify this device.

TURBINE COUPLING AND DECOUPLING

Coupling the turbine:



1. Insert the turbine head into the ring of the device, with the turbine knob in the direction of the ring.

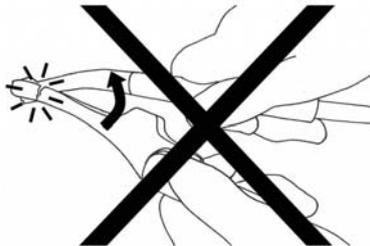


2. Rest the turbine handle on the tips of the attachment flanges of the device and press on the middle part of the handle to engage it between the wings. The coupling makes an audible click, indicating that it is complete.

Connection to the suction hose connector:

Connect the nozzle of the device to the hose connector with sufficient pressure to couple the two elements.

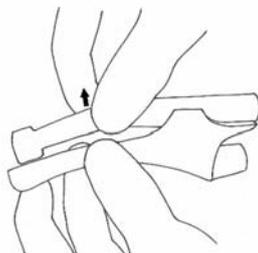
Turbine decoupling:



VERY IMPORTANT! DO NOT UNLOCK THE TURBINE BY PULLING ONLY ON THE HANDLE: The lever arm is so large that it can break the ring of the device.



1. While one hand holds the assembly, the other hand holds the middle part of the handle of the device with the thumb and middle finger, while pushing the turbine head through the ring with the index finger to dislodge it from its location.



2. At this point, the other hand can move on to comfortably pull the middle part of the turbine handle and disengage it from the attachment wings. Attempting to disengage the turbine in any other way may damage the device ring.

Disconnecting the suction hose connector:

Separate the nozzle from the hose connector by exerting sufficient traction and rotation.

USE WITH HOSES

USE WITH LIGHTWEIGHT, ULTRA-FLEXIBLE EVA (ETHYL VINYL ACETATE) HOSES

We recommend them for their light weight, flexibility and economy. However, the following recommendations for thick PVC hoses should be considered.

USE WITH PVC HOSES

Balanced position with thick PVC hose:

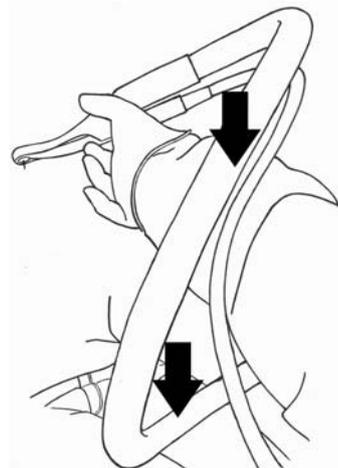
There are different strategies for converting the thick PVC suction hose into a support structure. These strategies allow the device-turbine assembly to be supported and balanced on the hand in a working position close to force neutrality.

With assistant:

The assistant holds the hose in a vertical trajectory so that it describes an arch to the specialist's hand without pushing, pulling or tilting it in any direction.

Without assistant:

The same purpose can be achieved by resting the proximal part of the hose on the patient's body or on the operator's body, depending on the position of the hoses in each dental device, and the distal part of the hose on the operator's forearm.



Rotation of the unit on the longitudinal axis:

Different milling angles during the same treatment require the turbine to be rotated on its longitudinal axis. To ensure that this rotation does not cause stress, the internal rotary joint of the suction hose connector must be lubricated. If this is not sufficient, the rotation between the two parts of the connector should be facilitated with the other hand until a working position close to force neutrality is achieved.

Use with thin PVC hose:

Although the resistance to rotation in the longitudinal axis and the acquisition of the neutral position are not equally important for use with thin hose, the recommendations for thick PVC hose should be considered.

For any type of hose:

The user is responsible for any inconvenience that may result from the use of the assembly outside a working position close to force neutrality. The user is also responsible for the stability of the device-turbine assembly, regardless of the method chosen to achieve the close-to-force-neutrality working position.

HANGING OF THE ASSEMBLY

During breaks in treatment, the device-turbine assembly is designed so that it can be positioned either on the turbine hanger by means of the turbine or on the suction hose hanger by means of the suction hose. On equipment with whip arm turbine suspension, the assembly can be positioned on the turbine rest area, or on the suction hose hanger when this is sufficiently mobile.

When the assembly is placed on the suction hose hanger, the drills inserted in the turbine head face outwards and care must be taken to prevent injury.

OPERATION

Once the turbine is attached and the hose connector is plugged into the device, the drill is inserted into the turbine while pressing with the thumb the button on the head, that protrudes through the ring. The air passage is enabled by releasing the choke on the suction hose connector, and the turbine is operated over the oral operative site. During treatment, the flow rate of the liquid and saliva ejector of the other suction hose must be adjusted to the minimum effective flow rate, so that the device is not impaired in its effectiveness.

For each operative procedure, prioritise alternatives that direct the spray towards the inside of the oral cavity, rather than towards the outside. If directing the spray outwards is unavoidable, interpose some surface in its path (e.g., the surface of the dental mirror).

During cavity carving, directional fluid deflections are formed by intracavity rebound of the ejections. Maximum effectiveness in stopping them is achieved by orienting the major axis of the device towards the bottom of the oral cavity, as the cavity carving advances in the direction of the operator.

As with the turbine, interaction with soft tissue should be avoided: separate tongue, lip, and cheeks. The practitioner is responsible for any damage that may be caused directly or indirectly using the device, and therefore it should only be used when there is sufficient access for the device and proper visibility of the working spot (using different drill lengths may be helpful in these cases).

Last revised: 10/07/2021