INSTRUCTION MANUAL

Airflow Dryer(AFD)

AirFlow Dryer

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Important advice

Please read this instruction carefully first before the use of AirFlow Dryer to give you the most effective handling and usage of this device. You should follow these instructions permanently. If you have any questions to the use of the AirFlow Dryer, please contact your local distributor or PAUDLRACH medical GmbH.

There are no special precautions to be kept in your mind during the operation of the AirFlow Dryer.

The instruction manual as well as other attached documents should be stored in a way that they will be accessible for the user at anytime.

Questions concerning the instruction, the usage or the safety have to be addressed directly to your local distributor or PAULDRACH medical GmbH.

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1. Technical description

The AirFlow Dryer (AFD) is a device for drying a flexible endoscopes' channels after a chemical treatment in order to blow out residual liquids. Flexible endoscopes are instruments which are used through natural orifices of the body whereas the physical examination generally does not take longer than 60 minutes.

By using the AFD it is possible to dry the channels of the endoscope which should not be completely dried by manual, semi-automatic or fully automatic treatment.

Use the AFD also between several treatments in order to remove remaining liquids from the channels to a large extent.

For this purpose you have the possibility:

1. to manually blow through the channels separately by using the AFD pistol
2. to blow through all channels at the same time by using a drying-tube-system.

2. Technical data, specifications

2.1. Data of device

Dimensions:	(w) 40 cm x (h) 29 cm x (d) 30 cm
Weight:	6 kg net, total weight, packing included: 7 kg
Electricity supply:	230 V / 50-60 Hz
Power consumption:	130 VA
Fuse:	2 x 1,25 A average
Max. air pressure:	0,4 bar
Flow pressure:	ca. 300 mbar
Max. flow volume:	without tube system ca. 20 l / minute at 50 Hz with tube system ca. 10 l / minute at 50 Hz
Flux controle:	No

2.2. Classification

Protection against electricity, category of safety:	I, grounded chassis
Protection of humidity:	Covered against spillage of liquids
MDD classification, supplement IX	I
Medical device according to MPBetreibV supplement 1/2:	No
UMDNS code:	12-300
UMDNS term:	Air-dry unit

2.3. Recommended room conditions

Temperature:	10 - 40°C
Relative air humidity:	30 - 75%

2.4. Scope of supply

Figure 1: Scope of supply

1 – AirFlow Dryer main unit
with AFD air gun or:
with AFD drying tube system (alternatively for Olympus, Pentax, Fujinon)
2 – Power cord 1.5 m
3 - (not included in delivery: 1 AFD drying tube system for Olympus)
4 – (not included in delivery: 1 AFD drying tube system for Pentax)
5 – (not included in delivery: 1 AFD drying tube system for Fuijnon)
6 – instruction manual
Packaging: carton with 2 cushions (no picture)

3. Connecting and implementing the AFD

3.1. Front panel

Figure 2: Front panel

(**1**) – Main switch, symbols: I and ⊙ = Power ON, O and ⏻ = Power OFF
(**2**) – CPC-coupling connection for AFD air gun, or drying tube system
(**3**) – Manometer

3.2. Installation

Please follow the operation conditions which are listed in the section "specifications".

When setting up the device, a secure standing and sufficient space for the device's ventilation has to be observed.

The device must not be set up in explosive areas.

3.3. Operating the AirFlow Dryer

The AFD is ready for use when connected to power supply.

Connect either the AFD air gun which is part of the basic equipment or an AFD dry tube system to the CPC coupling connection with light pressure.

The CPS coupling engages and a solid and leak proof connection is established.

3.4. Mains supply

Figure: Mains cord

The power switch has to be OFF.

Afterwards, plug the mains switch into the socket on the back side and connect it to an outlet.

Installation must correspond to relevant regulations concerning medically used rooms.

Please secure a safe grounding of the device.

3.5. Commissioning

Figure: Push-button

In order to start the device, press the green push-button on the front panel.

The button illuminates when device operates.

Connect the air tube to the CPC coupling.

The device is now ready for use.

3.6. Air-intake filter

Figure: Bacteria filter

In order to blow the endoscope channels with bacteria-free air, the AFD has an hydrophobic bacteria filter on the back side.

The filter can be easily exchanged by pulling off and pushing on.

We recommend the filter to be replaced every 2 months.

3.7. Cleaning of the AFD

Corresponding to the regulations of MPBetreibV, processing of device and accessories must be done by using appropriate, validated methods. Please stick, therefore, to the recommendations of the commission for hospital hygiene and infection prevention of the Robert-Koch-Institute and your governmental institute for medicine and medical products.

3.8. Storage

The AFD and all accessories must be stored dry at room temperature and must be protected from impacts, strokes, tilting over and ingress of moisture.

External damages can be indicator for internal damages – thus, the device must be checked concerning security!

4. Maintenance and service measures

4.1. Exchange of the fuse

If the device does not work even though the power switch is on "Power ON" and there is no mains supply, it is to be checked if:

- the power supply of the used outlet is proper,

- the power cord is connected correctly and does not show any damages

and the device fuse is not burned out.

In order to exchange a defective device fuse,

- the power cord needs to be unplugged,

- nominal values of the fuse are to be checked (specifications respectively sign of type) and only a new fuse with the same nominal values can be used for replacement.

In case of repeating failure of the device through repeating burning out of the fuse, the service team of ***PAULDRACH medical*** needs to be informed.

4.2. Air outlets

If dust settles on air outlets, it is necessary to vacuum. Do not blow dust into the device.

4.3. Cyclical inspection

The user of the device is recommended to perform operation tests regularly. In addition, all accessories and media related parts are to be checked.

Inspect regularly all connections of the tubes concerning leak tightness and exchange them when increasing yellowing or external or internal surface films occur.

In order to test the AirFlow pump, please connect the AFD gun and the PVC tube to the AirFlow Dryer by using the CPC coupling. Start the device and check the airflow. Also, test the tube's flexibility because with increasing deterioration of the material, the tube

hardens and does not reform completely. Please check also the inside of the tube. If it is stained significantly, you may want to replace the tube.

4.4. MPBetreibV

This device is not part of the group of devices related to the German Medical Product-Regulation for Operators of Medical Products (MPBetreibV) described in annexe 1 or 2.

4.5. Safety Control

In order to avoid accidents which may be caused by ageing, deterioration or malfunction of medical devices, the so-called MPBetreibV regulates in §6 regular safety controls.

The AFD has to be security-controlled at least once a year!

4.6. Safety controls for the AFD particularly include:

- visual examination of perfect working order of device and accessories
- ground wire check-up IEC 601-1
- isolation check-up VDE 0751-1
- electric leakage current check-up IEC 601-1
- examination of the device's function
- measurement of charging rate to idle speed and full power.

If defects are located during a check-up, which could endanger patients, employees or others, the device has to be taken out of order until an authorised technician or other authorised technical service will eliminate the defects.

5. Accessories and spare parts

5.1. Accessories

182-601-00
AFD-Drying tube system - basic configuration

Adaptors for Drying tube system-basic configuration
Reference Nos. in the following list:

182-601-10	AFD-O Complete Drying Tube for Olympus with 3 Connectors
182-601-11	AFD-O Suction Valve Adaptor, Olympus with LLf
182-601-12	AFD-O Air-Water Valve Adaptor, Olympus with LLf
182-601-13	AFD-O Working Channel Adaptor, Olympus with LLf
182-602-10	AFD-P Complete Drying Tube for Pentax with 3 Connectors
182-602-11	AFD-P Suction Valve Adaptor, Pentax with LLf
182-602-12	AFD-P Air-Water Valve Adaptor, Pentax with LLf
182-602-13	AFD-P Working Channel Adaptor, Pentax with LLf
182-603-10	AFD-F Complete Drying Tube for Fujinon with 3 Connectors
182-603-11	AFD-F Suction Valve Adaptor, Fujinon with LLf
182-603-12	AFD-F Air-Water Valve Adaptor, Fujinon with LLf
182-603-13	AFD-F Working Channel Adaptor, Fujinon with LLf
182-604-10	AFD-F Complete Drying Tube for Fujinon 500 with 3 Connectors
182-604-11	AFD-F-5 Suction Valve Adaptor, Fujinon with LLf
182-604-12	AFD-F-5 Air-Water Valve Adaptor, Fujinon with LLf
182-604-13	AFD-F-5 Working Channel Adaptor, Fujinon with LLf

5.2. Spare parts

182-600-21
AFD-Luer Lock Air-Gun with finger valve /2m tubing

185-301-01
AFD-hydrophobic bacteria filter

6. Responsibility of the producer

PAULDRACH medical GmbH is responsible for the consequences of security, reliability and engine power of the device, if:

Changes, new mountings, extensions, adjustments, modification or repairs will be done by authorised *PAULDRACH medical GmbH* personal only.

The electrical installation of the room is up to standards of VDE / IEC rules.

The device is used in accordance to this instruction manual.

PAULDRACH medical GmbH is not liable for repairs, modifications, adjustments or other interventions which are made by the user's (owner of this device) technical personnel although they use technical instructions from the manufacturer. The manufacturer is not liable for any malfunctions caused by this technical personnel, even if this device is declared repairable by customers.

Guarantee: The Air Flow Dryer is guaranteed for 12 month from date of purchase, however unauthorised opening of the pump housing or unauthorised repairs (other than user related activities mentioned above) will nullify the guarantee.

Garbsen, October 2003

Revision 2008-1 Air filter on back panel

Revision 2013-1 Air filter exchanged

Revision 2016-1 Hydrophobic bacteria filter from Serial-No.: 223