OPERATING INSTRUCTIONS

FLOWMETER
MEDAP-FINA FLOW
MEDAP-FINA DFLOW

MEDAP

GA 5752 2804 GB 19

Subject to technical modification!

Illustrations and technical specifications may vary slightly from those in these Operating Instructions as a result of ongoing product development.

V19 2022-08

CE 0124

Table of contents

1 Introduction

1.1 Foreword

Your facility has selected the leading-edge medical technology made by ATMOS. We sincerely appreciate the trust you have placed in us.

1.2 How to use these operating instructions

These operating instructions are provided to familiarise you with the features of this ATMOS product. They are subdivided into several chapters.

Please note:

- Please read these operating instructions carefully and completely before using the product for the first time.
- Always proceed in accordance with the information contained herein.
- Store these operating instructions in a location near the product.

1.2.1 Abbreviations

EEC	European Economic Community
VDE	Verband der Elektrotechnik Elektronik Informationstechnik (Association for Electrical, Electronic & Information Technology)

1.2.2 Symbols

1.2.2.1 Cross-references

References to other pages in these operating instructions are identified with a double arrow symbol '⏩'.

1.2.2.2 Actions and responses

The '☒' symbol identifies an action taken by the user, while the '✓' symbol identifies the reaction that this will induce in the system.

Example:

☒ Turn on the light switch.

✓ Lamp lights up.

1.2.3 Definitions

1.2.3.1 Design of safety notes

Pictogram	Descriptor	Text
	**DANGER!** Indicates a direct and immediate risk to persons which may be fatal or result in most serious injury.	The text for the safety note describes the type of risk and how to avert it.
	**WARNING!** Indicates a potential risk to persons or property which may result in health hazard or grave property damage.	
	**CAUTION!** Indicates a potential risk to property which may result in property damage.	

Tab. 1: Design of safety notes

1.2.3.2 Structure of notes

Notes not referring to personal injury or property damage are structured as follows:

Pictogram	Descriptor	Reference to
	**NOTE**	Supplementary assistance or further useful information without potential injury to persons or property damage is described in the text of the note.
	**ENVIRONMENT**	Information regarding proper disposal.

Tab. 2: Structure of notes

1.2.4 Symbols used

Symbols are attached to products, type plates and packaging.

Symbols	Identification
	Follow operating instructions
	Warning, observe with particular care
	This product complies with the relevant requirements of the EU regulations.

Symbols	Identification
CE 0124	This product complies with the relevant requirements of the EU regulations.
REF	Reference number
SN	Serial number
	Manufacturer
	Date of manufacture Country of manufacture
UDI	Unique Device Identifier of a medical device
MD	Medical device
LOT	Batch code
>PA<	Material designation for the plastic PA (polyamide)
	Keep dry
	Fragile, handle with care
	This side up

Symbols	Identification
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation
	Symbol for ‘Oil- and fat-free"

Tab. 3: Symbols

1.2.5 UDI-Code

(01)	UDI-DI: Identification of the manufacturer and the device
(10)	Batch code
(11)	Date of manufacture
(21)	Serial number

Tab. 4: UDI-Code

1.3 Disposal

WARNING!
Infection hazard!
The product or some of its components may be contaminated after use.
Clean and disinfect the product before disposal.

1.3.1 Packaging

The packaging is made of materials compatible with the environment. ATMOS will dispose of the packaging materials upon request.

1.3.2 ATMOS products

ATMOS will take back used products or those which are no longer in service.

Please contact your ATMOS representative for more detailed information.

1.4 Overview of FINA FLOW flowmeter

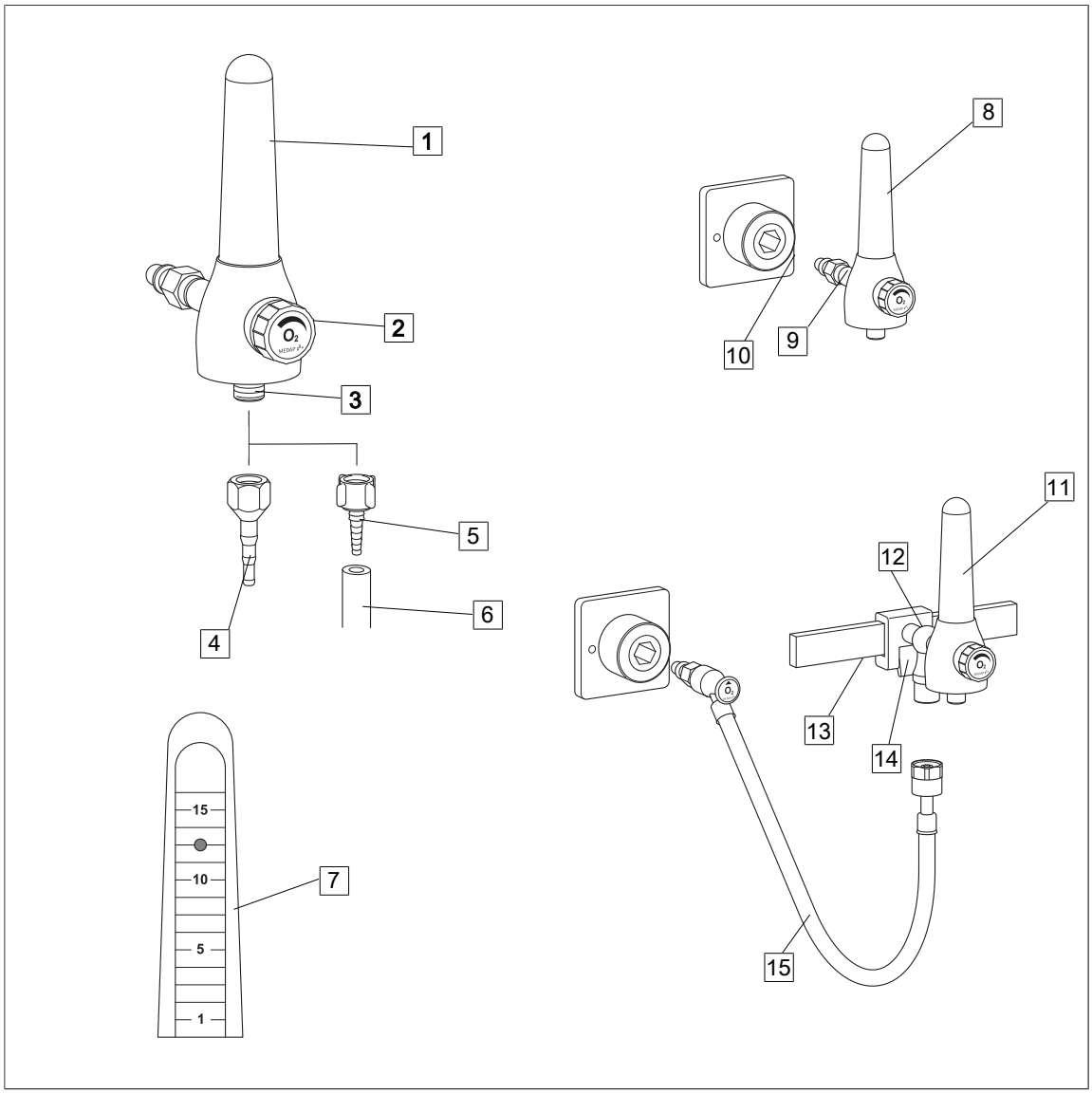


Fig. 1: Overview of FINA FLOW flowmeter

1 Flowmeter viewing tube
2 Control valve
3 Flowmeter outlet (UNF 9/16")
4 Tube adapter 4 mm, 6 mm, 8 mm (UNF 9/16")
5 Tube adapter, plastic, 4 mm, 6 mm, 8 mm (UNF 9/16")
6 Connection tube
7 Measuring scale
8 **Version A**
Tapping unit with integrated gas pin
9 Plug
10 Terminal unit
11 **Version B**
Tapping unit with rail clamp and NIST connection
12 Rail clamp
13 Equipment rail
14 Locking lever
15 Connection tube

1.5 Basic requirements

1.5.1 Use in accordance with the intended purpose

Product

As per Annex IX to the Medical Devices Directive 93/42/EEC, this product belongs to class IIa.

In accordance with this directive, the product may only be used by persons who have been instructed how to use this product by an authorised person.

This product is to be used exclusively for human medicine.

When employed in commercial or business use, this product must be entered in the inventory.

Accessories

Accessories or combinations of accessories may be utilised only as and when indicated in these operating instructions.

Other accessories, combinations of accessories and consumable items may be used only if they have a valid certification, are intended expressly for the particular use and will not adversely affect performance, the prescribed ambient conditions or safety requirements.

1.5.2 Applicable standards / directives

The product bears the CE marking CE 0124 in accordance with the EU Council Directive on Medical Devices 93/42/EEC and meets the essential requirements of Annex I of this Directive.

1.5.3 Intended purpose

Product name:	FINA FLOW
Main functions:	Flow measurement and precise dosing when supplying oxygen and compressed air. In conjunction with a hand-held nebuliser, the flowmeter is used to provide metered administration of medication aerosols.
Intended use:	Supply of oxygen or compressed air. For oxygen / compressed air supply, FINA FLOW is connected to a terminal unit for oxygen / compressed air of a central medical gas supply system with a pressure of 500 kPa ± 10%. For humidification of oxygen from the central medical gas supply system, a humidifier may be installed downstream from the flowmeter. Supply of oxygen to the patient takes place via connection tubes and an inhalation mask or a nasal cannula. The administration of drug aerosols via compressed air takes place via special connection tubes attached to a hand-held nebuliser. The patient presses the inhalation mask connected to the hand-held nebuliser onto the mouth and nose.
Intended users / user profile:	Doctors, trained medical staff
Intended patient target groups:	Patients of all ages with and without restrictions
Medical conditions to be diagnosed, treated or monitored:	Patients needing additional oxygen or water-soluble drugs via an inhalation mask
Organ(s) applied to:	Lung

Duration of application:	Flowmeter designed for continuous operation; in practice, short-term use on the patient (< 30 days)
Use environment:	Environments for use are the hospital/clinic environment and doctor's practices that have a central oxygen or compressed air supply system. The device may only be applied by medically trained and instructed staff.
Patient selection criteria:	All patients needing additional oxygen or water-soluble drugs via an inhalation mask
Indications:	• Inhalation and insufflation of oxygen within the scope of oxygen enrichment via an inhalation mask or a nasal cannula for patients breathing by themselves. • Together with a hand-held nebuliser, administration of water-soluble drugs via an inhalation mask.
Medical contra-indications:	• MR area: FINA FLOW • MR area > 4.7 tesla: S FLOW, LS FLOW • For sole ventilation • Central gas supply systems having supply pressures other than those indicated on the device
Other contra-indications:	• Outside the medical field • In the home care area • Use directly by the patient or his/her relatives • When applying oxygen in its function as a medication, it is absolutely necessary to measure the flow rate
Warnings:	Fire hazard due to escaping oxygen
The product is:	not active
Sterility/specific microbial state:	Non-sterile device
Single-use device / reprocessing:	The device is intended for multiple use. The device and part of the accessories are reusable. For information on reprocessing, cleaning and disinfection: see the operating instructions.

1.5.4 Versions of FINA FLOW / DFLOW flowmeter

The connection of the tapping unit to oxygen or compressed air depends on the model being used:

Version A: Tapping unit with integrated gas pin

- FINA FLOW is fitted directly to the terminal unit.

Version B: Tapping unit with rail clamp and NIST connection

- The FINA FLOW is designed for mounting to a 25 x 10 mm equipment rail and is supplied via a NIST connection with oxygen or compressed air from a terminal unit connecting using a connection tube with gas probe.

Products and accessories are only permitted with the ISO colour coding. In Germany, Austria and Switzerland, products with neutral colour coding are also permitted.

NOTE

The products are supplied with ISO coding. The scope of delivery includes a label for neutral colour coding.

The product is available in the following versions:

- FINA FLOW O 15 Wall MEDAP (REF HM57523680)
- FINA FLOW O 15 Wall DIN (REF HM57523681)
- FINA FLOW O 15 Equipment rail (REF HM57523682)
- FINA DFLOW O 15 Wall MEDAP (REF HM57523688)
- FINA DFLOW O 15 Wall DIN (REF HM57523689)
- FINA DFLOW O 15 Equipment rail (REF HM57523690)
- FINA FLOW A 15 Wall MEDAP (REF HM57523696)
- FINA FLOW A 15 Wall DIN (REF HM57523697)
- FINA FLOW A 15 Equipment rail (REF HM57523698)

1.5.5 Possible applications

The following usage options are made possible by connecting products or accessories which are contained in the list of accessories or which satisfy the specifications of the interface description.

- A metal tube adapter (REF HM57522746) or plastic (REF HM57525316) can be used to connect suitable connection tubes with inner diameters of 4 mm, 6 mm and 8 mm to the flowmeter.
- With the bubble humidifier (REF HM57525315) for humidifying oxygen. The bubble humidifier is intended for inhalation. The bubble humidifier is connected directly to the flowmeter.
- With the flow selector (REF HM57525707), suitable connection tubes with an inner diameter of 4 mm, 6 mm and 8 mm and a humidifier with a UNF 9/16" input may be connected directly.
- Sterile water systems / disposable humidifiers with a UNF 9/16" input may be connected directly.

1.5.6 Interface description

To fulfill its intended purpose, the product must be connected according to the following interface descriptions:

1.5.6.1 Supply pressure of the central gas supply

The product must be connected to a central gas supply for oxygen or compressed air with a supply pressure of 500 kPa +/- 10%.

1.5.6.2 Direct connection to a terminal unit

The product with wall connection must be plugged into a terminal unit with DIN or MEDAP standard.

1.5.6.3 NIST connection

The versions with equipment rail connection have a NIST connection. Connection tubes with a NIST connection, oxygen or compressed air can be connected there.

1.5.6.4 Equipment rail connection

The versions with equipment rail connection must be connected to equipment rails 25x10 mm.

1.5.6.5 Flowmeter outlet

The internal thread on the accessory must match the external thread on the flowmeter outlet (UNF 9/16‘‘, 18 gear).

1.5.6.6 Tube adapter

The tube adapter is used to connect the product to the connection tube. The internal thread on the tube adapter must match the external thread on the flowmeter outlet (UNF 9/16‘‘, 18 gear). The tube connection on the tube adapter (4, 6 and 8 mm) must match the inner diameter of the connection tube.

1.5.6.7 Connection tube

The connection tube with an inner diameter of 4, 6 or 8 mm is connected with the tube adapter.

The connection tube may not collapse or must be pressure-resistant and must comply with the hygiene standard of the hospital. The inner diameter of the connection tube must match the outer diameter of the tube adapter.

2 Safety notes

2.1 General safety notes

DANGER!

Incorrect use can result in fatalities!

Instructions for using components made by other manufacturers are not part of these operating instructions.

Ensure that the manufacturer's instructions are followed.

DANGER!

Observe hygiene guidelines!

Contaminated components may be hazardous to the patient's health.

Prepare the product according to the hygiene guidelines before using it for the first time. Clean and disinfect the product.

DANGER!

Fire/explosion hazard!

Air, oxygen and oxygen compounds react explosively with oils, greases and lubricants. Fire and explosion hazard due to compressed gases.

Always keep the product free of oils, greases and lubricants.

DANGER!

Fire hazard!

Fire hazard as a result of escaping oxygen.

Never smoke near equipment which carries oxygen and avoid using open fires or glowing objects. Check the connector for leaks and tight fit when mounting accessories.

DANGER!

Defective product!

Using incorrect spare parts and accessories can cause injuries or equipment failure.

Only use original accessories or spare parts.

WARNING!

Risk of injury!

Hazard resulting from incorrect handling.

Follow the operating instructions for all accessories.

2.2 Product safety notes

CAUTION!

Malfunction!

Ensure that the connection between the product and the accessory is leak-free.

CAUTION!

Property damage!

Exposure to UV rays can cause material fatigue. The stability would no longer be ensured.

Do not expose the product to strong UV light.

CAUTION!

Observe ambient conditions!

The precision, operation, mechanical stability and tightness of the product cannot be guaranteed if the ambient temperature range is undercut or exceeded.

WARNING!

Impacts!

Impacts may cause damage to sensitive, precision mechanical components.

Do not expose the product to impacts.

WARNING!

Non-permissible load!

If the permissible load is exceeded, leakages may occur at the connection between terminal unit and probe.

In accordance with DIN EN ISO 9170-1, the overall weight of the product and accessories may not exceed 2 kg.

DANGER!

Risk of injury!

The flowmeter viewing tube is made of a delicate material that can easily break. During transport and when coupling and uncoupling to and from the tapping unit or when attaching to or removing from an equipment rail, do not hold the product by the flowmeter viewing tube but by the housing.

DANGER!

Risk of injury!

A damaged flowmeter viewing tube can burst under the pressure of the central gas supply. If the flowmeter falls to the ground or other external force is applied to the flowmeter viewing tube, it must be replaced as a precautionary measure.

WARNING!

Allergic reactions due to contact!

The materials used were examined for their compatibility. In exceptional cases, allergic reactions to accessible materials on the unit and its accessories can occur. This applies to contact injuries in the event of prolonged contact. In this case, consult a doctor immediately.

Report all serious incidents that have occurred in connection with this product to the manufacturer and your national competent authority.

3 Initial operation

3.1 Product testing

DANGER!

Imprecise display in the event of deviations in system pressure!

If the system pressure of 500 kPa ± 10% is undercut or exceeded, it will no longer be possible to accurately display the measured values of the flowmeter.

DANGER!

Fluctuations in flow rate!

Flow accuracy may be influenced by the following factors:

- Fluctuations of the supply pressure (terminal unit)
- Fluctuations of the back pressure (accessories)
- Fluctuations of the ambient temperature

DANGER!

Product testing!

Only product parts which are in perfect condition can ensure proper functioning of the product. The product parts will thus have to be carefully inspected before mounting.

WARNING!

Measurement accuracy!

The product may only be operated in a vertical position.

☒ Pay special attention to the firm seat of the flowmeter viewing tube and to any possible cracks in the flowmeter viewing tube. Do not use the product if there are any signs of cracks.

☒ Check, whether the connection tubes are undamaged.

☒ Check whether the product has been properly cleaned and that there are no residues or soiling.

☒ Do not use damaged components.

3.2 Connection to the terminal unit

3.2.1 General

NOTE

Please refer to the manufacturer’s instructions for the particular terminal unit for information on connecting the gas probe to the terminal unit.

3.2.2 Version A

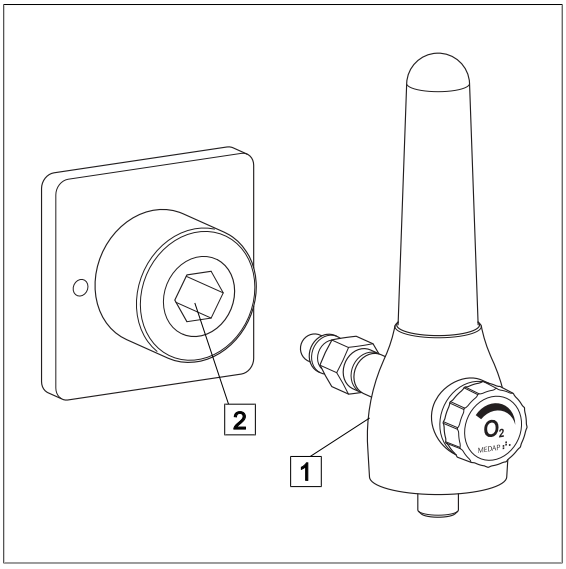


Fig. 2: Version A

Tapping unit with integrated gas pin

☒ The tapping unit (1) is plugged directly into the terminal unit (2).

3.2.3 Version B

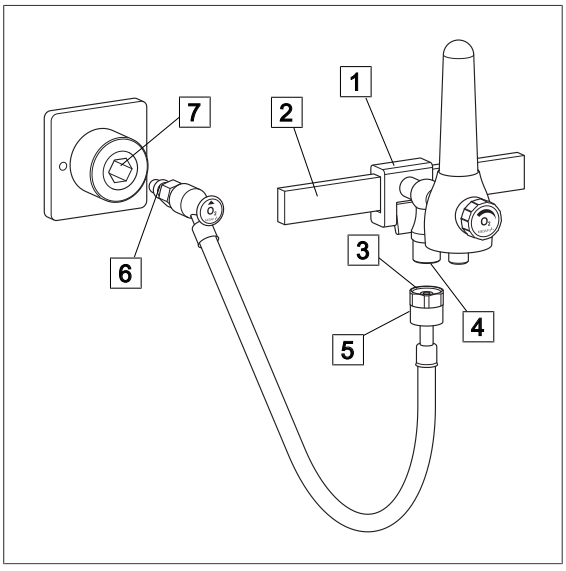


Fig. 3: Version B

Tapping units with rail clamp and NIST connection

☒ With the upper edge of the guide groove at the front, position the rail clamp (1) at a slight angle onto the equipment rail (2) and then press it against the equipment rail and allow it to click into place.

☒ Make sure that the rail clamp is correctly secured and that the tapping unit is in a stable position on the equipment rail.

☒ Insert the NIST nipple (3) of the connection tube into the NIST connection (4) of the tapping unit and tighten down the NIST screw connection (5) by hand.

☒ Plug the gas probe (6) into the terminal unit (7).

3.3 Mounting accessories

3.3.1 General

WARNING!

Tensile forces!

The connected accessories must not exert any mechanical forces which could adversely affect the secure fit of the product.

WARNING!

Tensile forces!

Hold the basic unit with one hand when installing or removing accessories in order to compensate for the tensile forces which are created.

3.3.2 Connection of bubble humidifier (REF HM57525315)

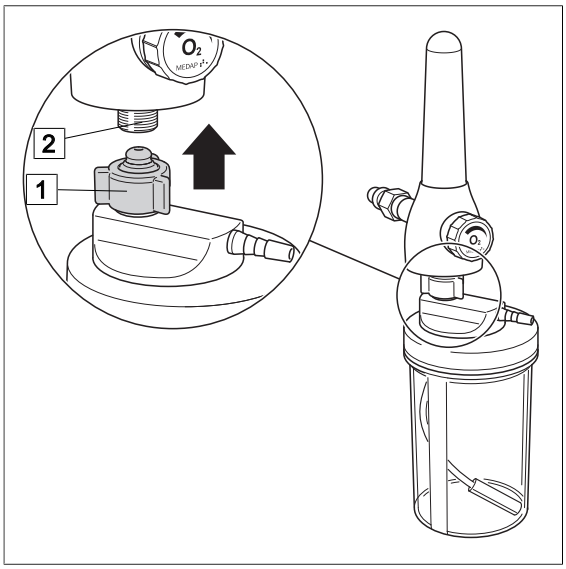


Fig. 4: Connection of bubble humidifier

Connecting the bubble humidifier

☒ Ensure that the tube connector of the bubble humidifier has two seals.

☒ Fill the humidifier bottle up to the marking ‘Filling level’ with distilled water and screw the bubble humidifier cap into place.

☒ Screw the bubble humidifier cap (1) directly onto the flowmeter outlet (2) and tighten finger-tight until it stops.

☒ Pay attention that no tensile forces affect the bubble humidifier.

3.3.3 Connection of disposable humidifiers from other manufacturers

Disposable humidifiers complying with the interface description may be connected to the flowmeter outlet.

☒ Screw the disposable humidifier directly onto the flowmeter outlet and tighten finger-tight until it stops.

3.3.4 Connection of flow selector (REF HM57525707)

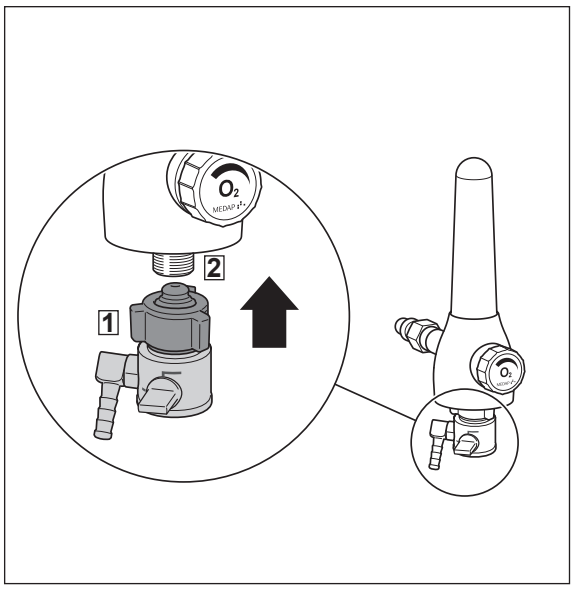


Fig. 5: Connection of flow selector

A flow selector can be connected to the flowmeter outlet. This enables the oxygen to be administered either directly via suitable connection tubes with an inner diameter of 4 mm, 6 mm or 8 mm or via a humidifier with a UNF 9/16" input.

☒ Ensure that there is a seal in the thread with cap nut in the flow selector.

☒ Screw the flow selector (1) directly onto the flowmeter outlet (2) and tighten finger-tight as far as it will go.

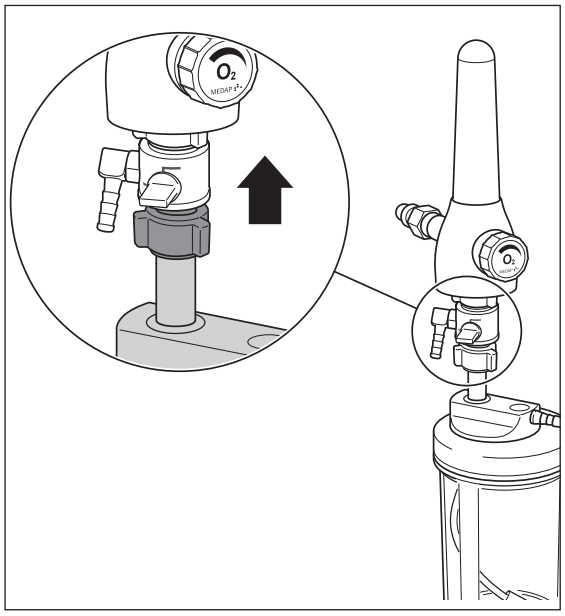


Fig. 6: Connection of bubble humidifier to flow selector

☒ Screw a bubble humidifier (REF HM57525315) as described in Chapter 3.3.2 or disposable humidifiers from other companies as described in Chapter 3.3.3 directly onto the flow selector outlet and tighten finger-tight as far as it will go.

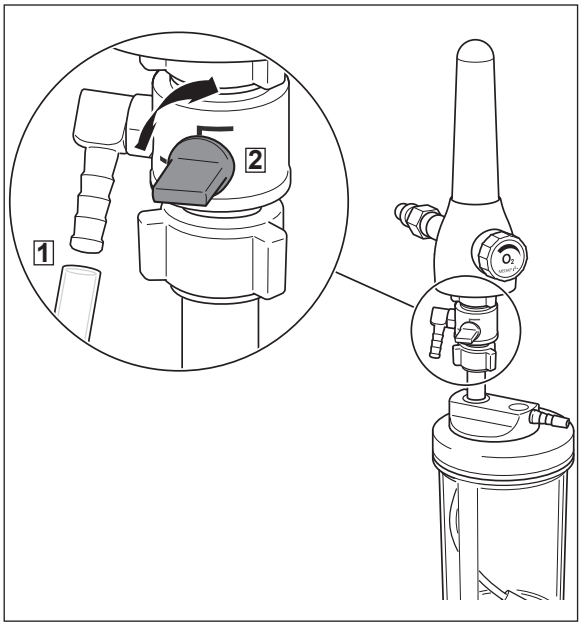


Fig. 7: Operation of the flow selector

☒ Insert a suitable connection tube (1) onto the tube adapter of the flow selector

Operation of the Flow Selector

☒ Turn the selector switch (2) to the desired position

☒ Vertical position - operation of the flowmeter via humidifier

☒ Horizontal position - operation of flowmeter via connection tube

4 Operation

4.1 Function test

DANGER!

Function check!

The product is used in the treatment of patients. Any restriction in the unit's performance can result in serious complications in treatment.

Perform a complete function check every time before using the unit.

Perform a complete function check of the tapping unit prior to use. During functional testing, pay attention to the following conditions:

Version A: Tapping unit with integrated gas pin

- The tapping unit is correctly plugged into the terminal unit

Version B: Tapping unit with rail clamp and NIST connection

- The gas probe of the connection tube is correctly inserted in the terminal unit.
- The NIST nipple of the connection tube is correctly secured in the NIST connection of the tapping unit.
- The NIST screw connection is tightly fastened.
- The tapping unit is locked firmly to the equipment rail.

All versions:

- The tube connectors are firmly secured and tightly sealed, and no mechanical forces are acting on the tubes.
- The plastic and rubber components are in perfect condition and show no signs of ageing.
- The accessories are correctly connected.
- The product is leak-free.
- It is possible to variably adjust the flow rate from zero to the maximum flow.
- The product is in good hygienic condition.

4.2 Setting the flow for treatment

DANGER!

Over-pressure!

The product is under pressure whenever it is connected to the terminal unit, even if the valve is closed.

The flowmeter viewing tube may not be unscrewed when the product is connected.

WARNING!

Compressed gas setting!

The regulating mechanism is sensitive. Make the compressed gas settings very carefully!

NOTE

The rate of gas flow is displayed on the flowmeter viewing tube in the centre of the indicator ball.

NOTE

When applying oxygen in its function as a medication as per the monograph in the European Pharmaceuticals Reference, it is absolutely necessary to measure the flow rate.

NOTE

The product only provides the patient with additional oxygen. The monitoring of the patient is the responsibility of the user.

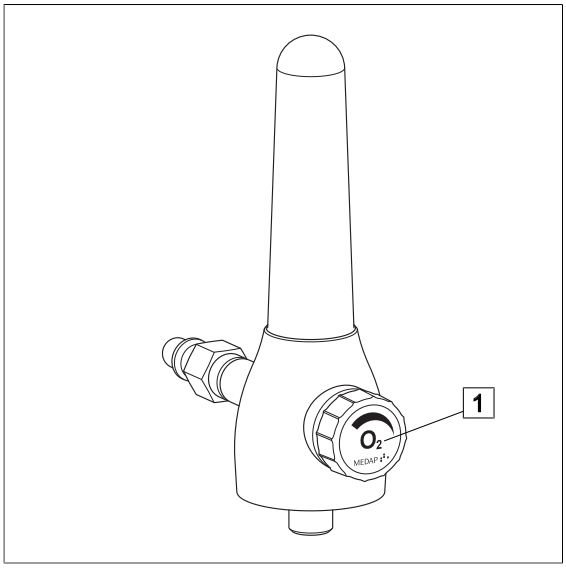


Fig. 8: Working with the tapping unit

Setting the flow for treatment

☒ Open the control valve (1) by turning it anticlockwise. Use the control valve to set the gas flow rate to the required value for the treatment:

Increase the gas flow rate

☒ Turn the control valve anticlockwise.

Reduce the gas flow rate

☒ Turn control valve clockwise.

5 Taking the unit out of operation

WARNING!

Disengage!

When the product is disengaged (removed) from the terminal unit the pressure energy may cause recoil.

Use the terminal unit in parking position or support when disengaging.

NOTE

To protect the product from damages, cover with cloths when storing.

NOTE

Refer to the medical gas distributor instructions for information regarding detaching the gas probe from the medical gas distributor.

All versions:

☒ After completing treatment, close the adjustment screw by turning it clockwise and ensure that it is closed.

☒ Disconnect the tapping unit / gas probe from the terminal unit.

Version B: Tapping unit with rail clamp

☒ Remove the unit from the equipment rail. For this purpose, open the handle screw and lift the unit off the equipment rail.

6 Cleaning and disinfection

6.1 General

The product must be wipe or spray disinfected after every use.

DANGER!

Risk due to incorrect use of detergents and disinfectants!

It is strictly advised to observe the manufacturer's instructions regarding how to use the detergents and disinfectants as well as to observe the valid hospital hygiene rules.

DANGER!

Infection hazard!

Product may be contaminated.

Always wear gloves for cleaning and disinfection.

DANGER!

Infection hazard!

Particles of grime may become encapsulated and cause the product not to achieve the desired germ reduction after disinfection.

Before disinfection, the product must be cleaned thoroughly of contamination and encapsulated particles of grime.

DANGER!

Health hazard!

The product is also used to administer respiratory gas. Residues of sterilisation gases or other substances in the unit could endanger the patient's health.

Do not disassemble the product and do not clean it by gas sterilisation or any other mechanical cleaning or sterilisation method. Ensure that no disinfectant or cleaning agent enters the product.

CAUTION!

Improper cleaning and disinfection can cause property damage!

Do **not** use the following products for cleaning and disinfection:

- Products containing alcohol (e.g. hand disinfectants)
- Halogenides (e.g. fluorides, chlorides, bromides, iodides)
- Dehalogenating compounds (e.g. fluorine, chlorine, bromine, iodine)
- Products that may scratch the surface (e.g. scouring agents, wire brushes, wire wool)
- Standard commercial solvents (e.g. benzene, thinner)
- Water containing iron particles
- Cleaning sponges containing iron
- Products containing hydrochloric acid

Use a soft, lint-free cloth or a soft nylon brush to clean the product.

CAUTION!

Improper cleaning and disinfection can cause property damage!

Use only as much detergent and disinfectant as required.

CAUTION!

Improper cleaning and disinfection can cause property damage!

Perform visual and functional inspections after each cleaning and disinfection process.

6.2 Cleaning

6.2.1 General

NOTE

In the event that product surfaces are very dirty, carry out an additional cleaning procedure before disinfecting the product.

NOTE

Use only all-purpose cleaners which are slightly alkaline (soap solutions) and which contain surfactants or phosphates as active cleaning ingredients.

In the event that surfaces are heavily contaminated, use concentrated all-purpose detergent.

CAUTION!

Improper cleaning can cause property damage!

Residues of physiological saline solutions (e.g. sodium chloride) can attack the surfaces of the product.

Remove residues of physiological saline solutions with a cloth dipped in clean water. Then dry the product with a dry, lint-free cloth.

CAUTION!

Improper cleaning can cause property damage!

Do not spray cleaning agent directly into the joints or gaps and never use a high-pressure cleaning unit!

6.2.2 Cleaning procedure

☒ Use the correct dose of all-purpose detergent with water for the degree of surface contamination and in accordance with the detergent manufacturer's instructions.

☒ Thoroughly wipe off the product with a soft cloth slightly dampened in an all-purpose detergent solution.

☒ Ensure that the product is free of contamination and encapsulated particles of grime.

☒ Thoroughly wipe off the product with a soft cloth dipped in clean water.

☒ Ensure that the product is free of detergent residues.

☒ Dry the product with a dry, absorbent and lint-free cloth.

✓ This will help to reduce pathogen growth on the product's surface.

☒ Wipe or spray disinfect the product after every cleaning.

6.3 Disinfection

6.3.1 General

NOTE

In the event that product surfaces are very dirty, carry out an additional cleaning procedure before disinfecting.

CAUTION!

Material damage due to excessive exposure times!

Exceeding the specified exposure time of the disinfectant may damage the surfaces.

Observe the specified exposure time of the disinfectant manufacturer.

WARNING!

Disinfectants for flowmeter viewing tube!

Only the following disinfectants are approved for the instrument disinfection of the flowmeter viewing tube:

- Indicin® Perfect* (surface disinfectant);
- Sekusept® forte S* (instrument disinfectant).

* (Registered trademark of Ecolab GmbH & Co. OHG)

6.3.2 Suitable disinfectants

Only surface disinfectants based on the following combinations of active ingredients may be used for disinfection:

- Aldehydes
- Quaternary compounds
- Guanidine derivatives

Ingredient group	Active ingredients
Aldehydes	2-ethyl-1-hexanal, formaldehyde, glutardialdehyde, glyoxal, o-phthaldialdehyde, succinaldehyde
Quaternary compounds	Alkyl-didecyl-polyoxethyl ammonium propionate, alkyl-dimethyl-alkylbenzyl ammonium chloride, alkyl-dimethyl-ethyl ammonium chloride, alkyl-dimethyl-ethylbenzyl ammonium chloride, benzalkonium propionate, benzalkonium chloride (alkyl-dimethyl-benzyl ammonium chloride, coco-dimethyl-benzyl ammonium chloride, lauryl-dimethylbenzyl ammonium chloride, myristyl-dimethyl-benzyl ammonium chloride), benzethonium chloride, benzyl-dihydroxyethyl-coco-alkyl ammonium chloride, dialkyl-dimethyl ammonium chloride (didecyldimethyl ammonium chloride), didecyl-methyl-oxyethyl ammonium propionate, mecetronium-ethyl sulfate, methyl-benzethonium chloride, n-octyl-dimethyl-benzyl ammonium chloride
Guanidine derivatives	Alkyl-biguanide, chlorhexidine-digluconate, cocospropylene-diamine guanidinium diacetate, oliogomeric biguanide, polyhexamethylene biguanide hydrochloride (oligo-diimino imiodo-carbonyl imino-hexamethylene, polyhexanide)

Tab. 5: Active ingredients of disinfectants

6.3.3 Disinfection procedure

☒ After each cleaning process, wipe or spray disinfect the product in accordance with the instructions of the disinfectant manufacturer.

☒ Ensure that the product is free of disinfectant residue.

☒ Perform visual and functional inspections.

6.4 Special safety notes

DANGER!

Tension cracks!

Various components in the tapping unit are made of plastic materials. Solvents and some disinfectants and some cleaning agents can soften plastic or cause tension fissures. The gas pressure may cause the flowmeter viewing tube to burst.

Never use detergents that contain alcohol. Observe cleaning and disinfection standards.

CAUTION!

Property damage!

Using non-colour-fast surgical drapes can cause discolouration of surfaces.

Only use colour-fast surgical drapes.

7 Maintenance

7.1 General

Maintenance, repairs and periodic tests may only be carried out by persons who have the appropriate technical knowledge and are familiar with the product. To carry out these measures the person must have the necessary test devices and original spare parts.

ATMOS recommends: work should be carried out by an authorised ATMOS service partner. This ensures that repairs and testing are carried out professionally, original spare parts are used and warranty claims remain unaffected.

DANGER!

Health hazard!

The product is used in the treatment of patients. The product or some of its components may be contaminated.

Clean and disinfect the product before maintenance and repair. Repair work may be performed by personnel authorised by ATMOS.

7.2 Periodic tests

Observe country-specific requirements regarding periodic tests.

7.3 Malfunctions and troubleshooting

Defect	Source of malfunction	Troubleshooting
Indicator ball does not rise even when the control valve is completely open	Gas pin for gas supply is only locked in the parking position	Bring gas pin for gas supply into the operating position, i.e. push the gas pin in completely
15 l/min are not reached with the control valve opened fully	The pressure from the central gas supply system is not high enough	Check the pressure supplied by the central gas supply system
	Sintered filter is clogged	Have the sintered filter replaced
Incorrect display of flowmeter	Pressure fluctuations in the central gas supply system; pressure is too low or too high	Contact Technical Service
Indicator ball does not rest on seat with the control valve in the closed position	Flowmeter viewing tube defective	Have flowmeter viewing tube and indicator ball replaced. Attention: flowmeter viewing tube and indicator ball function as a pair
	Control valve is no longer sealing	Have flowmeter inspected
Indicator ball is stuck	Flowmeter viewing tube is contaminated	Have flowmeter viewing tube cleaned. Attention: indicator ball and flowmeter viewing tube function as a pair
Gas probe does not fit into the terminal unit	Wrong terminal unit selected	Check the designation of the terminal unit

Defect	Source of malfunction	Troubleshooting
Full loss of pressure at the flowmeter	Seal is missing or defective	Have flowmeter inspected
	There is a leak in the housing	
	Accessories are not tightened	Ensure that the accessory is fitted properly

Tab. 6: Malfunctions and troubleshooting

7.4 Repairs

The following issues may require repairs by the manufacturer or an authorised service partner:

- Liquid has penetrated the device.
- Performance has significantly decreased.
- Inexplicable notifications appear.
- Abnormal noises occur.
- Functional faults cannot be rectified according to the measures in chapter Malfunctions and troubleshooting [⏩ page 28].

If defects are detected, the product may not be used any longer.

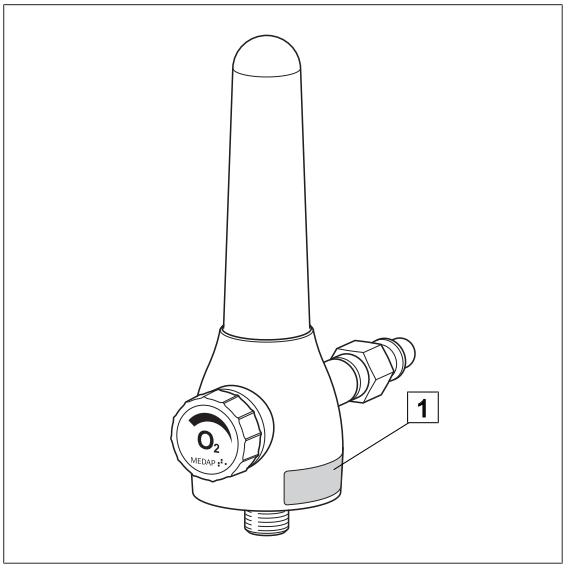
Make a note of the defects and the REF number on the type plate and inform your ATMOS representative.

Observe the information in chapter Sending in the device [⏩ page 29].

7.5 Service hotline

+49 7653 689-0

7.6 Type plate position



Position of the type plate (1) on the product.

Fig. 9: Type plate

7.7 Sending in the device

☒ Remove and properly dispose of consumables.

☒ Clean and disinfect the product and accessories according to the operating instructions.

☒ Place used accessories with the product.

☒ Fill in form QD 434 ‘Delivery complaint / return shipment’ and the respective **decontamination certificate**.

This form is enclosed with each delivery and can be found at www.atmosmed.com.

☒ The device must be well padded and packed in suitable packaging.

☒ Place form QD 434 ‘Delivery complaint / return shipment’ and the respective**decontamination certificate** in an envelope.

☒ Affix the envelope to the outside of the package.

Send the product to ATMOS or to your dealer.

8 Technical specifications

8.1 Details

Gas type	FINA FLOW O 15	Oxygen
	FINA FLOW A 15	Compressed air
	FINA DFLOW O 15	Oxygen
Measurement range	FINA FLOW O 15 / A 15 FINA DFLOW O 15	1 – 15 l/min
Adjustable flow rates	FINA FLOW O 15 / A 15 FINA DFLOW O 15	Infinitely adjustable
Supply pressure	FINA FLOW O 15 / A 15 FINA DFLOW O 15	500 kPa* ± 10%
Input filter (only with DIN version)	FINA FLOW O 15 / A 15 FINA DFLOW O 15	Sintered metal 80 µm pore width
Indication accuracy (freeflow at 500 kPa)	FINA FLOW O 15 / A 15 FINA DFLOW O 15	± 10% over 5 l/min flow indication ± 0.5 l/min to 5 l/min flow indication
Flow limitation	FINA FLOW O 15 / A 15 FINA DFLOW O 15	25 l/min ± 5 l/min
Connection thread	FINA FLOW O 15 / A 15 FINA DFLOW O 15	UNF 9/16“
Weight	FINA FLOW O 15 / A 15	approx. 750 to 950 g (depending on attachment)
	FINA DFLOW O 15	approx. 1600 to 1700 g (depending on attachment)
Dimensions (H x W x D)	FINA FLOW O 15 / A 15	approx. 70 x 50 x 140 mm
	FINA DFLOW O 15	Approx. 170 x 165 x 120 mm
Connection to CGS / gas pin	FINA FLOW O 15 / A 15 FINA DFLOW O 15	• Wall DIN • Wall MEDAP • Equipment rail
Environmental conditions: Transport/storage • Temperature range • Air humidity without condensation • Air pressure	FINA FLOW O 15 / A 15 FINA DFLOW O 15	 -15...+50 °C 10...95 % 700...1060 hPa
Environmental conditions: Operation • Temperature range • Air humidity without condensation • Air pressure	FINA FLOW O 15 / A 15 FINA DFLOW O 15	 +15...+40 °C 30...75 % 700...1060 hPa

Periodic tests	FINA FLOW O 15 / A 15 FINA DFLOW O 15	Observe country-specific requirements regarding periodic tests
CE marking	FINA FLOW O 15 / A 15 FINA DFLOW O 15	CE 0124
Reference number (REF)	FINA FLOW O 15 / A 15	• HM57523680 • HM57523681 • HM57523682 • HM57523696 • HM57523697 • HM57523698
	FINA DFLOW O 15	• HM57523688 • HM57523689 • HM57523690

9 Approved accessories

The following accessories are not part of the scope of delivery and must be ordered separately.

9.1 Accessories

HM57522746	Tube adapter, metal 4 mm, 6 mm, 8 mm
HM57525316	Tube adapter, plastic 4 mm, 6 mm, 8 mm
HM57525315	Bubble humidifier
HM57525707	Flow selector

Tab. 7: Accessories

9.2 Scope of delivery

HM57503774	Neutral colour coding label (AIR versions)
HM57503771	Neutral colour coding label (O2 versions)

Tab. 8: Scope of delivery

Notes

MEDAP

Manufacturer:

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