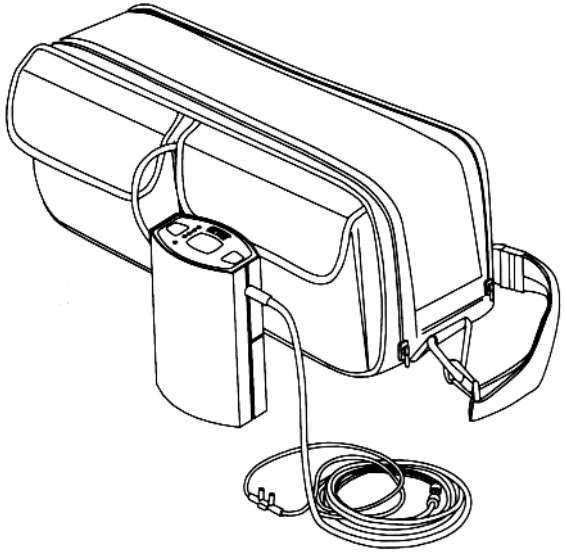


Operating Instructions
O_2 therapy device

OXYJET

Attention!

The OXYJET has to be operated only in combination with a pressure reducer of the company

MESSER - Cutting Systems

Type: FM 41F 200 - 5 L
Oxygen

Table of contents

Please read these operating instructions carefully before operating your mobile medical oxygen supply!

Annotation of the notes:

Warning!
Here, you will find particularly important notes and instructions. The non-observance of them will cause the risk of accidents and injuries and risks to life or physical condition.

Attention!
Here, you will find important information on improper or risky handling procedures of your device that may cause technical damages.

Note
Here, you will find practical advices for handling the O_2 therapy device in the optimal way.

1 Scope of delivery

Standard equipment:

Denomination	Ordering No.
Complete device	OX 9400
consisting of:	
1. Controller OXYJET	OX 6401
2. Spiral tube, complete	OX 6402
3. Nose cannula	OX 6404
4. Pressure controller med. 28	OX 6405
5. Oxygen bottle 2.0 litres, filled	OX 6407
6. Carrying bag OXYJET 2.0 litres	OX 6409
7. Bag for controller (small carrying bag)	OX 6410
8. Batteries 4x1.5 AA LR6	OX 6412
9. Operating instructions	OX 6413
10. Caddy	OX 6411

Hospital version:

Complete device	OX 7500
Parts of the standard equipment 1, 2, 3, 8	
Additionally:	
11. Pressure controller med. 28 for connection to Central Gas Unit (ZGA DIN EN 737)	OX 7501

For stationary domestic use:

Denomination	Ordering No.
Complete device	OX 6500
Parts of the standard equipment 1, 2, 3, 4, 8, 9	
Additionally:	
12. Oxygen bottle 10 litres, filled	OX 6501
13. Safety chassis	OX 6502
14. Bottle jacket, complete	OX 6503

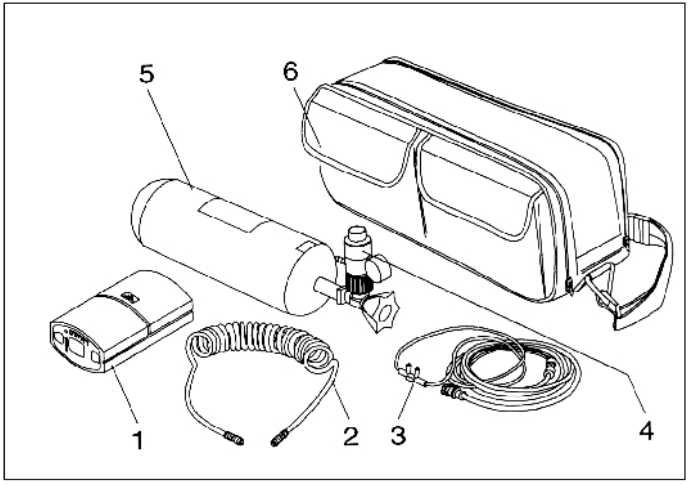


Figure 1: Parts of the standard equipment

2 Device description

2.1 Functional description of the controller

Your mobile medical oxygen supply type **OXYJET** is designed for the treatment of chronic respiratory diseases within the framework of long-term oxygen therapy.

Attention!
The required amount of oxygen depends on the physical stress and will be determined by your physician!

The unit analyses the vacuum resulting at the nose cannula from the process of breathing in and provides a defined amount of oxygen.
The oxygen is provided at the beginning of each breathing cycle.

The numbers of the programs indicate the set dosage quantity of oxygen in litres/minute (L/min) in each case:

P1	≙ 1L/min	8.2 ml/breath ± 15%
P2	≙ 2L/min	16.4 ml/breath ± 15%
P3	≙ 3L/min	25 ml/breath ± 15%
P4	≙ 4L/min	32 ml/breath ± 15%
P5	≙ 5L/min	42 ml/breath ± 15%
P6	≙ 6L/min	52 ml/breath ± 15%
P7	≙ 5L/min	(permanent supply)

By operating program P7 a uniform flow of oxygen (approx. 5L/min) is supplied, independent of the breathing cycle.

Warning!
Only use this program in cases of emergency and under the supervision of a physician!

2.2 Control and display elements of the controller

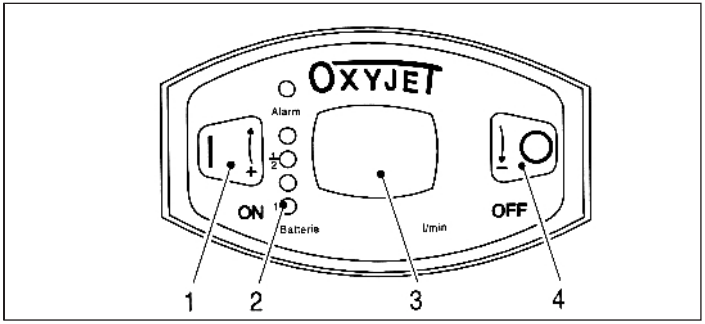


Figure 2: Control elements of the controller OXYJET

(1) Pushbutton ON, program change (increasing)
(2) LED display
(3) Display
(4) Pushbutton OFF, program change (decreasing)

2.3 Operation of the controller

Activation
After having pressed pushbutton (1), switch on the device.
The display (3) shows the program number (e.g. P2).

The vertical LED display (2) shows the status of the batteries:

- **green** full capacity
- **yellow** half capacity
- **red** depending on the program, the lifetime of the batteries is only a few hours

Program change
By pressing the pushbutton (1) several times, you select the programs up to P7 in an increasing manner.
By pressing the pushbutton (4) several times, you select the programs up to P1 in a decreasing manner.
The battery status will be indicated by the LED display (2) during each program change.

Deactivation
When pressing the pushbutton (4) for more than 1.5 seconds, the device will be switched off.

2.4 Control and safety functions of the controller

Battery monitoring
In addition to the battery status display during each program change, the battery voltage will be monitored continuously.

In case of an overvoltage situation, the following alarm will be indicated on the display:

Red LED flashing twice at short intervals, acoustic signal occurs in addition.
The display shows "b" (battery).

When this alarm is indicated, the batteries have to be replaced immediately!

No triggering procedure
If the device does not detect any breathing for a period of 40 seconds (e.g. due to jammed hose to the nose cannula or displaced nose cannula), the following alarm will be triggered:

Red LED flashing twice, yellow LED flashing once at short intervals, acoustic signal occurs in addition
The display shows "A" (triggering).

This alarm can be deactivated by:
- switching the device on and off,
- changing of program or elimination of the failure within the tube system or by restarting the breathing process.

Lack of oxygen
The following alarm will be triggered on the basis of a lack of oxygen (spiral tube jammed or not connected, oxygen bottle empty):

Red LED flashing twice, green LED flashing once at short intervals, acoustic signal in addition
The display shows "O" (O2)

This alarm can be deactivated by:
- switching the device on and off,
- changing of program, or
- elimination of failure within the oxygen supply.

2.5 Controller power supply

Please equip your mobile medical O_2 supply of the type OXYJET with 4 1.5V AA batteries R6 in the designed battery compartment (1) for commissioning purposes.

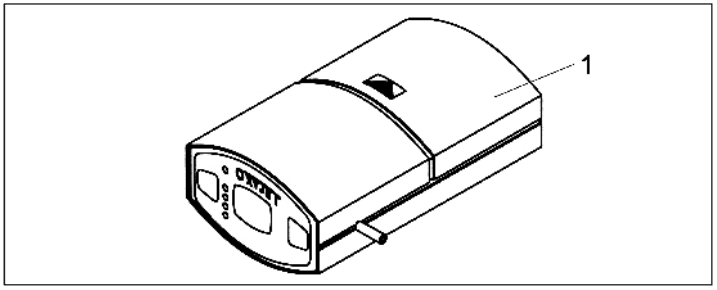


Figure 3: Battery compartment (1) inside the controller

Attention!
Please switch off the controller when you replace the batteries! Please observe the proper polarity + and - ! Empty batteries have not to be disposed of in the domestic waste.

If a red LED flashes during the battery test, the device will operate for only a few hours. In case of battery alarm (see item 2.4), you have to replace the batteries immediately.

2.6 The mobile med. O_2 supply

This variant consists of the standard equipment. Please refer to figure 1 on page 2.

By the complete device, the controller (1) is already connected by the manufacturer to the oxygen bottle (5) via the spiral tube (2) and the pressure controller med. 28 (4). The nose cannula (3) has to be connected to the right side of the controller.
The quick couplers on the spiral tube (2) are identical.

Note!
The tube fittings cannot be interchanged!

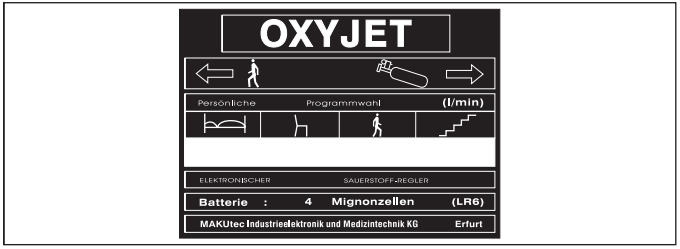


Figure 4: Identification of the tube fittings

(1) Fitting nose cannula
(2) Fitting spiral tube to O_2 bottle

The oxygen bottle is positioned within the carrying bag (6). The controller has to be positioned inside the right external bag that has a connection to the interior of the bag. These operating instructions have to be kept in the left external pocket.

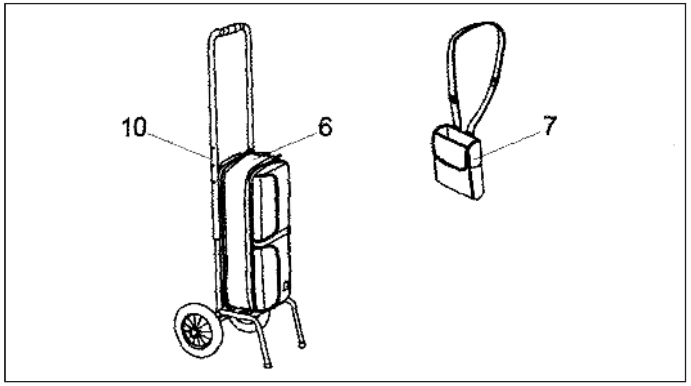


Figure 5: Further parts of the standard equipment

(6) Carrying bag
(7) Bag for the controller (small carrying bag)
(10) Caddy

We recommend using a caddy (10) when the device is used with the carrying bag (6) for mobile operation. For mobile operation, the carrying bag (6) is pulled over the inner bracket of the caddy (10) by use of the flap fixed to the carrying bag.

When using the caddy the controller has to be stored in the delivered bag (7), which has to be carried over the shoulder, on the belt, or around the neck.

2.7 The stationary med. O_2 supply

You may use a 10 litres oxygen bottle for domestic therapy purposes.

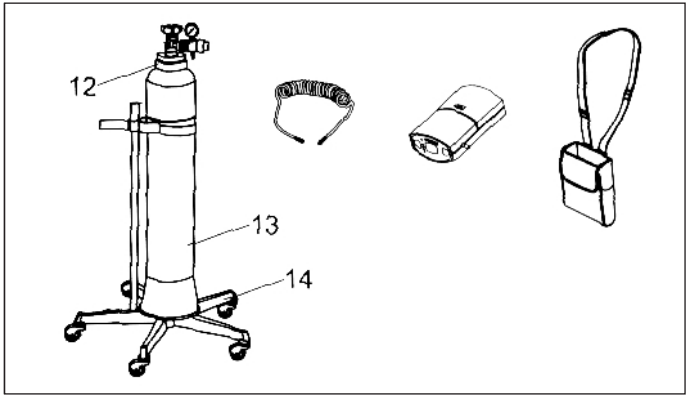


Figure 6: Additional parts for stationary applications

(12) Oxygen bottle, 10 litres
(13) Bottle jacket
(14) Safety chassis

Attention!
Protect the oxygen bottle against tumbling down!
Please use the safety chassis!

The O2 bottle can be "hidden" underneath a complete bottle jacket.
When the device is operated stationary the spiral tube is used as a fitting between controller and oxygen bottle.

2.8 Hospital version

For the O2 therapy device stationary operated in the hospital, the scope of delivery contains additionally to the standard equipment a special pressure controller med. 28 for the fitting to a central O2 system (ZGA),
The spiral tube is used as fitting between controller and pressure controller.

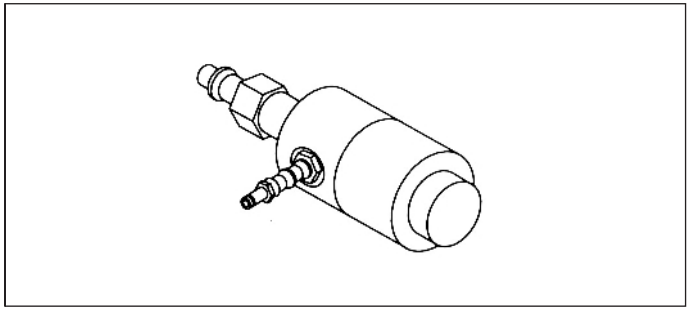


Figure 7: Pressure controller for ZGA in accordance with DIN EN 737 (Central Gas Unit)

3 Operation

3.1 Start of operation

Please observe figure 2 on page 4.
Please proceed as follows when starting the operation:

1. Open the carrying bag completely.
2. Slowly turn the valve wheel of the closed oxygen bottle in anti-clockwise direction (maximum 1 rotation).
3. Activate the controller OXYJET by using the pushbutton (1). By pressing the pushbuttons (1) and (4) several times you are able change the program shown on the display.
4. Apply the nose cannula as shown in figure 8. When breathing in through the nose the OXYJET will start operation.

Warning!
Please breathe through the nose only!

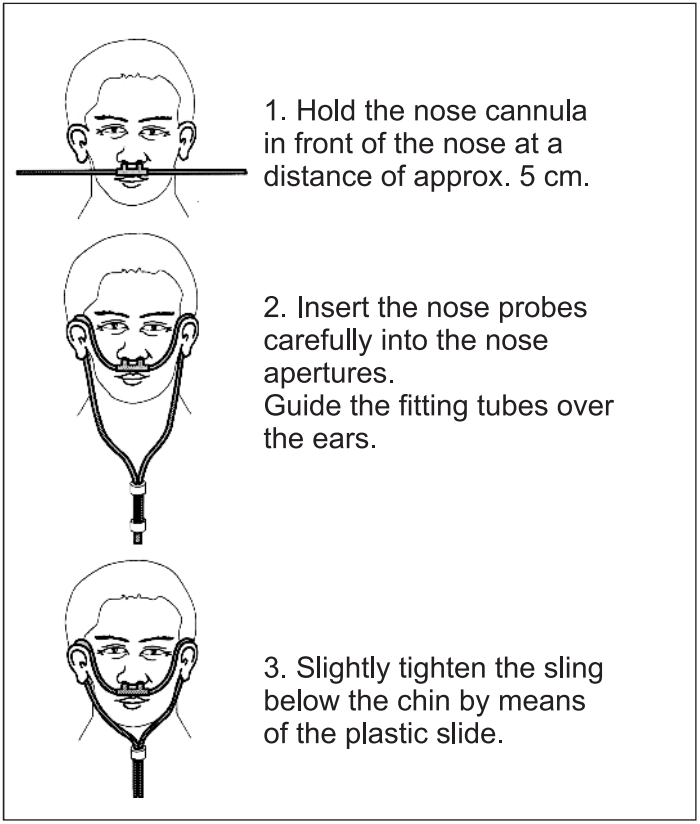
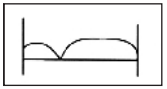


Figure 8: Application of the nose cannula

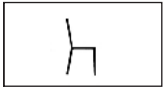
There is a sticker on the front side of the controller, see figure 9.

Figure 9: Sticker on the device

The symbols have the following meaning:

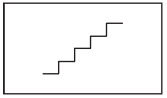


Resting



Low stress

Medium stress



High stress

Attention!
It is essential for you to write down the settings specified by the doctor. Therefore use a water-proof fibre pin! There is a sticker on the lower side of the controller, see figure 9a.

There is a sticker on the lower side of the controller, see figure 9a.

Figure 9a: Sticker on the lower side

Attention, please take care of the instructions in the operating instructions manual

Application part type BF

Attention, the device has not be disposed of in the domestic waste

CE 0494 SLG – Approval- and Certification GmbH

3.2 Replacing the bottle

Attention!
When replacing the oxygen bottle, it is essential to take care of the following in any case:
- **The bottle is pressurised!**
- **Keep the fitting free of grease and oil!**
- **Open the bottle valve slowly!**
- **Do not exert any force and do not use any tools!**
- **Never empty the bottle completely: The indication on the manometer has not fall below 10bar!**
- **Keep the bottle away from ignition sources!**
- **Smoking and open fire are prohibited!**
- **Use the equipment specified by the manufacturer only!**

1. Open the carrying bag completely
2. Close the bottle valve by turning it in a clockwise direction.
3. Depressurise the system:
   Switch on the controller and breathe in through the nose cannula until the indicator at the pressure controller shows "0".
   Switch off the controller.
4. Disconnect the spiral tube. Unscrew the pressure controller from the emptied bottle by turning it in an anti-clockwise direction.
5. Dismantle the hook-and-pile fasteners. Remove the emptied oxygen bottle out of the bag.
6. Screw the pressure controller onto the filled oxygen bottle by turning it in an clockwise direction until you reach a noticeable resistance.
7. Place the filled oxygen bottle inside the bag. Attach the bottle by using the hook-and-pile fasteners in the bag.
8. Connect the pressure controller and the controller to the spiral tube.
9. Connect the nose cannula to the controller.
10. Proceed as indicated in item 3.1.1 to 4.

3.3 Functional control

The implementation of regular functional controls upon every bottle replacement or after longer periods of standstill is very important for trouble-free operation of your mobile medical O2 supply type OXYJET.
In detail, the functional controls consist of:

1. **Checking the leak-proofness of all tubes and fittings**
   Depressurise the system, see item 3.2.

   Check the connections and tube fittings and tighten the same by hand, if applicable.

   Slowly open the bottle valve and check the level on the manometer of the pressure controller.

   Close the bottle valve and observe the needle deflection for 1 minute.

   If the needle deflection is constant, the leak-proofness of the system is guaranteed.

   If the needle falls down slowly there is a leakage.

Check all fittings!
If required, damaged parts have to be replaced.

Attention!
Use genuine spare parts and accessories only!

2. **Check if the controller is ready-to-operate**
   A battery test is to be done at each program change, see item 2.3.
3. **Check the alarm function**
   Switch on the controller and do not breathe through the nose cannula.
   After a period of 40 seconds the acoustic and visual alarm has to be triggered, see item 2.4.

Warning!
In any case of failures you have to inform your specialised distributor!

3.4 End of operation

When finishing the oxygen therapy, please proceed as follows:

Close the valve on the pressure controller by turning it in a clockwise direction.

Check the remaining quantity of oxygen.

The bottle must never be emptied completely, as air may penetrate otherwise. ***If the bottle is nearly empty, take care of a replacement bottle in a timely manner!***

Depressurise the system:
Switch on the controller and breathe through the nose cannula until the indicator at the pressure controller shows "0".

4 Maintenance and cleansing

Cleanse the unit after operation by using a clean cloth.

Attention!
The device must not be cleansed with a moist cloth as moisture could penetrate into the system. In this case a failure-free operation of the device is no longer guaranteed.

The nose cannula is a one-way article that has to be replaced after having been used several times and when changing the patients.

In order to assure trouble-free operation, regular functional controls are indispensable, see item 3.3.

Proper care and operation are essential for correct application.

The device has to be checked and, if needed, repaired by an authorised specialised distributor every 6 years.

The pressure controller has to be checked by the manufacturer or by a specialised company authorised by the same every 6 years.

5 Procedure in case of failures

Warning!
You have to contact the service of your specialised distributor in case of any malfunction of the device!

Note!
The authorised and prompt service responsible for you can be contacted under the following address:

6 Warranty

We grant a warranty of 2 years **from the date of purchase** for:

- failures of material
- failures concerning production

Note!
It is required that you show your proof of purchase!

In case of repair works, the transport costs shall be charged to the customer!

No warranty is granted in the following cases:

- use not according to regulations
- third party intervention
- non-observance of these operating instructions
- use of equipment parts not specified by the manufacturer

Batteries are excluded from warranty!

7 Technical data

Dimensions (HxWxD):	142 x 80 x 45 mm without tube fitting
Weight:	280g
Battery:	4x1.5V AA R6
Cycle output:	Depending on the program 8.2 - 52 ml/breath ± 15%
Triggering pressure change:	> 2mmWS
Oxygen supply:	per breath
Operating temperature range:	-10°C to + 55°C
Tube fittings:	non-interchangeable

We reserve the right to implement technical changes concerning design and equipment.

Notes for travelling!
Compressed oxygen is subject to the provisions for the transport of hazardous goods!
Before travelling, please inform yourself about the required arrangements for the corresponding means of transport!

Attention:

This device corresponds to the requirements for medical devices in accordance with
DIN EN 60601-1 (03.1996),
DIN EN 60601-1-2 (10.2006), and with the medical device directive MDD 93/42/EEC.

This assures a sufficient protection against perturbations during application.

Based on the broad distribution of devices emitting high-frequency radiation and other electrical sources of interference in the hospital and in the domestic area (e.g. electro-surgical devices, mobile telephones, radios, high-frequency therapy devices), it is possible that the function of the device may be interrupted near very intense sources of interference.

8 Fitting to liquid oxygen systems

1. Connect the OXYJET to the liquid oxygen system by use of the special spiral tube.
2. Set the selector switch of the liquid oxygen system to 5 litres.
3. Switch on the OXYJET and select your special program prescribed by the physician.
4. Apply the nose cannula. When the patient breathes in, the OXYJET will start operation.

MAKU tec KG

Industrieelektronik und Medizintechnik

Entwicklung Produktion Vertrieb

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