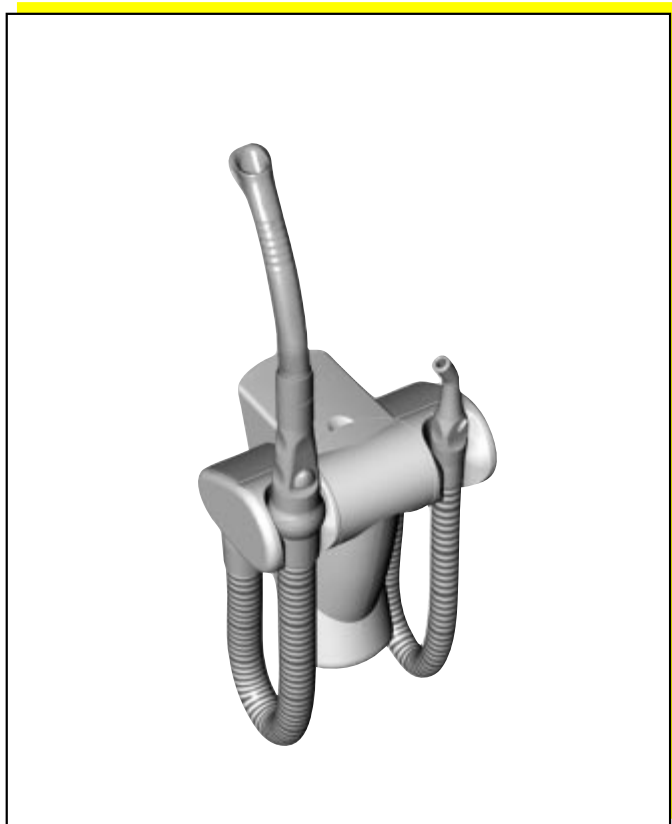


INSTALLATION AND OPERATING INSTRUCTIONS

DÜRR HOSE MANIFOLD COMFORT

GB



CE

9000-606-18/30



CONTENTS



Important Information

1. Notes	3
1.1 Test of conformity	3
1.2 General Notes	3
1.3 General Safety Notes	3
1.4 Notes concerning Medical Appliances	3
1.5 Warnings and Symbols	4
2. Product information	4
2.1 Correct Use	4
2.2 Incorrect Use	4
3. Contents	5
3.1 Accessories	5
3.2 Disposable material	5
4. Technical Data	5
5. Functional overview	6
6. Functional description	7
6.1 Suction hose in situ "A"	7
6.2 Suction hose removed "B"	7
6.3 Filter function	7
6.4 Rinse function	7



Installation

7. Alternative solutions	8
7.1 Wall mounting (w/o swivel arm)	8
7.2 Fixing to Dürre mounting bracket	10
8. Electrical connections	10
8.1 Sample arrangement	11



Use

9. Operation	12
9.1 Cleaning and Disinfecting Suction Unit and Hose Manifold	12
9.2 Disinfecting and Autoclaving suction nozzles	12
9.3 Ergonomic Tips	12
9.4 Tips for using a four-fold manifold (GFGK, KGFG)	13
10. Maintenance	13
10.1 Filter change - weekly	13
10.2 Replacing suction hose	13
10.3 Greasing the O-Rings	13



Disposal

11. Appliance disposal	14
-------------------------------------	----



Troubleshooting

12. Tips for operators and Technicians	15
---	----



IMPORTANT INFORMATION

1. NOTES

1.1 Test of conformity

This product was tested for conformity to the Guidelines 93/42/EWG of the European Union and has been found to satisfy all criteria of these guidelines.

1.2 General Notes

- These Installation and Operating Instructions form an integral part of the unit. They must be kept close to the unit at all times. Precise observance of these instructions is a precondition for use of the unit for the intended purpose and for its correct operation. New personnel must be made aware of the contents, and they should be passed on to future operating staff.
- Safety for the operator as well as trouble-free operation of the unit are only ensured if use is made of original equipment parts. Moreover, use may only be made of those accessories that are specified in the technical documentation or that have been expressly approved and released by Dürr Dental for the intended purpose.
- Dürr Dental cannot guarantee for the safety or proper functioning of this unit in the case where parts or accessories are used which are not supplied by Dürr Dental.
- Dürr Dental are only responsible for the equipment with regard to safety, reliability and proper functioning where assembly, resettings, changes or modifications, extensions and repairs have been carried out by Dürr Dental or an agency authorized by Dürr Dental and if the equipment is used in conformity with the Installation and Operating Instructions.
- These Installation and Operating Instructions conform to the relevant version of the equipment and the underlying safety standards valid at the time of going to press. All switches, processes, trade marks, software programs and appliances named in this document are registered names.
- Any reprinting of the technical

documentation, in whole or in part, is subject to prior approval of Dürr Dental being given in writing.

1.3 General Safety Notes

This appliance has been designed and constructed by Dürr Dental so that correct usage of the appliance is virtually free of any possible injury or danger. In spite of this, we feel it is our duty to mention the following safety measures in order to prevent any possible danger.

- When using this appliance all local and relevant regulations must be observed! Converting or modifying the appliance in any way is strictly prohibited. In such cases, any and all guarantees immediately become invalid. The operation of modified appliances can be punishable by law. In the interests of trouble-free operation the operator is responsible for observing these regulations.
- Retain the packaging for possible return of the product to the manufacturers. Ensure that the packaging is kept out of the reach of children. Only the original packaging provides adequate protection during transport of the unit. Should return of the product to the manufacturers be necessary during the guarantee period, Dürr Dental accepts no responsibility for damage occurring during transport where the original packaging was not used!
- Before every use the operator must check the functional safety and the condition of the appliance.
- The operator must be knowledgeable in the operation of the appliance.
- The product is not designed to be used in medical treatment areas where there exists the danger of explosion. Areas where explosions could occur are those where flammable anesthetic material, skin cleansers, oxygen and skin disinfectants are present. This appliance is not to be used in areas where the atmosphere could cause fire.

1.4 Notes concerning Medical Appliances

This product is a technical medical appliance and, as such, may only be operated by trained personnel, or persons who, as a result of specialist knowledge, are familiar with this type of appliance.

1.5 Warnings and Symbols

In the Installation and Operating Instructions use is made of the following terms or symbols to denote information of special importance:



Information and/or mandatory regulations or prohibitions for the prevention of personal injury or substantial property damage



Special information regarding the economical use of the equipment and other information



Part Type B



CE-Labeling without Notified Body Number



Observe Installation and Operating Instructions!



For the protection of both staff and patients, protective gloves must be worn when using the Hose Manifold



Date of manufacture

2. PRODUCT INFORMATION

2.1 Correct Use

The Dürr hose manifold is designed to hold those suction hoses which are not currently in use.

Replacing the hose triggers an electrical impulse which turns the suction unit off.

Removal of a suction hose activates an electrical signal which starts up the suction unit.

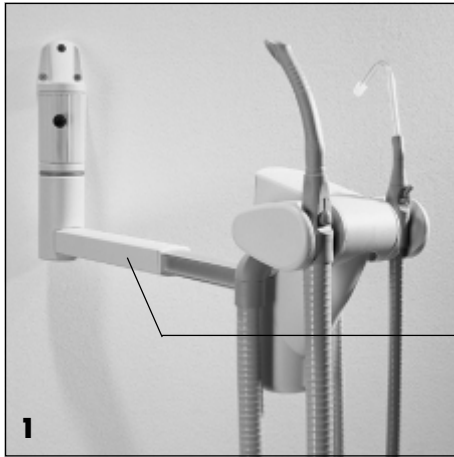
The hose manifold, together with the suction hoses and the handpieces, is suitable for both wet and dry suction systems.

The hose manifold has been designed as a modular system. The number of modules employed can be extended as circumstances demand.

2.2 Incorrect Use

Any use above and beyond that explained in these instructions is considered as incorrect.

The manufacturer will not be held liable for any damage resulting from incorrect use. All such risk will be borne by the operator.



3. CONTENTS

Hose manifold, complete

Model 7603G01 (3-fold unit, Fig. 1) or

Model 7604G.. (4-fold unit in variants:

SGFK (Model 7604G01)

GF GK (Model 7604G02)

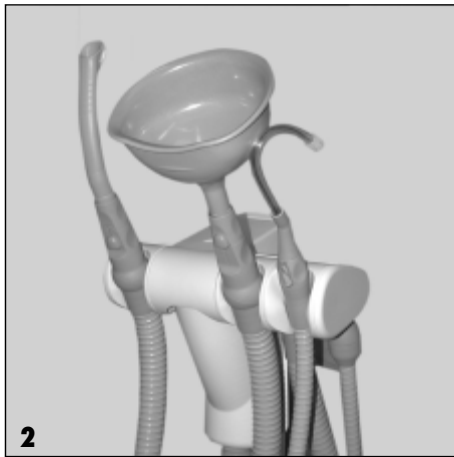
KGFK (Model 7604G03)

3.1 Accessories

The following accessories are **not** supplied with the contents.

please order as required!

Extendable and swivel arm (5)	
with assembly set	7600-150-00
Ball joint set for suction set	7600A030-00
Rinsing unit	7100-250-50
Air/water nozzle holder (insert)	
Set of 4	7600A980-50



3.2 Disposable material

Disposable filter, yellow, 12 pcs.

(Fig.3) 0725-041-00

Suction hose, large 7600A010-50

Suction hose, small 7600A020-50

4. TECHNICAL DATA

Dürr Hose Manifold Comfort

Protective low voltage (V) 24 AC/DC

Frequency (Hz) 50/60

Voltage range (AC/DC) max. 24, min. 5

Surge current (A) max. 4
(mA) min. 5

Suction performance (l/min)

Large suction cannula 250-350

Saliva suction cannula 30-60

Surgical cannula 50-80

Hose cross sections (mm)

Suction hose, large LW19

Suction hose, small LW10

Waste hose LW25

Pressure max (mbar / hPa) -200

Dimensions (cm) DxLxH 11 x 15 x 18

Weight (kg) c. 1

Temperature range (°C)

Operational +10 to +40

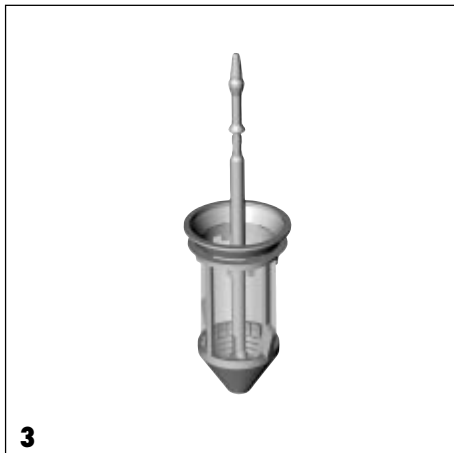
Storage and transport -10 to +60

Relative humidity (%)

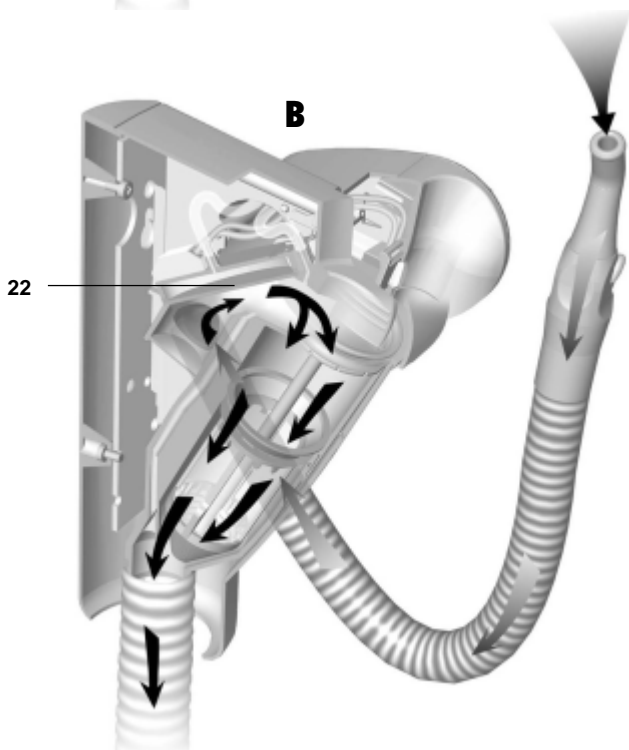
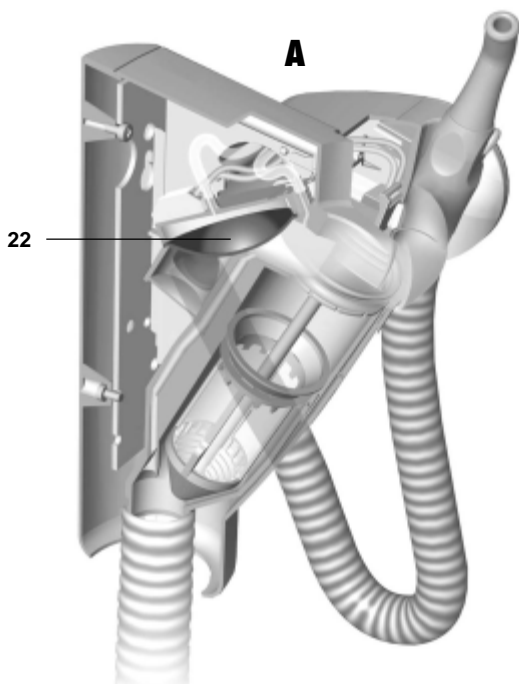
Operational max. 70

Storage and transport max. 95%

Protection system IP 23



5. FUNCTIONAL OVERVIEW



6. FUNCTIONAL DESCRIPTION

The hose manifold with 3 elements is offered as: **GFK** (model 7603G01)

- 1st - large suction hose **G**
- 2nd - filter element **F**
- 3rd - smaller suction hose **K**

This arrangement serves a selection function, i.e. only the one which is removed is provided with a vacuum.

The hose manifold with 4 elements is offered as:

SGFK (Model 7604G01) (S=Air/water)

GFGK* (Model 7604G02)

KGFG* (Model 7604G03)

As soon as two elements are placed in position alongside the filter element then vacuum will be supplied to both simultaneously: the selection function is now no longer available.

* This variation allows the addition of a funnel to one of the large suction hoses.

Because of the distribution of the suction power in the hose manifold, such a funnel adapter should be fitted on the same side as the smaller suction hose.

6.1 Suction hose in situ "A"

When the suction hose is placed in the hose manifold, the valve is closed by the depressed switch. Air at normal atmospheric pressure exerted on the selective diaphragm (22) keeps it in this position thereby closing the connection between suction hose and suction supply.

6.2 Suction hose removed "B"

Removal of the suction hose activates, via a small plug, both the valve and two microswitches. One microswitch activates the suction unit, while the other can regulate the station selector or the rinsing unit. The valve is opened. The vacuum resulting from the suction machine raises the diaphragm (22) and opens the path between suction unit and suction supply.

In both the Dürr suction hand pieces there is a **sliding switch to control and turn off the suction** during operation.

6.3 Filter function

Suction of secretions, saliva and spray from the mouth of the patient means that these media are passed through the suction hose by way of the opened diaphragm (22) and the filter into the suction connection. The **integrated yellow filter** holds larger, coarser particles back.

6.4 Rinse function

Where a rinsing unit has been added, water is passed through the suction system during the suction phase. This prevents the suction system from drying out thereby avoiding the build-up of deposits which are difficult to remove.

A rinsing unit can be added to both "dry" as well as "wet" suction systems.



INSTALLATION

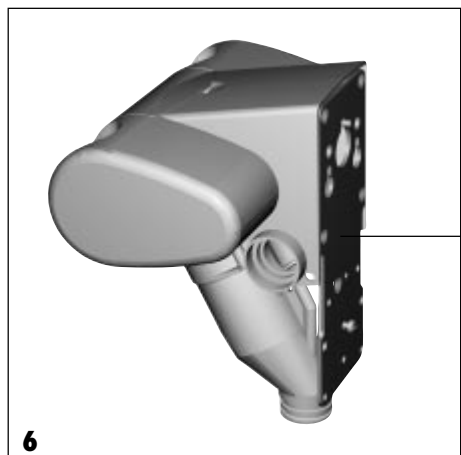
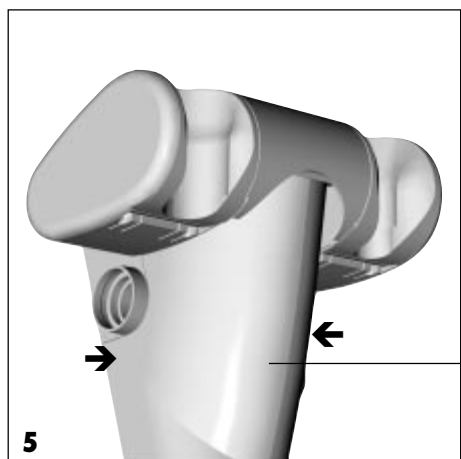
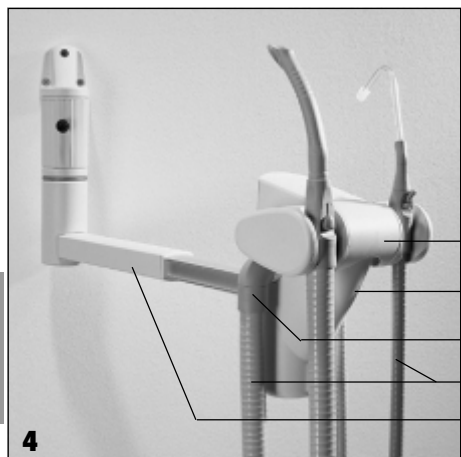
7. ALTERNATIVE SOLUTIONS

The Dürr hose manifold (1) can be set up on or under a working surface, or can be mounted on the wall, e.g. as a fixed unit or using the Dürr swivel arm (5), near a treatment station or operating chair.

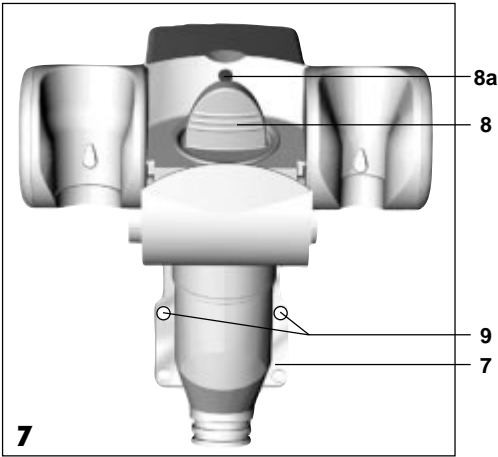
Instructions for mounting the swivel arm can be found in the accompanying booklet, order no. 7600-150-00.

7.1 Wall mounting (w/o swivel arm)

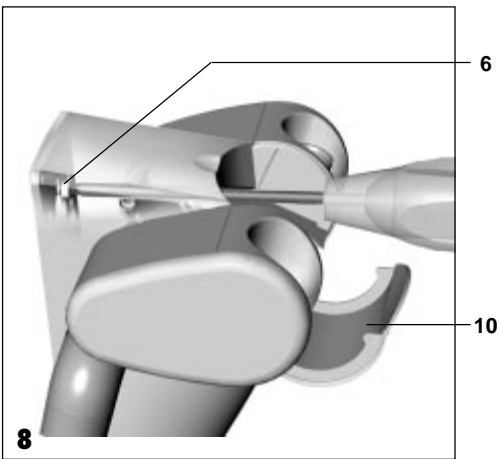
- For better accessibility we recommend first removing all hoses (4) from the hose manifold.
- Remove front cover (2), pressing firmly at sides.
- Mark optimal position on wall.
- Check for any possible connections under the plaster.
- Drill required hole and use rawl plugs if necessary.
- Insert the screws supplied (6) **half way only** at this stage.



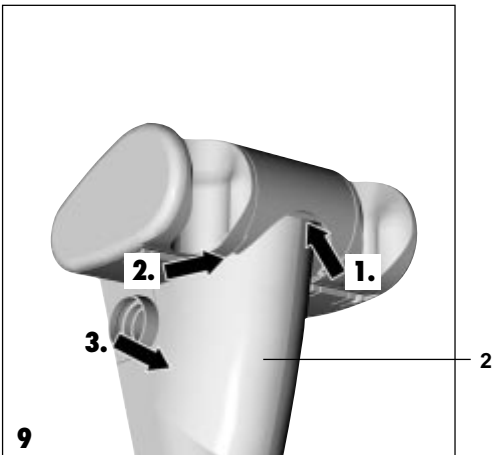
- Hang the hose manifold with its mounting plate over the screws (7).



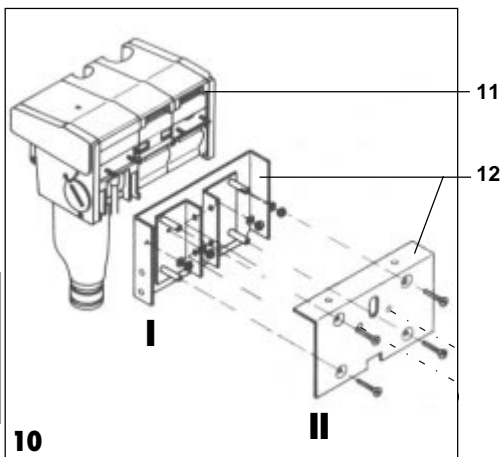
- Mark the two drill holes (9) on the wall and drill the required holes.



- Tighten the screws (6) as follows:
 - Open the filter cover (10) and remove the yellow filter (8).
 - Remove cover (8a, fig.7) completely.
 - Position the screwdriver horizontally through the opening and tighten the screw.
- Fix the mounting plate into position using the two screws provided (7).



- Replace the front cover (2). Please carefully note the correct sequence: Slide the cover under the lip "1", then close the upper clip "2" and finally click the last clip "3" into place.
- Replace cover (8a) and filter (8) in place and hoses with bracket.



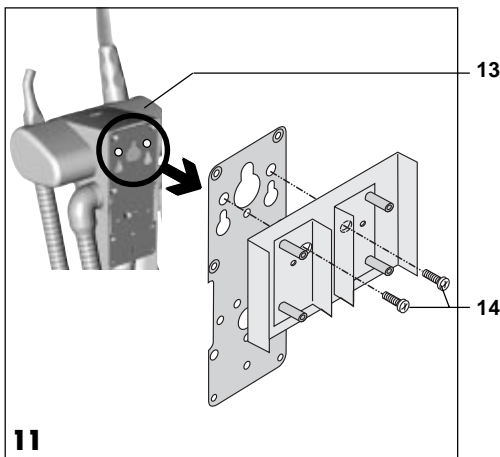
7.2 Fixing to Dürr mounting bracket

i The previous Dürr hose manifold (11) must be removed from the plate (12) and replaced by the new unit Comfort (13).

- Remove part **II** of the mounting plate by loosening the screws.
- Unscrew the older hose manifold part **I** and fix new hose manifold into position using two philips screws (1).
- Replace part **II**.

If the part, **II**, of the mounting plate cannot be loosened, then an adapter part can be inserted between part **I** and the new hose manifold. Adapter units:

- 3-hose manifold, order No. 7600-163-01
- 4-hose manifold, order No. 7600-164-01
- 5-hose manifold, order No. 7600-165-01



8. ELECTRICAL CONNECTIONS

Electrical connection must be effected either over the appliance on/off switch or over the surgery mains switch (fuse box).

! **The connection to the appliance must be free of any mechanical tension.**

Connection of control contacts to hose manifold must be using terminals 1, 3 and 4 (Figs. 12 and 12b)

Terminal 1: voltage input

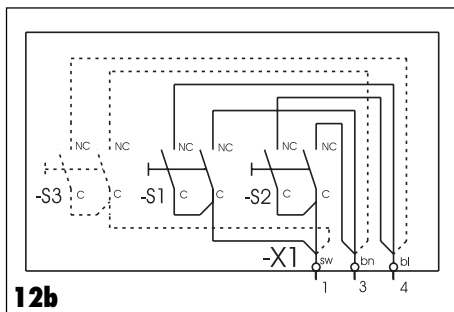
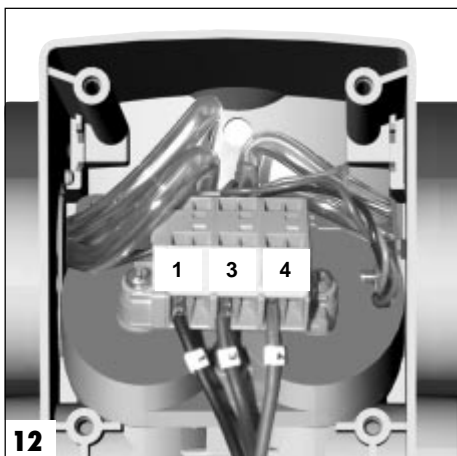
Terminal 3: voltage output (controls the suction unit)

Terminal 4: voltage output (controls components in the treatment station)

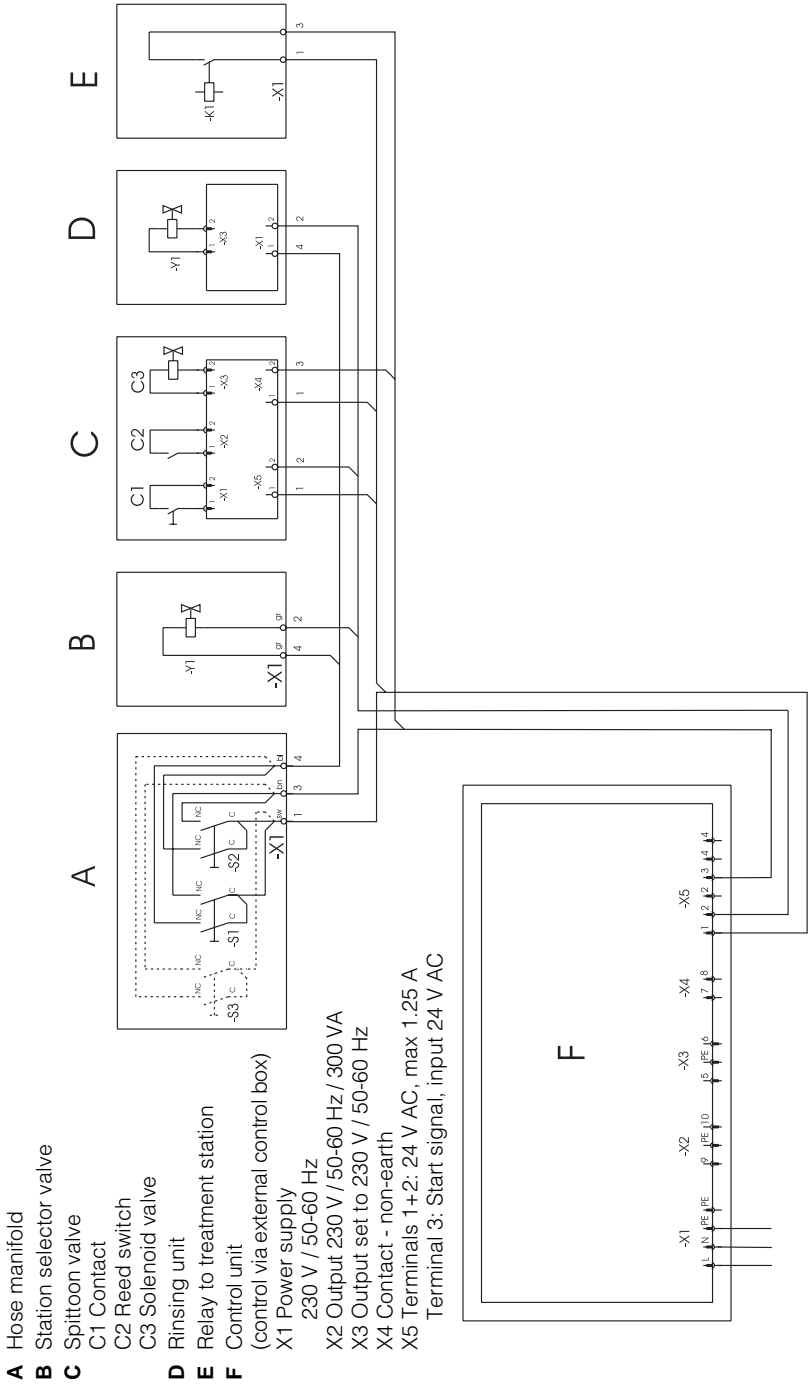
Connection of wires to terminals: Fig. 12

Protective low voltage according to EN 60601-1, 5 to 24 V AC/DC

Direct connection of voltage (100-110 / 120 / 127 or 230 V low voltage) over the microswitch is not permitted.

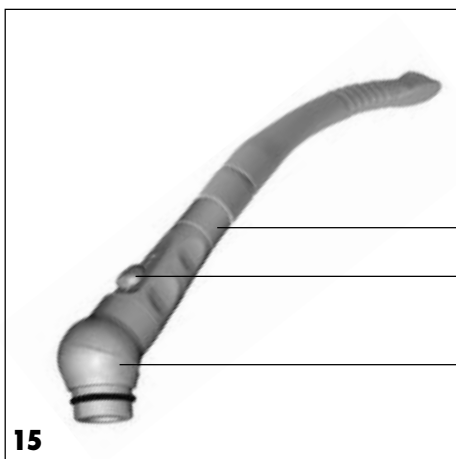


8.1 Sample arrangement

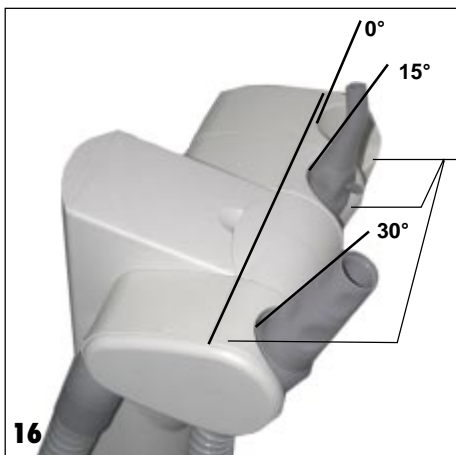




14



15



16



USE

9. OPERATION

9.1 Cleaning and Disinfecting Suction Unit and Hose Manifold



Suck one glass of clean water through the system after every patient.

For cleaning and disinfecting the complete suction system use a non-aggressive and non-foaming disinfectant for suction units (e.g. Orotol Plus).



We recommend that the suction unit is cleaned and disinfected 2 x daily. See the Operating Instructions on Disinfection and Cleaning of Suction Units, order No. 9000-605-10/..

The upper surfaces of the housing and the Hose Manifold should be regularly cleaned and disinfected, e.g. with Dürr surface disinfectant FD 322 / FD 350

9.2 Disinfecting and Autoclaving suction nozzles

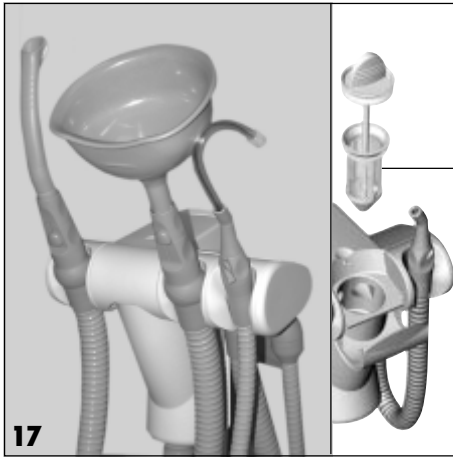


After every patient the suction nozzles must be **disinfected**, for the protection of both staff and patient, and put in autoclave where required.

Every suction nozzle is supplied with cleaning instructions.

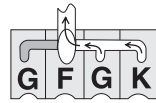
9.3 Ergonomic Tips

- Various inserts are integrated into the hose manifold modules (18), e.g. for holding large or small suction hoses. Depending on function these **inserts can be set at 0°, or can be rotated forwards 15° or 30°.**
- The largest hose nozzle for the universal cannula can, if required, be fitted with a **ball joint** (17). This ball joint adapter can be rotated in 15° steps allowing a more convenient and better insertion into the Hose Manifold.
- If required, a **rotating connector piece** (15) for insertion between nozzle and cannula is available. This allows the cannula to be turned more easily.
- Both the large and small Dürr suction nozzles are fitted with a **slider to regulate the air flow** during treatment of the patient.



9.4 Tips for using a four-fold manifold (GFGK, KGFG)

As soon as two elements are placed in position alongside the filter element then vacuum will be supplied to both simultaneously: the selection function is now no longer available.



Model 7604G02

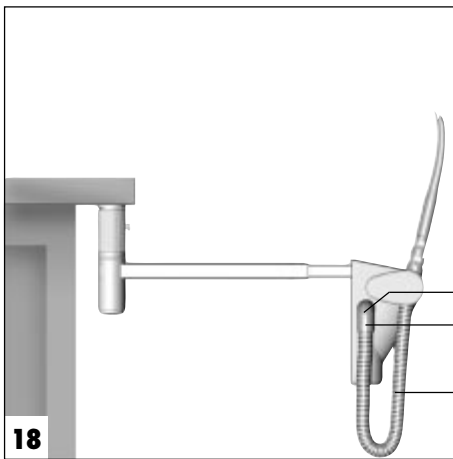


Model 7604G03


Example:

Hose arrangement **GFGK**:

If one of the larger hoses **G** is used, then the slider will be moved to close off the smaller hose **K**.



10. MAINTENANCE

 Non-porous gloves should be worn during maintenance to reduce the risk of infection. (German regulations VBG 103 §5 and 7)

10.1 Filter change - weekly

Open the cover of the central hose manifold module and replace the yellow filter (19).

Further instructions on filter change are supplied with each filter.



Never work without a filter, otherwise there is the danger that parts enter the suction hose manifold, get stuck at awkward places and interfere with the function of the system.

The filter is designed to be disposable and is not to be put in the autoclave. The temperature resistance of filter and filter cover is only 60 °C. Order: Disposable filter (12 pcs) order No. 0725-041-00

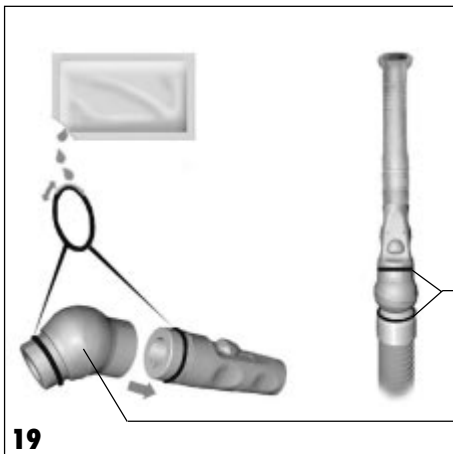
10.2 Replacing suction hose

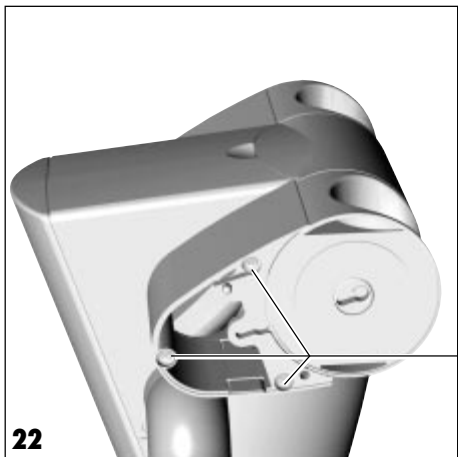
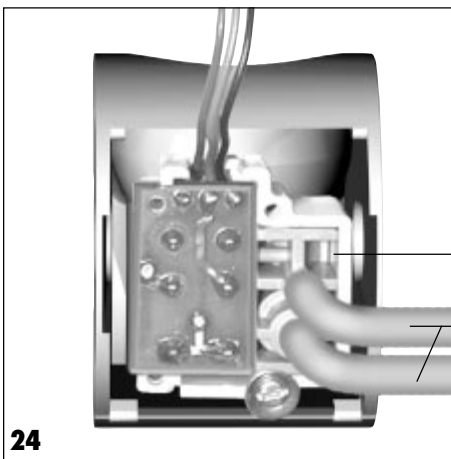
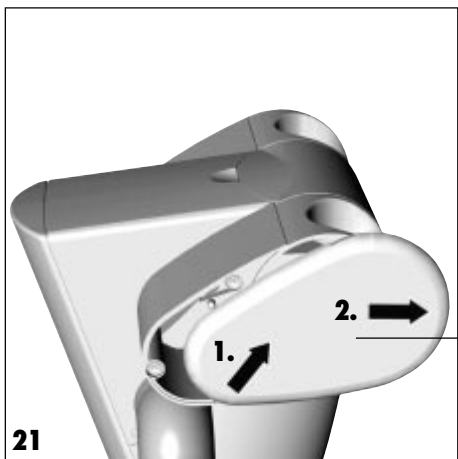
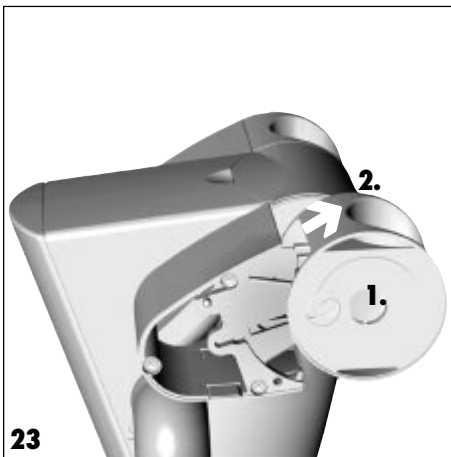
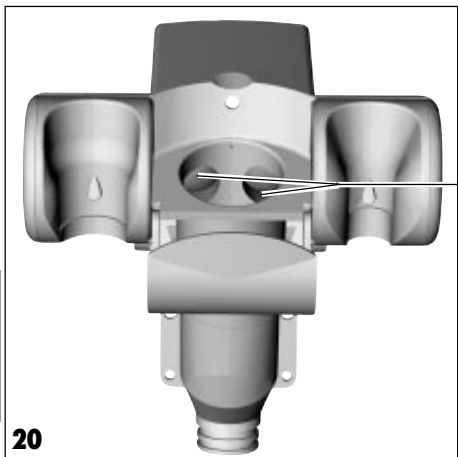
The suction hoses (4) are subject to a certain amount of wear and tear and should be regularly checked for kinks and bends and should be replaced where necessary.

The suction hoses can be removed together with the bracket (3) or, with the handpiece (20), extracted from the bracket (3).

10.3 Greasing the O-Rings

In order to ease removal and insertion of the brackets (3), hoses (4) and suction handpieces, we recommend regular application of a small amount of grease to the O-rings (21), e.g. Vaseline.





 **DISPOSAL**

11. APPLIANCE DISPOSAL

The hose manifold, and all parts that may be contaminated by amalgam, e.g. filter and hoses etc. must be disposed of according to the national and local waste disposal regulations.



TROUBLESHOOTING

12. TIPS FOR OPERATORS AND TECHNICIANS

Repairs, above and beyond normal maintenance, may only be carried out by qual-ified personnel or our service technicians.

Problem	Possible cause	Solution
1. Suction power decreases	<ul style="list-style-type: none">• Filter in hose manifold full.• Blockage in hose or in hand-piece. • Kink or bend in hose.• Selective diaphragm (22) blocked.	<ul style="list-style-type: none">• Filter change required.• Locate blockage. Remove hose from manifold, disassemble (fig. 14) and clean. • Straighten or replace as needed.• Remove filter cover and, if necessary, the hose. Remove the dirt particles with a suitable instrument (e.g. blunt tweezers. Warning! Do not damage the selective diaphragm (22)!
2. No suction power	<ul style="list-style-type: none">• Slide on hand-piece closed (Fig.15, Pos.16).• Suction unit not working. • Selective diaphragm (22) does not open or not fully open.	<ul style="list-style-type: none">• Slide to open position. • Check function of suction unit and the electrical connections.• Clean the vacuum areas within the filter housing: Remove the filter (fig. 17) and remove dirt using a suitable instrument, e.g. tweezers or water jet.• Faults caused by other means may only be corrected by one of our own technicians:<ul style="list-style-type: none">- Check control hose (26) in module (fig. 24) and filter housing (fig. 12) for kinks.- Check 3/2 valve (25). <p>Tip:</p> <ul style="list-style-type: none">• Remove individual modules: Undo screws (24)• Strip down module: see fig. 23: 1 - press left and right, 2 - lift out.
3. Fluid escapes at slider on hand-piece	<ul style="list-style-type: none">• Dirt or deposits in hand-piece	<ul style="list-style-type: none">• Disinfect, strip down, clean and autoclave hand-piece. See cleaning instructions for suction hand-pieces, order No. 9000-606-16/01