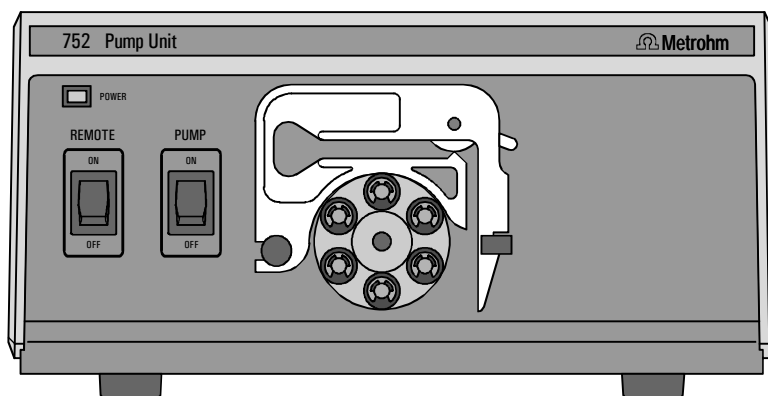


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752 Pump Unit



8.752.1013 Instructions for Use

1.10.1998 / dö

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1 Introduction

1.1 Instrument description

The **752 Pump Unit** is a 2-channel peristaltic pump which can be used to pump two solutions simultaneously. It is particularly suitable for operating the suppressor module in the 2.733.0X30 IC Separation Center by supplying regeneration and rinsing solutions. This application is described in detail in these Instructions for Use.

The 752 Pump Unit can either be operated manually by means of the on/off switch for the pump or remotely controlled via the remote interface.

1.2 Parts and controls

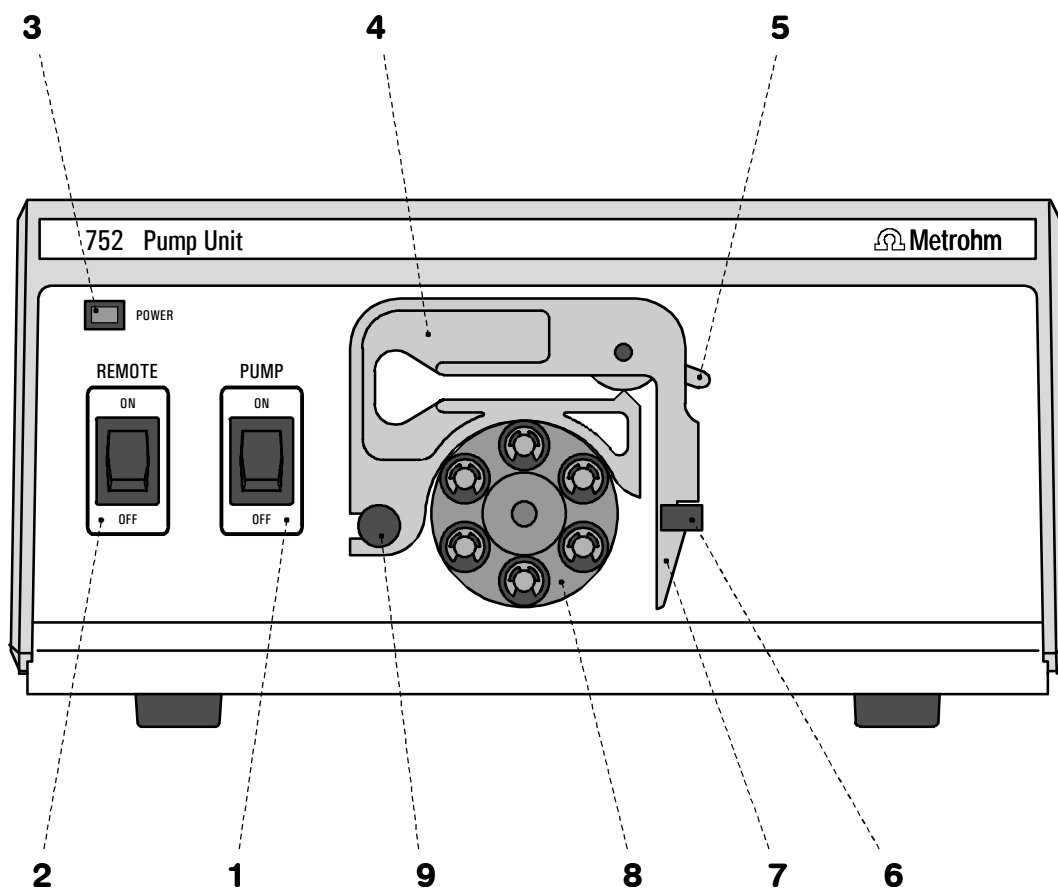


Fig. 1: Front of the 752 Pump Unit

<p>1 Pump ON/OFF On/Off switch for the pump (manual operation mode)</p>	<p>5 Contact pressure lever For adjusting the contact pressure</p>
<p>2 Remote ON/OFF On/Off switch for remote control via remote interface</p>	<p>6 Holding clamp For locking the tubing cartridge into place</p>
<p>3 Power on lamp Lights up when instrument is switched on</p>	<p>7 Snap-action lever For releasing the tubing cartridge</p>
<p>4 Tubing cartridge For 6.1826.050 Pump tubing</p>	<p>8 Pump drive Roller head with contact rollers</p>
	<p>9 Mounting pin For attaching the tubing cartridge</p>

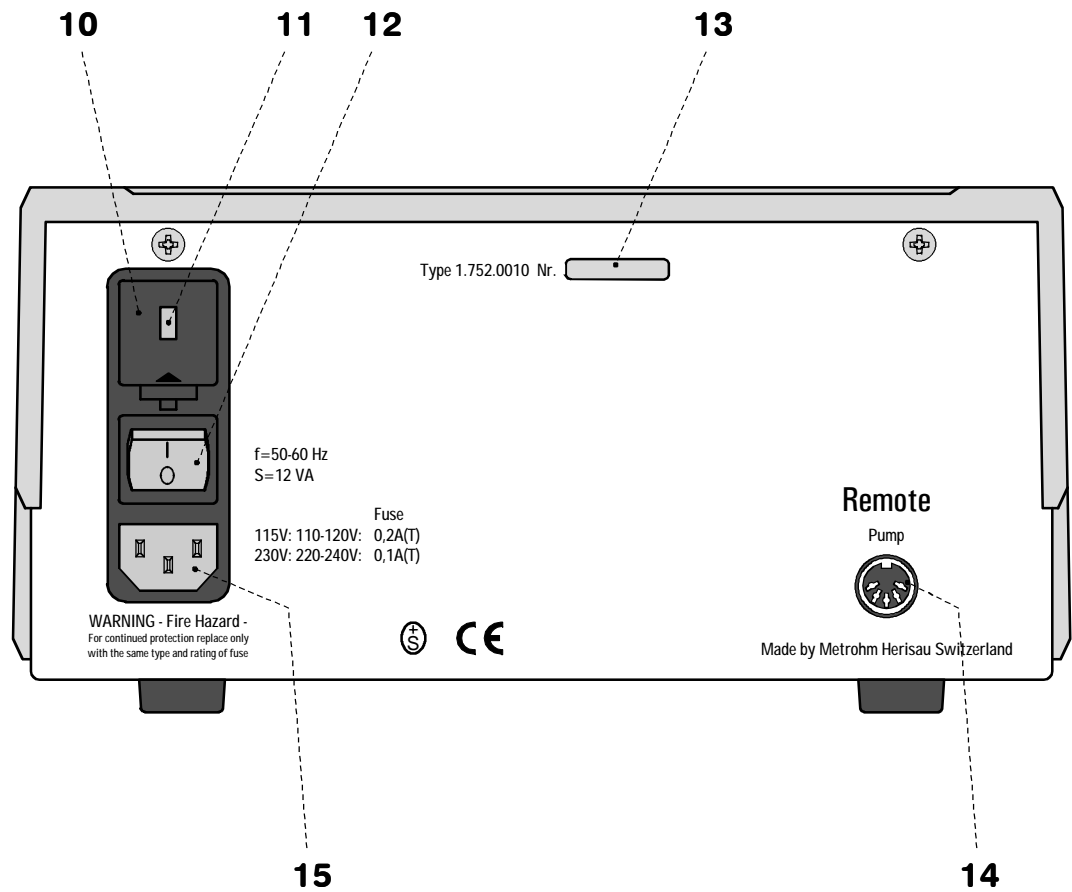


Fig. 2: Rear of the 752 Pump Unit

<p>10 Fuse holder Changing the fuses, see <i>section 2.2</i></p>	<p>13 Serial number</p>
<p>11 Voltage selection insert with display of voltage</p>	<p>14 Remote interface Remote I/O lines for connection of external devices (e.g. 732 IC Detector)</p>
<p>12 Mains switch For switching the instrument on/off: I = ON 0 = OFF</p>	<p>15 Mains connection plug Mains connection, see <i>section 2.2</i></p>

1.3 Information about the Instructions for Use



Please read through these Instructions for Use carefully before you put the 752 Pump Unit into operation. The Instructions for Use contain information and warnings to which the user must pay attention in order to assure safe operation of the instruments.

1.3.1 Organization

These **8.752.1013 Instructions for Use** for the 752 Pump Unit provide a comprehensive overview of the startup procedure, operation, fault rectification and technical specifications of these instruments. The Instructions for Use are organized as follows:

Section 1 Introduction

General description of instruments, parts and controls and safety notes

Section 2 Installation

Attachment of accessories, connection to IC system

Section 3 Operation

Manual operation and operation via 732 IC Detector

Section 4 Maintenance – Faults

Maintenance, fault rectification





Section 5 Appendix

Technical data, standard equipment, options, warranty, declarations of conformity, index

To find the required information on the instruments please use either the **Table of contents** or the **Index** at the back.

1.3.2 Notation and pictograms

The following notations and pictograms (symbols) are used in these Instructions for Use:

<PUMP>	Switch or key
15	Part or control of 752
<u>89</u>	Part or control of 732/733
"range"	Parameter or entry value at 732 IC Detector
>PARAM/detector range: 1.00 mS/cm	Display Text in display 1 of the 732 IC Detector
	Hazard This symbol draws attention to a possible danger to life or of injury if the associated directions are not followed correctly.
	Warning This symbol draws attention to possible damage to instruments or instrument parts if the associated directions are not followed correctly.
	Caution This symbol marks important information. First read the associated directions before you continue.
	Comment This symbol marks additional information and tips.

1.4 Safety notes

1.4.1 Electrical safety

While electrical safety in the handling of the 752 Pump Unit is assured in the context of the specifications IEC 1010-1 (protection class 1, degree of protection IP40), the following points should be noted:

- **Mains connection**



Setting the **mains voltage**, checking the **mains fuse** and the **mains connection** must be effected in accordance with the instructions in section 2.2.

- **Opening the 752 Pump Unit**



When the 752 Pump Unit is connected to the power supply the instrument must neither be opened nor should parts be removed from it, otherwise there is a danger of coming into contact with components which are live. Always disconnect the instrument from all voltage sources before you open it and ensure that the **mains cable is disconnected from mains connection 15 !**

- **Protection against static charges**



Electronic components are sensitive to static charging and can be destroyed by discharges. Before you touch any of the components inside the 752 Pump Unit, you should earth yourself and any tools you are using by touching an earthed object (e.g. housing of the instrument or a radiator) to eliminate any static charges which exist.

1.4.2 General precautionary rules

- **Handling of solvents**



Check all pump tubings and all input and output lines periodically for possible leaks. Follow the relevant instructions regarding the handling of flammable and/or toxic solvents and their disposal.

- **Regular exchange of pump tubings**



Pump tubings are consumable material and must be replaced from time to time (see section 4.4). Suitable measures must be taken so that any leak which might occur in the pump tubing or connections during unattended operation will cause no damage (placing the instrument at the bottom, collection device for any liquid which may leak out).

2 Installation

2.1 Setting up the instrument

2.1.1 Packaging

The 752 Pump Unit is supplied together with the separately packed accessories in special packagings containing shock-absorbing foam linings designed to provide excellent protection. The actual instrument is packed in an evacuated polyethylene bag to prevent the ingress of dust. Please store all these special packagings as only they can assure damage-free transport of the instrument.

2.1.2 Check

After receipt, immediately check whether the shipment is complete and has arrived without damage (compare with delivery note and list of accessories in *section 5.2*). In the case of transport damage, see instructions in *section 5.4.1 "Warranty"*.

2.1.3 Location

Position the instruments in the laboratory at a location convenient for operation, free from vibrations and protected against a corrosive atmosphere and contamination by chemicals.

2.1.4 Arrangement of the instruments

In one-channel operation with suppressor module (2.733.0X30 IC Separation Center), the 752 Pump Unit, 709 IC Pump, 733 IC Separation Center and 732 IC Detector are best stacked on top of one another in this order.



The 752 Pump Unit should always be placed at the bottom of the instrument stack so that any leaks which may occur in the pump tubing or connections cannot cause damage to the other instruments by leakage of corrosive liquids (e.g. H_2SO_4).

2.2 Mains connection



Follow the instructions below for connecting to the power supply. If the instrument is operated with the mains voltage set wrongly and/or wrong mains fuse there is a danger of fire!

2.2.1 Setting the mains voltage

Before switching on the 752 Pump Unit for the first time, check that the mains voltage set on the instrument (see *Fig. 3*) matches the local mains voltage. If this is not the case, you must reset the mains voltage on the instrument as follows:

1 Disconnect mains cable

Disconnect mains cable from mains connection plug **15** of the 752 Pump Unit.

2 Remove fuse holder

Using a screwdriver, loosen fuse holder **10** and take out completely.

3 Change mains voltage

Completely remove voltage selection insert **11** by hand, rotate it through 180° and reinsert it. The required mains voltage (115 or 230 V) must now be visible from the front.

4 Check fuses

Carefully take both fuses out of fuse holder **10** and check their specifications:

100¼ 120 V 0.2 A (slow-blow) Metrohm-No. U.600.0009

220¼ 240 V 0.1 A (slow-blow) Metrohm-No. U.600.0006

5 Insert fuses

Change both fuses if necessary and reinsert in fuse holder **10**.

6 Install fuse holder

Push fuse holder **10** back into the opening of 752 Pump Unit by hand until it clicks into place properly.

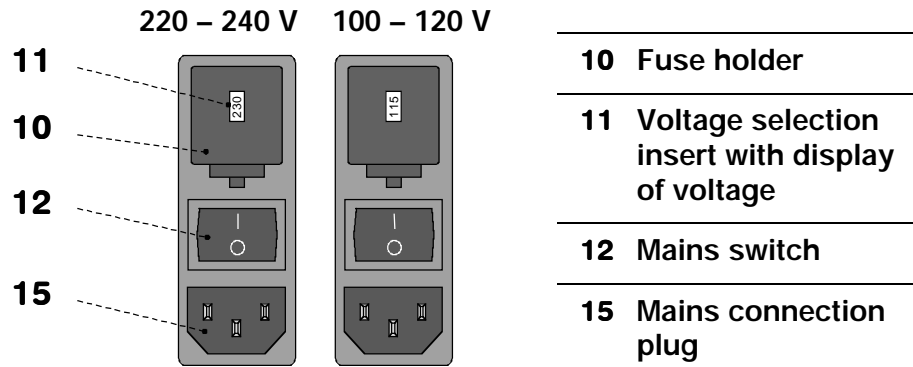


Fig. 3: Setting the mains voltage

2.2.2 Fuses

Two fuses 0.2 A/slow-blow for 100...120 V or 0.1 A/slow-blow for 220...240 V are installed in the fuse holder **10** of the 752 Pump Unit as standard.



Ensure that the instrument is never put into operation with fuses of another type, otherwise there is danger of fire!

For checking or changing fuses, proceed as described in section 2.2.1.

2.2.3 Mains cable and mains connection

Mains cable

The instrument is supplied with one of three mains cables:

- 6.2122.020 with plug SEV 12 (Switzerland, ...)
- 6.2122.040 with plug CEE(7), VII (Germany, ...)
- 6.2133.070 with plug NEMA 5-15 (USA, ...)

which are three-cored and fitted with a plug with an earthing pin. If a different plug has to be fitted, the yellow/green lead (IEC standard) must be connected to protective earth (protection class 1).



Any break in the earthing inside or outside the instrument can make it a hazard!

Mains connection

Plug the mains cable into mains connection plug **15** of the 752 Pump Unit (see Fig. 3).

2.2.4 Switching the instrument on/off

The 752 Pump Unit is switched on and off using mains switch **12**. When the instrument is switched on lamp **3** lights up.

2.3 Connection to the IC System

2.3.1 Electrical connection to the 732 IC Detector

In order to allow remote control via 732 IC Detector the 752 Pump Unit must be connected to the "Remote" connection of the 732 IC Detector with the 6.2143.200 cable as shown in *Fig. 4*. To allow the remote control to operate, switch **2** "REMOTE" on the front of the 752 Pump Unit must be set to "ON".

If a second, additional instrument (e.g. 752, 753, 754) is to be connected to the Remote interface of the 732 IC Detector then the 6.2143.220 cable (available as an option) should be used to connect the 752 Pump Unit instead of the 6.2143.200 cable.

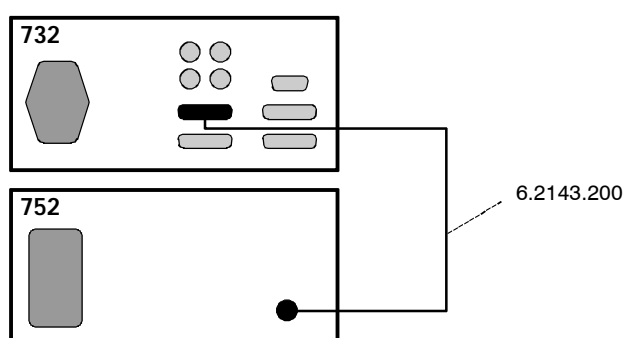


Fig. 4: Connection 752 Pump Unit – 732 IC Detector

2.3.2 Connection of the suppressor module

The **Metrohm Suppressor Module MSM** built into the 2.733.0X30 IC Separation Center is described in detail in *section 2.8.3* of the *732/733 Manual*. The 752 Pump Unit is used to supply regeneration and rinsing solutions to the suppressor module. To avoid contamination of the suppressor module by foreign particles or bacterial growth, it is advantageous to install an **in-line filter** between the 752 Pump Unit and the inlet capillaries of the suppressor module. The two **6.2821.100 Filter units PEEK** (see *section 2.6.3* of the *732/733 Manual*) supplied with the 2.733.0X30 IC Separation Center are eminently suitable for this purpose.

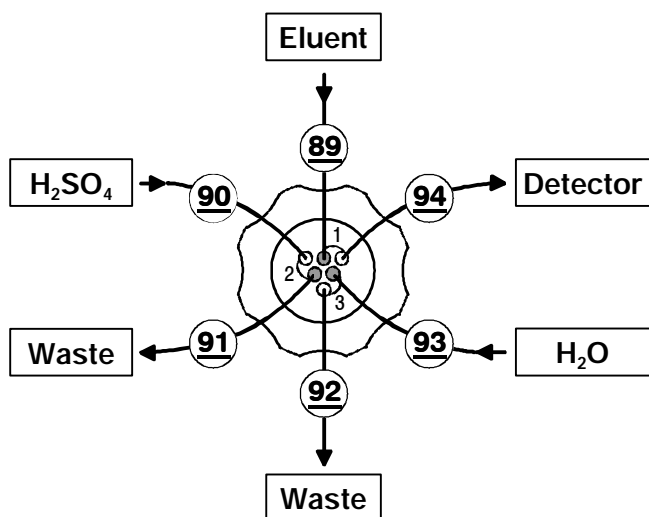
Connection of the suppressor module to the 752 Pump Unit is carried out as described in *section 2.8.6* of the *732/733 Manual*. The most important points are repeated here; underlined numbers **##** refer to operating elements in the *732/733 Manual*:

1 Connect column to injector

see *section 2.8.6* of *732/733 Manual*

2 Rinse column

see *section 2.8.6* of *732/733 Manual*



89 Suppressor inlet capillary for eluent

90 Suppressor inlet capillary for H₂SO₄

91 Suppressor outlet capillary for H₂SO₄

92 Suppressor outlet capillary for H₂O

93 Suppressor inlet capillary for H₂O

94 Suppressor outlet capillary for eluent

Fig. 5: Connections at suppressor module

3 Connect column to suppressor module

- Cut inlet capillary **89** marked with "Eluent" of suppressor module **95** (see Fig. 17 in 732/733 Manual) to the desired length using a sharp cutting tool (e.g. razor blade).
- Screw inlet capillary **89** to outlet end of separating column **76** using a 6.2744.014 Compression fitting.

4 Fix column

- Insert one or two column holders **84** (6.2027.030, 6.2027.040 or 6.2027.050) in mounting rails **83** and fasten separating column in the column holder.

5 Connect suppressor module to detector block

- Cut outlet capillary **94** marked with "Detector" of suppressor module **95** to the desired length using a sharp cutting tool (e.g. razor blade).
- Screw outlet capillary **94** marked with "Detector" to coupling **96** using a 6.2744.014 Compression Fitting.
- Screw inlet capillary **82** of detector block **81** to other end of coupling **96**.

6 Fix connection suppressor – detector block

- Insert one of the column holders **84** (6.2027.030, 6.2027.040 or 6.2027.050) in mounting rail **83** and fasten coupling **96** in the column holder.

7 Attach pump tubings to 752 Pump Unit

- Loosen both tubing cartridges **4** from the holding clamp **6** by pressing down snap-action lever **7** and remove from mounting pin **9** on Pump Unit 752 (see Fig. 1).

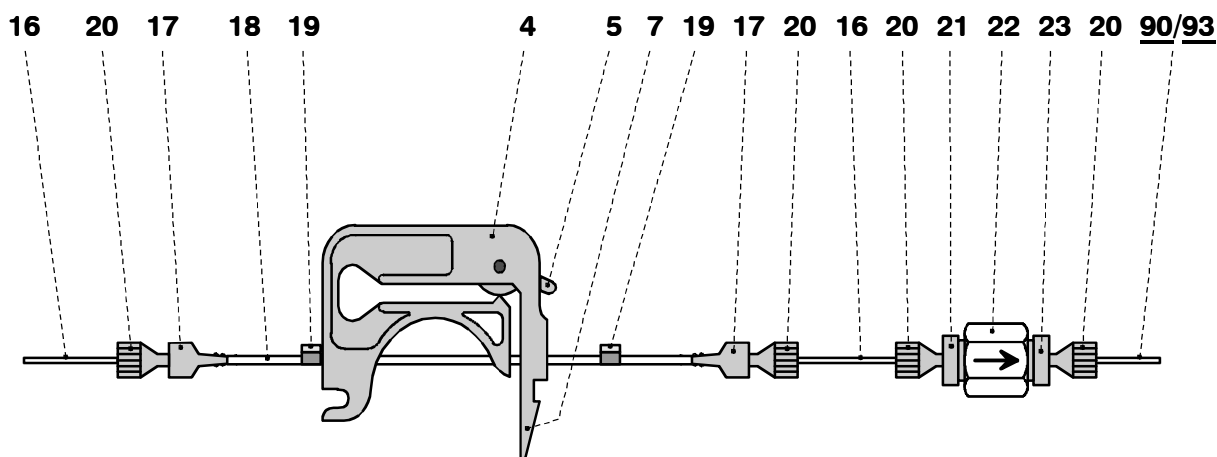


Fig. 6: Installing pump tubings

4	Tubing cartridge	20	PEEK compression fitting (6.2744.010)
5	Contact pressure lever	21	Connector (6.2824.110) with filter
7	Snap-action lever	22	Housing for 6.2824.100 Filter unit PEEK
16	PTFE tubing (6.1803.020)	23	Connector
17	Coupling (6.2744.030)	90	Suppressor inlet capillary for H ₂ SO ₄
18	Pump tubing (6.1826.050)	93	Suppressor inlet capillary for H ₂ O
19	Stopper (white-yellow)		

- Press contact pressure lever **5** on both tubing cartridges down as far as it will go.
- Insert a length of pump tubing **18** (6.1826.050) into each of the tubing cartridges as shown in *Fig. 6*. The white-yellow stopper **19** must click into the corresponding holder on the left-hand side of the tubing cartridge.
- Place the tubing cartridges on mounting pin **9** and press down on the right-hand side until snap-action lever **7** clicks into position on holding clamp **6**. Take care that no kinks are formed in the pump tubing.

8 Suppressor connection 2: H₂SO₄

- Loosen rotary nipple screwed onto the interior side of connection **27**. Pull inlet capillary **90** marked with "H₂SO₄" (see *Fig. 17* of 732/733 *Manual*) by hand out of the opening of connection **27** as far as required. Retighten nipple on the interior side of connection **27** to fix inlet capillary **90**.

- Attach inlet capillary **90** using compression fitting **20** (6.2744.014) to the connector **23** (see *Fig. 6*) of the filter unit PEEK (see *section 2.6.3 of 732/733 Manual*).
- Attach a piece of PTFE tubing **16** cut to the required length using a compression fitting **20** (6.2744.014) to the connector **21** with filter at the other end of the filter unit PEEK.
- Attach the other end of the PTFE tubing **16** using a compression fitting **20** (6.2744.014) to the coupling **17** (6.2744.030) and mount it on the outlet end of the first length of pump tubing **18**.
- Mount a coupling **17** (6.2744.030) to the inlet end of the first length of pump tubing **18**. Attach a piece of the PTFE tubing **16** (6.1803.020) cut to the required length using a compression fitting **20** (6.2744.014) to the other end of this coupling.
- Immerse the other end of the aspirating tubing in a vessel containing regeneration solution (normally 20 mmol/L H₂SO₄) and fix in place.
- Pull outlet capillary **91** marked with "Waste" of the suppressor module through the rear panel opening **43**, lead it to a sufficiently large waste container and fix it in place.

9 Suppressor connection 3: H₂O

- Loosen rotary nipple screwed onto the interior side of connection **28**. Pull inlet capillary **93** marked with "H₂O" (see *Fig. 17 of 732/733 Manual*) by hand out of the opening of connection **28** as far as required. Retighten nipple on the interior side of connection **28** to fix inlet capillary **93**.
- Attach inlet capillary **93** using compression fitting **20** (6.2744.014) to the connector **23** (see *Fig. 6*) of the second filter unit PEEK (see *section 2.6.3 of 732/733 Manual*).
- Attach a piece of PTFE tubing **16** cut to the required length using a compression fitting **20** (6.2744.014) to the connector **21** with filter at the other end of the filter unit PEEK.
- Attach the other end of the PTFE tubing **16** using a compression fitting **20** (6.2744.014) to the coupling **17** (6.2744.030) and mount it on the outlet end of the second length of pump tubing **18**.
- Mount a coupling **17** (6.2744.030) to the inlet end of the second length of pump tubing **18**. Attach a piece of the PTFE tubing **16** (6.1803.020) cut to the required length using a compression fitting **20** (6.2744.014) to the other end of this coupling.
- Immerse the other end of the aspirating tubing in a vessel containing rinsing solution (normally dist. H₂O) and fix in place.
- Pull outlet capillary **92** marked with "Waste" of the suppressor module through the rear panel opening **43**, lead it to a sufficiently large waste container and fix it in place.

10 Startup of 752 Pump Unit

- Set switch <REMOTE> **2** on 752 Pump Unit to "OFF".
- Switch on 752 Pump Unit with mains switch **12** and set switch <PUMP> **3** to "ON".
- Adjust the contact pressure for both tubing cartridges: press contact pressure lever **5** upwards until the solutions just start to be drawn in. Then press the contact pressure lever upwards until it clicks once more to obtain optimal contact pressure.
- Check all capillaries between the 752 Pump Unit, the suppressor module and the waste container for escaping liquid. If liquid escapes anywhere the corresponding compression fitting must be tightened further or changed.



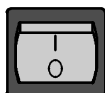
*Pump tubings are consumable material with a lifetime which depends on the contact pressure. This is why the tubing cartridges should be raised completely by loosening snap-action lever **7** on the right-hand side if the pump is to remain switched off for a considerable length of time (the set contact pressure remains unchanged).*

3 Operation

3.1 Manual operation



The 752 Pump Unit cannot be manually operated unless the installation has been carried out properly as described in section 2 (mains connection, attaching the pump tubing, connection to the IC system).



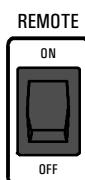
Switch instrument on/off

The 752 Pump Unit is switched on and off using mains switch **12** on the rear of the instrument (see Fig. 2):

- I Instrument switched on
- O Instrument switched off



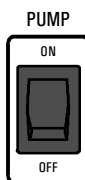
After the instrument has been switched on the power lamp **3** lights up to show that the instrument is ready for use.



Switch off remote control

In order to allow manual operation the remote control must be switched off.

- ON Remote control switched on
- OFF Remote control switched off



Switch pump on/off

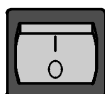
The drive of Pump Unit 752 is switched on and off with the switch <PUMP>:

- ON Pump switched on
- OFF Pump switched off

3.2 Operation via 732 IC Detector



The 752 Pump Unit cannot be remotely operated via the IC Detector unless the installation has been carried out properly as described in section 2 (mains connection, connection cable 732 – 752, attaching the pump tubing, connection to the IC system).



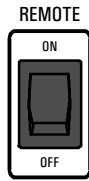
Switch instrument on/off

The 752 Pump Unit is switched on and off using mains switch **12** on the rear of the instrument (see Fig. 2):

- I Instrument switched on
- O Instrument switched off



After the instrument has been switched on the power lamp **3** lights up to show that the instrument is ready for use.



Switch on remote control

In order to allow remote operation via 732 IC Detector the remote control must be switched on.

ON Remote control switched on
OFF Remote control switched off

Automatic pump switch-on when the 732 IC Detector is switched on

In order to start up the drive of the 752 Pump Unit automatically when the 732 IC Detector is switched on alterations must be made to the basic settings (Setup, see *section 4.4.1 of 732/733 Manual*). The remote output lead 1 must be set to 1 (on, active, 0 V):

```
>SETUP/output
remote          10000000
```

When the 732 IC Detector is switched off the pump is also switched off.

Switch pump on/off in a program

In the 732 IC Detector the <PROGRAM> key can be used to create time programs with a maximum of 20 program steps (see *section 4.7.1 of 732/733 Manual*). The pump can be switched on or off at any program step by setting the remote output lead 1 to 1 (on, active, 0 V) or 0 (off, inactive, open) respectively:

Switch on:

```
>PROGRAM/edit   XXX. X mi n
remote          1*****
```

Switch off:

```
>PROGRAM/edit   XXX. X mi n
remote          0*****
```

Switch pump on/off at an event

In the 732 IC Detector the <EVENT> key can be used to program a maximum of 4 different events (see *section 4.7.3 of 732/733 Manual*). The pump can be switched on or off at any event by setting the remote output lead 1 to 1 (on, active, 0 V) or 0 (off, inactive, open) respectively:

Switch on:

```
EVENT YY-MM-DD HH:MM:SS
remote          1*****
```

Switch off:

```
EVENT YY-MM-DD HH:MM:SS
remote          0*****
```

4 Troubleshooting

4.1 Insufficient or non-existing flow rate

If the 752 Pump Unit is supplying insufficient liquid or no liquid at all then this can be remedied by proceeding as follows:

1 Set contact pressure correctly

- Press contact pressure lever **5** on the tubing cartridge down as far as it will go.
- Press contact pressure lever **5** upwards until the solution just starts to be drawn in. Then press contact pressure lever upwards until it clicks once more to obtain optimal contact pressure.

2 Exchange the pump tubing

- If the delivery performance is still not satisfactory then the pump tubing must be exchanged (see *section 4.3*).
- After the pump tubing has been exchanged press contact pressure level **5** on the tubing cartridge down as far as it will go.
- Press contact pressure level **5** upwards until the solution just starts to be drawn in. Then press contact pressure lever upwards until it clicks once more to obtain optimal contact pressure.

3 Check the connections

- If the delivery performance is still not satisfactory even with the new pump tubing then the connections must be checked.
- Loosen the first connection after the tubing cartridge in the supply direction. If liquid is still flowing here then retighten the connection and release the following connection and so on.
- Replace the connection at which liquid transport ceases or exchange the connection pieces.
- If liquid transport ceases after the Filter unit PEEK, replace filter **21** (6.2824.110; see *Fig. 6*).
- If liquid transport ceases after the suppressor module then this should be exchanged.

4.2 Leaking of tubing nipples

If liquid is leaking from the tubing nipples then these must be tightened up further. If the fault cannot be cured in this way then the tubing nipples must be replaced.

4.3 Air bubbles in pump circuit

If air bubbles can be seen in the pump circuit then the aspirating tubing must be immersed completely in the liquid. If this has no effect then the connections must be checked (see *section 4.2*).

4.4 Exchanging the pump tubing

Pump tubings are consumable material with a limited lifetime and should be exchanged at regular intervals (approx. every 2 weeks under continuous use).

The working life of pump tubing depends to a considerable extent on the contact pressure. This is why the contact pressure must be correctly set as described in *section 2.3.2*. If the pump is to remain switched off for a lengthy period of time the tubing cartridges should be raised completely by loosening snap-action lever **7** on the right-hand side (the set contact pressure remains unchanged).

As the pump is always operated on the same side the pump tubings 6.1826.050 supplied can be used on both sides. To exchange a pump tubing proceed as follows:

1 Remove old pump tubing

- Press contact pressure lever **5** on the tubing cartridge down as far as it will go.
- Release tubing cartridge **4** from holding clamp **6** by pressing down snap-action lever **7** and remove from mounting pin **9** on the 752 Pump Unit (see *Fig. 1*).
- Remove old pump tubing.

2 Insert new pump tubing

- Insert the new pump tubing **18** (6.1826.050) in the tubing cartridge as shown in *Fig. 6*. The white-yellow stopper **19** must click into the corresponding holder on the left-hand side of the tubing cartridge.
- Place the tubing cartridge on mounting pin **9** and press down on the right-hand side until snap-action lever **7** clicks into position on holding clamp **6**. Take care that no kinks are formed in the pump tubing.

3 Set contact pressure

- Press contact pressure lever **5** upwards until the solution just starts to be drawn in. Then press contact pressure lever upwards until it clicks once more to obtain optimal contact pressure.

5 Appendix

5.1 Technical data

Pump

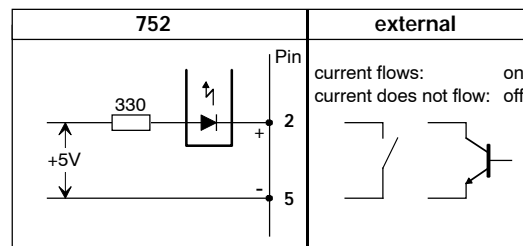
<i>Pump type</i>	2-channel peristaltic pump with rotational speed of 20/min (50 Hz) 24/min (60 Hz)
<i>Pump capacity</i>	typically 0.5...0.6 mL/min with 6.1826.050 pump tubing
<i>Pressure</i>	max. 4 bar (0.4 MPa)
<i>Pumpable liquids</i>	Clear liquids with no solid contents
<i>Pump tubing material</i>	PVC (Tygon®)

Mains connection

<i>Mains voltage</i>	115 V: 100...120 V ± 10 % 230 V: 220...240 V ± 10 % Switchable with voltage selection insert in fuse holder (see <i>section 2.2.1</i>)
<i>Mains frequency</i>	50...60 Hz
<i>Power consumption</i>	12 VA
<i>Fuse</i>	5 mm Ø, 20 mm length 100...120 V: 0.2 A (slow-blow) 220...240 V: 0.1 A (slow-blow)

Remote interface

<i>Purpose</i>	Remote control of pump (switching on/off)
<i>Pin assignment</i>	



Safety specifications

<i>Construction / Testing</i>	According to IEC 1010 / EN 61010 / UL 3101-1, protection class 1, degree of protection IP40
<i>Safety directions</i>	The Instructions for Use include information and warnings to which the user must pay attention in order to assure safe operation of the instrument.

Electromagnetic compatibility (EMC)

<i>Emitted interference</i>	Standards met: EN 55011, EN 55022, EN 50081-1
<i>Immunity to interference</i>	Standards met: IEC801-2/IEC1000-4-2 (class 4), IEC801-4/ IEC1000-4-4 (class 4), EN50082-1/2, IEC1000-4-11/EN61000-4-11

Ambient temperature

<i>Nominal operating range</i>	+5...+45°C (at 20...80 % atmospheric humidity)
<i>Storage, transport</i>	-40...+70°C

Housing

<i>Material of cover</i>	Polyurethane rigid foam (PUR) with fire protection for fire class UL94VO, CFC-free
<i>Material of base</i>	Steel, enamelled

Dimensions

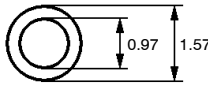
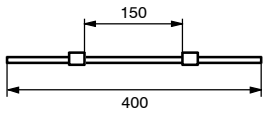
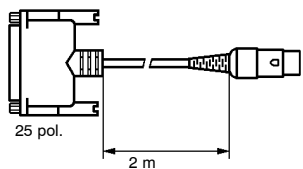
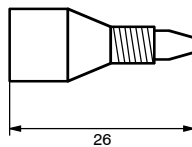
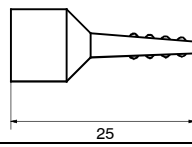
<i>Width</i>	260 mm
<i>Height</i>	129 mm
<i>Depth</i>	366 mm
<i>Weight</i>	4.2 kg (incl. accessories)

5.2 Standard equipment



*Subject to changes !
All dimensions are given in mm.*

The 2.752.0010 Pump Unit includes the following parts:

Quant.	Order No.	Description													
1	6.1803.020	PTFE capillary tubing Length = 5 m													
2	6.1826.050	Pump tubing made of PVC (Tygon®); with 2 firmly attached white-yellow stoppers; i.d. = 0.57 mm, e.d. = 2.27 mm													
1	6.2143.200	Connecting cable Connecting cable 732 IC Detector – 752 Pump Unit													
1	6.2122.0X0	Mains cable to customer's specifications: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><u>Cable socket</u></td> <td style="width: 50%;"><u>Cable connector</u></td> <td></td> </tr> <tr> <td>Type IEC 320/C 13</td> <td>Type SEV 12 (CH...)</td> <td>6.2122.020</td> </tr> <tr> <td>Type IEC 320/C 13</td> <td>Type CEE (7), VII (D...)</td> <td>6.2122.040</td> </tr> <tr> <td>Type CEE (22), V</td> <td>Type NEMA 5-15 (USA...)</td> <td>6.2122.070</td> </tr> </table>	<u>Cable socket</u>	<u>Cable connector</u>		Type IEC 320/C 13	Type SEV 12 (CH...)	6.2122.020	Type IEC 320/C 13	Type CEE (7), VII (D...)	6.2122.040	Type CEE (22), V	Type NEMA 5-15 (USA...)	6.2122.070	
<u>Cable socket</u>	<u>Cable connector</u>														
Type IEC 320/C 13	Type SEV 12 (CH...)	6.2122.020													
Type IEC 320/C 13	Type CEE (7), VII (D...)	6.2122.040													
Type CEE (22), V	Type NEMA 5-15 (USA...)	6.2122.070													
2	6.2744.014	PEEK compression fitting For connection of 6.1831.010 PEEK capillaries or 6.1803.020 PTFE capillaries. Set of 2													
1	6.2744.030	PEEK Coupling Connection between 6.2744.010 PEEK compression fitting and 6.1826.0X0 pump tubing. Set of 4													
1	8.752.1013	Instructions for Use (English) for 752 Pump Unit													

5.3 Optional accessories

6.2143.220	Connecting cable Connecting cable 732 IC Detector – 752 Pump Unit – 753 Suppressor Module
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5.4 Warranty and conformity

5.4.1 Warranty

The warranty on our products is limited to defects that are traceable to material, construction or manufacturing error which occur within 12 months from the day of delivery. In such cases the defects will be rectified in our workshops free of charge. Transport costs are to be paid by the customer.

For day and night operation the warranty is limited to 6 months.

Glass breakage in the case of electrodes or other parts is not covered by the warranty. Checks which we are asked to carry out during the warranty period for reasons other than material or manufacturing faults will be invoiced. For parts manufactured by third parties, insofar as these constitute an appreciable part of our instrument, the warranty stipulations of the manufacturer in question apply.




With the regard to the guarantee of accuracy, the technical specifications in the instruction manual are authoritative.

With regard to defects in material, construction or design as well as the absence of guaranteed features, the purchaser has no rights or claims except those mentioned above.



If damage of the packaging is evident on receipt of a consignment or if the goods show signs of transport damage after unpacking, the carrier must be informed immediately and a written damage report demanded. Lack of an official damage report releases Metrohm from any liability to pay compensation.

If any instruments and parts have to be returned, the original packaging should be used if at all possible. This applies above all to instruments, electrodes, burette cylinders and PTFE pistons. Before embedding them in wood shavings or similar material, the parts must be packed in a dustproof package (for instruments the use of a plastic bag is imperative). If open assemblies are enclosed in the scope of delivery that are sensitive to electromagnetic voltages (e.g. data interfaces etc.) these must be returned in the associated original protective packaging (e.g. conductive protective bag). (Exception: assemblies with built-in voltage source belong in a non-conductive protective packaging). For damage which arises as a result of non-compliance with these instructions, no warranty responsibility whatsoever will be accepted by Metrohm.

5.4.2 EU Declaration of conformity

							
<p>EU Declaration of Conformity</p> <p>The METROHM AG company, Herisau, Switzerland hereby certifies, that the instrument:</p> <p style="margin-left: 100px;">752 Pump Unit</p> <p>meets the requirements of EC Directives 89/336/EWG and 73/23/EWG.</p>							
<p>Source of the specifications:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%; padding-left: 40px;">EN 50081-1</td> <td>Electromagnetic compatibility, basic specification Emitted Interference</td> </tr> <tr> <td style="padding-left: 40px;">EN 50082-1/2</td> <td>Electromagnetic compatibility, basic specification Interference Immunity</td> </tr> <tr> <td style="padding-left: 40px;">EN 61010</td> <td>Safety requirements for electrical laboratory measurement and control equipment</td> </tr> </table>		EN 50081-1	Electromagnetic compatibility, basic specification Emitted Interference	EN 50082-1/2	Electromagnetic compatibility, basic specification Interference Immunity	EN 61010	Safety requirements for electrical laboratory measurement and control equipment
EN 50081-1	Electromagnetic compatibility, basic specification Emitted Interference						
EN 50082-1/2	Electromagnetic compatibility, basic specification Interference Immunity						
EN 61010	Safety requirements for electrical laboratory measurement and control equipment						
<p>Description of the instrument:</p> <p style="margin-left: 40px;">Two-channel peristaltic pump with remote control</p>							
<p>Herisau, September 27, 1996</p> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  <p>Dr. J. Frank Development Manager</p> </div> <div style="text-align: center;">  <p>Ch. Buchmann Production and Quality Assurance Manager</p> </div> </div>							

5.4.3 Certificate of conformity and system validation

Certificate of Conformity and System Validation	
This is to certify the conformity to the standard specifications for electrical appliances and accessories, as well as to the standard specifications for security and to system validation issued by the manufacturing company.	
Name of commodity:	752 Pump Unit
Name of manufacturer:	Metrohm Ltd., Herisau, Switzerland
Principal technical information:	Voltages: 100...120, 220...240 V Frequency: 50...60 Hz
<p>This Metrohm instrument has been built and has undergone final type testing according to the standards:</p> <p style="text-align: center;"> IEC801-2/IEC1000-4-2 (level 4), IEC801-4/IEC1000-4-4 (level 4), IEC1000-4-11/EN 61000-4-11, EN55011, EN55022, EN50081-1, EN50082-1/2 — <i>Electromagnetic compatibility</i> IEC1010, EN61010, UL3101-1 — <i>Security specifications</i> </p> <p>It has also been certified by the Swiss Electrotechnical Association (SEV), which is member of the International Certification Body (CB/IEC).</p> <p>The technical specifications are documented in the instruction manual.</p>	
Metrohm Ltd. is holder of the SQS-certificate of the quality system ISO 9001 for quality assurance in design/development, production, installation and servicing.	
Herisau, September 27, 1996	
	
Dr. J. Frank	Ch. Buchmann
Development Manager	Production and Quality Assurance Manager

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