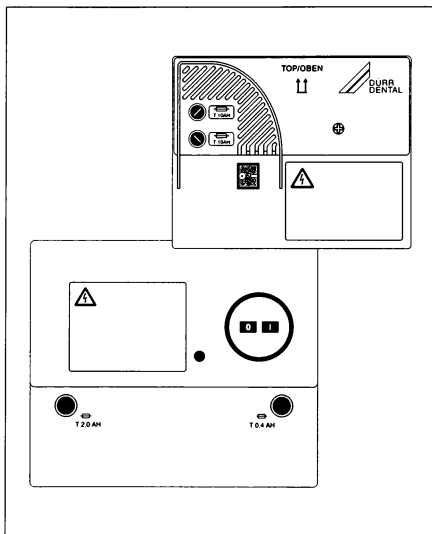


INSTALLATION AND OPERATING INSTRUCTIONS DÜRR CONTROL UNIT 0700-.. AND 0732-..



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IMPORTANT INFORMATION

1. NOTES

1.1 CE - Labeling

This product bears the CE- Labeling in accordance with the low voltage guidelines 73/23/EWG and electromagnetic guidelines 89/336/EWG and satisfies all criteria of these guidelines.

The certificate of conformity is only valid in combination with those appliances explicitly recommended by Dürr Dental.

1.2 General Notes

- These Installation and Operating Instructions form an integral part of the unit. They must be kept close to the unit and in readiness whenever required. Precise observance of these instructions is a pre-condition for use of the unit for the intended purpose and for its correct installation and operation, e.g. repair and maintenance. These Installation and Operating Instructions should be passed on to any future purchaser or operator.
- 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.
- There is no guarantee against damage arising where parts or accessories are used which are not supplied by Dürr Dental.
- Dürr Dental only regard themselves as being responsible for the equipment with regard to safety, reliability and proper functioning if 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.

- The Control Unit conforms to the relevant safety standards valid at this time. 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 written approval of Dürr Dental.

1.3 General Safety Information

This appliance has been so designed and constructed by Dürr Dental that any danger arising from the use of this product is virtually excluded provided it is fitted according to the instructions. However, in order to avoid any possible damage or injury we are obliged to point out the following safety measures.

- When fitting and operating this appliance observe all local rules and regulations! Any modification whatsoever is not permitted: any guarantees covered by Dürr Dental thus become invalid. In the interests of ensuring problem-free running the owner and operator are responsible for observing all rules and regulations.
- Retain all packing material for possible return of the product to the manufacturer. Take care that it does not fall into the hands of children. Only the original packing guarantees optimal safety of the appliance during transport. 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!
- This product is a technical appliance and may only be installed and operated or used by someone who has been trained or who has experience of how to use the appliance correctly.
- 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 any areas where the atmosphere could cause fire.

1.4 Combining Appliances

- This control unit must be used only in combination with Dürr Dental specified suction units. In order to ensure maximum patient and operator safety the unit must be installed by a fully qualified specialist.

1.5 Electrical Safety Notes

- Warning! Any work on the control unit must be carried out by qualified personnel.
- Warning! Before opening the Control Unit all power must be removed; switch off at mains, protect from accidental restart, ensure no residual power is present.
- Warning! Check the appliance and the power supply and frequency are compatible before switching on.
- Warning! Check the appliance and the power supply cables for correct installation and possible damage before switching on. Damaged cables, plugs and sockets must be replaced before use. Before first time use an electrical check must be carried out by a qualified person and the results documented.

1.6 Warnings and Symbols

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



Warning! High voltage.



CE-Labeling without Notified Body Nummer.



Observe Installation and Operating Instructions.



Fuse



Off



On



Do not operate the switch

2. PRODUCT INFORMATION

2.1 Correct Usage

The Control Unit is designed solely for use with DÜRR DENTAL Suction Units.

2.2 Incorrect usage

Any other use or use beyond what is specified is deemed to be not for the intended purpose. The manufacturer accepts no liability for damage resulting therefrom. All risk is borne solely by the user.

2.3 Product Description 0700-...

After connecting to the main power source and activation of the two-position power switch, the transformer provides primary power. Power is also provided to terminal X2 in order to provide power to connected appliances, e.g. AZ50. The transformer provides 24V AC secondary power available for rinsing, spittoon valve, station selector switch etc. The maximum load of 25VA enables two treatment stations to be served. Activation of the contact positioned at the hose manifold or a relay on the treatment chair bridges terminals 1 and 3 via the control system, thereby activating the electronics to switch the suction unit on via the suction unit relay. Simultaneously a potential-free closer is shut down. This enables further appliances to be operated. On switching the hose manifold contact or the relay on the treatment chair off the suction unit starts up after the pre-set delay. (A time delay of 4 to 60 seconds is possible.) Removal of a jumper eliminates any delay setting.

2.4 Product Description 0732-...

After connecting to the main power source the transformer is provided with power on primary side. After switching on, power is also provided to the 3-pin terminal X5 in order to provide power to connected appliances, e.g. AZ50. Power is also provided to terminal X4 between pin 11 and pin L3 for the ventilator/fan. The transformer provides 24V AC power on the secondary side which is available for rinsing, spittoon valve, station selector switch etc. The maximum load of 40VA enables three treatment stations to be served.

Activation of the contact positioned at the hose manifold bridges terminals 1 and 3 of terminal X3 via the control system, thereby activating the electronics to operate the main protector K1M. This provides power via the motor protection Q1 through terminal X2 to the suction unit. Simultaneously a potential-free closer (X6) is shut down. This enables further appliances to be operated. On deactivation of the hose manifold contact the suction unit is instantly shut down (or after a set delay for those versions equipped with a delay relay). The potential-free closer falls immediately, or after a pre-set time lag.

3. MODEL OVERVIEW

Control unit 230V 1~ 0700-500-50
for suction units 0740, 0747, V 300, VS 300,
VSA 300, V 600, VS 600

Control unit 230V 1~ 0732-100-50
for suction unit 0732, V 900

Control unit 230V 1~ 0732-100-51
for suction unit 0747

Control unit 400V 3~ 0732-100-52
for suction unit 0727-0729, 0733, V 600, V 900

Control unit 230V 3~ 0732-100-53
for suction unit 0729, 0733, V 600, V 900

Control unit 400V 3~ 0732-100-54
for suction unit 0746, V 1200

Control unit 230V 1~ 0732-100-55
for suction unit VS 900

Control unit 400V 3~ 0732-100-56
for suction unit VS 600, VS 900

Control unit 230V 3~ 0732-100-57
for suction unit VS 600, VS 900

Control unit 230V 3~ 0732-100-58
for suction unit 0729, V 1200

Control unit 230V 3~ 0732-100-59
for suction unit VS 900

4. DELIVERY CONTENTS

Control unit; see Model Overview

4.1 Accessories

- 4 Rawlplugs S6 9000-454-02
- 4 Semi-circular wood screws 0001-420-05
- 1 Installation and Operating
Instructions 9000-606-21/30

5. TECHNICAL DATA

5.1 Control Unit 0700-..

Voltage 230 V 1~
Frequency 50-60 Hz
Max. rating 1625 VA

Output terminals X2 and X3

Voltage 230 V AC
Max. rating X2 and X3 1605 VA
Max. rating X3 1310 VA

Output terminal X5

Voltage 24 V AC
Current 1.05 A
Rating 20 VA

Input terminal X5

Voltage 24 V AC
Current 25 mA

Relay contact terminal X4

Potential-free closer

Voltage max. 24 V AC/DC
Current max. 5 A
Voltage min. 12 V AC/DC
Current min. 10 mA

Dimensions

L x B x H 196 x 158 x 75 mm

Weight 1.45 kg

Fuses

Appliance fuses 2 x T 12.0 AH
according to IEC 127
Cut-off performance H

5.2 Control unit 0732..

Voltage 230 V, 1~ / 230/400 V, 3~
Frequency 50-60 Hz

Output terminal X3

Voltage 24 V AC
Current 1.7 A
Rating 40 VA

Input terminal X3

Voltage 24 V AC
Current 0.2 A

Output terminal X4

Voltage 230 V AC
Rating 50 W

Output terminal X5

Voltage 230 V AC
Current 2 A
Rating 350 VA

Relay contact terminal X6

Potential-free closer

Voltage max. 24 V AC/DC
Current max. 2 A

Motor protector settings

0732-100-50 6.3 - 10 A
0732-100-51 2.5 - 4 A
0732-100-52 2.5 - 4 A
0732-100-53 4 - 6.3 A
0732-100-54 4 - 6.3 A
0732-100-55 6.3 - 10 A
0732-100-56 2.5 - 4 A
0732-100-57 4 - 6.3 A
0732-100-58 6.3 - 10 A
0732-100-59 6.3 - 10 A

Dimensions

L x B x H 236 x 202 x 122 mm

Weight 2.7 kg

Fuse F1 IEC 127-2/V T 2AH

Fuse F2 IEC 127-2/V T 0.4AH

Fuse F3 IEC 127-2/V T 2AH

5.3 General

Protection class I (earthed)

Ambient temperature +5 - +40 °C

Fuse IP 21

Storage and

Transport temperature -10 - + 55 °C



INSTALLATION

6. INSTALLATION SET-UP

- In dental surgeries, directly next to the suction unit and only in neighboring rooms or in the cellar (not in wet rooms or at treatment station).
- The control unit should be kept in a cool, dry room at all times.
- Room temperature should not fall below 5°C or rise above +40°C. Adequate ventilation and heat extraction should be ensured.

7. ELECTRICAL CONNECTION

Electrical connection to the power supply, by either under-floor or ceiling installation, according to either DIN VDE 0107 or IEC 64/1043/CD:1998, must be carried out by inserting into the circuit a circuit breaker (switch or line safety switch (fuse)) with >3mm contact gap.

Circuit fuse

AC: 16 AT

3-phase: 10 AT

Line safety switch EN 60 898 / IEC 60898 /

DIN VDE 0641 Section 11

Characteristic: B

7.1 Connecting circuits

230V Power supply, permanent installation:

- NYM-J 3x1.5mm² according to DIN VDE 0250 Section 204

230V Power supply, flexible installation:

PVC-shielded connection H05VV-F 3G 1.5mm²
(IEC 227 Code 53)
or rubber-shielded
H05 RN-F 3G1.5 mm²,
H05 RR-F 3G1.5 mm²

400V Power supply, permanent installation:

- NYM-J 5x1.5mm²
according to DIN VDE 0250 Section 204

230V Power supply, flexible installation:

PVC-shielded connection H05VV-F 5G 1.5mm²
(IEC 227 Code 53)
or rubber-shielded
H05 RN-F 5G1.5 mm²,
H05 RR-F 5G1.5 mm²

15V/24V Control line, protective low voltage for

- Hose manifold
- Selector switch
- Spittoon valve

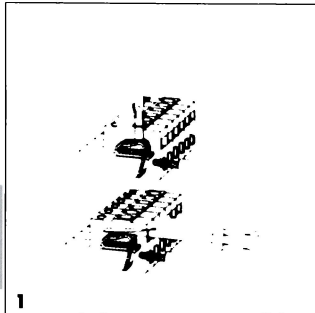
Fixed connection:

(N/YM (ST) -I 4x1.0 shielded cable sheathing
according to DIN VDE 0250 Section 204/209

Flexible connection

- PVC-Data cable LiYCY 4x1.0 mm², sheathed shielded cable as used in telecommunications and EDP or light-PVC-control sheathed shielded cable.

Above a supply line of 40m the cross section should be increased to 2.5mm².



1

8. INSTALLATION OF THE CONTROL UNIT

The control unit must be set up in an upright position on the wall using the 4 screws placed through the mounting plate and into the rawplugs provided. The minimum distance to any construction above, e.g. ceiling or cupboard, is 10 cm.

8.1 Terminals

The control unit terminals 0700-500-50 have been produced using the modern Cage Clamp technique so that a cross section of 0.08 mm – 2.5 mm can be achieved. Finer wire strand connections can be used, sturdy, with/ out caps or pin-type cable sockets. The length of stripped insulation should be 8 mm. To attach the connection, the plug and socket connectors may be removed. Strip c. 90 mm from the insulation; and the grounding conductor should be c. 1/3 longer.

20

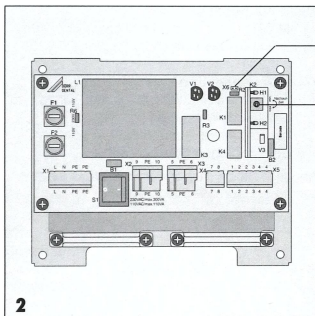
21

Secure the cable relief by tightening the two strips just before the connection.

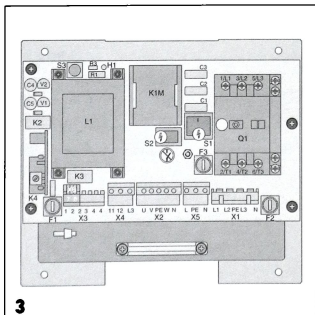
8.2 Setting the time relay

The control unit 0700-500-50 is fitted with electronics for setting the operation delay. This delay can be adjusted as required or disconnected.

- no delay, jumper X6 (20) removed.
- min. delay (2 s) potentiometer (21) fully turned to left
- max. delay (60 s) potentiometer (21) fully turned to right



2



3

Control unit 0732-100... is fitted with/without a delay shut-down operation depending on model chosen.

- if the shut-down delay is to be deactivated, then the electronics need to be removed.
- min. shut-down delay (2 s) turn the potentiometer (26) fully to the left
- max. shut-down delay (60 s) turn the potentiometer (26) fully to the right

9.2 Overview 0700-..

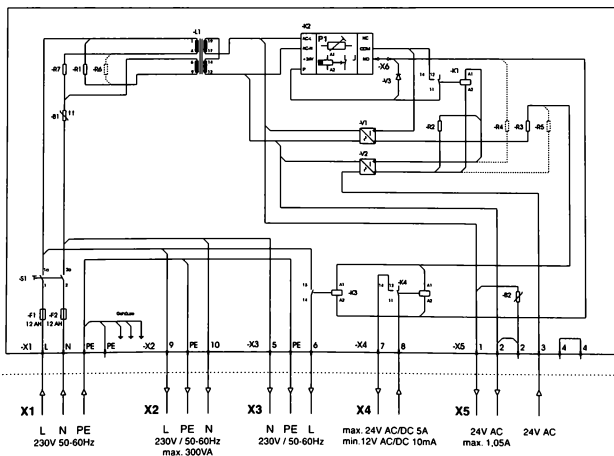
1a Control unit

- F1, F2 Fuse T 12AH
- S1 Control unit mains switch
- R1,R3-R7 Bridge (0 Ohm-resistance)
- L1 Transformer
- V1, V2 Rectifier
- K1 Start relay for delay electronics
- K2 Delay electronics
- P1 - Potentiometer to set delay
- K3 Relay for suction unit
- K4 Relay, potential-free closer
- X1 Main power supply
- X2 Power output
- X3 Output switch
- X4 Relay contact, potential-free
- X5 Output gate voltage, input control signal
- X6 Jumper to activate/deactivate delay

7 Suction unit 0740 / 0747

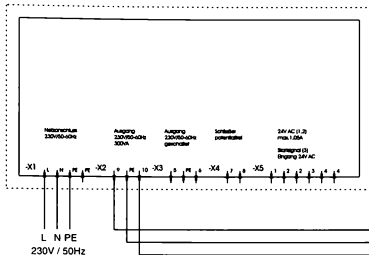
- 8 Suction unit VS 300
- 9 Suction unit VS 300 with control board
- 10 Suction unit VSA 300
- 11 Suction unit VSA 300 with control board
- 12 Suction unit VS 600
- 13 Amalgam separator AZ 50

1a

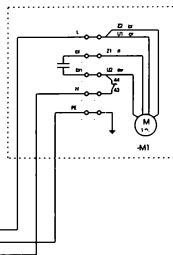


9.3 Suction Unit connection 0740/0747

1a

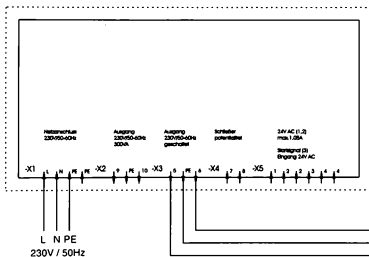


7 0740 / 0747

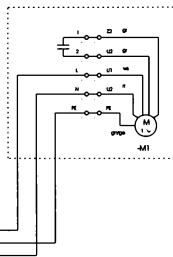


9.4 Connection VS 300

1a

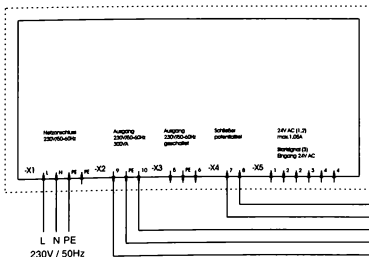


8 VS 300

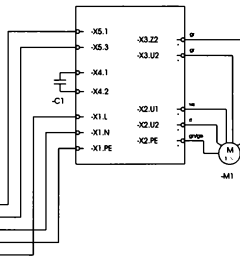


9.5 Connection VS 300 with control board

1a

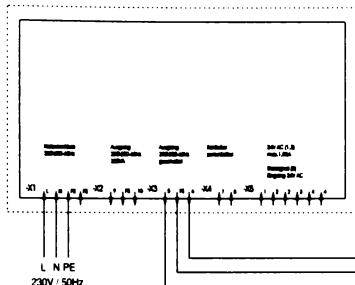


9 VS 300

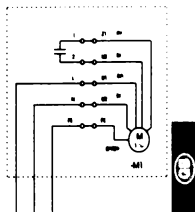


9.8 Connection VS 600

1a

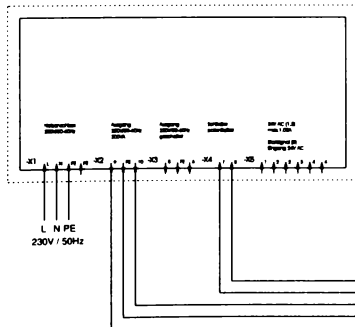


12 VS 600

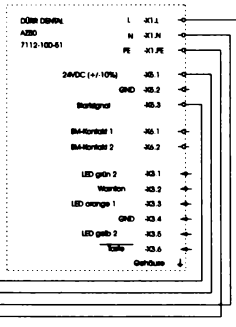


9.9 Connection AZ 50

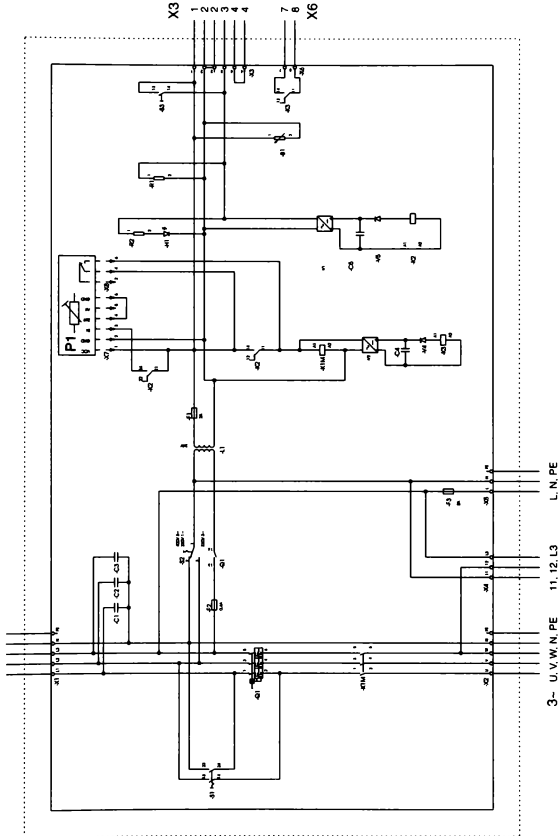
1a



13 **AZ 50**



X1
1~ L, N, PE
3~ L1, L2, L3, N, PE

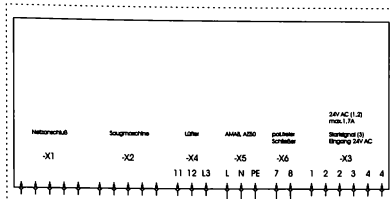


3~ U, V, W, N, PE
1~ N, L, ... PE
X2
X4
X5

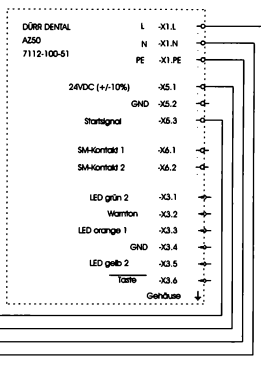


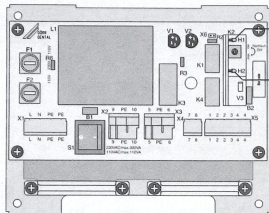
9.13 Connection AZ 50

1b



13 AZ 50





TROUBLESHOOTING

10. TROUBLESHOOTING

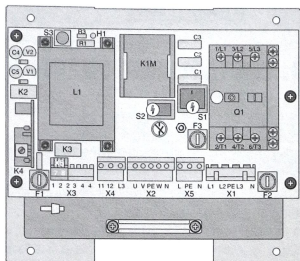
10.1 Control unit 0700-..

Suction Unit does not operate. Check that suction unit is fixed properly.

- Check whether the light diodes (22) on the timer relay display and whether second light diode (23) displays when the hose manifold is operated. If the second light diode (23) does not display when the hose manifold is operated, then the start signal has been disconnected.
- Check the control system, i.e. microswitch on hose manifold and relay at treatment station.

If neither lamp lights up, check fuses F1 and F2 and replace if necessary. If neither lamp lights up now, then there is probably a short circuit of the 24V AC output (X5 terminal 1,2). Remove connectors X5 and check the 24V AC using appropriate testing equipment or check operation of display (22).

If the correct voltage is present, the start signal correctly connected and the 24V AC output not overloaded, but the appliance does not function, then the control board must be replaced by qualified personnel.

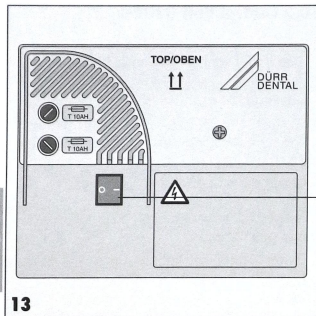


10.2 Control Unit 0732-..

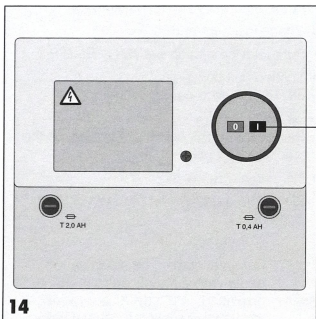
- Suction unit does not operate.
 - Check that suction unit is not blocked.
- Motor protection switch (Q1) has been activated.
 - Check the motor protection switch setting. For correct setting values see the table in the Technical Data.
 - Check that current is flowing with a measuring instrument. If current consumption is too high, check for any technical defect.
- Press S3. LED H1 lights up.
 - Suction unit does **not** operate, fault at V1, V5 or K2
 - Suction unit starts, no control signal at X3
- Press S3, LED V3 does not light up
 - Check fuses F1 and F2
 - Set motor protection switch Q1 to OFF
- Suction unit continues to operate, LED V3 off, key S3 does not function and no control signal at X3
 - Relay K2 is stuck or the electronics for the time lag are defect
- No delayed running
 - Electronic defect or not plugged in correctly



Removal of the time lag relay will deactivate the delayed running operation. In the event of a defect of the time lag relay the controller can continue to function without initiating the time lag.



13



14



OPERATION

11. CONTROL UNIT ON/OFF SWITCH

Before operating the suction unit the control unit must be switched on.

On control units 0700-500-... there is a tumbler switch (24) on the front which is connected behind the fuses electrically.

On control units 0732-100-... the driving voltage is immediately available after fuses are switched on control unit. After activation of the motor protection switch (25) the suction unit is ready for operation.

12. CHANGING FUSES

Should there be any defect of the suction unit the fuses in the control unit can be checked and replaced.



Before opening any fuse box switch off main fuse (e.g. over-current release) in front of the control unit.

In order to replace fuses, use a screwdriver to unscrew the fuse holder, remove the fuse from holder and fit fresh fuse.

i Fuse F3, e.g. for connecting an amalgam separator, can be found under the housing cover



DISPOSAL

13. APPLIANCE DISPOSAL

The electronic boards and components should be disposed of as electronic scrap. The appliance cover can be disposed of as plastic waste and the base plate as scrap metal.