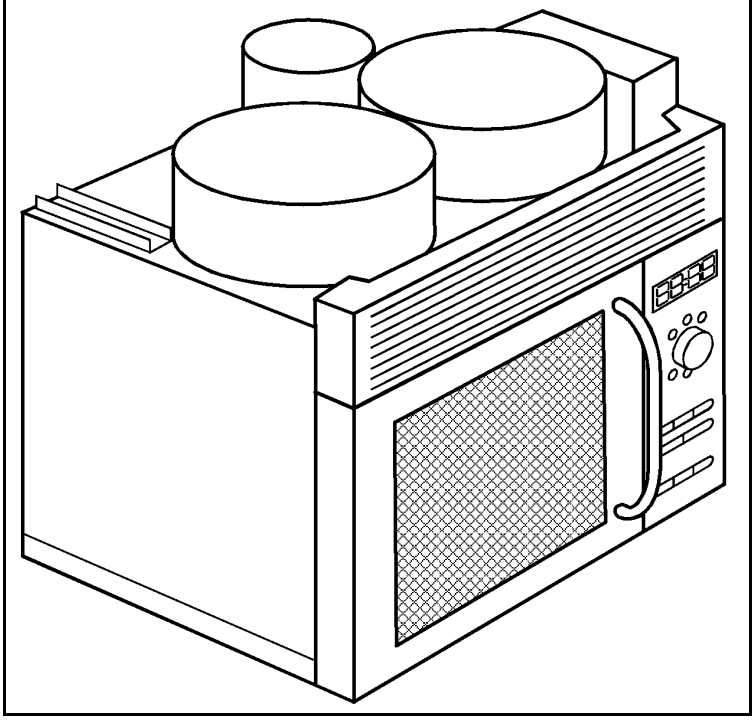

Microwaves

MW 900

MWG 1000

MWGD 900

Küppersbusch

THE HEART OF A GOOD KITCHEN

GB

Service Manual: H4-070-14-01

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1. Description of type

Type	Features
MWGD 900.0	Combined microwave oven/cooker hoods with dual microwave feed up to 900 watts, quartz grill and hot air convection possible. Rapid start, automatic defrosting, 201 stainless steel oven.
MWG 1000.0	Microwave with dual microwave feed up to 1000 watts, quartz grill 900 watts, rapid start, automatic defrosting, 201 stainless steel oven cavity, turntable.
MW 900.0	Microwave with dual microwave feed up to 900 watts, rapid start, automatic defrosting, 201 stainless steel oven cavity with turntable and electronic clock.
MW 800.0	Microwave with feed up to 750 watts, 99 minutes 99 seconds timer, power control with 10 cooking modes, 4-step automatic programm control.

Introduction

Every appliance is carefully tested before it leaves the factory. However it is important that it is assembled and operated correctly.

Despite all safety measures, the safety of the appliance depends on it being correctly installed. It is equally important for the user to operate the appliance correctly and to carry out the appropriate maintenance measures.

It is extremely important for the owner to read through the operating instructions before using the appliance for the first time to ensure that it is operated correctly, that it works safely and that good results are obtained.

WARNING - MICROWAVE ENERGY

NOBODY SHOULD BE EXPOSED TO THE MICROWAVE ENERGY RADIATED BY THE MAGNETRON, THE WAVEGUIDE OR THE ANTENNA IF THESE ARE OPERATED INCORRECTLY OR HAVE BEEN IMPROPERLY CONNECTED. ALL MICROWAVE TERMINALS FOR INPUT AND OUTPUT, THE WAVE GUIDE AND ALL FLANGES AND SEALS MUST BE FASTENED AND SEALED CORRECTLY. THE APPLIANCE MUST NEVER BE PUT INTO OPERATION WITHOUT THE OVEN CONTAINING A LOAD THAT ABSORBS MICROWAVE ENERGY. NEVER LOOK INTO AN OPEN WAVEGUIDE OR AN ANTENNA WHEN THE MAGNETRON IS UNDER VOLTAGE. THE APPLIANCE MUST NEVER BE OPERATED WITHOUT THE CASE EXCEPT WHEN IT IS BEING GIVEN A TRIAL RUN. IN THIS CASE, HOWEVER, THE MAGNETRON AND THE VISIBLE MICROWAVE TERMINALS MUST BE MEASURED FOR MICROWAVE LEAKAGE.

ATTENTION

The appliance must not be used under the following conditions:

- if the door does not close properly and does not fit the frame because it is distorted or because the hinges have been damaged,
- if the door or the door seal are damaged,
- if the appliance shows obvious signs of damage,
- if the door does not close properly.

The appliance must not be used if any of the components of the door interlock system, the door or any parts of the high-frequency circuit are damaged. These parts must be replaced.

2. Repair and maintenance

IMPORTANT NOTES

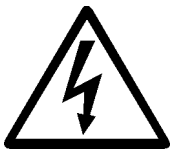
All work and repairs on the components of microwave ovens may only be carried out by a qualified service technician who has been trained by the manufacturer and authorized to carry out such work.

Safety can be increased by using special tools such a TORX screwdriver and measuring instruments to test microwave leakage.

In order to prevent accidents and damage to the appliance, the following rules should be observed when carrying out repairs:

- Before opening up the case disconnect the appliance from the mains or switch off the main switch of the appliance. Wait at least 3 minutes.
- Before beginning the work, the technician should take off his watch and, if necessary, his metal bracelets. Never touch high-tension parts and wires.
- Before checking or exchanging, discharge the high-voltage capacitor for the appliance housing with an insulated conductor. Before shorting the capacitor terminal make sure that the conductor to the housing has been earthed.
- Do not use a usual voltmeter to measure the high tension.

The following points must be checked before the appliance is reconnected to the mains:



- that all internal terminals have been properly connected;
- that all wires are insulated and that they do not come into contact with the door of the appliance, with the case or with any sharp edges;
- that all grounding terminals are in perfect condition, electrically and mechanically;
- that no changes have been made to the built-in safety devices and that they are not manipulated in any other way;
- that all spare parts conform to the manufacturers specifications.

2.1 Technical data MWGD 900.0

Technical requirements

Measured at an ambient temperature of 25°C.

Electrical system

All voltages are based on average values.

Nominal input voltage

207 - 244 V

Output

210 - 244 V

Test voltage (statutory requirement):

207 - 244 V

Electrical terminals (EN-335-1):

230 V

Frequency

50 Hz

Phases

Single-phase Operation

Nominal power input

Microwave	1500 W (short), 1400 W (long)
Grill	900 W
Crisp (Grill + MW)	2550 W
Cooker hood	355 W / 290 W (incandescent lamps / PL lamp)
In total	2850 W / 2775 W (cold operation), 2600 W / 2550 W (hot operation) (incandescent lamps / PL lamp)

Nominal power input

Microwave	7 A
Grill	4.2 A
Crisp	11 A
Crisp	10 A (CH / DK)
Cooker hood	2.3 A / 2.2 A (incandescent lamps / PL lamp)
In total	13 A / 12.5 A (cold operation), 11.7 / 11 A (hot operation) (incandescent lamps / PL lamp)

Fuses

DE	16 AL
	16 AH

Features of the microwave oven

Power output (according to IEC 7051)	850 W +10 % /- 50 W (when the oven is empty)
Output regulated by	ON / OFF switch
Duration of cycle	20.5 sec.
Power levels	8 (between 0 W and 850 W)

Features of the quartz grill

Power density	2.2 W / cm^2
Grilling space	330 cm^2
Heating uptime	30 sec.
Max. power input at 230 V	900 W

Features of the cooker hood in accordance with DIN 44971

Air suction (exhaust air)	360 m^3/ hour
Air suction (recirculating air)	240 m^3/ hour
Pressure	345 Pa

Timer

90 minutes

Oven lamp

Energy saver 1000 hours, 240 V max. 25 W, cannot be exchanged by customers.

Cooker hood lamp

Standard lamp 2 x 40 W 230/240V E14, can be exchanged by customers.

Mechanics

Weight

Gross	40 kg
Net	36 kg

Dimensions

Outer dimensions	598 x 340 x 540 mm (W x H x D)
Gross dimensions of oven cavity	335 x 290 x 1 85mm (18.0 1)
Useable volume	$\frac{\text{IEC 705 } 290^2 \text{ x PIE x } 173}{4}$

Fitting space dimensions

Visible parts	600 x 340 x 540 mm (W x H x D)
With exhaust part	600 x 340 x 540 mm (W x H x D)
Distance from hob	at least 430 mm
Exhaust pipes	120 mm
Building-in kit	4-point holder System
Distance from wall	adjustable from 0 - 40 mm, in steps of 5 mm
Load-bearing capacity	at least 60 kg on holder system

The appliance can be built in without removing the decorative parts.
When the appliance is being serviced, it should be possible to remove the microwave unit and the fan motor without dismounting the entire appliance.

Material of the oven cavity

Non-rust steel

Technical details

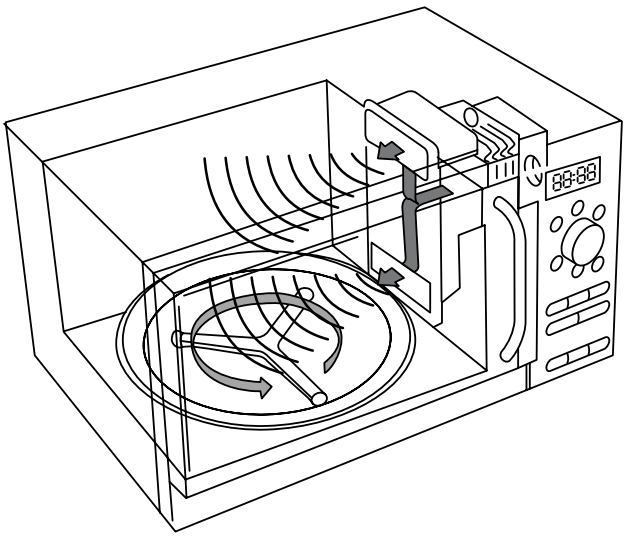
Noise level

MW	58 dBA (1 pW) IEC704
	125 Hz max. 66 dB
	250 Hz max. 62 dB
Cooker hood	68 dBA (exhaust air)
	67 dBA (exhaust air)
In total	68 dBA (exhaust air)
	67 dBA (exhaust air)

Hob lighting

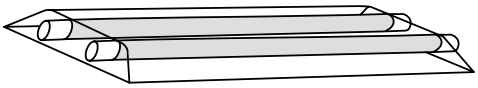
Distance of 430 mm	290 / 315 lux (incandescent lamps / PL lamp)
Distance of 650 mm	230 / 240 lux (incandescent lamps / PL lamp)

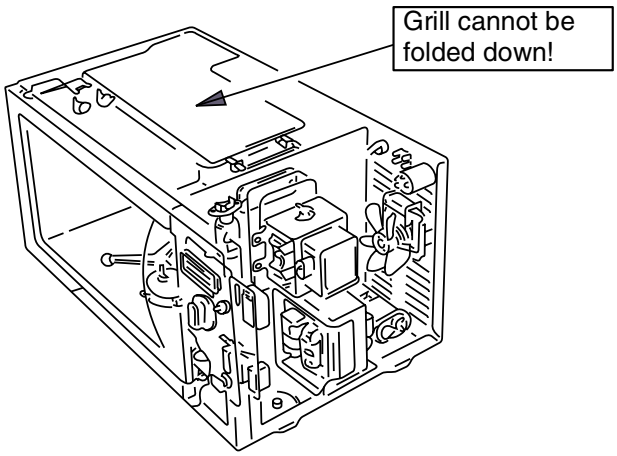
Microwave feed, turntable



The microwaves are fed into the oven in two places. This novel system is known as **Dual Microwave Feed (DMF)**. The rotation of the turntable ensures that the microwave energy is evenly absorbed by the food. The turntable consists of a roller stay and a glass plate.

Grill (MWDG 900.0 and MWG 1000.0)

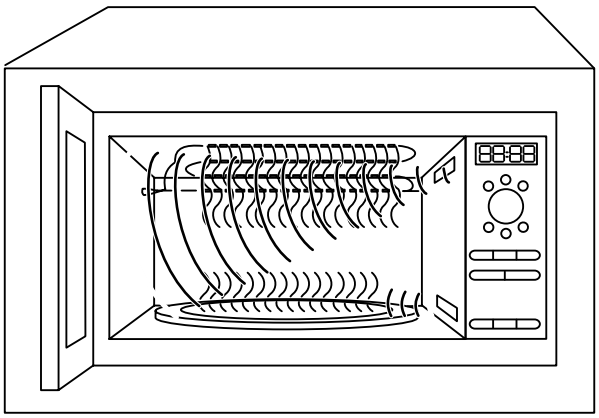




The grill element is a high-output quartz grill consisting of two glass tubes connected in a cascade. They are accommodated in a special case mounted at the top of the oven cavity. In order to make it impossible to touch the glass tubes they have the additional protection of an internal ceiling which is welded to the inside of the oven. The grill element **cannot be** cleaned inside the oven.

2.2 New features

Crisp

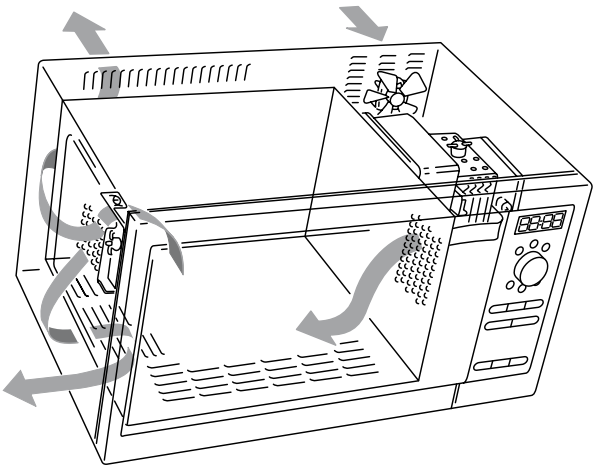


A combination of

- Grill
- Microwave oven
- Crisp plate special metal ovenware (reaches 200°C within two minutes)

has been developed.

Ventilation and air flow



2.3 Description of the components and their functions

Noise filter

Prevents any interference from radio or television that may occur when the appliance is being put into operation.

Fan motor

The fan motor activates the fan which sucks in air through the vents on the right side of the appliance and which causes it to circulate around the magnetron and the transformer. Some of the air is directed into the case in order to start the antenna turning and to remove any excessive steam produced by the food. This steam is blown towards the vents on the left and at the rear and is thus extracted.

Oven lamp

The oven lamp serves to control the food which can be seen through the viewing panel in the door. The oven lamp is always switched off when the cooking time has been set.

H.V. transformer

The H.V. transformer serves to generate a filament voltage to heat up the magnetron and to generate high voltage for the magnetron tubes. During cooking the 220V ~ (240V) used for the primary winding is converted into approx. 3.3V ~ on the filament winding and into approx. 2300V ~ on the secondary high-voltage winding of the power transformer.

Half-wave voltage-doubling circuit

The half-wave voltage-doubling circuit consists of a regulator and a capacitor with shunt resistance whose job it is to transform the 2300V ~ from the secondary winding of the high-voltage transformer into approx. 4000 V= in order to operate the magnetron.

Magnetron tubes

The magnetron generates microwaves using strong electric and magnetic fields. The microwaves are conducted into the oven where they are evenly distributed by the antenna to generate the required heat in the food.

Monitor switch

This switch is usually open. It is closed when the door is open. Should door switch remain closed for any reason, the fuse will be short circuited and will blow. The short-circuit current is limited by resistor 3104/3105.

Latch switches

These switches are safety switches which are activated by the door. Switch 1040 interrupts the current to the electronic controls and the display panel. Switch 1040 is the main door switch.

Note: Defective switches should be destroyed immediately to prevent them from being used again.

Grill

The grill (MGWD 900) cannot be pulled down to make it easier to clean the inside of the oven. The heat emanating from the grill, or the heating element, is so intense that the dirt is burned away.

Turntable motor

The turntable motor is a small synchronous motor which drives the turntable via a roller stay. The motor can start from any position.

3. Repair and maintenance

IMPORTANT NOTES

All work and repairs on the components of microwave ovens may only be carried out by a qualified service technician who has been trained by the manufacturer and authorized to carry out such work.

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In order to prevent accidents and damage to the appliance, the following rules should be observed when carrying out repairs:

Before opening up the case disconnect the appliance from the mains or switch off the main switch of the appliance.

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- that all internal terminals have been properly connected;
- that all wires are insulated and that they do not come into contact with the door of the appliance, with the case or with any sharp edges;
- that all grounding terminals are in perfect condition, electrically and mechanically;
- that no changes have been made to the built-in safety devices and that they are not manipulated in any other way;
- that all spare parts conform to the manufacturers specifications.

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ALL MICROWAVE TERMINALS FOR INPUT AND OUTPUT, THE WAVE GUIDE AND ALL FLANGES AND SEALS MUST BE FASTENED AND SEALED CORRECTLY.

THE APPLIANCE MUST NEVER BE PUT INTO OPERATION WITHOUT THE OVEN CONTAINING A LOAD THAT ABSORBS MICROWAVE ENERGY.

NEVER LOOK INTO AN OPEN WAVEGUIDE OR AN ANTENNA WHEN THE MAGNETRON IS UNDER VOLTAGE.

THE APPLIANCE MUST NEVER BE PUT INTO OPERATION WITHOUT HOUSING.

3.1 Dismantling of the cooker hood for repair work

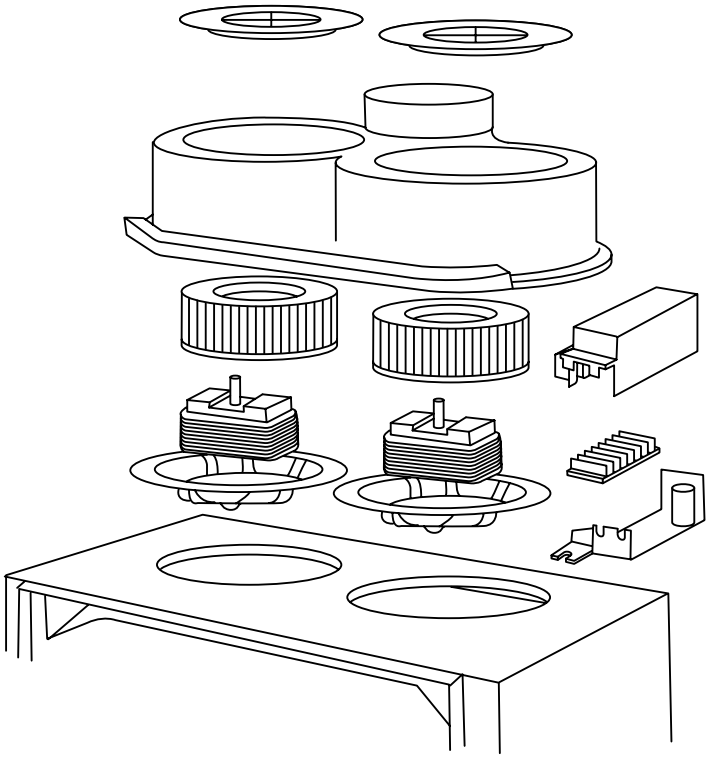
As the appliance is very heavy (approx. 40 kg) it is not usually possible for one person to dismount the appliance from the wall!

Connecting block / cooker hood motors

The connecting block and the cooker hood motors can be accessed from the top.
The wooden panel above the combination appliance might have to be removed for this purpose.

Motors

The fan motors of the cooker hood are accessible after the fascia (7 screws) has been removed.

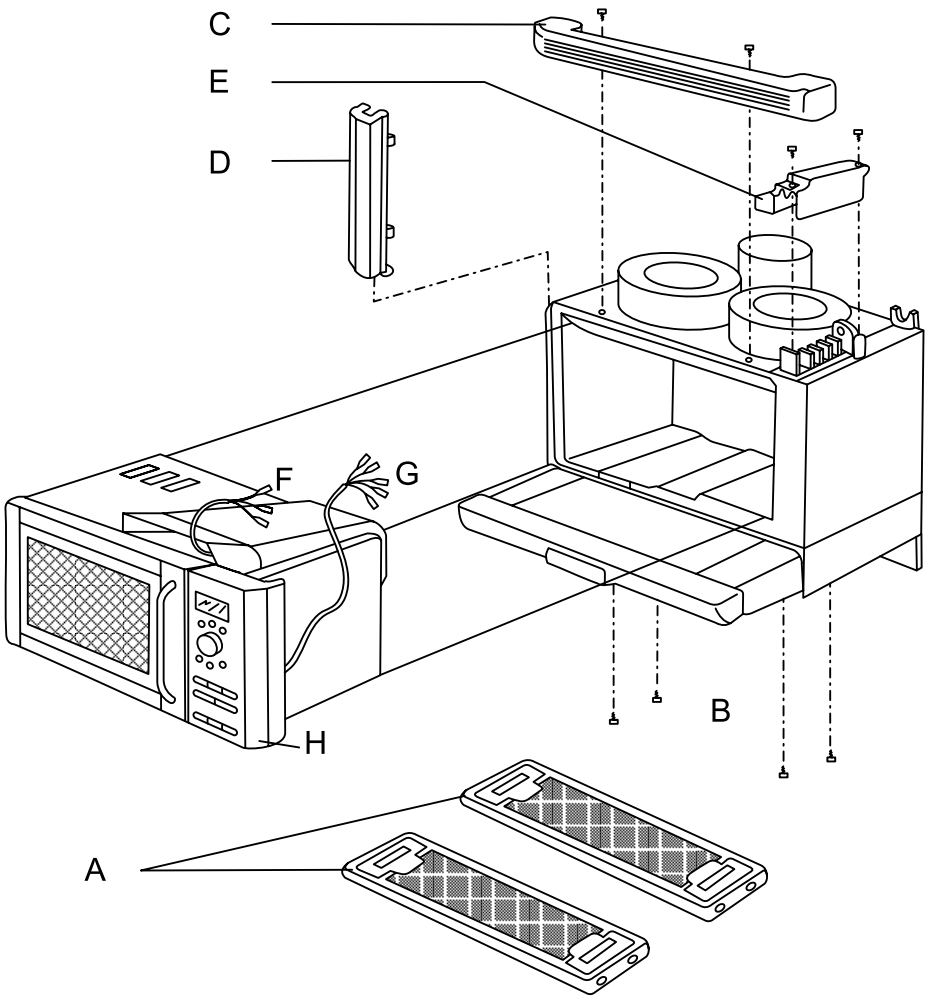


3.2 Microwave oven and cooker hood controls

In order to carry out repair work on the microwave oven and on the cooker hood controls, the microwave oven must be removed from the cooker hood. This is possible with a combination appliance that is mounted on the wall.

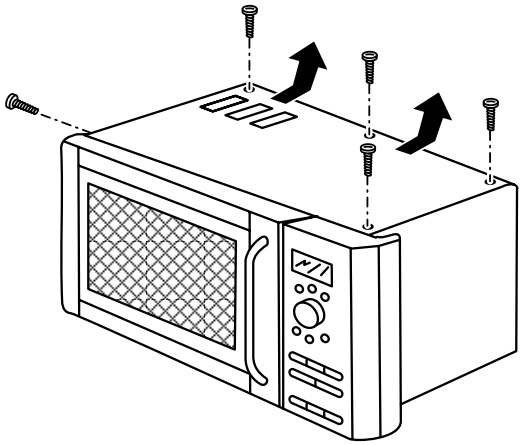
Removal: The parts can be dismantled in the following sequence:

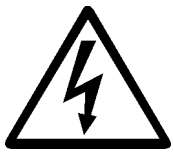
1. Fat filters (A)
2. Unscrew the four Torx (B) screws from below. (The screws are visible after the fat filters have been removed and the flat panel has been extended).
3. Air grating (C) at the top (2 screws).
4. Lift away the side panel on the left (D).
5. Open the connection box.
6. Pull away the connection leads for the microwave oven (F) and the cooker hood controls (G) from the top of the connection block.
7. Take the microwave oven out of the cooker hood case.
8. The operation fascia (H) of the microwave oven can be detached by lifting it upwards. Then you can access the switches of the cooker hood.



3.3 Dismantling and assembling the appliance

Removing the case



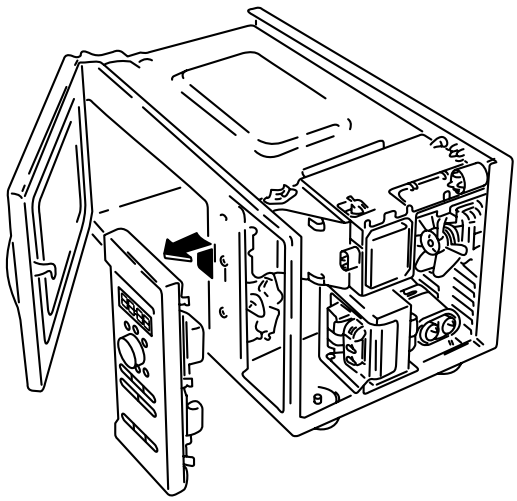


CAUTION HIGH VOLTAGE!

Disconnect the appliance from the electricity mains before removing the case.

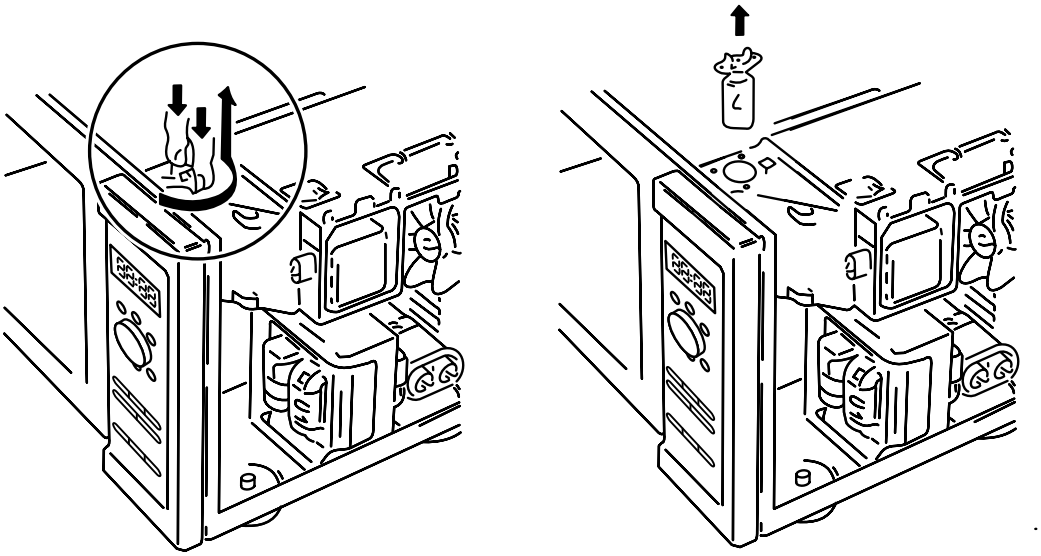
After the case has been removed the parts that are under high voltage are accessible and technical work can be carried out on them.

Removing the operation fascia

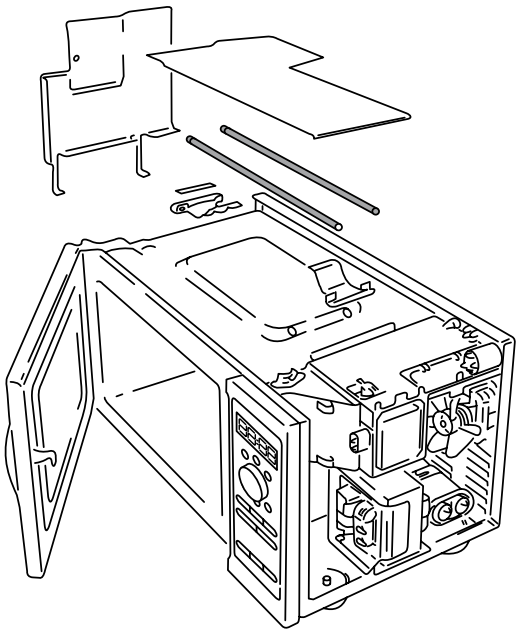


Lift the operation fascia and remove it carefully.

Exchanging the oven lamp



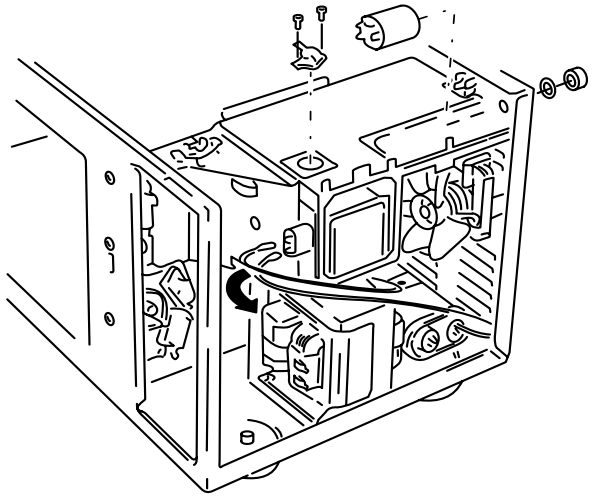
Exchanging the grill / heating element

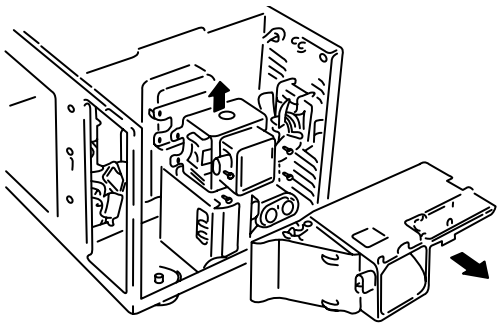


Attention:

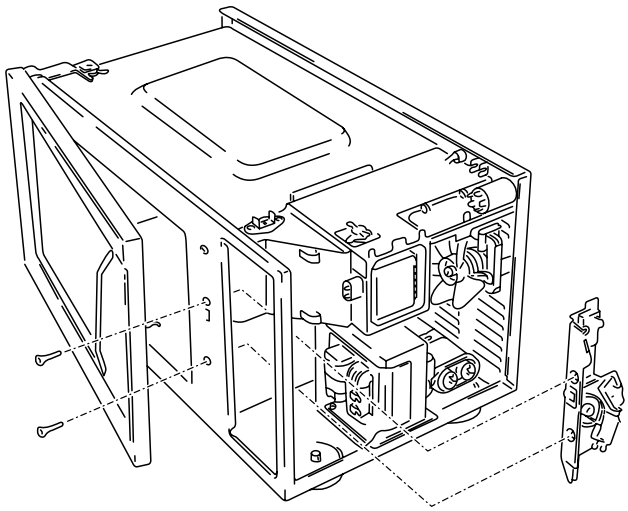
The ventilator must first be removed together with the case before the grill or the heating element can be exchanged.

Exchanging the magnetron

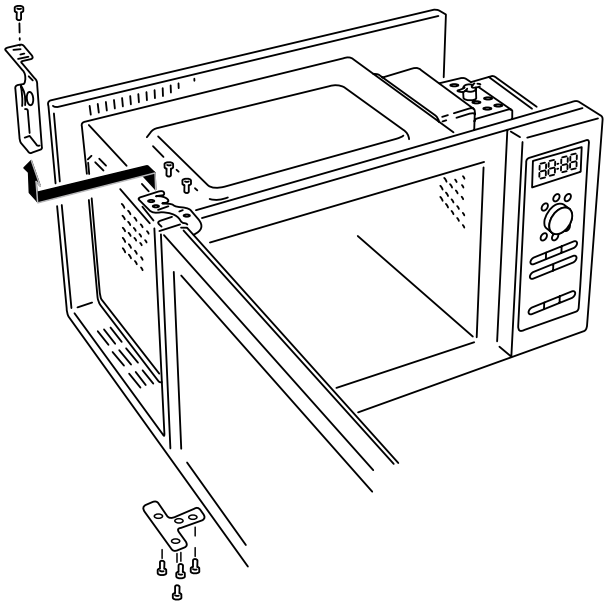




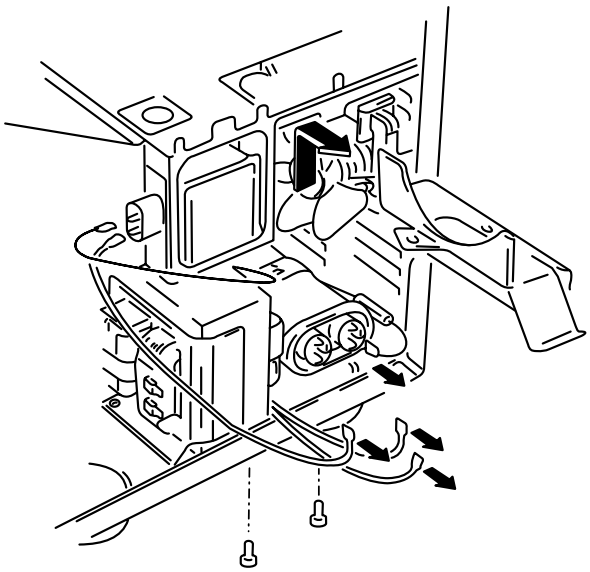
Exchanging the door switch unit



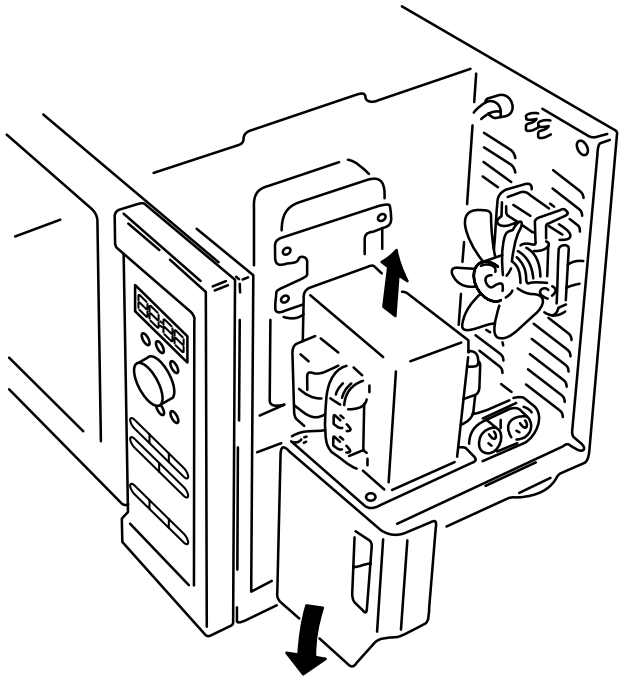
Exchanging the door



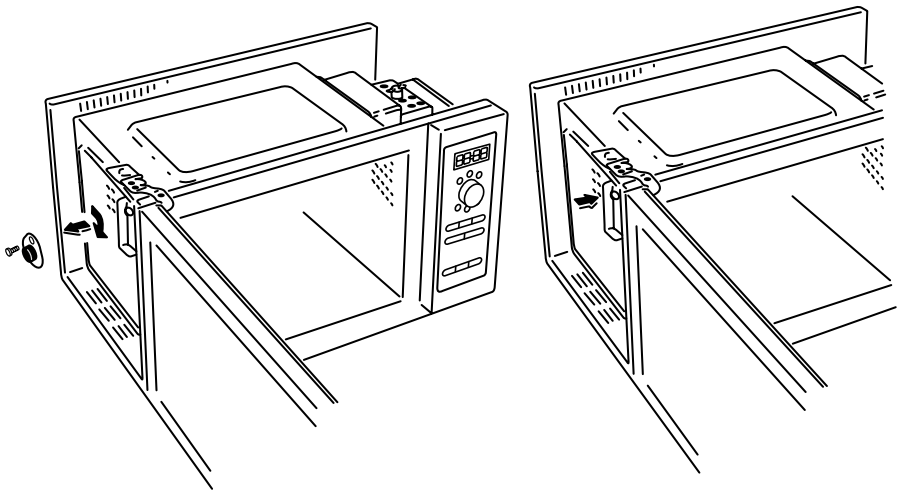
Exchanging the insulation for the air channel



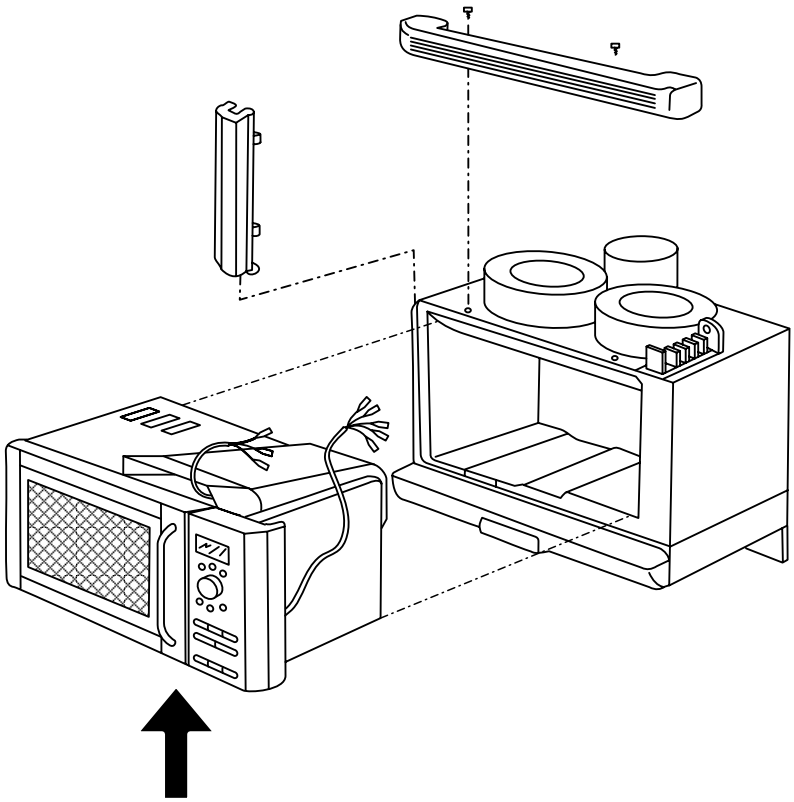
Mounting the transformer

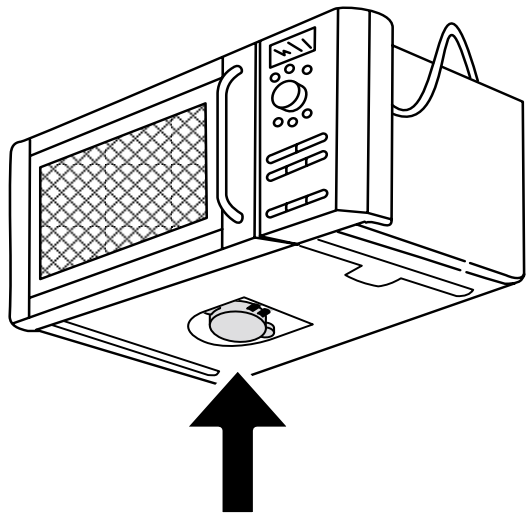


Mounting the overheating protection

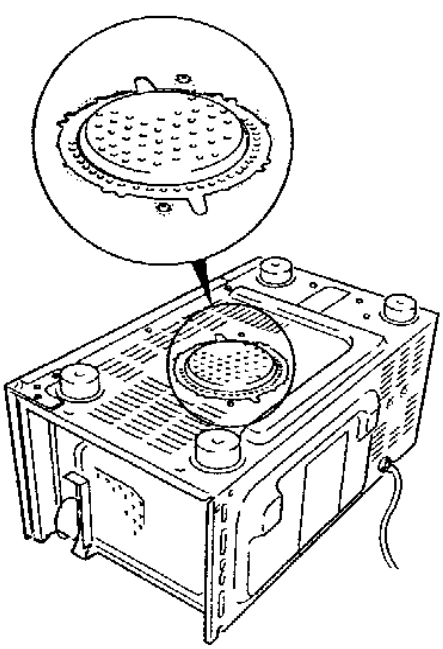


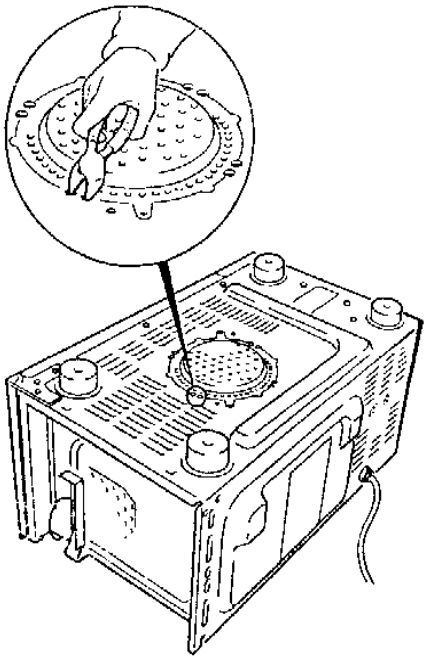
Accessing the turntable motor MWGD 900.0

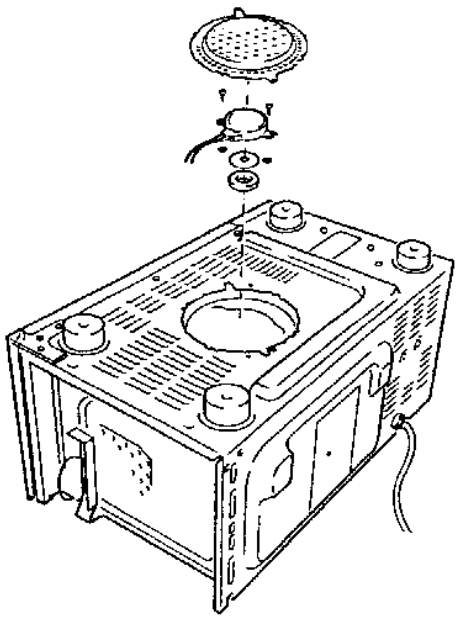




Accessing the turntable motor MWG 1000.0, MW 900.0 and MW 800

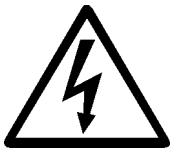






4. Measurements and adjustments

Testing the high-voltage transformer



Attention: During cooking the high-voltage terminals of the transformer are under a voltage of 2300 V~. When testing the transformer, keep your hands and all measuring instruments, etc. away from these high-voltage terminals.

- ♦ Switch off the appliance and discharge the capacitor with an insulated screwdriver.
- ♦ Disconnect the connection lead of the capacitor from the terminal of the high-voltage transformer.
- ♦ Connect the voltmeter to the filament terminals of the magnetron with a toothed clamp and ensure that you always keep a good distance from the voltmeter and the wires.
- ♦ Connect the appliance to the mains and start the cooking process. The voltmeter must indicate a voltage of 3.3 V~.

Attention: Switch oft the appliance before disconnecting the voltmeter.

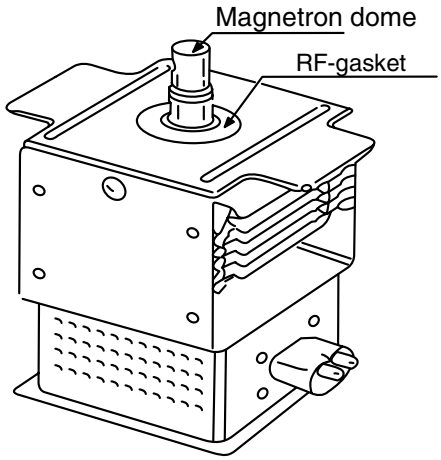
- ♦ If the measuring instrument does not indicate any voltage, you must set the correct value and check whether a voltage of 220 V ~ (240 V) is applied to the primary winding of the transformer during the cooking process.

Anode voltage

For reasons of safety, it is neither advisable nor necessary to measure the anode voltage as the appliance is under high voltage (approx. 4 KV).

4.1 Component testing

4.1.1 Magnetron filament



Disconnect the appliance from the mains and discharge the HV capacitor.

Then disconnect the high-voltage leads from the filament terminals of the magnetron and measure the resistance at the two filament terminals of the magnetron.

The correct reading should be less than 1 ohm.

If the resistance is high or infinite the magnetron must be exchanged.

Short magnetron test

Connect the ohmmeter between the filament terminals of the magnetron and the case.
The reading on the ohmmeter should indicate an infinite resistance.
A low resistance means that there is a ground contact in the magnetron. In this case the magnetron must be exchanged.

Note: When exchanging the magnetron please ensure that:

- ♦ you do not interchange the connection leads at the magnetron terminals
- ♦ you do not use the appliance if the RF gasket is missing or damaged. This gasket surrounds the dome of the magnetron and prevents microwave leakage from occurring.

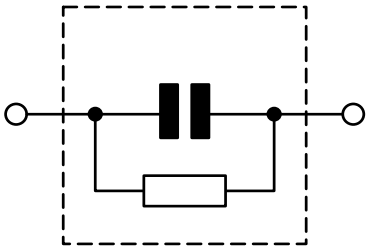
Warning: When exchanging the magnetron you must ensure that the dome is not scratched by metal parts, as even the smallest metal splinters on the ceramic dome can considerably shorten the lifetime of the magnetron.

4.1.2 Checking the capacitor

If the capacitor has an open flow of current, then the magnetron is not under high voltage.

If there is a short circuit in the capacitor, this will result in the mains fuse blowing due to the consumption of peak current.

The open or short-circuited capacitor can be tested with an ohmmeter.



- Disconnect the appliance from the mains.
  Discharge the capacitor.
  Disconnect the leads of the capacitor.
- The resistance between terminal “C” and the other terminal is measured using an ohmmeter set to the highest range.
  The indicator should shoot up briefly, indicating continuity and then point towards infinite when the capacitor is charged. This reading should also appear if the measuring sensors are swapped over.
- If the ohmmeter indicates continuity between the terminals of the capacitor or if it shows no fluctuations the capacitor must be exchanged.

4.1.3 Testing the high-voltage diode

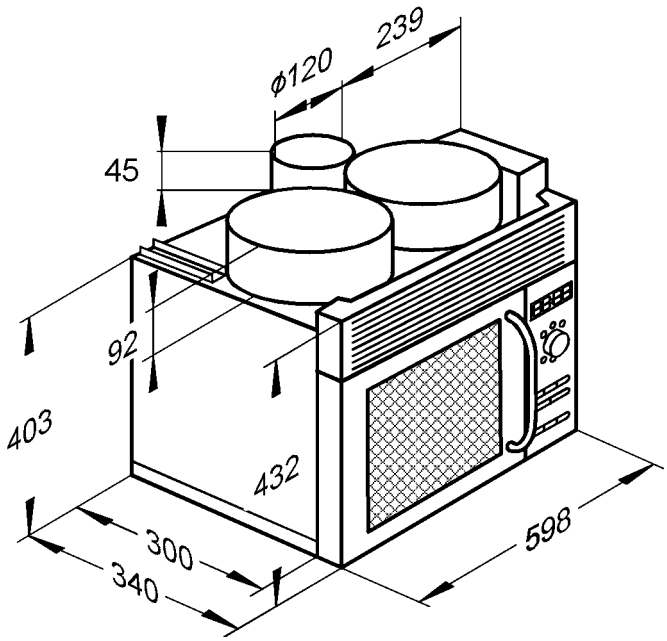
The high-voltage diode is no longer accommodated in the case of the capacitor. It is located outside the case. The high-voltage diode is installed in the same way as the high-voltage capacitor.

It can prove difficult to check the operation of the diode with a normal ohmmeter. If the ohmmeter points towards infinite, then you should not come to the conclusion that the diode is defective. It is when a resistance is measured in both directions that the diode is defective.

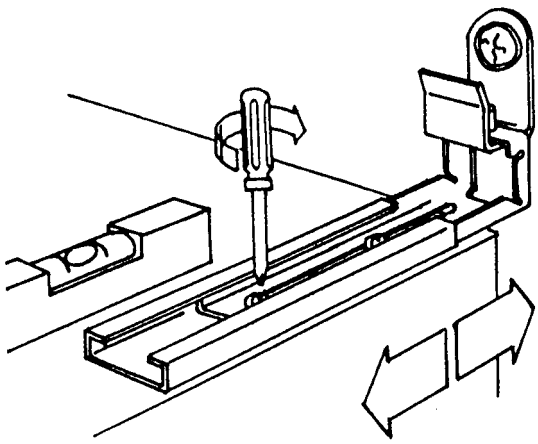
Note: Using different ohmmeters for the measurements will produce varying results. We therefore recommend that you first test the measuring instrument on a diode that is in order before carrying out any further tests on other diodes.

5. Installation

5.1 Dimensions



5.2 Methods of assembly



When it is hung directly on the wall, the combined microwave oven and cooker hood fits perfectly between two upper wall units with a depth of 30 cm.

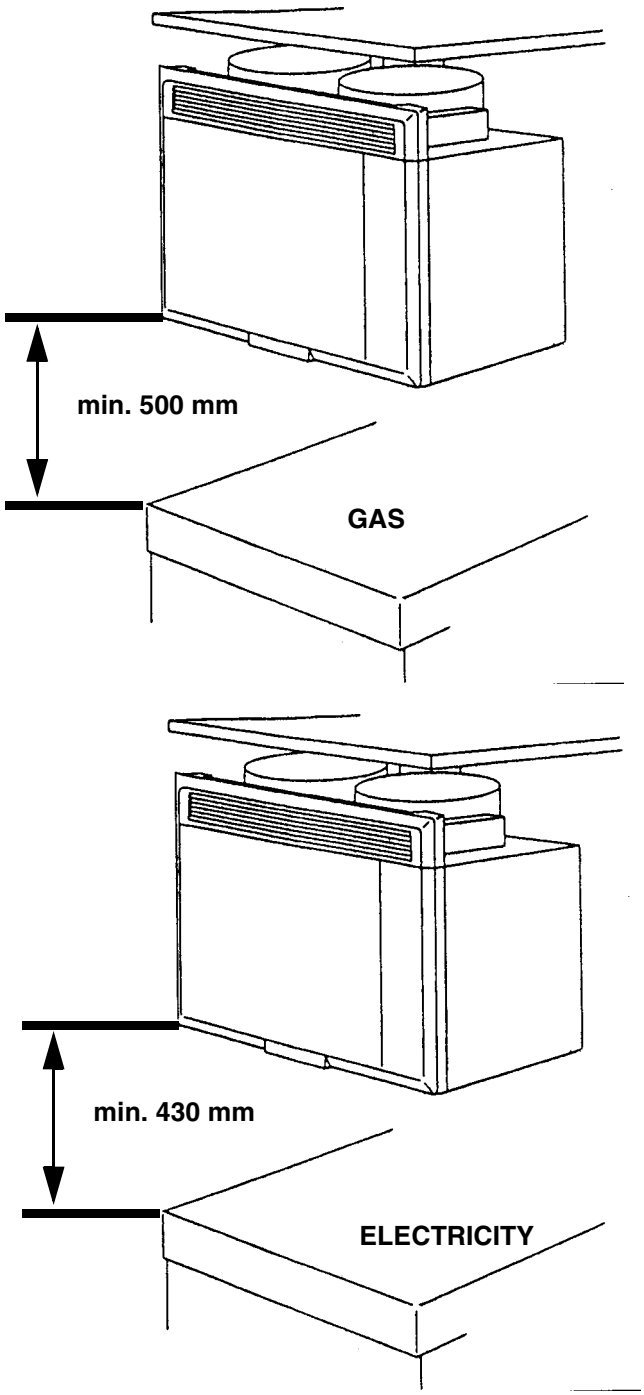
In order to adapt the appliance to other types of kitchen furniture it can be adjusted to a depth of up to 34 cm.

This versatility allows the appliance to be perfectly integrated into the kitchen furniture.

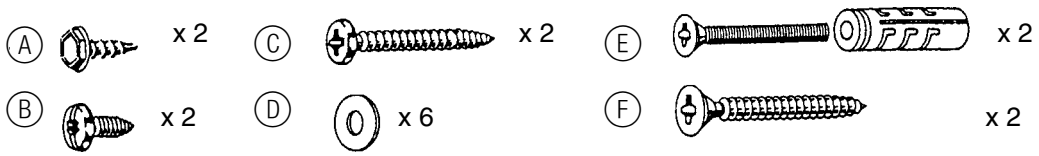
5.3 Notes on installation

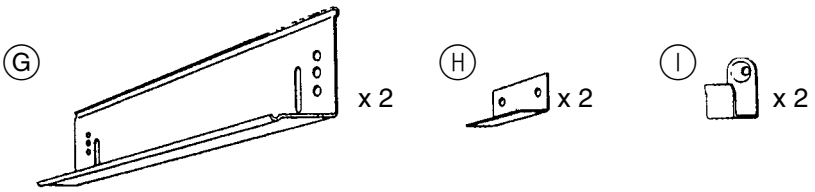
The combined microwave oven and cooker hood can be installed above both an electric hob and a gas hob.

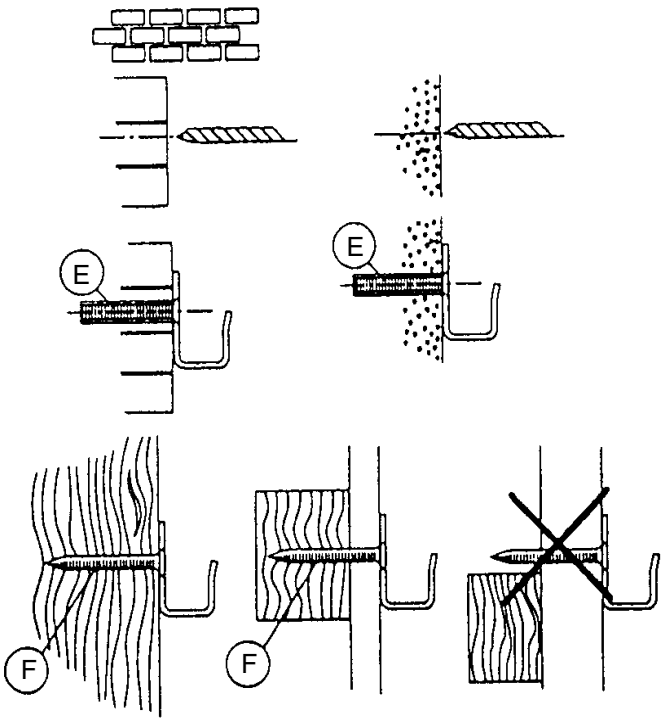
Be absolutely certain, to observe the minimum distances!



5.3.1 Accessories for assembly



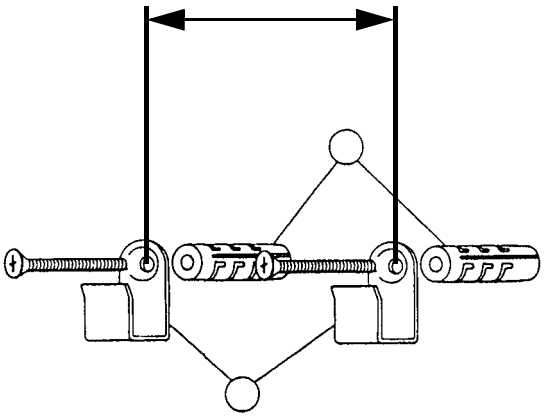




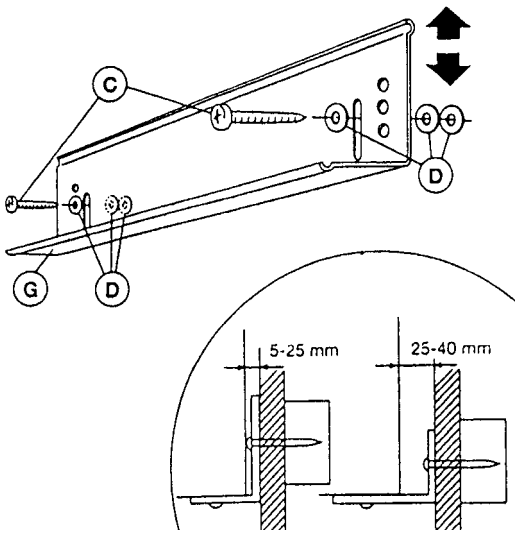
In order to fasten the hooks firmly to the wall, the appliance is supplied together with screws for both a stone wall (E with wall plugs) and for a wooden wall (F).

5.3.2 Assembly

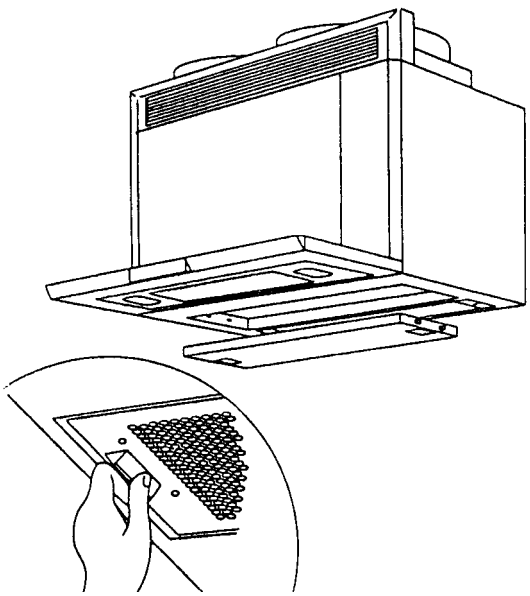
Distance between the drilled holes: 540 mm.



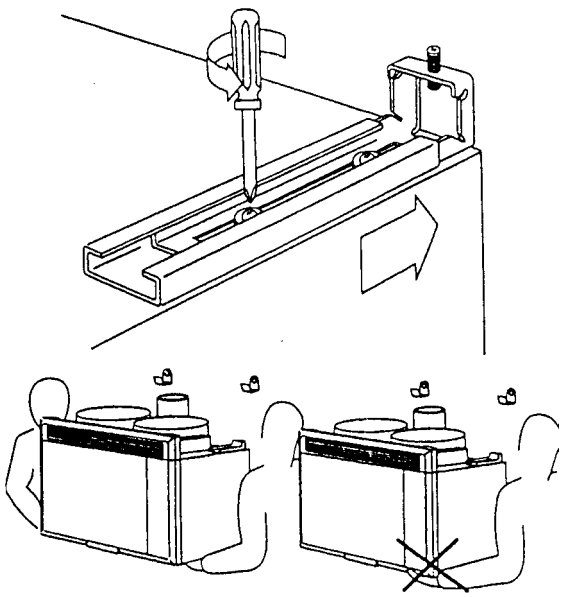
In order to firmly mount the hooks to the wall, drill two holes at a distance of 540 mm.



If the appliance is not to be mounted flat against the wall, do not tighten the screws for the adjustment strip yet, as it must still be possible to make an exact alignment later.

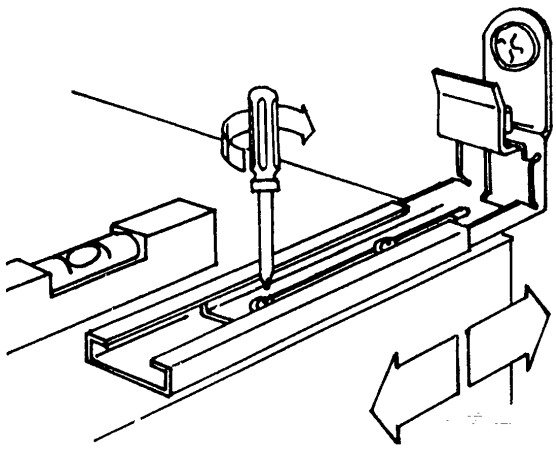


In order to avoid any possible damage, please ensure that you remove the metal filter cassette during installation.

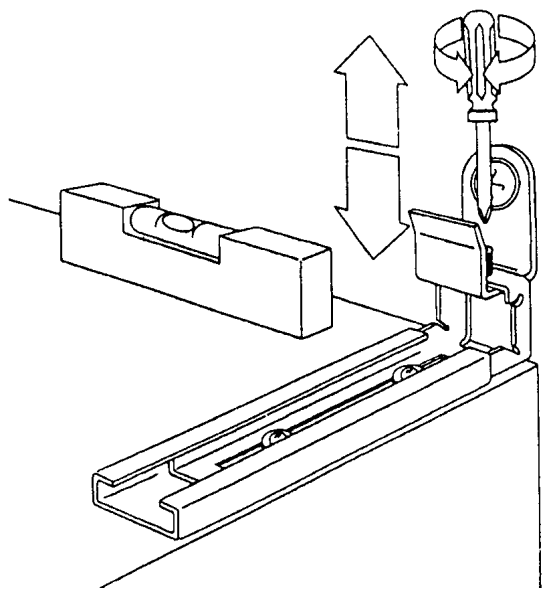


Unscrew both screws of the adjustable rails and slot the appliance onto the hooks on the wall.

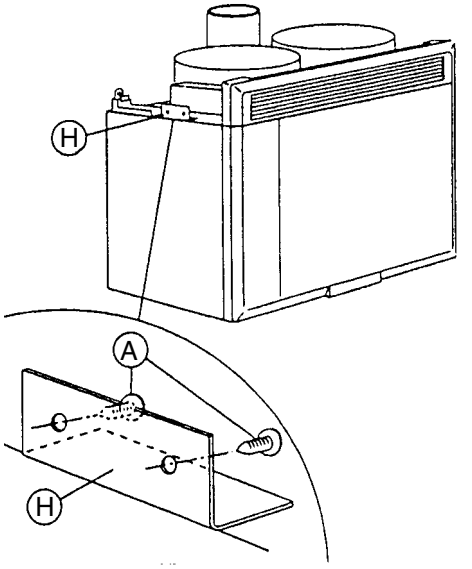
Two people are needed to hang the appliance on the wall and the appliance should not be lifted by taking hold of it at the front.



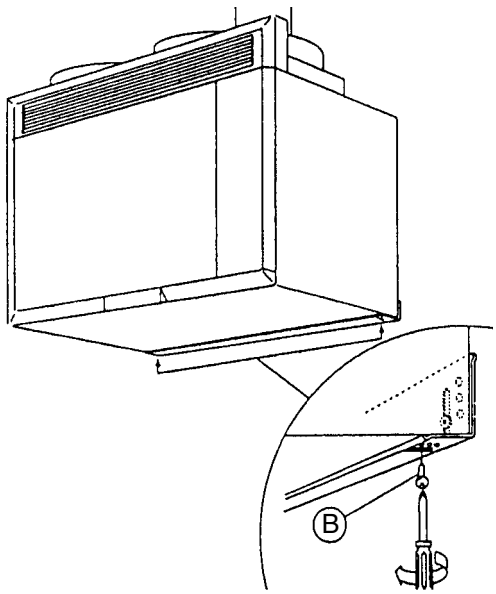
The appliance's inclination and its distance from the wall can then be adjusted at the rails.



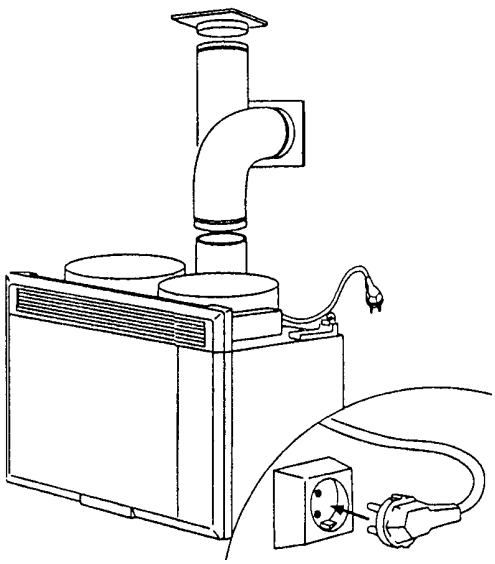
The appliance can be exactly aligned horizontally by turning the adjusting screw in the hooks.



If the appliance is to be mounted flat against the wall please place bracket **H** (supplied with the appliance) on the left side of the appliance and fasten it to the adjacent wall cupboard with screws **A**. This will prevent the appliance being demounted by accident.



If you have not mounted the appliance flat against the wall, align it and then fasten it to adjustment strip **G** with screws **B**. This will prevent it from being accidentally demounted.



Connect the appliance to the extraction pipe. Connect the microwave oven to the electricity mains.

5.3.3 Technical data and installation dimensions MWG 1000

Weight

Gross	20 kg
Net	16.8 kg

Dimensions

Outer dimensions	548 x 332 x 398 mm (W x D x H)
Gross dimensions of oven cavity according to 1 EC 705	346 x 225 x 341 mm (26.0 l)
Diameter of turntable	325 mm

Electrical connection

Voltage	230 V
Frequency	50 Hz
Total wattage	2550 W
Microwave frequency	2450 Hz
Power consumption	7 A
Fuse	10 A
Microwave output	1000 W
Timer	90 minutes, digital

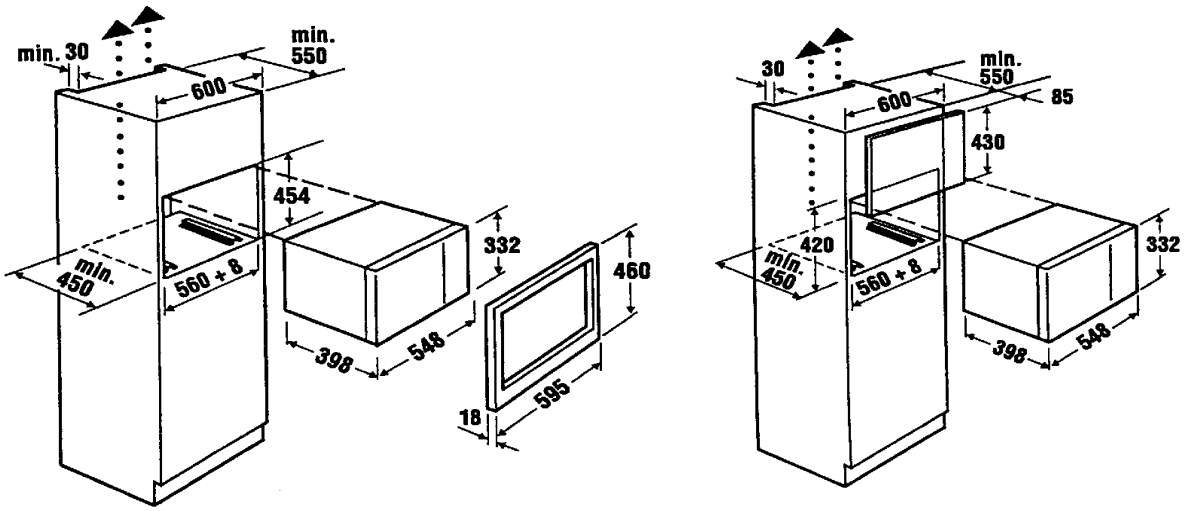
Material of the oven cavity

Non-rust steel

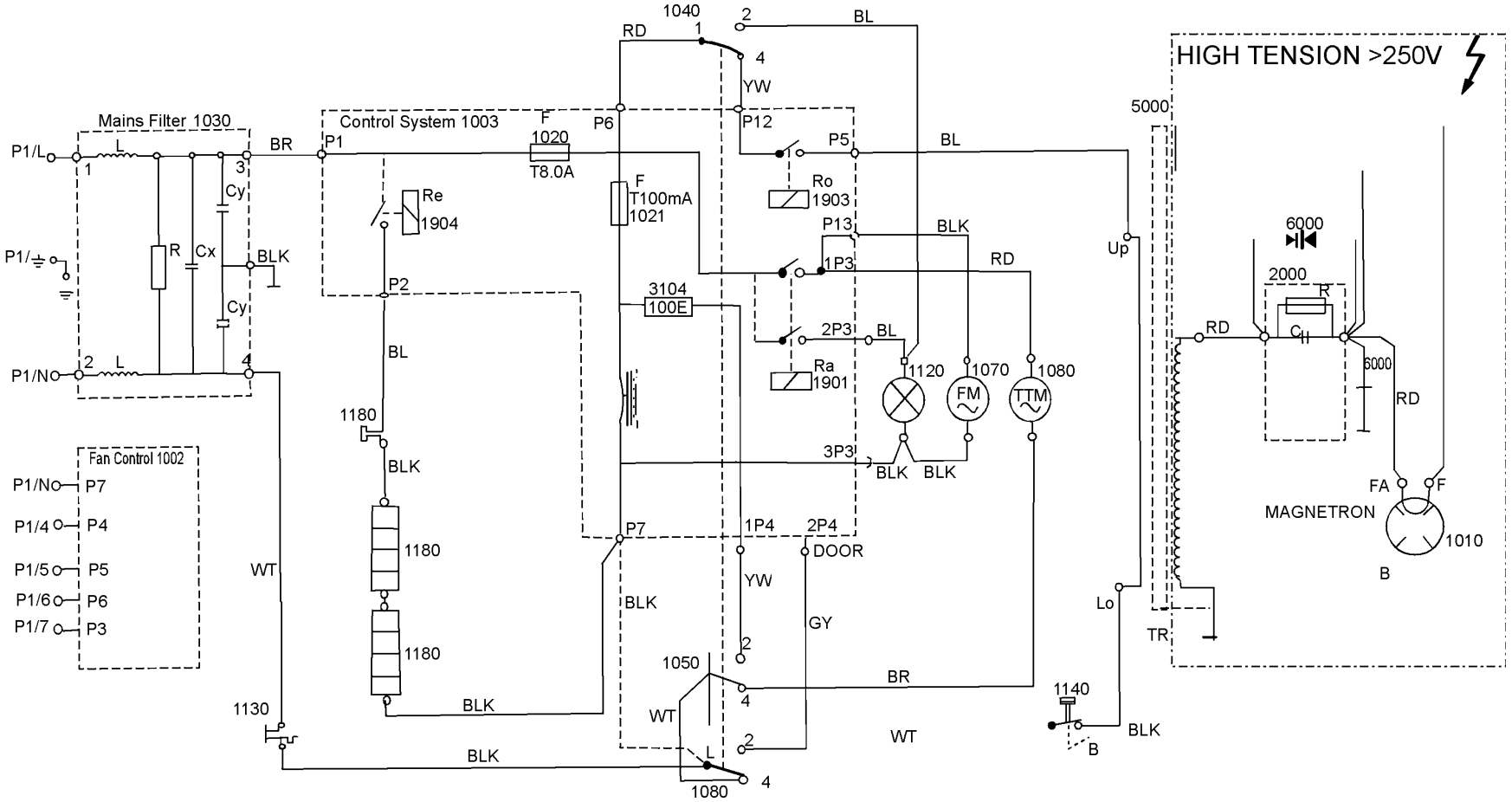
Accessories

Dual-level defrosting grid and turntable (standard accessories)

White building-in kit	(optional accessory no. 255)
Black building-in kit	(optional accessory no. 256)



5.4 Wiring diagram for MWG 1000



1040 Secondary door switch

1050 Monitor door switch

1060 Primary door switch

OVEN SWITCHED OFF

DOOR CLOSED

1030 Mains filter

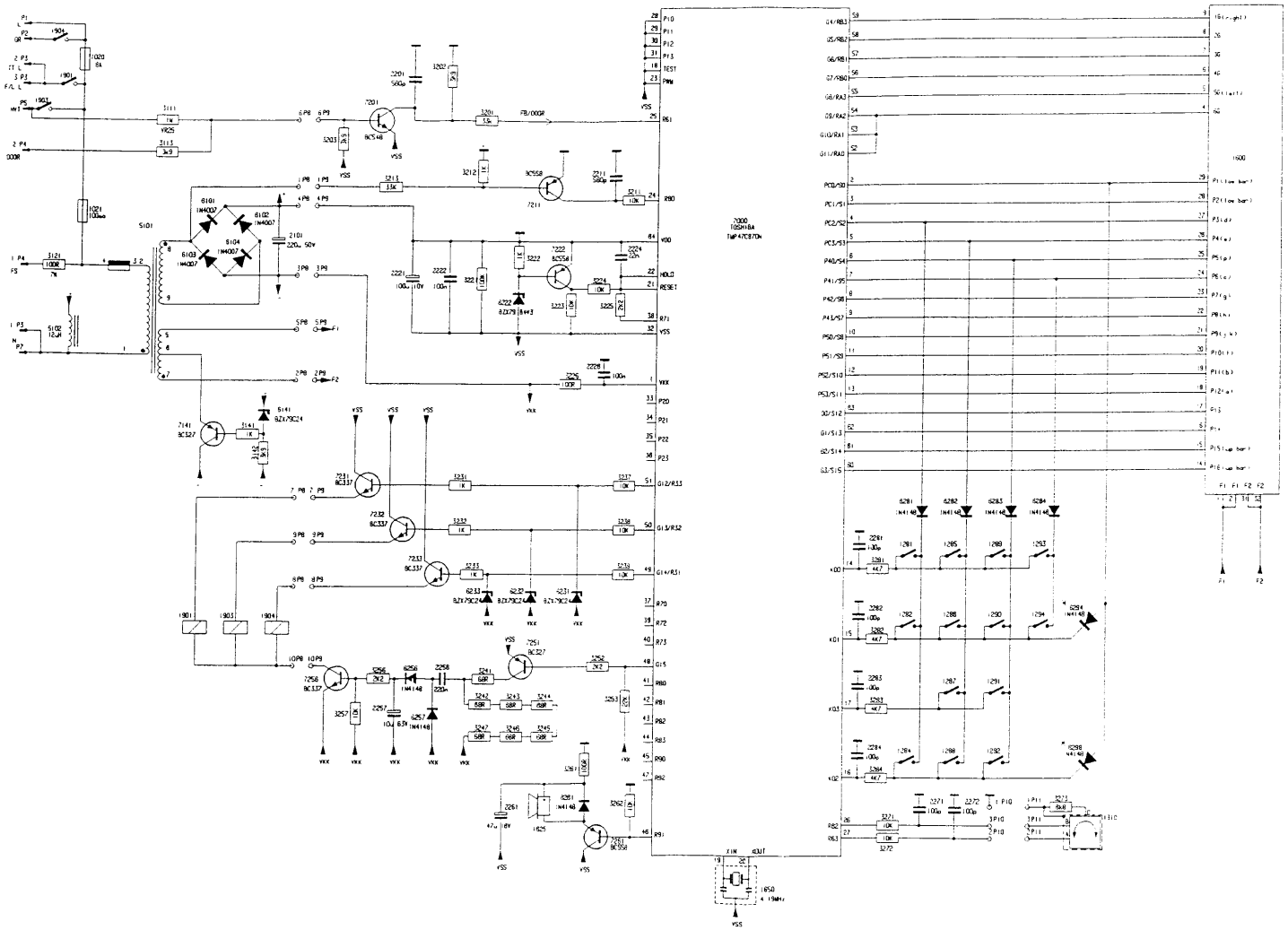
1003 Control board

1002 Fan control

Up = Upper contact primary winding HT-transformer

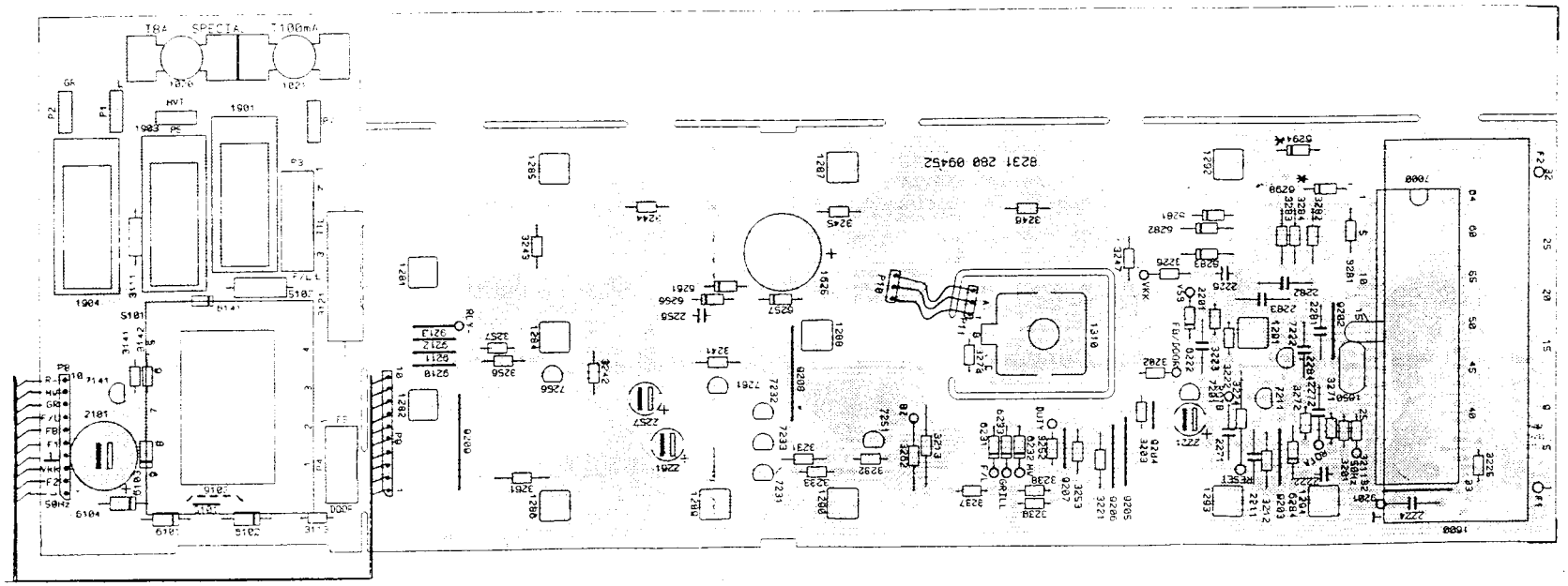
Lo = Lower contact primary winding HAT-transformer

5.5 Wiring diagram for MWG 1000



* see table page 43

Wiring diagram for MWG 1000.0



	6294	6298
461968800280	applicable	not applicable
461968800290	applicable	applicable
461968800300	not applicable	not applicable
461968800310	not applicable	applicable

5.5.1 Technical data and installation dimensions MW 900.0

Weight

Gross	17.5 kg
Net	16.8 kg

Dimensions

Outer dimensions	525 x 277 x 338 mm (W x D x H)
Gross dimensions of oven cavity according to 1 EC 705	340 x 290 x 210 mm (20.0l)
Diameter of turntable	280 mm

Electrical connection

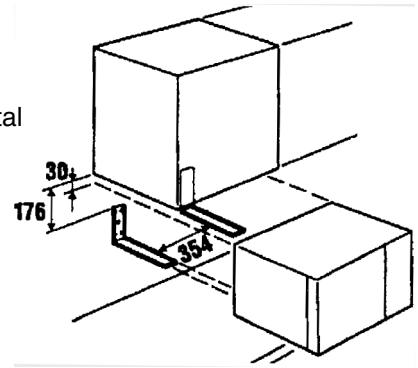
Voltage	230 V
Frequency	50 Hz
Total wattage	1600 W
Microwave frequency	2450 Hz
Power consumption	7 A
Fuse	10 A
Microwave output	900 W
Timer	90 minutes, digital

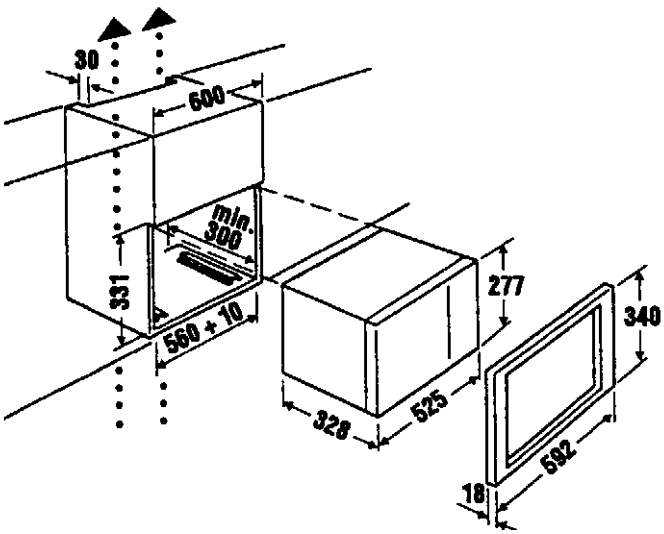
Material of the oven cavity

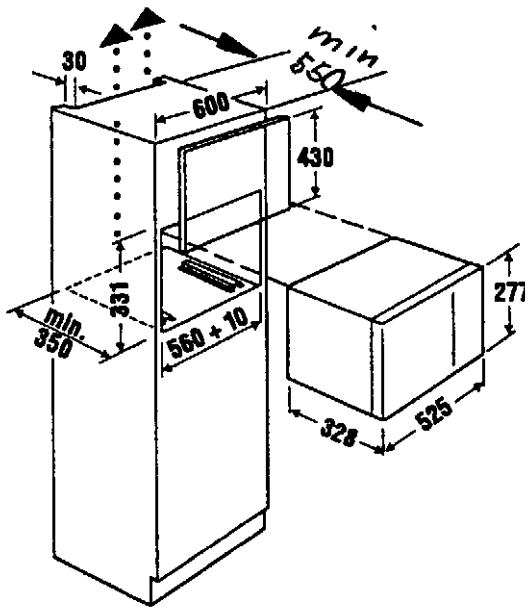
Non-rust steel

Accessories

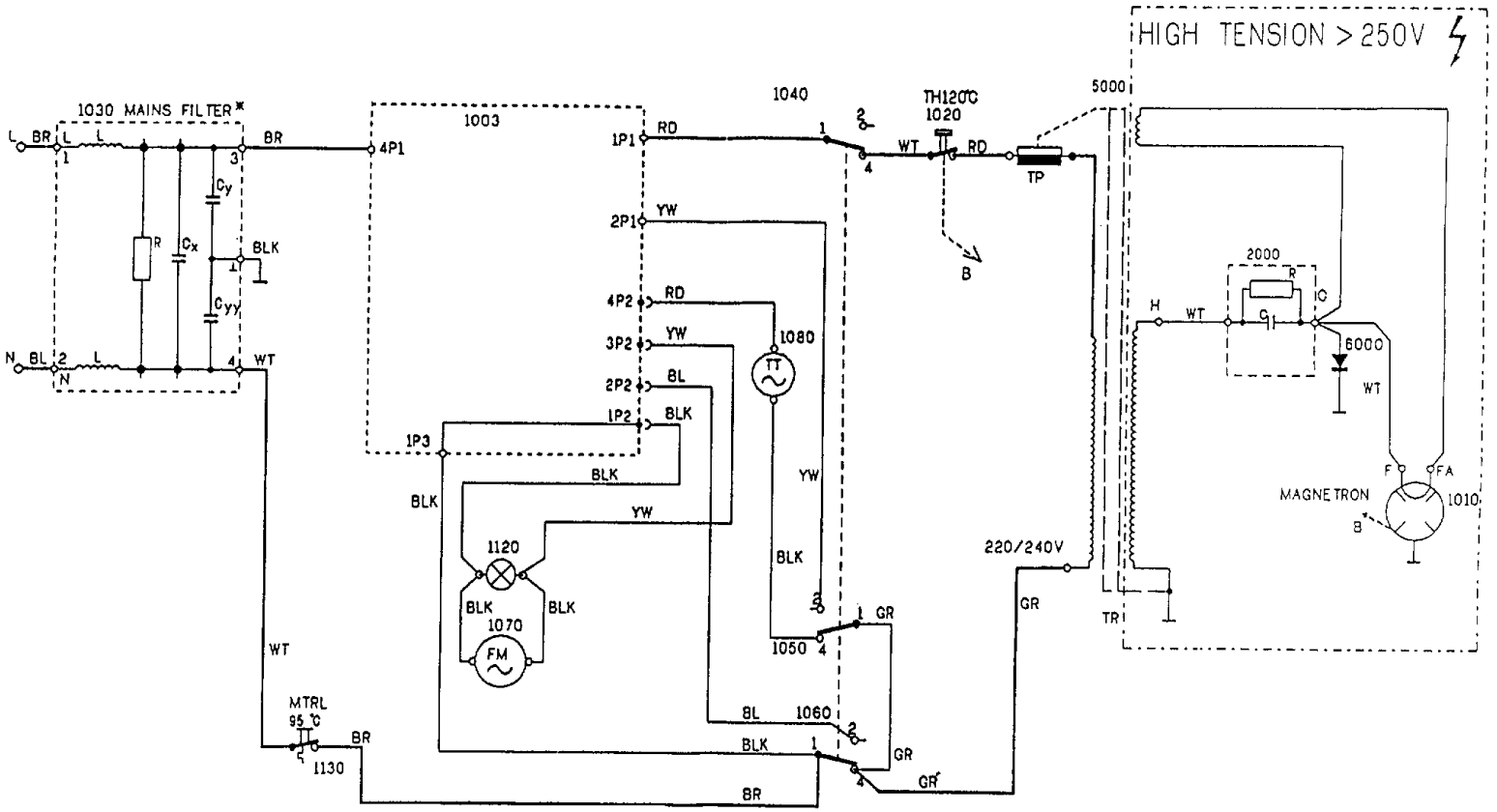
Installation frame (accessory)







5.6 Wiring diagram for MW 900.0



1000 Output regulation board
1001 Fuse T8A
1002 Fuse T250mA
1003 Control board
1010 Magnetron
1020 Thermal switch for magnetron
1030 Mains filter
1040 Monitor switch for electronics
1050 Monitor switch
1060 Door switch
1070 Fan motor
1080 Turntable motor
1101 Relay
1110 Timer
1120 Oven lighting
1130 Thermal switch for oven cavity
2000 HV capacitor
5000 HV transformer
6000 HV diode

5.6.1 Technical data and installation dimensions MWGD 900

Weight

approx.	36 kg

Dimensions

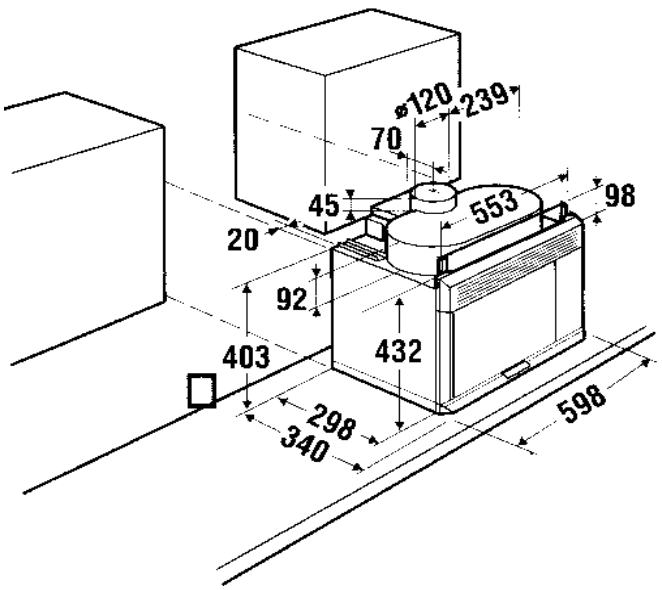
Outer dimensions	598 mm x 530 mm x 340 mm (W x D x H)
Gross dimensions of oven cavity according to 1 EC 705	340 x 210 x 290 mm (20.0 l) (W x D x H)
Diameter of turntable	280 mm

Electrical connection

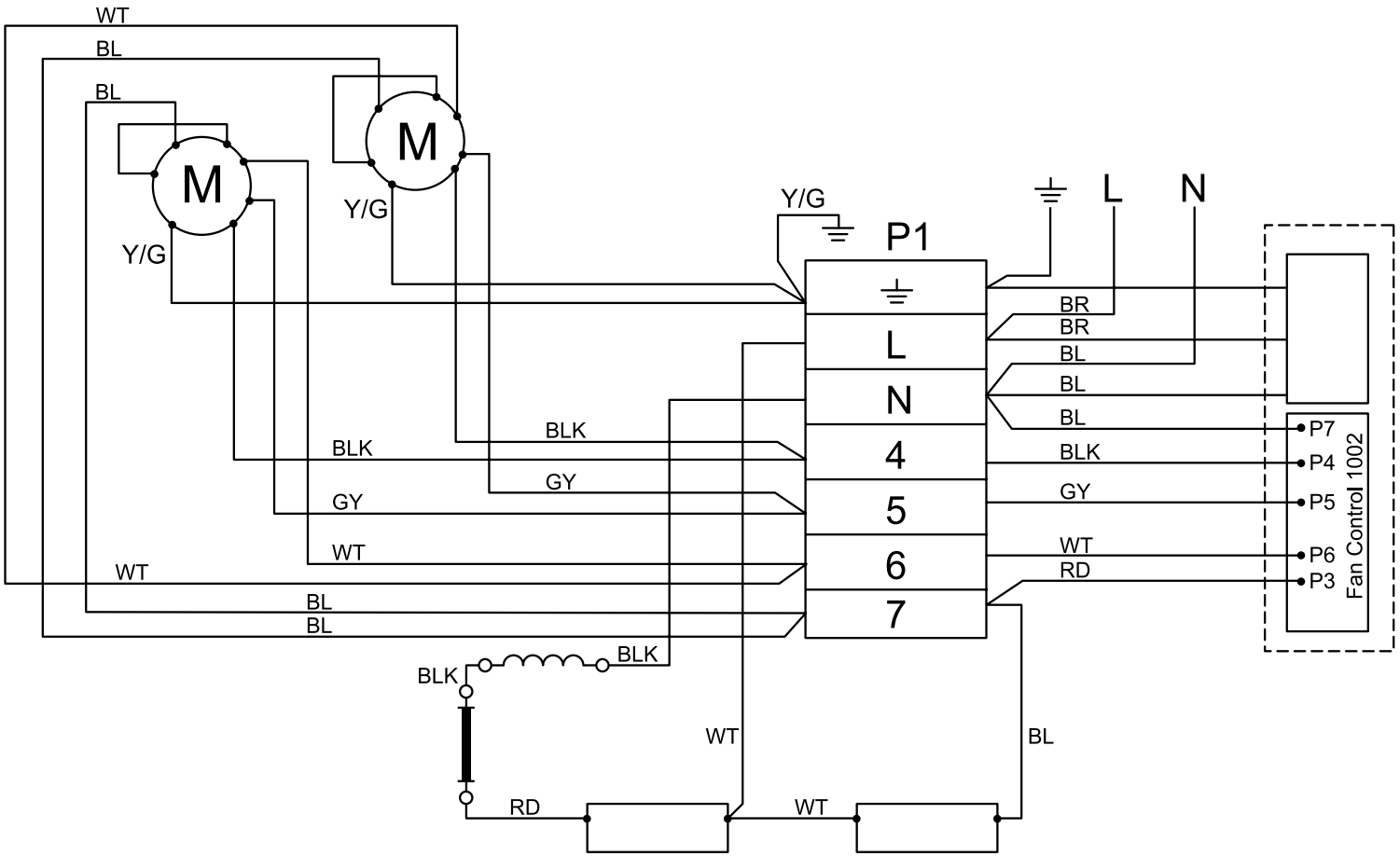
Voltage	230 V
Frequency	50 Hz
Total wattage	2550 W
Microwave frequency	2450 Hz
Power consumption	7 A
Fuse	10 A
Microwave output	900 W
Timer	90 minutes, digital

Material of the oven cavity

Non-rust steel



5.7 Wiring diagram for MWGD 900.0



1002 Control system cooker hood