

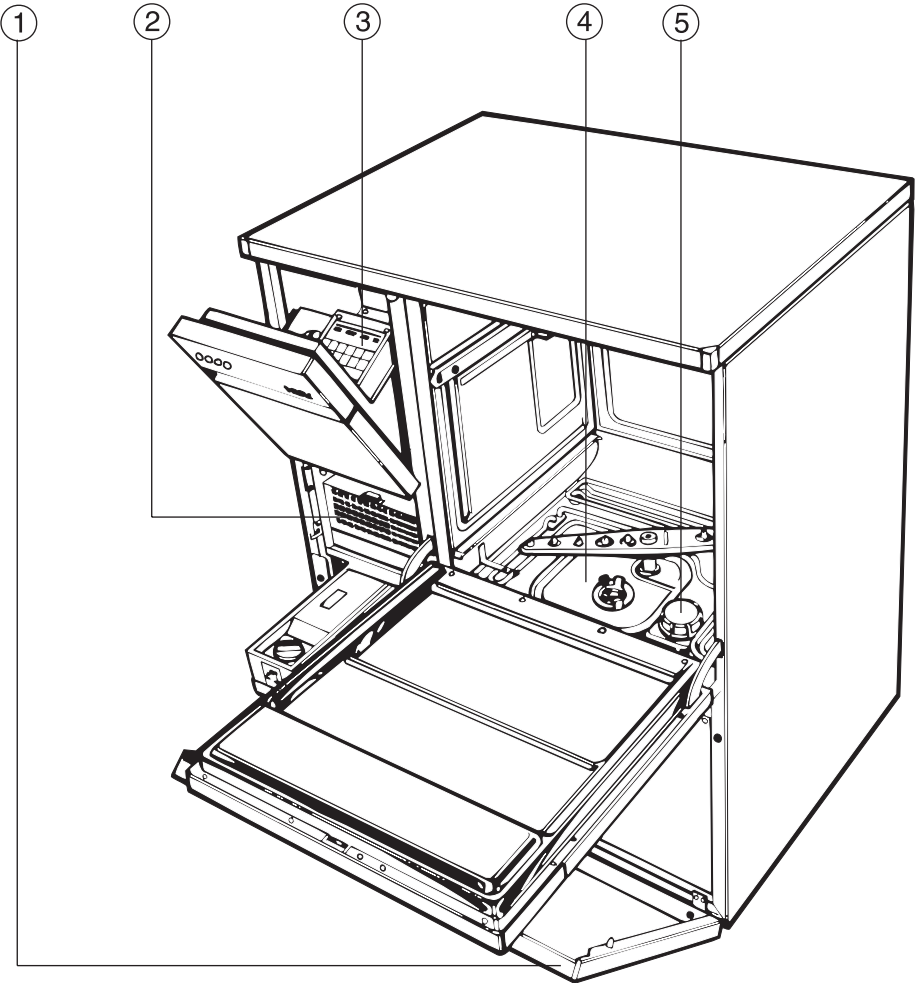
Operating Instructions Industrial cleaner IR 6001

To prevent accidents
and machine damage,UV
read these
instructions **before**
installation or use.

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Guide to the machine

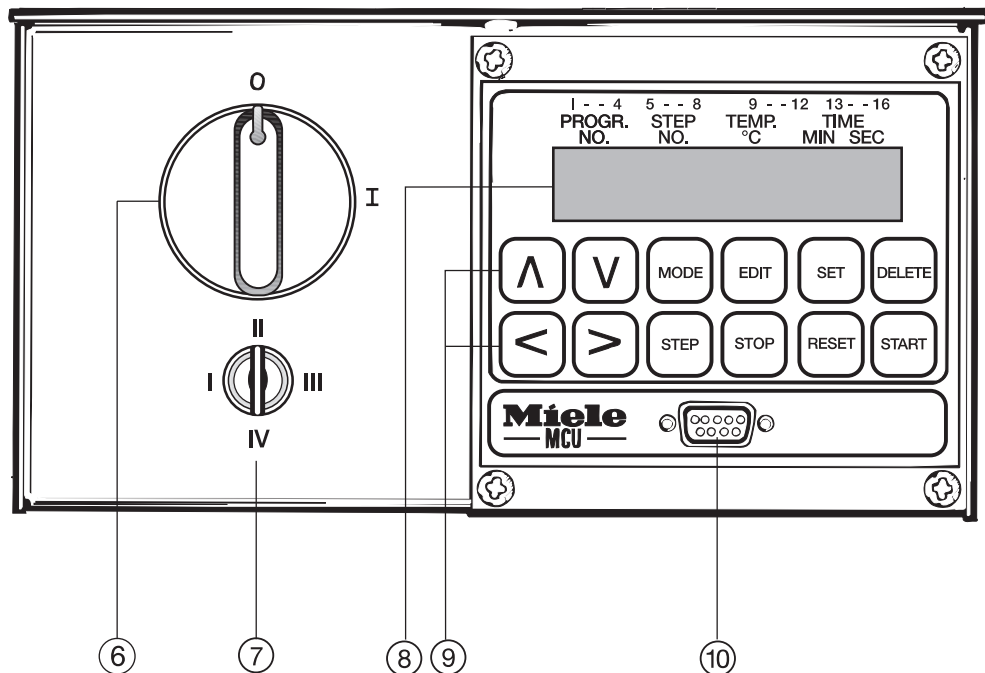


- ① Service Panel
- ② TA Drying unit
- ③ MCU

- ④ Filter combination
- ⑤ Reactivation socket for salt container (water softener)

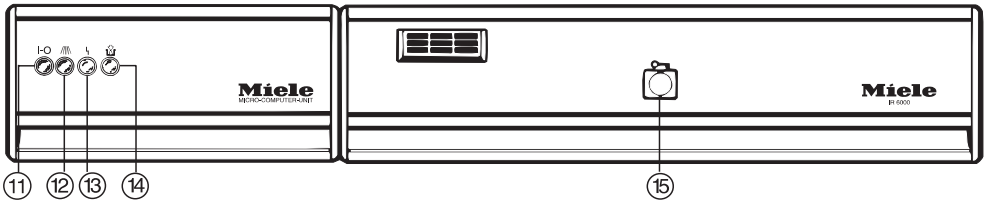
Guide to the machine

MCU



- ⑥ Main power switch
- ⑦ Key switch
- ⑧ Display field
- ⑨ Operating control pad
- ⑩ Serial interface

Control indicators



- ① "On/Off" indicator light
- ② "In operation" indicator light
- ③ "Fault-Error" indicator light
- ④ "DOS dispenser level" indicator light
- ⑤ Door release

IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE

WARNING -

The manufacturer cannot accept responsibility for damage caused when the appliance is not used according to the instructions, or for uses other than those for which it was intended.

■ This machine is designed for commercial use and for specialized applications only, as described in these Operating Instructions. Using it for purposes other than those for which it is designed could cause damage or injury. The manufacturer cannot be held responsible for any damage caused by improper use. Keep these instructions in a safe place for future reference.

Please pay attention to the following notes to maintain safe procedures.

■ Do not install the machine in an area where a danger of explosion may be present.

■ The machine should be installed, repaired and maintained by an authorized Miele Service technician. Repairs by unqualified persons could be dangerous.

■ Before any maintenance or repair work is undertaken, the machine must be unplugged or disconnected from the main power supply or the circuit breaker.

■ A damaged machine is dangerous. Turn off the power immediately and call an authorized Miele Service technician.

■ Unauthorized personnel should not be allowed access to the machine or its controls.

■ Take care when handling liquids such as detergents, wetting agents, or neutralizing agents. These may contain irritant or corrosive ingredients, acids or alkalis. Never use any organic solvent, as the danger of an explosion exists.

■ Follow all safety instructions. Wear protective gloves and goggles.

IMPORTANT SAFETY INSTRUCTIONS

- The water in the machine must not be used as drinking water.
- Do not sit or lean on the open door, or rest objects on it. This could cause the machine to tip and be damaged.
- Be careful when sorting items with sharp pointed ends. Position them in the machine so that you do not hurt yourself or create a danger for other operators.
- When using this machine at temperatures between 158 °F and 203 °F (70 °C and 95 °C) be especially careful not to scald or burn yourself. Baskets and inserts must first cool down. Any water which may remain in containers will be very hot and should be emptied into the wash cabinet.
- At the end of the drying cycle open the door to allow the wash load and inserts to cool down.
- Do not touch the heating elements during or directly after the end of a program. You could burn yourself.
- Never use a hose or steam cleaner on or near the machine.
- When disposing of an old machine, first make it unusable. Disconnect the power cord and cut off the plug. For environmental and safety reasons ensure the machine is completely drained of any residual water and cleaning agent. Make the door lock inoperative, so that children cannot accidentally shut themselves in.

The following points should be observed to avoid damage to the IR 6001 and the loads being cleaned.

- Use only cleaning agents formulated for special processes and approved by Miele for use with this machine. Use of unsuitable cleaning agents could adversely affect the load or the machine. See the enclosed pamphlet for recommended detergents.
- When a chemical additive is recommended, the manufacturer of the machine takes no responsibility for the effect of the chemical on the material of the items being cleaned. Please be aware of changes in formulation, storage conditions, concentrations, etc., which may not be publicized by the chemical producer, can have a negative effect on the cleaning result.
- The machine is designed for operation with water and cleaning agents only. Organic solvents must not be used in the machine, as the danger of explosion exists under certain circumstances. Although this is not the case with all organic solvents, other problems could arise with their use, for example damage to rubber and synthetic materials.

IMPORTANT SAFETY INSTRUCTIONS

■ In critical applications where stringent requirements have to be met, it is strongly recommended that all process parameters, such as cleaning agent or quality of water, are discussed with the Miele Application Technology specialists.

■ If the clean objects are subject to particularly stringent requirements (e.g. chemical analysis, industrial processes), a regular quality control test should be carried out by the user to ensure that required standards of cleanliness are being achieved.

■ Do not allow any remains of acids, solvents, or chloride solutions to get into the wash cabinet. Similarly, avoid any materials with a corrosive effect. Their presence as compounds in any solvents should be minimal (especially those in hazard class A1).

■ To avoid corrosion, ensure that solutions or steam containing acid salts do not come into contact with the outer steel casing of the machine.

■ Do not use any cleaning agent which adheres to file dust or filings. Depending on the type and shape of the file dust, this could damage the circulation pump, or cause contact corrosion.

■ Empty any containers before loading them into the IR 6001.

■ Use special inserts in accordance with the instructions provided.

■ Waste water must be discharged in accordance with national and local water regulations. Consult your local water authority. Where discharge is indirect, ensure that the waterborne residues do not exceed statutory limits.

■ Only equipment made or authorized by Miele should be connected to this machine. Consult Miele on the type and application of such equipment.

SAVE THESE INSTRUCTIONS

A second set of Safety Instructions suitable for posting can be found in the centerfold.

Applications

The Industrial Cleaner is designed for specialized sectors of industrial high technology production, where a consistently high standard of cleaning is required, and where the structure of the items to be cleaned may be complex.

Areas of application are:

- Electronics, such as circuit boards and solder frames
- Metal cleaning
- Optics
- Particle decontamination

Cleaning process

The Industrial Cleaner works on the principle of fresh water circulation. The bath time for cleaning and rinsing is approx. 20-30 minutes. Drying is effected by means of an integrated drying unit. A period of 15 to 45 minutes must be added to the above time to thoroughly dry the batch, depending on the heat retention capacity of the items in the load and the amount of water remaining.

The machine can be programmed, and a variety of baskets and inserts used, depending on specific needs.

Special cleaning programs can be written for individual applications.

Water recycling

The IR 6001 comes equipped with a two stage drainage system, and a pump to bring rinse water back into the machine, enabling it to be re-used. Rinse water which is still quite clean, for example from the final rinse, can be directed into an external holding tank and be fed back into the machine for the following pre-wash or main wash cycle. The holding tank does not come with the machine, and must be supplied on-site. The water from the pre-wash and main wash is normally discharged into the waste water system, or into an effluent treatment plant. The separate booklet "MCU Program Summary" explains how to program this feature.

Description of the machine

MCU-control

The Industrial Cleaner is controlled by a micro computer unit. This ensures maintenance of wash process standards by displaying the current stage of the process, or an error message if there is a fault.

The controls can be programmed for a range of individual applications; for example, time, temperature, water quality, dispensing to various liquid detergents and additives. This enables the user to adapt the process to individual requirements. With a large memory capacity, up to 64 different programs can be stored and the selected according to the load to be cleaned. Different keys are used with the key switch to restrict access to the operating and programming options.

The control unit has two serial interfaces to allow wash parameters to be monitored or documented through the use of a printer or PC (not supplied).

Should your needs change, or the machine be needed for other applications, different programs can be designed with the help of Miele.

Setting the water hardness

Before using the machine for the first time the regeneration parameters must be set by the service technician according to the local water hardness level (see MCU operating and programming manual).

The local water authority can advise you of the water hardness in the area.

Loading and unloading

- Press the door release button and, at the same time, grasp the grip rail and open the door.
- Load the items into their respective baskets and inserts.

See pages on the individual applications for details on loading the machine.

Automatic coupling

The machine is supplied as standard with an automatic spring-loaded coupling for either the upper basket or a mobile unit.

Make sure the spring loaded coupling engages correctly when a basket, injector or mobile unit is inserted into the machine, it should be $\frac{3}{8}$ " higher than the water inlet in the roof of the cabinet. If it is not, adjust the adapter by:

- Loosening the lock ring.
- Pushing up the adapter ($\frac{3}{8}$ " higher than the water connection inlet) and re-tightening the lock ring.

Removing the upper basket

When the lower basket is being used alone for large items such as solder frames, the large spray arm supplied with the machine should be attached the water inlet on the roof of the cabinet.

- Remove the upper basket by pulling it forward to the stop position, lifting it up to the front, and then out of the wash cabinet.
- Unscrew the small upper spray arm retainer and remove the small upper spray arm.
- Install the large upper spray arm with its threaded spindle flange.

Important


Please note that only top baskets, mobile units or injector nozzle should be coupled without a spray arm.

For other applications the small spray arm should be re-installed.

First Use

Adding detergent

Only use cleaning agents formulated for special processes and approved by Miele for use with this machine. Use of unsuitable cleaning agents could adversely affect the load or the machine. Please see the enclosed pamphlet for a list of tested and recommended cleaning agents and additives. If you have questions regarding the suitability of a detergent, please contact the Miele Applications Department.


 Exercise caution when handling liquid additives. These can contain irritant or corrosive ingredients. Take care to ensure that necessary safety precautions are observed. Wear protective goggles and gloves.

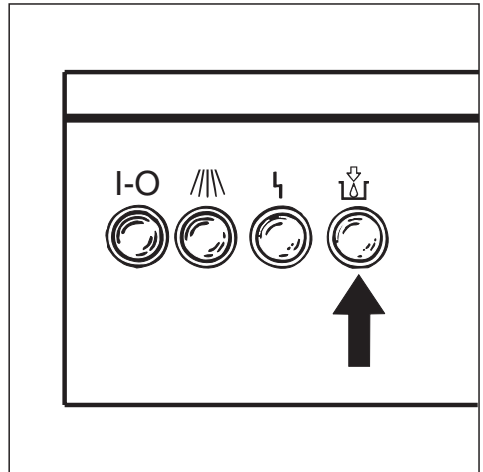
The IR 6001 comes standard with 3 DOS pumps for automatic dispensing of liquid additives:


- DOS 10/30 injector pump for dispensing acid additives. Dispensing capacity is 10 ml/30 secs (channel 9).
- 2 DOS 60/30 injector pumps for dispensing liquid cleaning agent. Dispensing capacity is 60 ml/30 secs (channels 6 and 8).

Filling the containers with liquid additive

The IR 6001 has suction tubes for use with the external detergent containers. Select the stopper with the appropriate thread (depending on the size of the container). The suction tube length can be adjusted (see note supplied).

When the containers are full, the DOS level indicator light  goes out.



The containers for liquid cleaning agents must be filled or the DOS level indicator light  will stay on.

If a dispensing system is not used, the service technician should remove the plug connection for this system, to prevent the DOS indicator light from staying on.

The containers should not be allowed to empty completely and should be filled regularly, otherwise the first wash cycle after refilling will take place without detergent.

The internal dispenser pump hoses are subject to wear and should be replaced as preventative maintenance every 12 to 18 months.

Venting the dispensing systems

Before using the machine for the first time, the air has to be expelled from the dispensing system.

This should also be done if the container has not been refilled in time and the dispensing system was allowed to empty completely.

- Close the door.
- Set the key switch to position II.
- Turn the main switch to I.
- Select program 14 (DOS-FILL/ DOS-FUELL) using the key pads or . "14 DOS-FILL" (or DOS-FUELL) appears in the display field.
- Press the START key pad.
- Repeat the program several times if necessary.

Altering the temperature and drying time

The temperatures for cleaning and drying, as well as the drying times, are stored for each program (see program summary supplied).

To change the stored values:

- Turn the key switch to setting II.
- Turn the main switch to I.
- Select the program (see Turning on).

First Use

Altering temperature T1, from 201 °F to 185 °F (94 °C to 85 °C) (example)

<u>Touch pad</u>	<u>Display</u>
	XXX PROGRAM NAME
<input type="right"/>	XXX T1 094
<input type="edit"/>	XXX T1 09 <u>4</u>
<input type="down"/>	XXX T1 09 <u>3</u>
<input type="down"/>	XXX T1 09 <u>2</u>
.	.
.	.
.	.
<input type="down"/>	XXX T1 08 <u>5</u>
<input type="set"/>	XXX T1 085
<input type="set"/>	XXX PROGRAM NAME

_ = number flashes

XXX = program number selected

Altering the T2 temperature

Start by pressing the touch pad twice, then proceed as for temperature T1.

Note:

Header parameters which have not been programmed do not appear in the display.

Altering the TA drying temperature from 194 °F to 176 °F (90 °C to 80 °C) (example).

<u>Touch pad</u>	<u>Display</u>
	XXX PROGRAM NAME
<input type="right"/>	XXX T1 094
<input type="right"/>	XXX T2 070
<input type="right"/>	XXX TA 090
<input type="edit"/>	XXX TA 09 <u>0</u>
<input type="left"/>	XXX TA 0 <u>9</u> 0
<input type="down"/>	XXX TA 0 <u>8</u> 0
<input type="set"/>	XXX TA 080
<input type="set"/>	XXX PROGRAM NAME

_ = number flashes

XXX = program number selected

Altering the ZA drying time from 30 min to 40 min. (example).

Touch pad

Display

XXX PROGRAM NAME



XXX T1 094



XXX T2 070



XXX TA 090



XXX ZA 030



XXX ZA 031



XXX ZA 031



XXX ZA 032

·
·
·

·
·
·



XXX ZA 040



XXX ZA 040



XXX PROGRAM NAME

_ = number flashes

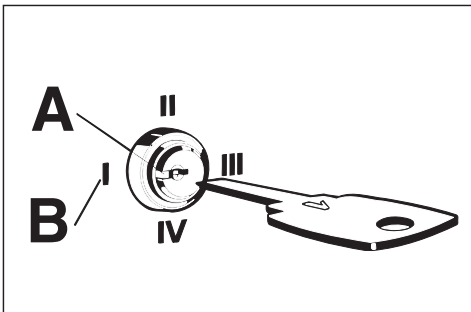
XXX = program number selected

Operation

Key switch

The following choices can be selected with the four position key switch, using the three keys provided:

- I = fixed program
(key can be removed)
- II = free program selection
- III = programing
(see operating and programming manual).
- IV = service mode
(see operating and programming manual).



The slot in the keyhole (**A**) points to the switch position selected (**B**).

Three keys are supplied, numbered separately 1, 2 and 3:

- Key 1 for switch settings I, II
- Key 2 for switch settings I, II, III
- Key 3 for switch settings I, II, III, IV

Turning on

1. Free program selection

- Key switch setting: II.
- Turn main switch to I (on).
- Select program with keys or :

The program description appears in the display field.

- 1 Wafer chip WAFER-CHIP
- 2 Semiconductors HALBLEITER
- 3 Solder frames LOETRAHMEN
- 4 PCB Rosin LEI-KOL
- 5 PCB water LEI-WASSER
- 6 Metal METALL
- 7 PCB oil. LEI-OEL
- 10 Fill FUELLEN
- 11 Empty ENTLEEREN
- 12 PREFILTER TA *) . . . GROBFILTER *)
- 13 S-FILTER ta *). FEINFILTER *)
- 14 DOS-FILL DOS-FUELL
- 15 REGENERATE REGENERIER

*) Only visible when using switch setting III or IV.

For detailed information on the programs see the supplied program summary.


- Press the START touch pad.
- If the selected program is desired as a fixed program, it can be stored:
- Turn the key switch to position I.
- The key can then be withdrawn.

2. Starting a fixed program

- Key switch to position I.
- Turn main switch to I (On).

The pre-selected program appears in the display field.

- Press the START touch pad.

The  in operation indicator light comes on to show that the machine is running a program.

Note:

If several programs are required as fixed programs, (i.e. switchable with key setting I), consult the programming manual under PROG-SELECTION.


The program parameters (codetext) can be read off the display without activating any further functions:

00 6	0 0 3 0	0 7 8	1 5 1 0
1	2	3	4

1. Program number
2. Current program step
3. Current temperature
4. Remaining step time in minutes and seconds

Touch the MODE pad to see the current program segment, (pre-wash, main wash, interim rinse, final rinse, drying) or the Codetext.

Program sequence

After starting, the program proceeds automatically. It is finished when the in operation light  goes out.

↳ The Fault-Error indicator light

will come on if the system has been interrupted during operation.

The cause of the interruption is shown in the display field as an error message.

The following error messages are possible:

ERR DOOR

The door has been opened during the wash program.

ERR INFLOW

Water intake has been impeded (closed valve, clogged filters, etc.)

ERR DRAIN

Water is not draining freely (kinked hose, sewer blockage, etc.)

ERR TEMP

Temperature not reached in prescribed time. Call Miele Technical Service Dept.

ERR T-SENSOR

Defective sensor. Call Miele Technical Service Dept.

ERR PUMP-PRG

Programming fault: several pumps were activated simultaneously in one program step.

ERR KEY

Defective key switch. Call Miele Technical Service Dept.

Operation

ERR WATER-PRG

Programming fault: more than one water inlet valve has been activated in one program step, or an inlet valve has not been activated in combination with the circulation pump.

ERR WATERINF

Water inflow time is insufficient. Increase the ADD-WATER time in the system parameters.

ERR BATTERY



Change the lithium battery within 4 weeks after this message.

- If possible, reset the fault and start the program again.

When the following **operating messages** appear in the display, the appropriate action must be taken:

GROBFILTER (PREFILTER)

Change the coarse filter in the drying unit (see page on drying unit maintenance). Then reset the filter display message.

- Key switch position III or IV.
- Use touch pad  or  to select program 12 GROBFILTER (Coarse filter).
- Press the START button.

FEINFILTER (HEPA-Filter)

Call the Miele Technical Service Dept to change the particle filter in the TA drying unit. (See page on drying unit maintenance.)

REGENERIER (REGENERATE)

Replenish the water softener with salt (see Reactivating water softener).

Interrupting a program

Once a program has been started, it should only be interrupted in an emergency or if the items are moving about noisily due to incorrect loading.

The machine must be turned off, the water drained from the wash cabinet and the program re-started.


- Turn the main switch to 0 (off).
- Wait 5 seconds, then turn the main switch to I (on).

DRAIN is displayed if there is water in the machine (the water is then pumped away).

OR the program parameters are displayed with a flashing step time (no water in the machine).

- Key switch position II.
- Press the RESET touch pad.
- Open the door and arrange the items properly.
- Shut the door.
- Start the program again.

Turning off

On completion of the program the ON indicator light  goes out. If the machine is not to be used again:

- Turn the main switch to 0 (off). This disconnects the machine from the main power supply.
- Turn off the faucets (water supply).

Electronics

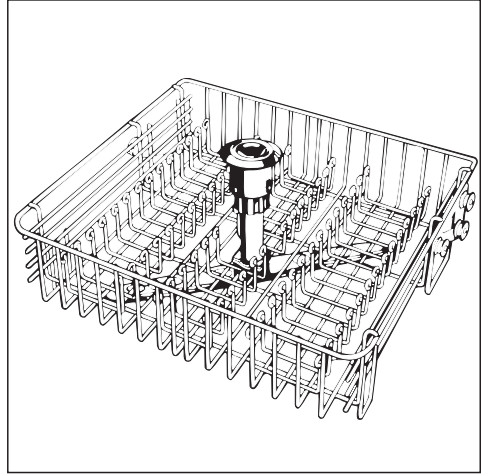
Populated circuit boards and solder frames require cleaning that takes into account product specifications and the soldering processes used.

Circuit boards

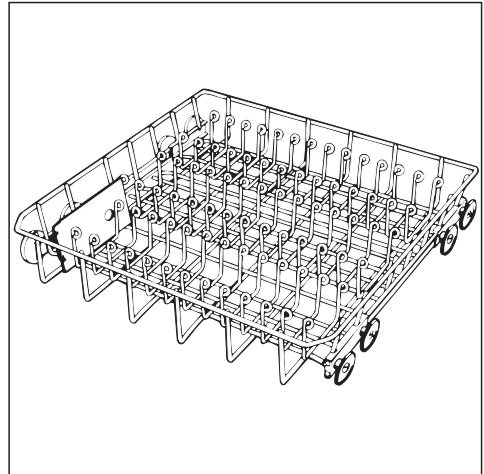
Circuit boards can be cleaned of resin residues in the machine. The results depend on the type of flux used. For individual application, Miele recommends consultation with cleaning technology advisors. Cleaning is generally performed with tenside additives (0.5 - 0.7% at 149 °F - 167 °F (65 °C - 75 °C)). The wash/rinse process consists of several stages and purified ion-free water is used throughout (DI-water).

For surface mount or hybrid technology, the use of water soluble soft solder paste is recommended. A high standard of cleaning can then be achieved by using water and variable temperature washes. This also applies to integrated circuit boards. The time for a cleaning program is approx. 30 minutes for the wash phase and 40 - 50 minutes for the drying phase, depending on the structural complexity and volume of the load.

Baskets designed for circuit boards are made of plastic coated stainless steel. These are the O 500-10 top basket and U 500-10 bottom basket, which together can hold 73 PCBs.



Top basket O 500-10



Bottom basket U 500-10

Applications Electronics

Solder frames

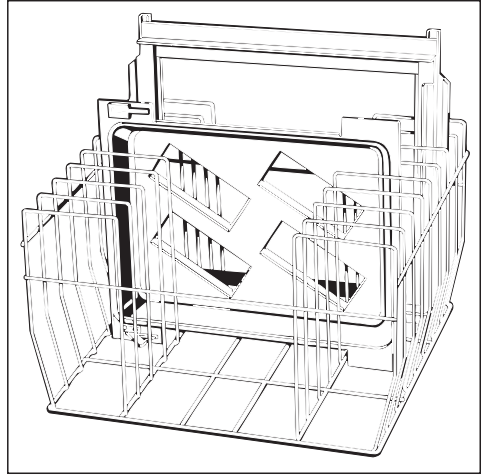
Depending on the type of soil, an alkaline cleaning agent at a low concentration of 0.3 - 0.5%, a neutralization agent or wetting agent (0.1%), is used.

With aluminum solder frames, using de-ionized water (either throughout or in the final rinse, depending on quality standard required) reduces the risk of damage to the material, which may be adversely affected by non-purified water after prolonged use.

Example: 8 solder frames (L $18 \frac{11}{16}$ " x W $16 \frac{29}{32}$ " x D $1 \frac{31}{32}$ ") (L 475 mm x W 430 mm x D 45 - 50 mm) can be cleaned and dried in the machine within 30 minutes if operated with a hot water intake of 149 °F (65 °C).

Sample configuration:

Lower basket U 874 with E 500 insert.



Insert E 500

Applications Electronics

Application,	circuit boards	circuit boards	solder frames	solder frames
Material/ Soiling	flux with resin	water soluble flux	flux with resin	water soluble flux
Program	P 004 LEI-KOL	P 005 LEI-WASSER	P 003 LOETRAHMEN	P 003 LOETRAHMEN
Wash temperature T1 (°C)	65 - 75	65 - 75	75 3 - 10 minutes	65 - 75
Wash temperature T2 (°C)	65	65 - 75	65 - 75	65 - 75
Cleaning agent ¹⁾	neutral, with tensides		alkaline, with silica	alkaline, with silica
Concentration ²⁾ for use	0.5 - 0.7 %		0.5 % anti-foam additive required	0.5 % anti-foam additive not always required
Neutralizer ¹⁾			slightly acidic, citric or phosphoric acid base	slightly acidic, citric or phosphoric acid base
Concentration ²⁾ for use			0.1 - 0.15 %	0.1 - 0.15 %
Notes	a second cleaning agent may be necessary	where foam occurs use silicone-free anti-foaming agent	do not use neutralizers if susceptible steel items are cleaned on the frames (Delete Step 11), and set T2 to 65 °C.	

1) Characteristics of cleaning and neutralizing agents are given, not product names.

2) Concentration for use = percentage of the chemical additive in the wash water solution
Water requirement / wash cycle = approximately 15 liters, e.g.:

0.1 % = 0.5 fl.oz. (15 ml) or 15 g amount to be dispensed
 0.3 % = 1.6 fl.oz. (45 ml) or 45 g amount to be dispensed
 0.5 % = 2.6 fl.oz. (75 ml) or 75 g amount to be dispensed
 0.7 % = 3.7 fl.oz. (105 ml) or 105 g amount to be dispensed


Applications Metal Cleaning

Cleaning metal

The machine can be used for cleaning products requiring degreasing, removal of dust or polishing/grinding paste, or pre-treatment before painting or galvanizing.

Cleaning agents and wash parameters can be selected according to the properties of the iron, steel or non-ferrous metal. A test wash is advisable with polishing/grinding pastes to identify the most suitable cleaning processes.

A final rinse with de-ionized water is often necessary, especially with non-ferrous metals, to achieve the cleaning result required.

 Make sure that no file dust or other fillings, (from drilling, milling etc), especially from iron based materials, are introduced into the machine.

The upper basket O-188 and lower basket U 874 are recommended as a basic basket set for the machine.

IMPORTANT SAFETY INSTRUCTIONS

To the person responsible for the machine:

- Make this pull-out with the Warning and Safety Instructions available to any operators of the machine. Place it near the machine, where it can be seen.
- Ensure that operators know and understand these Warning and Safety Instructions, and observe them in use.

When using an electrical appliance, basic precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE

WARNING -

The manufacturer cannot accept responsibility for damage caused when the appliance is not used according to the instructions, or for uses other than those for which it was intended.

■ This machine is designed for commercial use and for specialized applications only, as described in these Operating Instructions. Using it for purposes other than those for which it is designed could cause damage or injury. The manufacturer cannot be held responsible for any damage caused by improper use. Keep these instructions in a safe place for future reference.

Please pay attention to the following notes to maintain safe procedures.

- Do not install the machine in an area where a danger of explosion may be present.
- The machine should be installed, repaired and maintained by an authorized Miele Service technician. Repairs by unqualified persons could be dangerous.
- Before any maintenance or repair work is undertaken, the machine must be unplugged or disconnected from the main power supply or the circuit breaker.
- A damaged machine is dangerous. Turn off the power immediately and call an authorized Miele Service technician.

IMPORTANT SAFETY INSTRUCTIONS

■ Unauthorized personnel should not be allowed access to the machine or its controls.

■ Take care when handling liquids such as detergents, wetting agents, or neutralizing agents. These may contain irritant or corrosive ingredients, acids or alkalis. Never use any organic solvent, as the danger of an explosion exists.

■ Follow all safety instructions. Wear protective gloves and goggles.

■ The water in the machine must not be used as drinking water.

■ Do not sit or lean on the open door, or rest objects on it. This could cause the machine to tip and be damaged.

■ Be careful when sorting items with sharp pointed ends. Position them in the machine so that you do not hurt yourself or create a danger for other operators.

■ When using this machine at temperatures between 158 °F and 203 °F (70 °C and 95 °C) be especially careful not to scald or burn yourself. Baskets and inserts must first cool down. Any water which may remain in containers will be very hot and should be emptied into the wash cabinet.

■ At the end of the drying cycle open the door to allow the wash load and inserts to cool down.

■ Do not touch the heating elements during or directly after the end of a program. You could burn yourself.

■ Never use a hose or steam cleaner on or near the machine.

■ When disposing of an old machine, first make it unusable. Disconnect the power cord and cut off the plug. For environmental and safety reasons ensure the machine is completely drained of any residual water and cleaning agent. Make the door lock inoperative, so that children cannot accidentally shut themselves in.

IMPORTANT SAFETY INSTRUCTIONS

The following points should be observed to avoid damage to the IR 6001 and the loads being cleaned.

■ Use only cleaning agents formulated for special processes and approved by Miele for use with this machine. Use of unsuitable cleaning agents could adversely affect the load or the machine. See the enclosed pamphlet for recommended detergents.

■ When a chemical additive is recommended, the manufacturer of the machine takes no responsibility for the effect of the chemical on the material of the items being cleaned. Please be aware of changes in formulation, storage conditions, concentrations, etc., which may not be publicized by the chemical producer, can have a negative effect on the cleaning result.

■ The machine is designed for operation with water and cleaning agents only. Organic solvents must not be used in the machine, as the danger of explosion exists under certain circumstances. Although this is not the case with all organic solvents, other problems could arise with their use, for example damage to rubber and synthetic materials.

■ In critical applications where stringent requirements have to be met, it is strongly recommended that all process parameters, such as cleaning agent or quality of water, are discussed with the Miele Application Technology specialists.

■ If the clean objects are subject to particularly stringent requirements (e.g. chemical analysis, industrial processes), a regular quality control test should be carried out by the user to ensure that required standards of cleanliness are being achieved.

■ Do not allow any remains of acids, solvents, or chloride solutions to get into the wash cabinet. Similarly, avoid any materials with a corrosive effect. Their presence as compounds in any solvents should be minimal (especially those in hazard class A1).

■ To avoid corrosion, ensure that solutions or steam containing acid salts do not come into contact with the outer steel casing of the machine.

■ Do not use any cleaning agent which adheres to file dust or filings. Depending on the type and shape of the file dust, this could damage the circulation pump, or cause contact corrosion.

IMPORTANT SAFETY INSTRUCTIONS

- Empty any containers before loading them into the IR 6001.
- Use special inserts in accordance with the instructions provided.
- Waste water must be discharged in accordance with national and local water regulations. Consult your local water authority. Where discharge is indirect, ensure that the waterborne residues do not exceed statutory limits.
- Only equipment made or authorized by Miele should be connected to this machine. Consult Miele on the type and application of such equipment.

SAVE THESE INSTRUCTIONS

Applications Metal Cleaning

Application	stainless steel	Aluminum	bright metal, eg. brass,	non-stainless steel
Material/ Soiling	oil, grease, particles etc.	oil, grease, particles etc.	oil, grease, particles etc.	oil, grease, particles etc.
Program	P 006 METALL or P 007 LEI-OEL	P 006 METALL or P 007 LEI-OEL	P 006 METALL or P 007 LEI-OEL	P 007 LEI-OEL
Wash temperature T1 (°C)	65 - 75 (2 - 10 min)	55 - 70 (2 - 5 min)	55 - 65 (2 - 5 min)	60 - 75 (2 - 10 min)
Wash temperature T2 (°C)	65 - 75	50 - 65	50 - 60	40 - 50
Cleaning agent ¹⁾	mildly alkaline, to highly alkaline	neutral or alkaline with silica	neutral to alkaline	alkaline to highly alkaline
Concentration ²⁾ for use	0.3 - 0.5 % also possible: alkaline with silica and neutral (see Aluminum) 0.3 - 0.5 %	(3-5 ml) use only alkaline product with silica	0.3 - 0.5 % not highly alkaline	(pH > 10) 0.3 - 0.5 % not mildly alkaline or neutral
Neutralizer ¹⁾	not always necessary to neutralize with a phosphoric acid product when using alkaline cleaner	sometimes necessary for a citric acid based neutralizer when using alkaline cleaner with silica	addition of citric or phosphoric acid based neutralizer often brightens the surface	no acid neutralization
Concentration ²⁾ for use	0.1 - 0.15 %	0.1 - 0.15 %	0.1 - 0.15 %	
Notes	<p>If a neutralizer is needed, select P 006, delete Step 5 (P 006), and add a Step (Channel 9 and 14) between Steps 11 and 12 (P 006).</p> <p>If no neutralizer and only a small amount (0.3 %) of cleaning agents is dispensed, select P 007.</p> <p>If the cleaning agent is low-foam delete Step 4 (P 007).</p>			<p>Dispense an anti-corrosion additive during water intake for interim rinse and final rinse. Delete Step 4 in P 007</p>

1) Characteristics of cleaning and deneutralizing agents are given, not product names

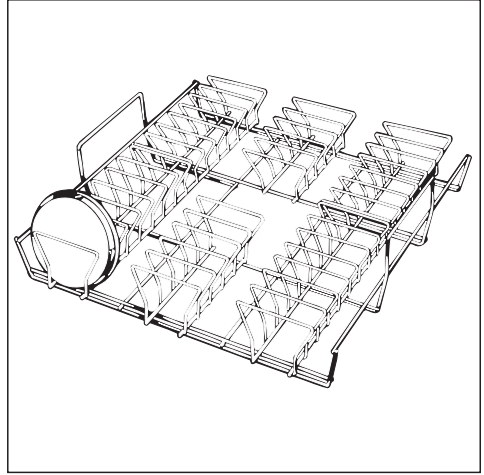
2) Concentration for use = percentage of the chemical additive in the wash water solution
Water requirement / wash cycle = approximately 15 liters, e.g.:

0.1 % = 0.5 fl.oz. (15 ml) or 15 g amount to be dispensed
 0.3 % = 1.6 fl.oz. (45 ml) or 45 g amount to be dispensed
 0.5 % = 2.6 fl.oz. (75 ml) or 75 g amount to be dispensed
 0.7 % = 3.7 fl.oz. (105 ml) or 105 g amount to be dispensed

Applications Optics

Optics

In the production of optical items the machine can be used for degreasing, removing dust or polishing/grinding paste, and giving a final rinse to clear the items of residues. The quality of the final rinse depends on the quality of the water. With polishing pastes it is advisable to investigate the suitability of the cleaning process for the type of glassware being cleaned.



Insert E 118-10

Applications Optics

Application Material/Soiling	Optical Glass Dust/particles etc.
Program	P 006 METALL or P 007 LEI-OEL
Wash temperature T1 (°C)	60 - 75
Wash temperature T2 (°C)	50 - 60
Cleaning agent ¹⁾ Concentration for use ²⁾	mildly alkaline, alkaline 0.3 - 0.5 %
Neutralizer ¹⁾ Concentration for use ²⁾	Neutralization with product containing phosphoric component sometimes necessary 0.1 - 0.15 %
Notes	If a neutralizer is needed, select P 006, delete Step 5 (P 006), add a Step (Channel 9 and 14) between Steps 11 and 12 (P 006). If no neutralizer and only a small amount (0.3 %) of cleaning agent is dispensed, select P 007. If the cleaning agent is low-foam delete Step 4 (P 007).

1) Characteristics of cleaning and neutralizing agents are given, not product names

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 0.7 % = 3.7 fl.oz. (105 ml) or 105 g amount to be dispensed

Applications Particle Decontamination

Particle decontamination

The IR 6001 offers exceptional cleaning results and is recommended for particle decontamination of chip boxes, wafer trays, drainers, fitting racks, computer components etc. Decontamination is accomplished with the addition of a minimal amount of a special cleaning agent in a purely aqueous system, without the addition of solvents. In these applications the cleaning process is carried out using de-ionized water throughout the wash-program.

Miele offers a wide variety of inserts for different applications, not all of which can be shown here. Please contact Miele for details of other inserts available.

Reactivating the water softener

Before using the machine for the first time, the MCU must be set by the service technician to reactivate the water softener according to the local water hardness level (see Operating and program manual). The local water authority can advise you of the water hardness in the area.

When, after a number of wash cycles, the message REGENERIER (REGENERATE) appears in the display, the built-in water softener is depleted and cannot supply any more soft water. It must therefore be reactivated **with regenerate salt immediately** after the program has ended.

If this cannot be done immediately and further batches have been washed, the reactivation process must be carried out twice in succession.


For each reactivation program you will need:

- 4.4 lbs. (2 kg) reactivation salt (granule size must be 1-4 mm).
- The plastic salt container supplied as standard equipment with the machine.

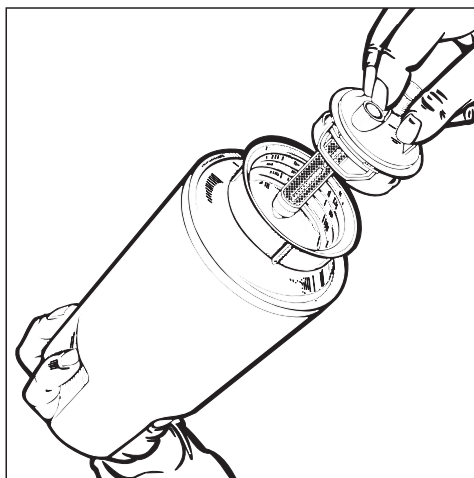
Please note

Never use rock salt as the dirt particles it contains will block the water softener unit.

Reactivation salt with granules smaller than 1 mm or larger than 4 mm must not be used.

 The salt container must only be filled with salt!
Filling the salt container with anything but salt, such as detergent, could cause pressure to build in the salt container resulting in harm (chemical burns, physical injury) to the operator.

To fill the salt container

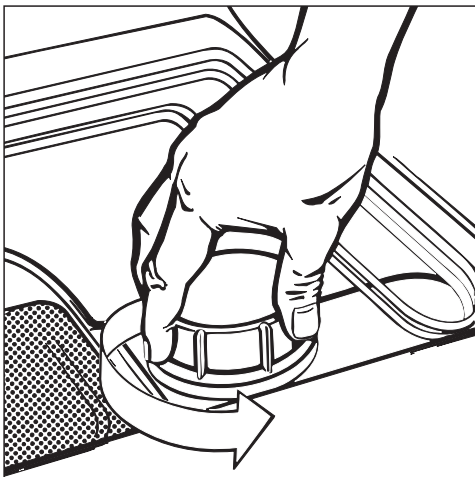


- Unscrew and remove the filter insert from the salt container.
- Fill the salt container with granular salt and replace the filter insert.

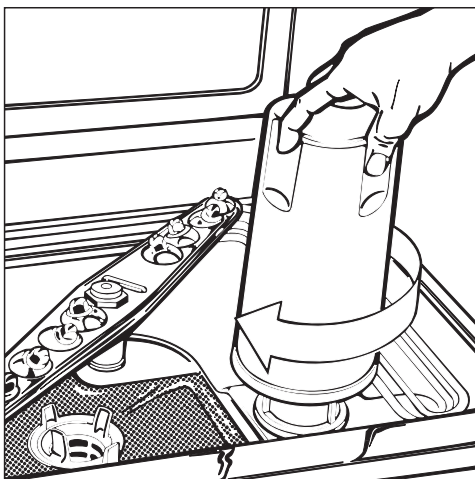
Reactivating the water softener

To insert salt container

- Remove the bottom basket from the wash cabinet.




- Unscrew the plastic cap in the base of the wash cabinet.



- Place the salt container on the reactivation socket and screw firmly into place.

- Close the door.
- Turn on the faucets (water supply).
- Select program 15 REGENERIER (Regenerate/Reactivate). See "Turning on".

The reactivation program proceeds automatically and is finished when the  indicator light goes out.

Then:

- Turn off the machine.
- Open the door and remove the salt container.
- Replace the plastic cap on the socket at the bottom of the wash cabinet.
- Replace the lower basket.
- Rinse the salt container and filter insert under running water.
- Turn off faucets (water supply).

The water pressure must be at least 36 psi.

If the flow pressure is below 36 psi, salt residues may be left in the salt container. If this is the case, the REGENERIER program must be run again.


The serial interfaces are RS 232 compatible.

The interface enables data transfer between the MCU and an EPSON compatible printer or IBM compatible PC.

The MCU offers the following timed printout options:

- Date and machine number,
- Program start (with program number, step number),
- Program end,
- Confirmation that programmed temperature has been reached, and any applicable Code-texts,
- Temperature,
- All faults (with parameters, where given),
- All manual interventions.

At older MCU Versions (until version S2.05 inkl.) the use of the interfaces is not permitted.

 Use ONLY the interface cable provided by MIELE, as some of the contact points on the MCU interface are non-standard RS 232. An unapproved cable could damage the MCU and peripheral equipment.

The following connection cables are available from Miele:

- 45 ft. (15 m) connection cable for short-term connection between the MCU front interface and a PC or printer.
- 45 ft. (15 m) connection cable for long-term connection between the MCU rear (internal) interface and a PC or printer.
- 6 ft. (2 m) connection cable for short-term connection between the MCU front interface and a PC.

When connecting a printer or PC to the MCU please note the following points:

- When installing the machine take the dimensions of the printer or PC into account.
- After removing the interface cable, replace the black cap on the interface socket.

The function PRINT must be selected in the system parameters SERIAL-MODE/FUNCTION, for the report printer to be activated. At the same time the Baud rate (transfer speed) of the printer must be set on the MCU.

The following baud rates are possible: 1200, 2400, 4800, 9600, 19200.











Serial interfaces

Preparing the MCU for report printout








1. Set the baud rate (transfer speed) of the printer

(see the printer handbook)

Turn the key switch to position III or IV.

<u>Touch pad</u>	<u>Display</u>
	ZZZ PROGRAM NAME
	PROGRAMMING
	SYSTEMPARAMETER
	CTEXT SPECIALS
 	SERIAL MODE
	BAUDRATE <u>nnn</u>
	BAUDRATE <u>nnn</u>
	
.	.
.	.
.	.
	BAUDRATE <u>XXX</u>
	BAUDRATE XXX

2. Select communication type "PRINT" (printer connection)

<u>Touch pad</u>	<u>Display</u>
	BAUDRATE XXX
a)	
	FUNCTION PROG
	FUNCTION <u>PROG</u>
	FUNCTION <u>PRINT</u>
	FUNCTION PRINT
	ZZZ PROGRAM NAME
b)	
or alternatively if "PRINT" has already been set:	
	FUNCTION PRINT
	ZZZ PROGRAM NAME

___ = number sequence flashes

XXX = baud rate to be set

ZZZ = program number selected

nnn = stored baud rate

Consult the supplier on the availability of dedicated PC programs. (Programs listed below may be universally obtainable).

MCU-Protokoll-Manager (Report printout manager)

This program can be used to record and store report data, load from a data carrier, and print from an Epson compatible or HP-LaserJet printer.

MCU-programming software

In addition to programming through the MCU keyboard, was programs can be created on a PC, stored, and transferred to the MCU.

Cleaning and Care

Cleaning the filters in the wash cabinet


The wash water passes through a four filter combination in the base of the wash cabinet which consists of:

- Coarse filter
- Fine filter
- Flat filter
- Micro-fine filter

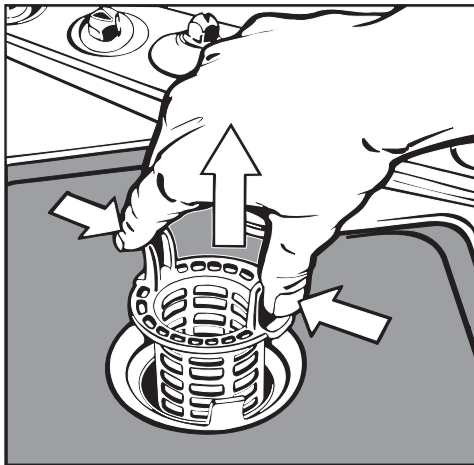
It is important that the filters are kept clean (otherwise the water overflow system cannot function reliably).

The filter combination has been designed so that most of the soil is collected in the coarse filter.

The coarse filter should be inspected and, if necessary, cleaned after every program.

 Glass fragments, needles, pieces of wire etc. may have collected in this filter, and could cause injuries.

Cleaning the coarse filter



- Press the two tabs inwards and remove the filter.
- Clean the filter.
- Replace the filter and press until it clicks into place.

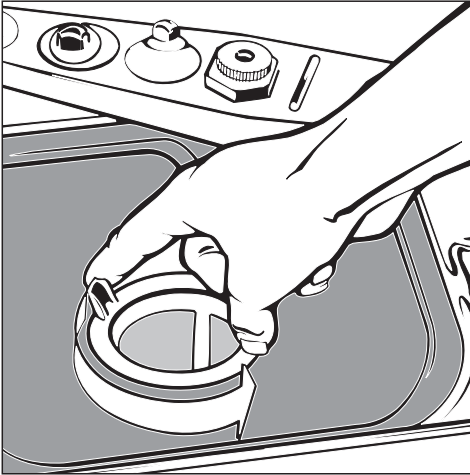
Fine filter

The fine filter is located under the coarse filter. It will trap very small items that are not caught in the coarse filter. Whenever the coarse filter is cleaned, the fine filter should be removed and inspected.

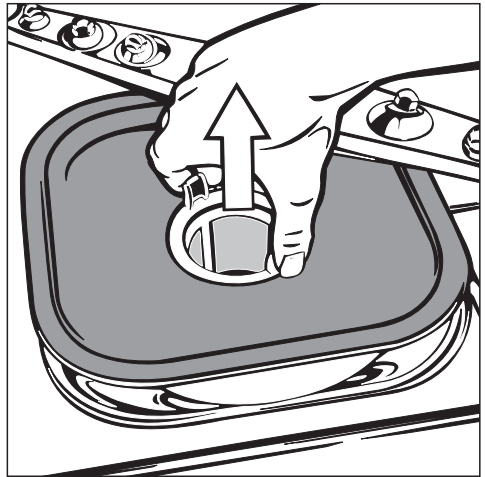
- To remove, lift out the fine filter and clean.
- Replace the filter by inserting it into the center of the micro-fine filter.

Cleaning the flat and micro-fine filters


- Remove the coarse and fine filters.



- To unscrew the micro-fine filter, take hold of the two tabs, turn twice in a counter-clockwise direction and remove together with the flat filter.



- Clean all the filters.
- Replace the filter combination securely in the reverse order in which it was removed.

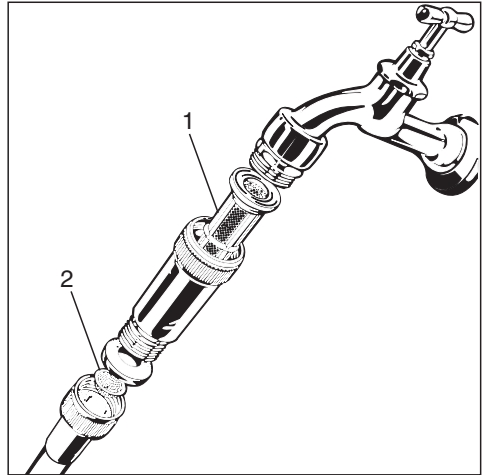
 The machine must not be used without all the filters in place!

Cleaning and Care

Cleaning the water inlet filters

Two filters incorporated into the water inlet system protect the valves from particles that may be in the water supply. The filters must be cleaned when dirty, or insufficient water flows into the wash cabinet.

- Turn off the water valves.
- Disconnect the inlet hoses.
- Remove the filter housing from the water valve.
- Remove the filter insert (1) from the housing and clean or replace, if necessary. Clean the filter located in the hose connector (2).

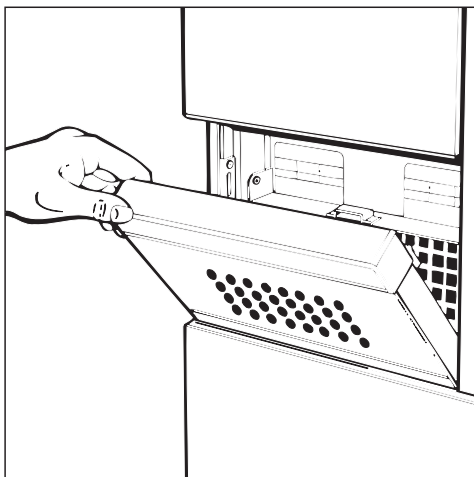


- Reinstall the filters. Connect the hoses and turn on the valves to test for leaks.

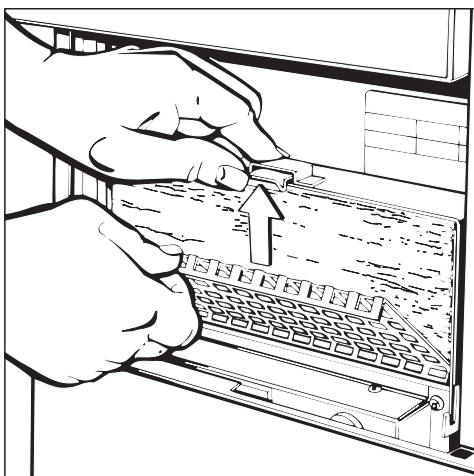
A third filter is located in the solenoid valve and should only be cleaned or replaced by an authorized technician.

Changing the coarse filter

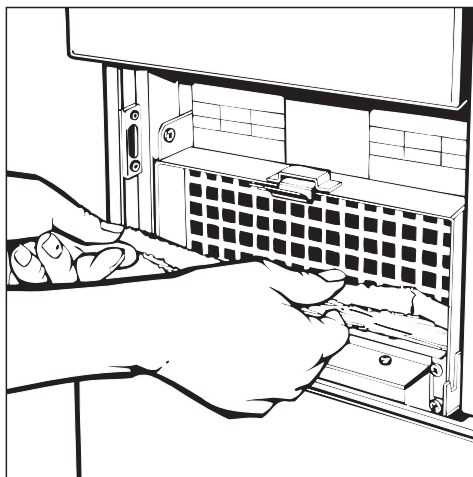
The coarse filter should be changed when dirty or after approximately 100 operating hours ("GROBFILTER" appears in the MCU control display).



- Pull the top of the inlet grill out, then lift up, off of the retainers, and remove.




- Take out the perforated plate.



- Change the coarse filter. The smooth side of the filter should face the rear.
- Position the perforated plate at the base and press into place at the top. The edges should face forward.
- On replacing the inlet grill, it should click into place.


Exchanging the HEPA particle filter

This filter should be replaced every 500 hours, or when "FEINFILTER" is displayed.

 This filter should only be changed by an authorized Service technician.

Reproducible operation of the machine can only be achieved if original Miele HEPA particle filters are used.

Correcting minor faults

 Repairs should only be undertaken by an authorized technician.

Heater limiter

The IR 6001 is equipped with a thermal breaker which shuts off the heating elements if the machine overheats. The breaker reset can be found on the right-hand side behind the service panel.

Symptoms:

The water in the wash cabinet does not heat up; the program cycle takes too long, or the fault message F TEMP is displayed.

Overheating can occur if large items cover the heater elements preventing them from transferring heat to the water. It can also occur if the filters in the wash chamber are blocked, or too little water has been taken into the wash chamber.


Remedy:

- Isolate and correct the cause of the problem.
- Clean the filters in the water inlet.

Reset the heater by:

- Removing the service panel and
- Pressing the blue reset button on the heater limiter.

 The Miele Technical Service Dept. should be called if the thermal breaker trips again.
USA: 1-800-999-1360
CDN: 1-800-565-6435

 This machine must be connected to the water supply in accordance with all national and local plumbing codes!

Faucets and drain connections should be situated as close to the machine as possible, and be easily accessible. The cold and hot water supply flow pressure should be between 36 and 145 psi (2.5 and 10.0 bar). The machine is supplied with 4 connection hoses 5 ft. (1.5 m) long with $\frac{3}{4}$ " (19 mm) female hose thread ends. Do not shorten the hoses! Where flow pressure is between 5 and 36 psi (0.3 and 2.5 bar), fill time may be extended by reprogramming the machine. The machine cannot be operated with an inflow pressure of less than 5 psi (0.3 bar).

Requirements (refer to IR 6001 MCU Installation Diagram for corresponding numbers):

1. Cold water connection:

One $\frac{1}{2}$ " (13 mm) cold water supply line with a standard $\frac{3}{4}$ " (19 mm) male hose thread faucet is needed. The cold water supply hose is marked with blue tape.

2. Hot water connection:

One $\frac{1}{2}$ " (13 mm) hot water supply line with a standard $\frac{3}{4}$ " (19 mm) male hose thread faucet is needed. The water temperature must not exceed 150 °F (65 °C) (recommended: 140 °F / 60 °C). The hot water supply hose is marked with red tape.

This hose may also be connected to a cold water supply, if hot water is not available.

3. DI water connection:

One $\frac{1}{2}$ " (13 mm) de-ionized water supply line with a standard $\frac{3}{4}$ " (19 mm) male hose thread faucet is needed. Flow pressure should be between 25 and 145 psi (1.5 and 10.0 bar). Where flow pressure is between 5 and 25 psi (0.3 and 1.5 bar), fill time may be extended by reprogramming the machine. The machine cannot be operated conventionally with an inflow pressure of less than 5 psi (0.3 bar). In this case the installation of an optional DI pump is required. The DI water supply hose is marked with green tape.

This hose may also be connected to a cold water supply, if DI water is not available, and where the local water hardness does not exceed 100 ppm CaCO_3 .

4. Tank water connection:

The machine has a 1" (25 mm) connection socket. A connection hose from the holding tank to the machine is not supplied as standard. This connection hose must be installed from the bottom of the tank to the machine, with a downward gradient, and should not be looped or inclined (see item 4 on enclosed diagram). Minimum height for the supply connection is 14" (35 cm).

Installation

5. Drain connection to the sewage system:

The machine comes equipped with a flexible drain hose $\frac{7}{8}$ " (22 mm) internal diameter, 5 ft. (1.5 m) long, with appropriate hose clamps. It can be connected to a drain pipe or a $1\frac{1}{4}$ " (32 mm) minimum diameter stand pipe. The drain pipe must be able to accept a flow volume of 13.2 gal/min. (50 l/min.). Do not decrease the diameter of the drain connection at any point to less than $\frac{3}{4}$ " (19 mm).

This hose must not be shortened. An increase in length up to 13 ft. (4 m) is possible using a $\frac{7}{8}$ " (22 mm) internal diameter hose (available through Miele Technical Service). Maximum drain height is 3 ft. (1 m).


6. Drain connection to the holding tank:

The machine comes equipped with a flexible drain hose $\frac{7}{8}$ " (22 mm) internal diameter, 5 ft. (1.5 m) long, for connection to a holding tank.

This hose must not be shortened. An increase in length up to 13 ft. (4 m) is possible using $\frac{7}{8}$ " (22 mm) internal diameter hose (available through Miele Technical Service). Do not decrease the internal diameter of the drain connection at any point to less than $\frac{3}{4}$ " (19 mm).

Maximum drain height is 3 ft. (1 m).

7. Electrical connection:

 All electrical connections must be made by a qualified electrician and meet all national and local codes.

The machine comes equipped for connection to a three phase power supply:

- Three phase 208 V AC
- 6.6 kW connected load
- 20 A circuit breaker per phase

A dedicated three phase line incorporating the appropriate circuit breakers (specified above) should be situated near the appliance. The machine comes supplied with a 6-foot 4 X 12 AWG cord (without a plug), that may be hardwired into an appropriate electrical box, or plugged in via the use of a 3 pole, 4 wire grounding plug and receptacle (NEMA type L15-20R and L15-20P are recommended).

8. Vent connection:

The machine is equipped with a venting socket at the rear. It must be connected to a vent pipe to be provided on-site. The vent must be able to accept a minimum volume of 3,530 cfm (100 m³/min.). Using an adapter it is possible to obtain venting up to 15 ft. (5 m) in length with HT pipe (HT - able to withstand high temperatures), 2 ³/₄" (70 mm) internal diameter. Deduct a nominal 20" (50 cm) from the maximum length for each bend. Where several machines are installed, each one must be connected individually as described above to the main ducting. The main duct must have a minimum diameter of 4" (100 mm), and work with underpressure.

9. Connection to cleaning agent containers:

The connection hoses for the three integrated DOS dispenser pumps can be directed through the rear to either side of the machine. Maximum distance of the agent containers is 43" (107.5 cm) to the left, or 15" (37.5 cm) to the right.

10. Holding tank (not supplied with the machine):

An external holding tank is not supplied with the machine, but must be provided on-site if required. The tank should be positioned to the left of the machine (viewed from the front). If the user wishes to connect a holding tank to the machine, the following conditions have to be met:

- The water level in the tank must not rise above 37 ¹/₄" (950 mm), measured from the base level of the machine in position. The tank must be provided with an unrestricted overflow at this height. There must still be a capacity of 5 ¹/₂ gal. (20 l) in the tank above this level.
- The drain outlet from the holding tank must be situated at least 13 ³/₄" (350 mm) high, measured from the base level of the machine in position. The connection hose must be laid so that there is an uninterrupted downward gradient from the holding tank to the connection on the machine.
- The holding tank must be vented.
- There is no inlet filter in line with the suds recycling pump. It is the responsibility of the user to take suitable steps (e. g. using a lid) to ensure that no impurities enter the holding tank. If this is not possible, a filter should be installed in the holding tank at the outlet connection.

The holding tank and its connection hose must be provided on site.


Help to protect our environment

Disposal of the packing material

The transport and protective packing materials are environmentally friendly for disposal and can normally be recycled. Please recycle.

Disposal of an old appliance

Old appliances contain materials that may be recyclable. Please contact your local recycling authority about potential recycling, before disposing of the appliance. See also the section under "Warning and Safety instructions".

 When disposing an old machine, first make it unusable. Disconnect or cut off the plug and cable. For environmental and safety reasons ensure the machine is completely drained of any residual water and cleaning agent. (Observe safety regulations and wear safety goggles and gloves). Make the door lock inoperative, so that children cannot accidentally shut themselves in. The simplest way to do this is to remove the locking pin (2 philips screws above the door). Make appropriate arrangements for the safe disposal of the machine).

When contacting the Technical Service,
please quote the model and serial number
of your appliance.



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