Operating and installation manual

Tumble dryer Wascomat TT600

(RMC) GAS

487 17 53 81 / 01
Ø.Eng 98.10

English speaking countries outside EU

Tumble dryer GAS RMC, drum volume 600 litres

List of contents:

Safety instructions

This machine is only intended for drying water-washed garments.

The machine must not be used for drying foam rubber or foam-like materials.

The machine must not be used for drying floor mops*.

The machine must not be used by minors.

The machine must not be hosed down with water.

Mechanical, electrical and gas installations must only be carried out by authorized personnel.

If the machine has a fault, this must be reported as soon as possible to the person in charge. This is important for your own safety and for the safety of others.

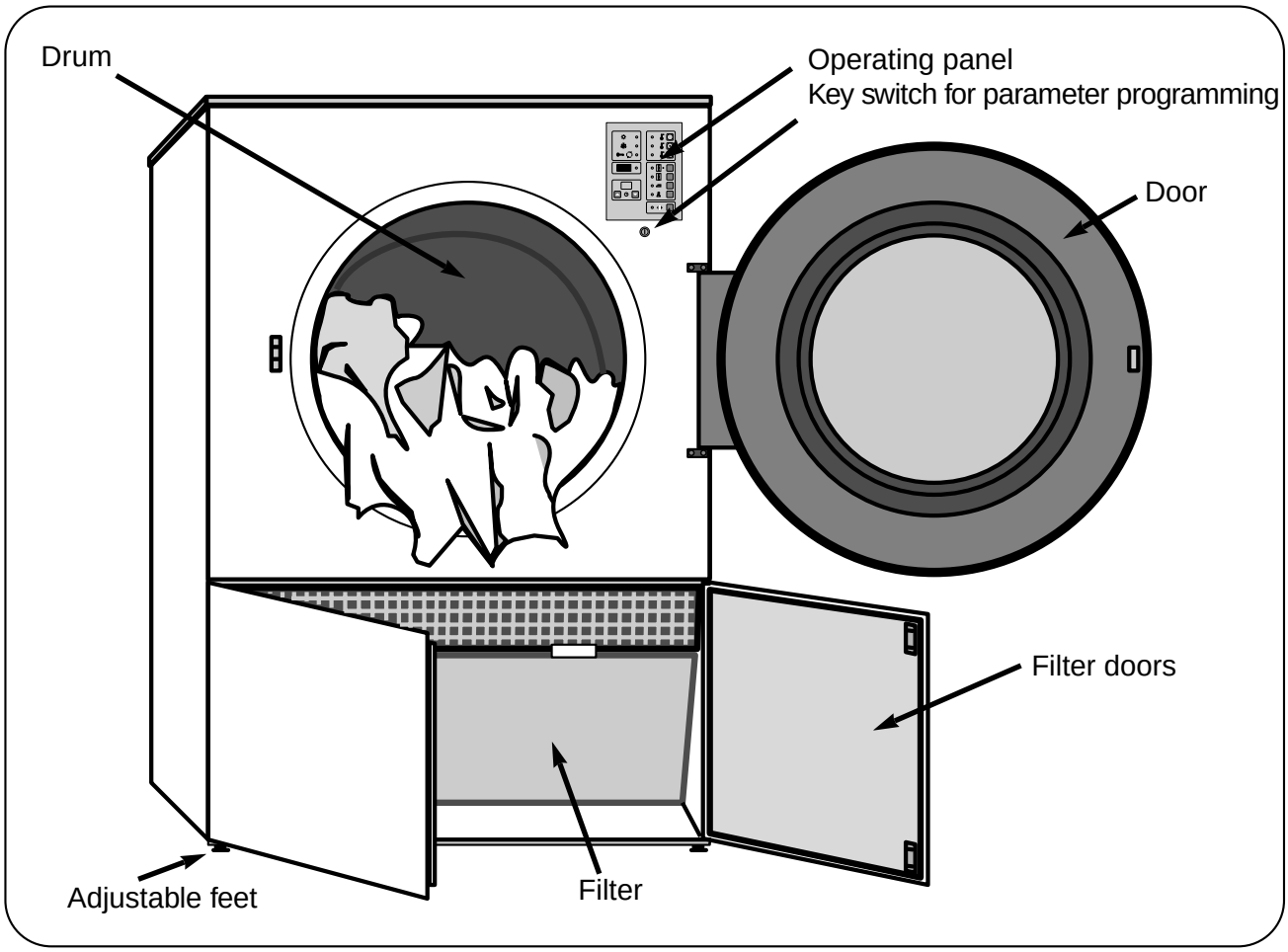
The machine is not to be installed in rooms containing cleaning machines with PERCHLOROETHYLENE, TRICHLOROETHYLENE or CHLOROFLUOROCONTAINING HYDROCARBONS as cleaning agents.

*Applies only to floor mops containing polypropylene.

Remember that such textiles as silk and wool must not be dried in the tumbler.

The manufacturer reserves the right to modify design and material specifications without notice.

General



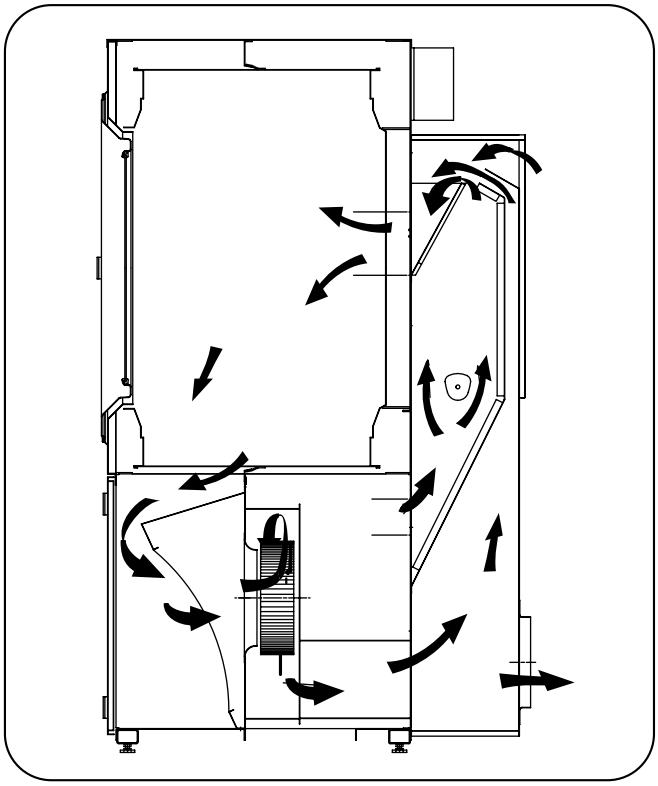
Air-flow principle

The fan generates a negative pressure in the drum, which means that air is sucked into the machine via the heater.

The heated air passes through the clothes and the holes in the drum.

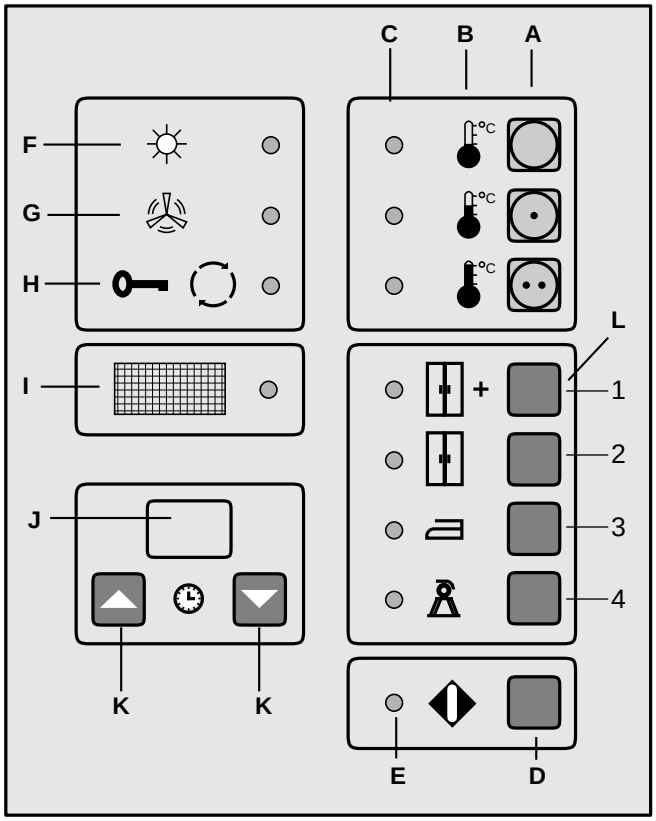
The air is then guided through a lint filter placed immediately before the fan.

On gas and electricity heated machines, approx. 50-60% of the air is recirculated. The remaining air is evacuated via the fan and the evacuation system.



Manual operation with residual moisture control

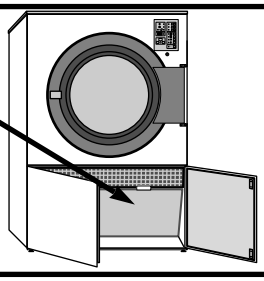
A. Program selection buttons
B. Temperature symbols
C. Lamp lit for selected program
D. Start button
E. Lamp flashes / ready to start
F. Drying / lamp is lit
G. Cooling / lamp is lit
H. Drying time completed / lamp is lit
I. Filter/lamp is lit: Clean filter
J. The display shows drying time / residual time, in time control mode
K. Timer buttons for desired drying time; one push = one minute
L. Select residual moisture control program by pressing one of the buttons:
    1. Extra dry
    2. Ready-to-put-away
    3. Iron dry, for iron
    4. Iron dry, for the ironing machine



Operation

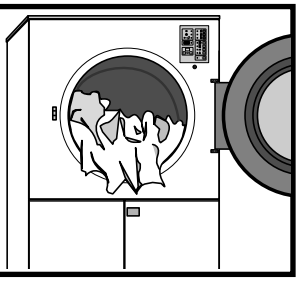
1

Open filter door.
Clean filter.
Close filter door.



Open filling door.

Load garments into drum.
Close door.

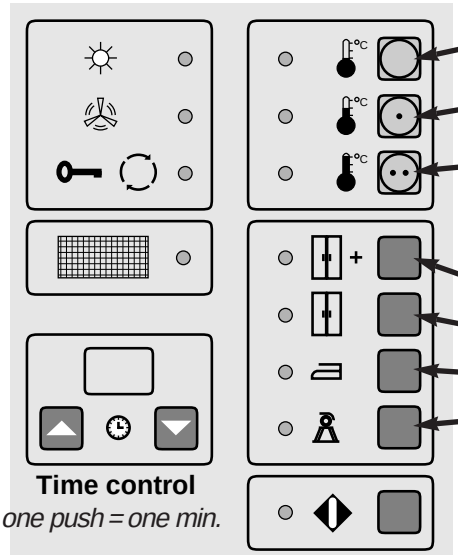


2

Select drying program.
Press a program button.
The lamp of the selected program is lit.

3

Then select
either
Time control
or
Residual Moisture Control



Airing
without heat
Fine wash / mild
Low heat
Normal wash / P
Normal heat

Residual moisture
Extra dry
Ready to put away
Iron dry (iron)
Iron dry (ironing machine)

4

Drying program:

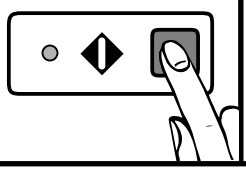
Airing without heat
Fine wash / mild wash
Normal wash / PP

Time control:
set timer
approx. 10 min.
approx. 25 min.
approx. 25 min.

Residual moisture:
Automatic program for selection of:
Extra dry
Ready to put away
Iron dry (iron)
Iron dry (ironing machine)

5

Start:
Press start button



Stop:
The tumbler can always be stopped by opening the door.
Restart:
Close door and press start button.

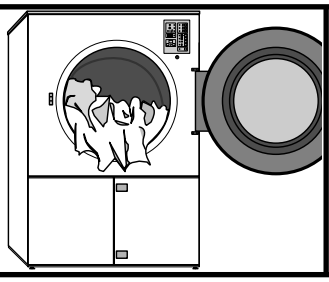
Tumbler stops automatically:

In time control:
• When drying time has ended

Residual moisture:
• When the selected residual moisture has been reached..

6

To **prevent creasing** of garments: Empty tumbler immediately.



Anti-crease program:

After the drying time is up, the drum rotates at short intervals until the door is opened.

Max. 1 hour.

Maintenance

The following should be carried out at regular intervals, depending on the operating frequency.

Daily

- Check that the drum stops when the door is opened.
- Check that the machine does not start until the start button has been activated.
- Check whether the door packing has been cleaned (use a moist cloth).
- (1) Clean the lint filter by means of a hand-held broom or a vacuum-cleaner.
- The lint filter must not be taken out for cleaning.
- Check that the lint filter is unbroken.

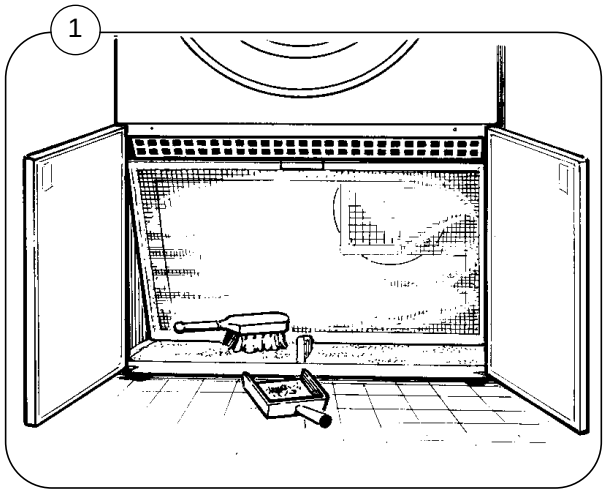
Quarterly/Semi-annually

- Check that the fresh-air intake at the back of the tumbler is not clogged by lint or otherwise blocked.

- Check that the evacuation ducts/pipes are tight and not clogged by lint/dust or otherwise blocked.

Annually

- Check that the fresh-air intake to the room and evacuation ducts/pipes in and from the room are not clogged by lint/dust or otherwise blocked.
  Carry out cleaning/cleansing at a frequency that depends on the operating load - once a year as a minimum.
- At least once a year a skilled expert should check the inside wearing parts of the machine and clean them of lint.



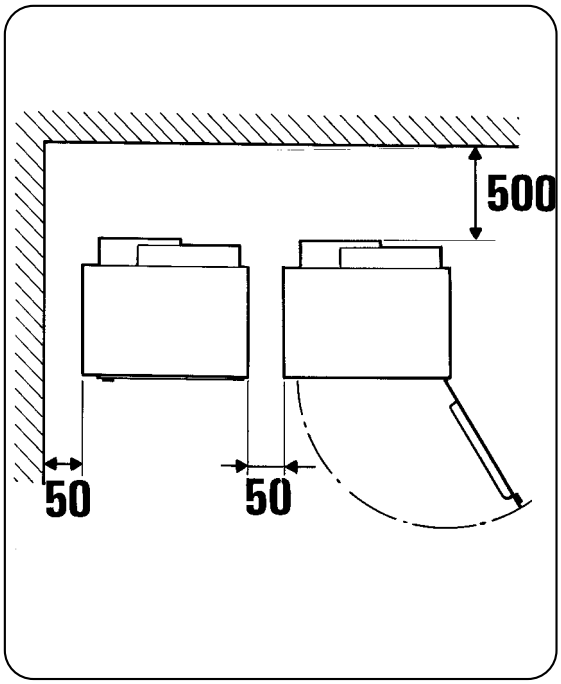
Installation

Unpacking

When unpacking the machine, handle it with care.

There are no transport clamps.

Release the machine from the pallet by removing the four corner bolts. Lift the machine off the pallet. Remember only to lift at the reinforced sections (A). Before placing the machine in the right position, fit the four feet where the bolts were.



Poisitioning

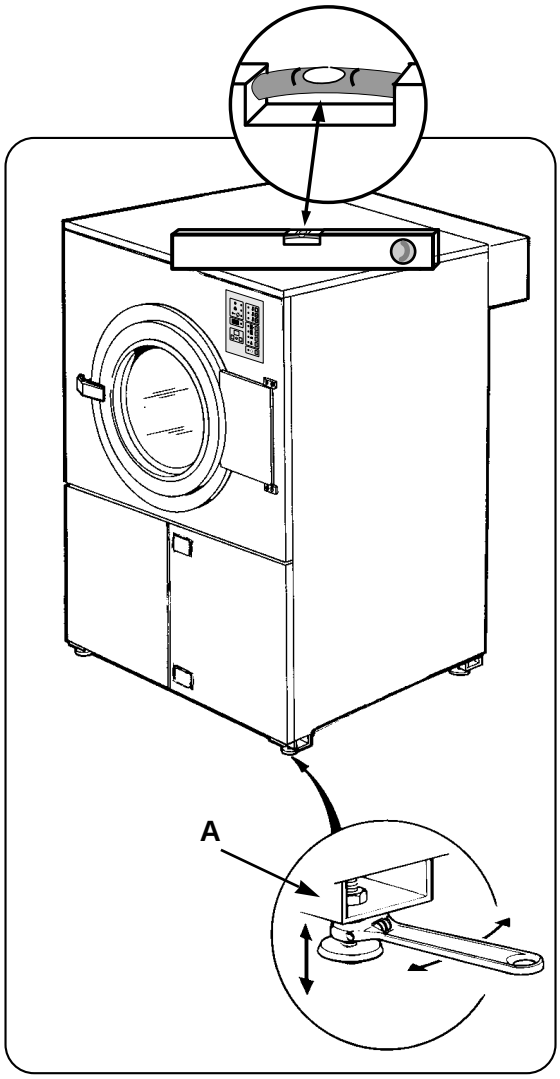
Place the tumble dryer to give good access for user and service technician alike.

The distance to a wall or other equipment behind the machine should be at least 500 mm, and the distance to the sides at least 50 mm. To allow servicing, there should - however - be access to the rear of the machine.

Mechanical installation

Adjust the machine to make it stand horizontally and stably on all four feet.

The max. height adjustment of the feet is 15 mm.



Gas installation
machines with HONEYWELL gasvalve

Only for LPG and natural Gas

The installation must be performed by authorized staff. Mount a manual shut-off valve prior to the machine.

The gas pipe to the machine must be dimensioned for a power output of 40 kW.

The machine is equipped with an allgas burner.

On delivery from the factory the machine is adjusted to a nozzle pressure equivalent to the calorific value indicated on the data sign.

Note! If you convert to another kind of gas a corresponding sign enclosed must replace the existing sign on the back of the machine.

Check that the nozzle pressure and the calorific value correspond with the values indicated in the table. If not, you must get in touch with the supplyer.

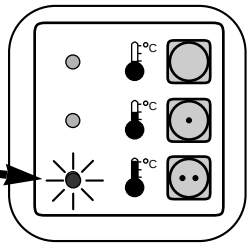
Before connecting the machine the pipe must be ventilated.

After connection all the joints must be tested for leakage.

Test run

Connect a pressure gauge to testsocket outlet (1). (Page 8)

Select programme (70°C)



Start the machine.

Check the nozzle pressure. See table page 8.

Any adjustment is carried out on the adjusting screw (3) of the regulator under nipple (2).

Check that the gas flame burns steadily with a bluish colour.

Having completed the test the machine is made ready.

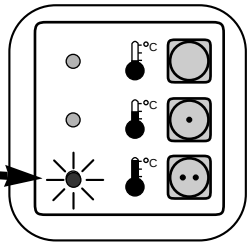
Gas installation
machines with HONEYWELL gasvalve

Conversion to natural gas

Mount nozzle (4) corresponding to gas type (GNH/GNL), see table page 8.

Connect a pressure gauge to testsocket outlet (1).

Select programme (70°C).



Start the machine.

Adjust nozzle pressure to 14,5 / 14,3 mbar on the adjusting screw (3) under nipple(2).

Check that the gas flame burns steadily and with a bluish colour.

Mount nipple (2).

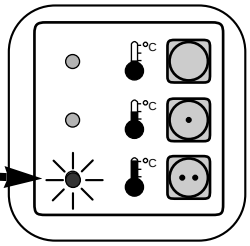
Having completed the test the machine is made ready.

Conversion to LPG gas

Mount the enclosed nozzle on 3,0 mm (4).

Connect a pressure gauge to testsocket outlet (1).

Select programme (70°C).



Start the machine.

Adjust nozzle pressure to 30 mbar on the adjusting screw (3) under nipple (2).

Check that the gas flame burns steadily and with a bluish colour.

Mount nipple (2).

Having completed the test the machine is made ready.

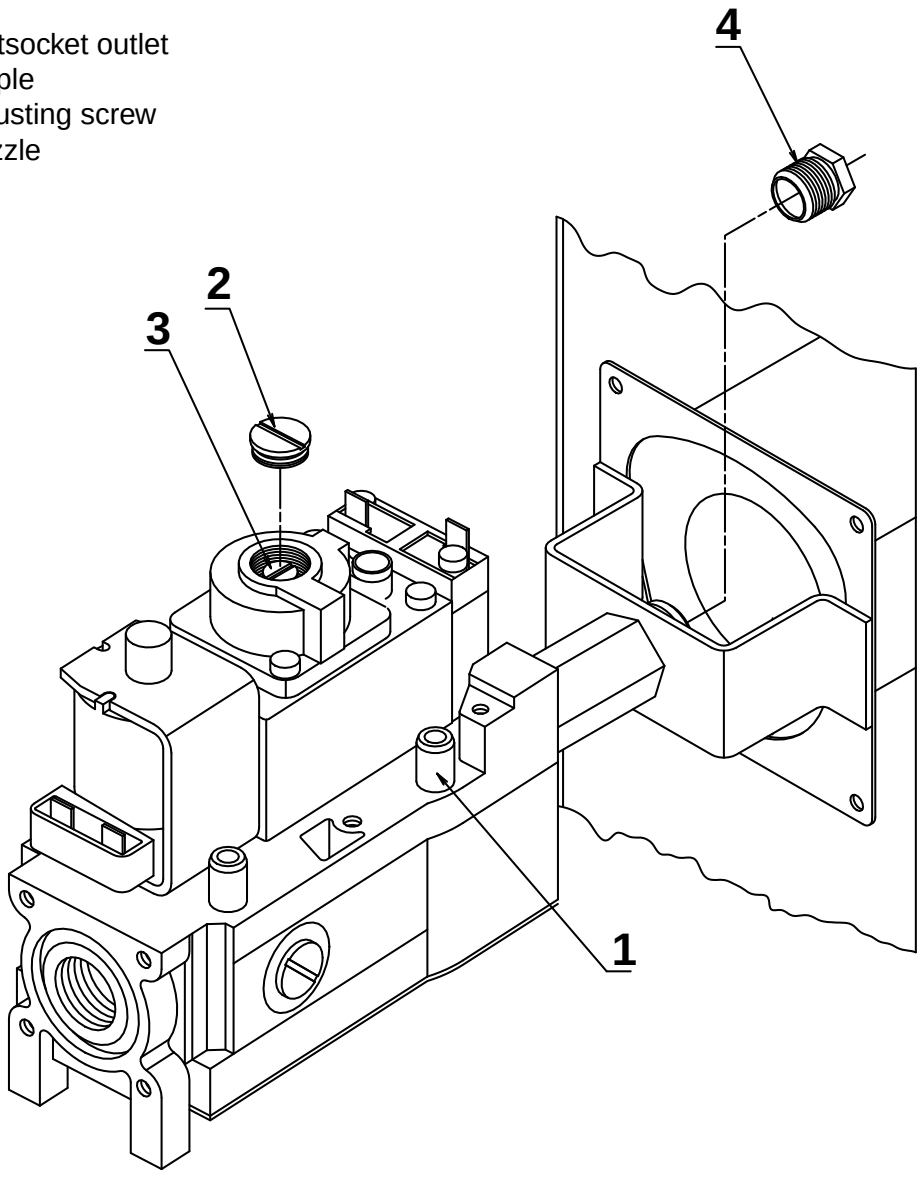
Installation

Table of calorific value, nozzles and gas pressure

HONEYWELL gasvalve (only for LPG and natural Gas)

Gastype	Calorific Value	Wobbe-index	Gas pressure		Ø Nozzle 4
			Inlet	Test Outlet 1	
	MJ/m³	MJ/m³	mbar	mbar	mm
LPG	126,4	87,3	30	30,0	3,0
GNH	37,4	47,9	18	14,5	5,0
GNL	33,6	42,0	18	14,3	5,5

1. Testsocket outlet
2. Nipple
3. Adjusting screw
4. Nozzle



Gas installation machines with KROMSCHRÖDER gasvalve

Only for towngas and natural Gas

The installation must be performed by authorized staff. Mount a manual shut-off valve prior to the machine.

The gas pipe to the machine must be dimensioned for a power output of 40 kW.

The machine is equipped with an allgas burner.

On delivery from the factory the machine is adjusted to a nozzle pressure equivalent to the calorific value indicated on the data sign.

Note! If you convert to another kind of gas a corresponding sign enclosed must replace the existing sign on the back of the machine.

Check that the nozzle pressure and the calorific value correspond with the values indicated in the table. If not, you must get in touch with the supplyer.

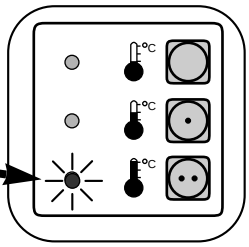
Before connecting the machine the pipe must be ventilated.

After connection all the connections must be tested for leakage.

Test run

Connect a pressure gauge to testsocket outlet (1). (Page 11)

Select programme (70°C)



Start the machine.

Check the nozzle pressure. See table page 11

Any adjustment is carried out on the adjusting screw (2).

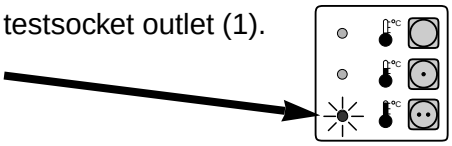
Check that the gas flame burns steadily with a bluish colour.

Having completed the test the machine is made ready.

Gas installation machines with KROMSCHRÖDER gasvalve

Conversion to town-gas

Mount air reducing plate (3)
Mount the enclosed nozzle on 10,2 mm (4).
Connect a pressure gauge to testsocket outlet (1).
Select programme (70°C).
Start the machine.
Adjust nozzle pressure to 3,6 mbar on the adjusting screw (2)
Check that the gas flame burns steadily and with a bluish colour.
Having completed the test the machine is made ready.



Conversion to natural gas

Dismount air reducing plate (3), if any.
Mount nozzle (4) corresponding to gas type (GNH/GNL), see table page 11.
Connect a pressure gauge to testsocket outlet (1).
Select programme (70°C).
Start the machine.
Adjust nozzle pressure to 14,5 / 14,3 mbar on the adjusting screw (2)
Check that the gas flame burns steadily and with a bluish colour.
Having completed the test the machine is made ready.

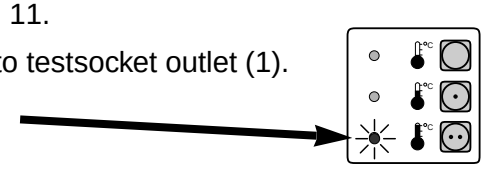
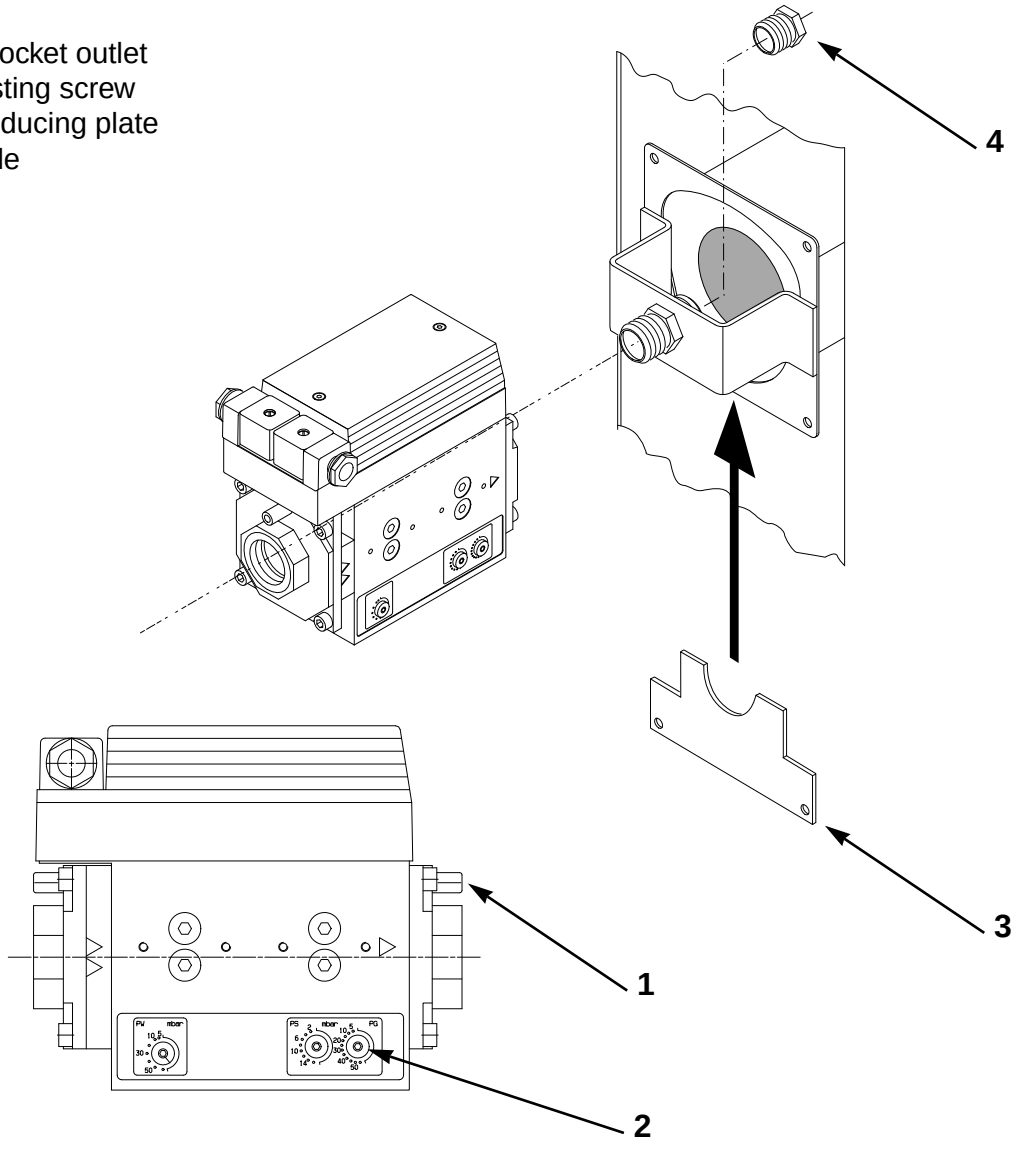


Table of calorific value, nozzles and gas pressure

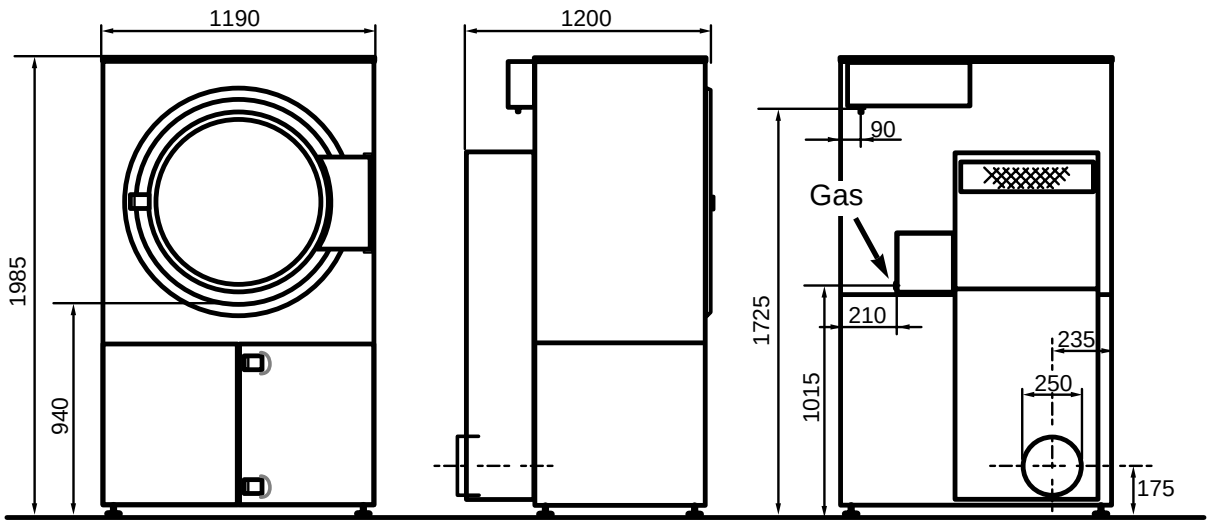
KROMSCHRÖDER gasvalve

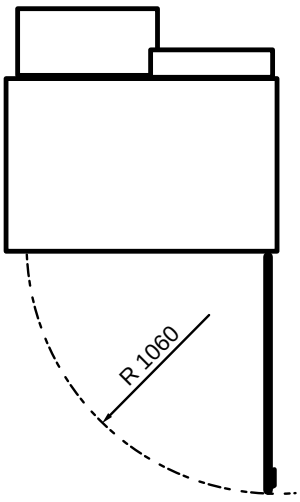
Gastype	Calorific Value	Wobbe-index	Gas pressure		Ø Nozzle 4
			Inlet	Test Outlet 1	
	MJ/m3	MJ/m3	mbar	mbar	mm
GNH	37,4	47,9	18	14,5	5,0
GNL	33,6	42,0	18	14,3	5,5
GT	15,0	22,1	8	3,6	10,2

1. Testsocket outlet
2. Adjusting screw
3. Air reducing plate
4. Nozzle



Dimension sketch





Wiring installation

This must be carried out by a skilled expert. The tumble dryer must have a fuse-group of its own.

For **countries inside EU and EEA**, a multi-pole lockable switch* is fitted for each tumble-dryer in the permanent installation.

For **countries outside EU and EEA**, a multi-pole switch is fitted for each tumble-dryer in the permanent installation.

The switch must be easily accessible, but it must **not** be possible to mistake it for the master switch of the tumble-dryer.

For calculation of the connection cable dimension, please refer to local guidelines.

Functional inspection, see page 17

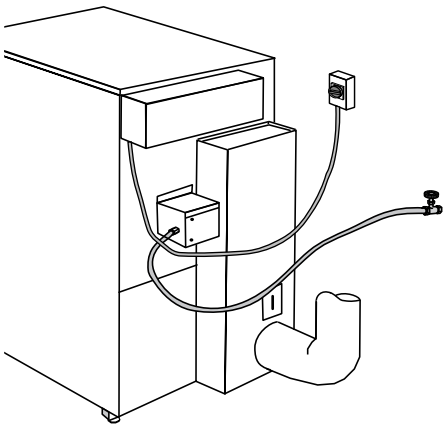
(Right direction of rotation is important).

The tumble dryer must be provided with extra protection in accordance with applicable regulations.

* A lockable switch accompanies the machine for countries inside EU and EEA. (Machine directive requirements concerning disconnection of the electricity supply during service work).

Gas heating

Voltage		Total output	Fuse
400-440V	*3NAC 50/ 60 Hz	3,0 kW	10 A
400-440V	3AC 50/ 60 Hz	3,0 kW	10 A
208-240V	3AC 50/ 60 Hz	3,0 kW	10 A



*****If the machine is equipped with a zero voltage connection, **this must always be connected.**

Technical data

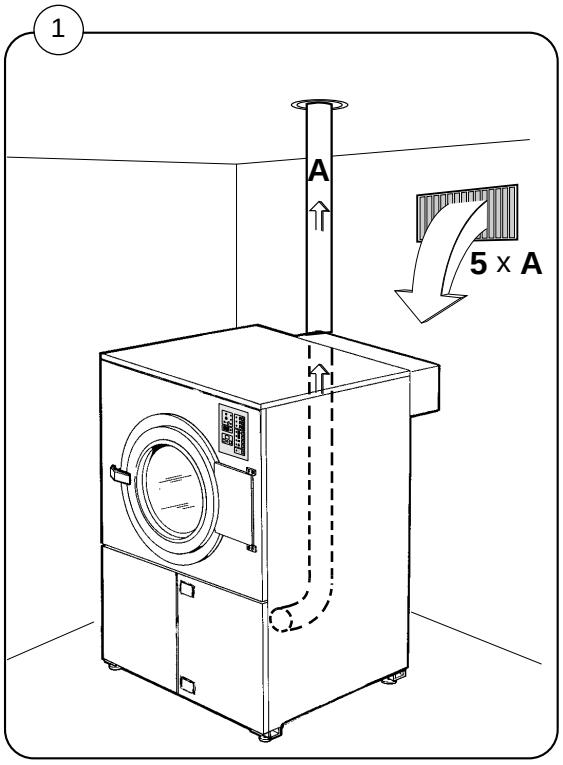
Heating:		GAS
Drum volume:		**600 litres**
Dimensions:	Width	1190 mm
	Depth	1200 mm
	Height	1985 mm
Weight:	Net	339 kg
Drum:	Diameter	1100 mm
	Depth	630 mm
	RPM	33 rpm
	G-factor	0.67
Capacity:	1 : 25	24 kg
	1 : 33	18 kg
Motor:	Power	2 x 1.35 kW
	RPM 50 Hz	1400 rpm
	RPM 60 Hz	1700 rpm
Heat effect:		40 kW
Air consumption:	40 kW gas	1200 m^3/h
Piping:	Air-evacuation	Ø 250 mm
	GAS: Pipe thread	ISO 7/1 - R 1/2"
	Town gas: Pipe thread	ISO 7/1 - R 1"
Max. allowed pressure drop of the evacuation pipe.	Air-evacuation 50 Hz	max. 90 Pa
Gas pressure :	Natural gas	18 mbar
	LPG	30 mbar
	GT	8 mbar
Sound pressure level		< 70 dB (A)

Evacuation system for tumble dryer

Fresh-air

For the machine to work optimally with the shortest possible drying time, it is **important** for the air input to the room to come from an aperture from outside, through which the same amount of air is taken into the room as is blown out. To avoid a draught in the room, the air inlet should preferably be placed behind the machine. The area of the air inlet aperture must be five times the area of the air outlet pipe. The resistance in the grating/slats should not exceed 10 Pa (0.1 mbar).
The air consumption is approx. 1200 m³/h.

1



Outlet pipe/duct

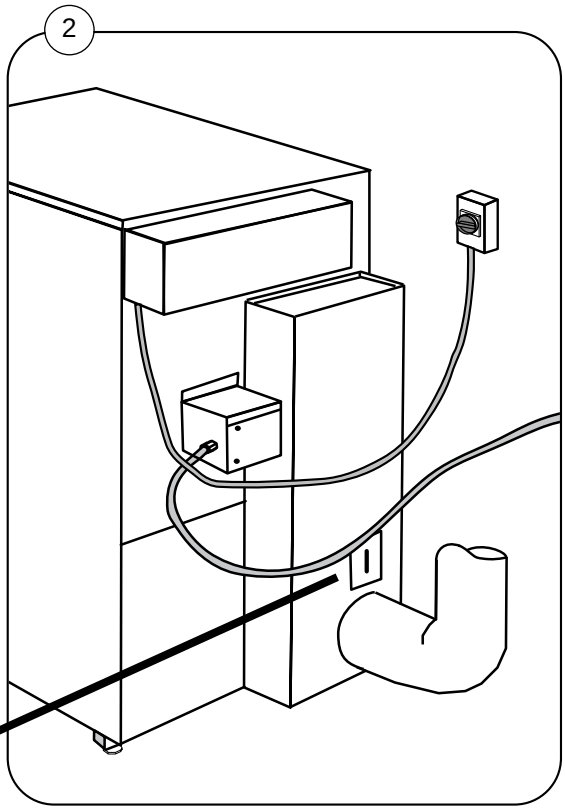
It is recommended that each machine be connected separately to a smooth air outlet pipe with the lowest possible friction.

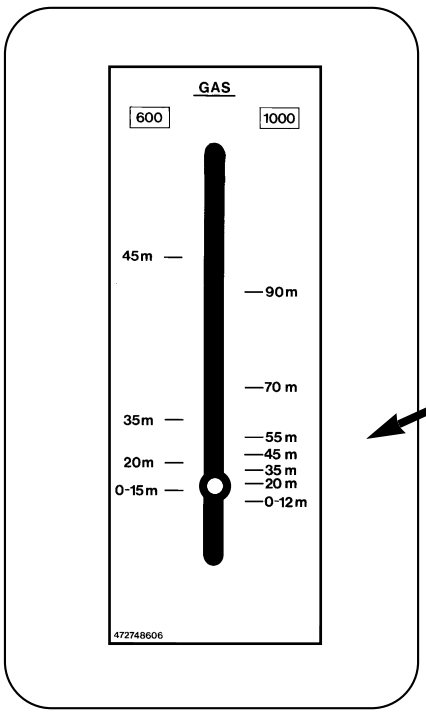
Measure the straight lengths of pipe in metres. Add two metres for each 90° bend and one metre for each 45° bend. Set the machine grate to this value, see fig. 2.

2

The pipe must end outside the building and its aperture must be protected against rain and impurities.

If there is any doubt concerning the design of an evacuation system, please do not hesitate to contact our service organization or dealer.



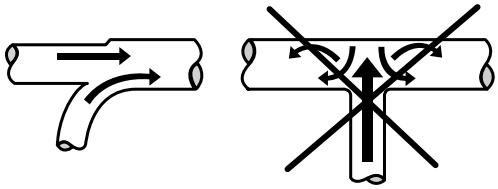


Evacuation system if more than one machine uses a given air outlet pipe

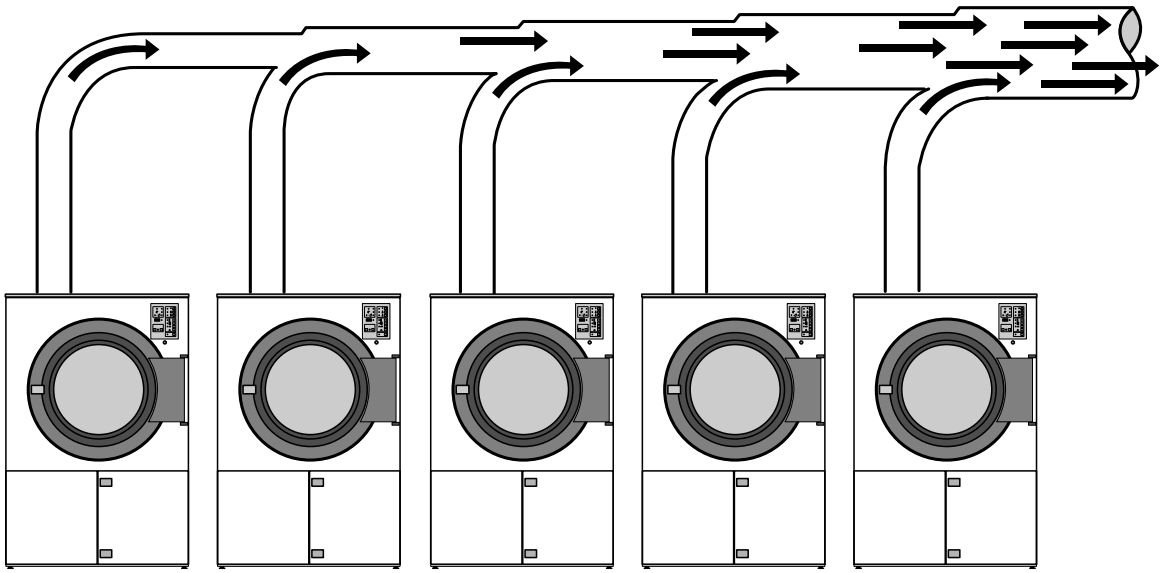
1 If more than one machine uses a given air outlet pipe, the area of the pipe should be increased for each machine to ensure that each machine has the same air resistance. Fig. 1 and the table give a simplified version of the dimensions required from the air outlet pipe.

2 **Note!** Bends (not T-sections) must be used to give the air a co-current, see fig. 2.

2



1



No. of tumblers	1	2	3	4	5
Air outlet pipe diameter, inches and mm	10" 250	14" 355	18" 450	20" 500	22" 560
Required area of fresh-air inlet pipe, m^2	0.3	0.5	0.8	1.0	1.3

Each machine requires a fresh-air aperture of 540 x 540 mm

Function check:

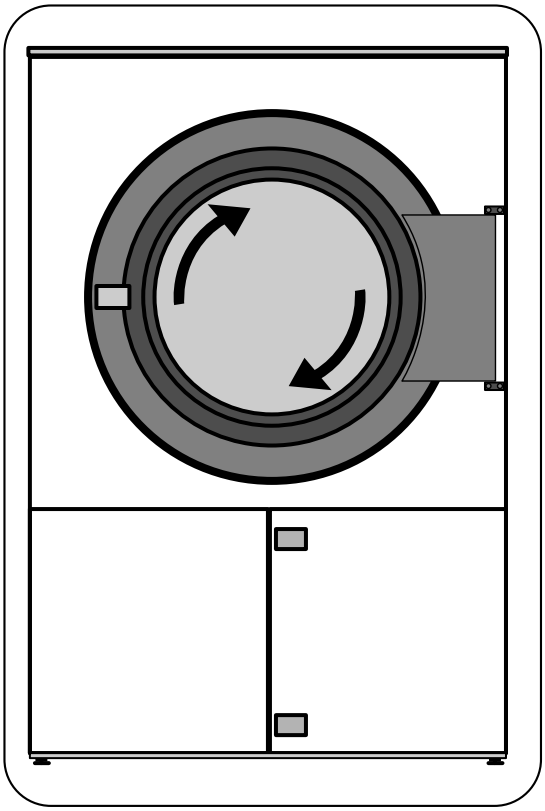
This must be carried out by skilled personnel. Check whether the drum is empty and the door closed.

Start the machine. Check whether the safety lock works. The drum must stop when the front door is opened.

The drum should rotate “clockwise” (see illustration). If this is not the case, switch two phases.

Let the machine work five minutes with a program that requires heat; then open the front door and feel whether the heating works.

If the tests outlined above are successful, the tumbler is ready for use.
If any faults or deficiencies are found, please contact the nearest service organization / dealer.

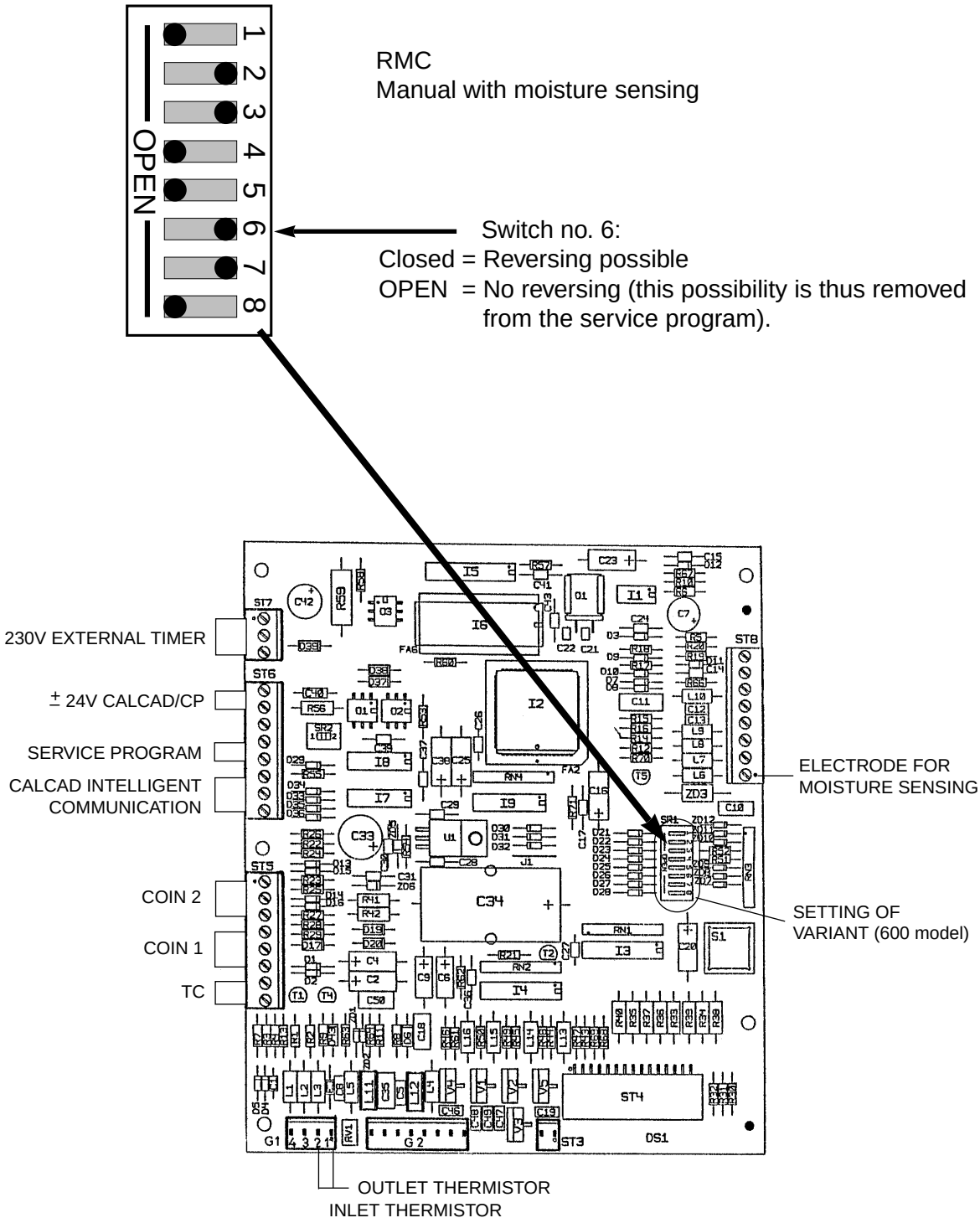


Parameter programming

PCB (printed circuit board), setting of 600-litre machine

The switch setting (variant setting) for the 600-litre model. The PCB has been preset at the works to match this model.

Only if the PCB is replaced is it necessary to reset.



Quick-view parameter listing

The following values have been pre-programmed:

Parameter No.	Value / setting	Parameter
01	3.0	Cooling time
02	50	Program with low temperature: 50°C
03	70	Program with high temperature: 70°C
04	90	Maximum running time
05	01	With reversing
06	2.3	Reversing time
07	03	Reversing, pausing time
16	n6	Program: Extra dry
17	00	Program: Dry
18	13	Program: Iron dry (iron)
19	21	Program: Iron dry (ironing machine)

A more detailed explanation of the parameter programming can be found on the following pages.

Parameter programming

Explanation of the parameter programming

At the works specific values have been pre-set for the tumbler, such as: Maximum time on timer, temperature, cooling, reversing and residual moisture percentage.

These different parameters can be adjusted in the parameter programming of the machine.
The parameter programming can be activated by turning the key switch (**A**) at the front of the machine.
(The parameter programming can only be engaged when the machine has stopped and the machine door is open).

When engaging the program, always start with parameter no.01. By pressing the start button (**B**) repeatedly (**Enter**), it is possible to go to the parameter number to be adjusted.

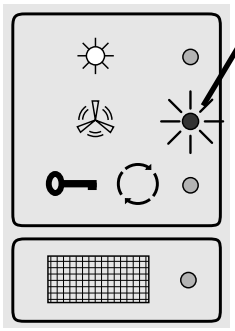
Once the parameter programming has been engaged, the LEDs (light-emitting diodes) are used as an indicator for the parameter in question:

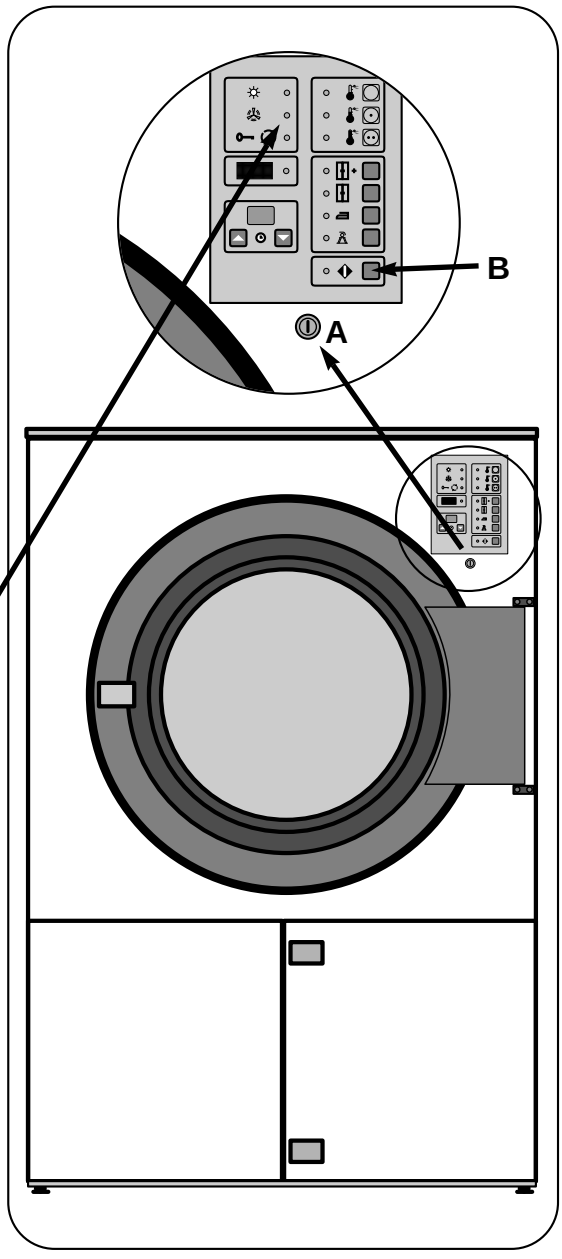
LED **Drying** =

LED **Cooling** =

LED **Key** =

LED **Filter** =





An example: (Parameter no. 04). If the maximum time on the timer is not satisfactory (factory setting = 40 min.):
First press start button (**B** - **Enter**), until the LED for **Cooling** is lit - corresponding to parameter no. 04. The display now reads 40. Now count upwards by means of the **"Count Up"** button if a longer time, or **"Count Down"** if a shorter time, is required. Once the desired value has been reached, press the start button **"Enter"**. The new value has now been stored in the program.
Back to factory setting 40: Press **"Reset"**.

Examples are described with illustrations on the following page.

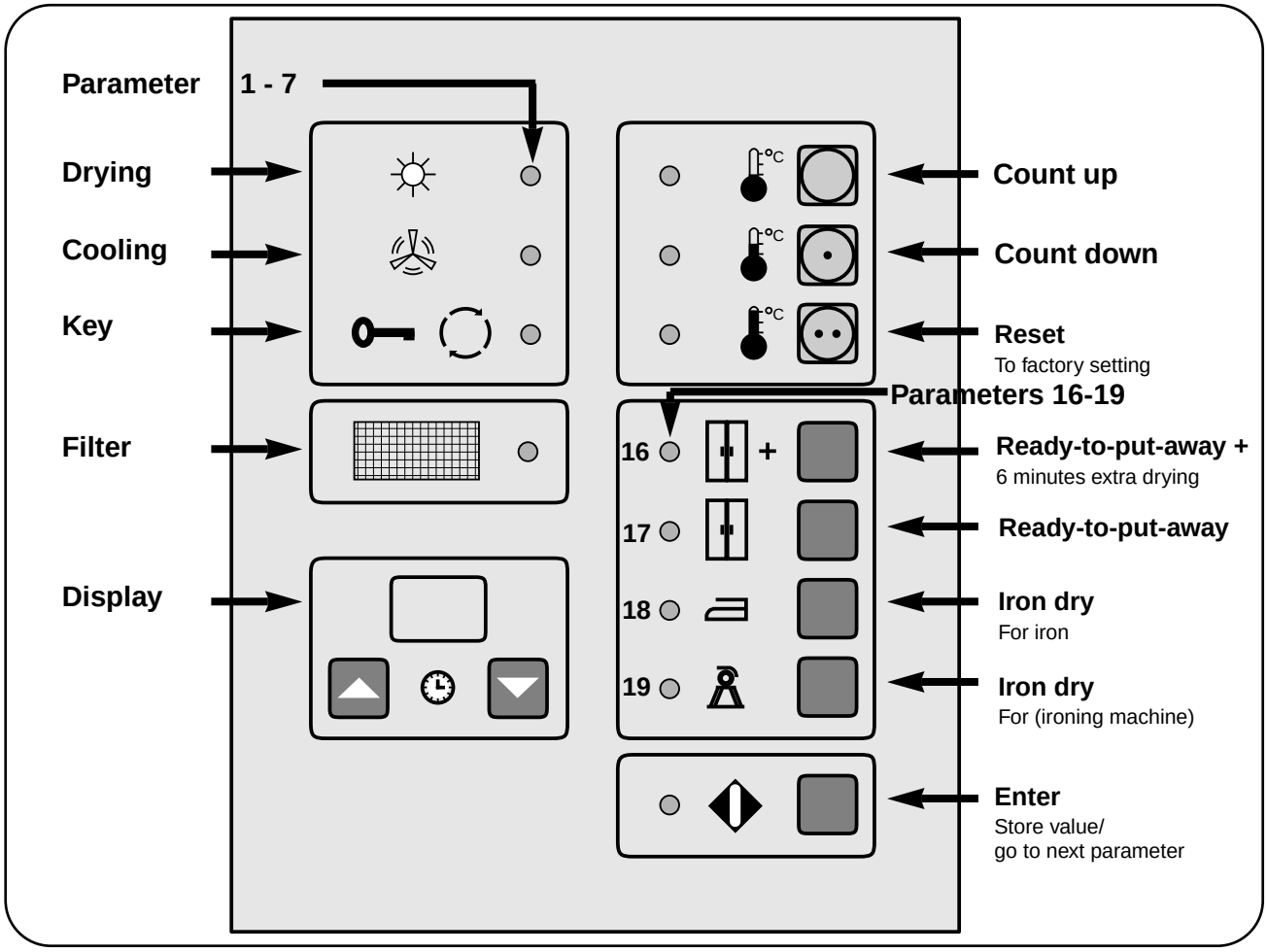
It is always possible to leave the parameter programming by turning back the key switch to its original position.

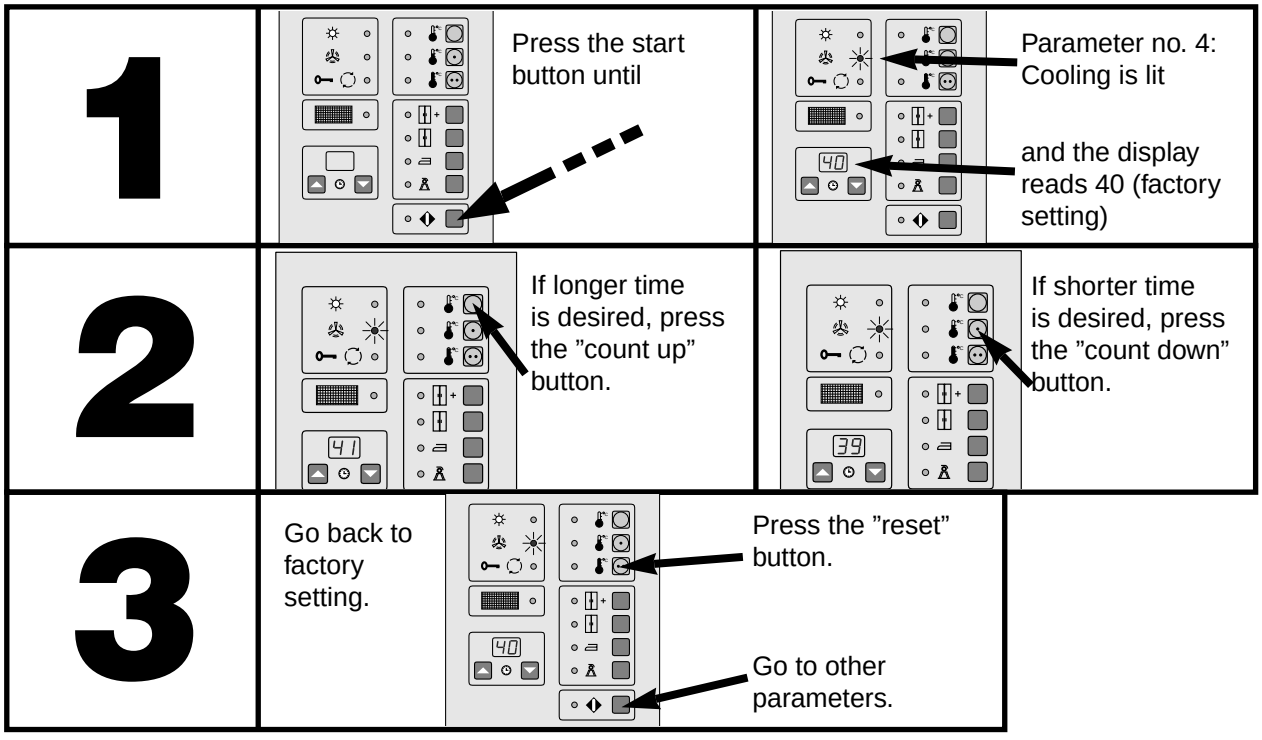
Parameter no. 04

Factory setting: 40,
but reset to 90.

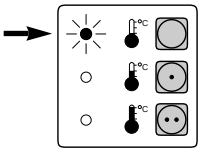
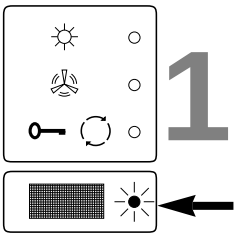
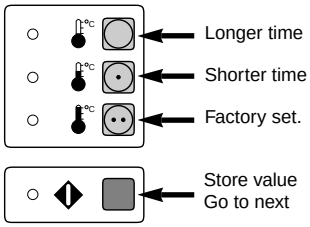
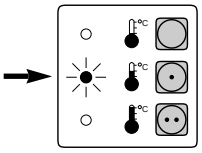
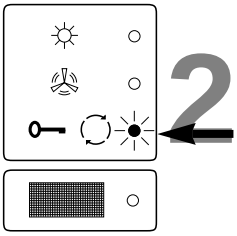
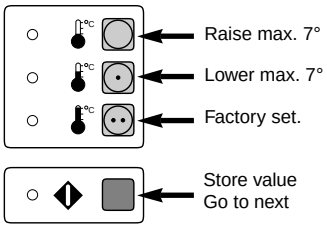
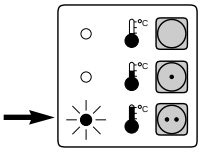
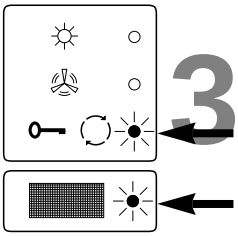
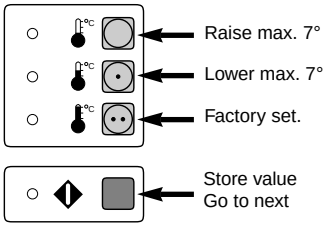
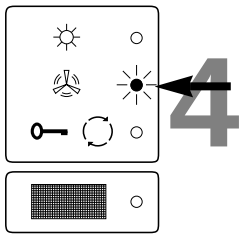
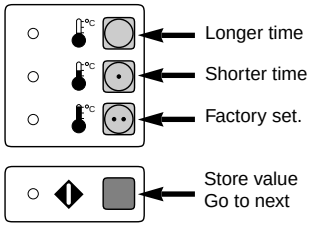
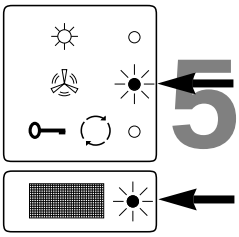
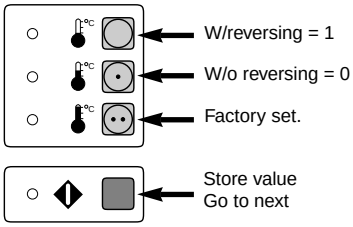
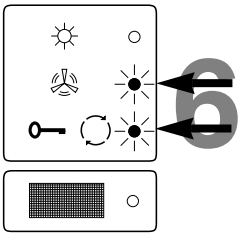
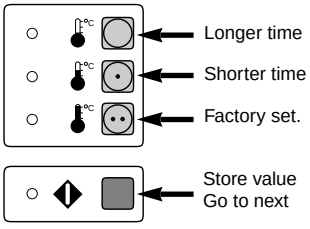
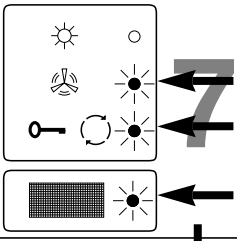
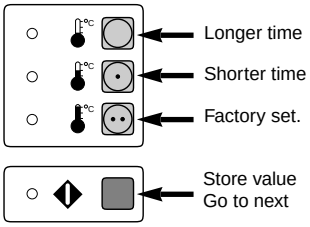
Note! On this machine parameter 4 has to be set (using the counter) to 90.

Control panel



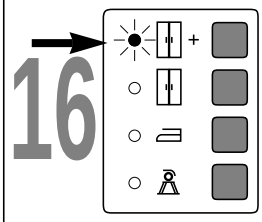
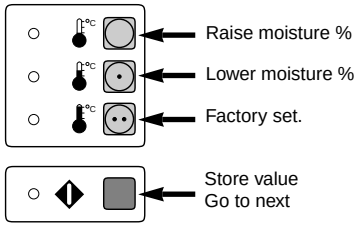
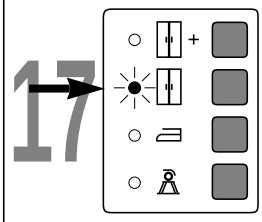
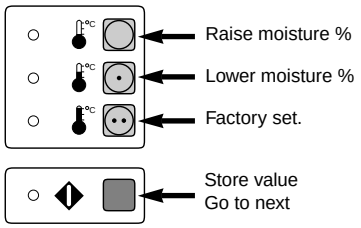
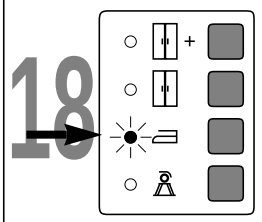
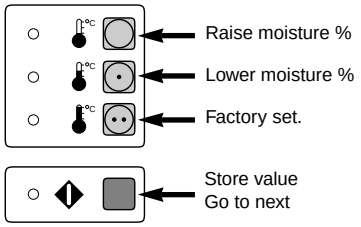
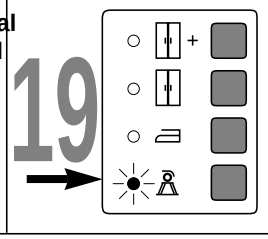
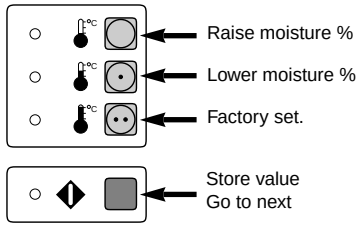


Parameter programming

Parameters 1 - 7	LED: On = ☼ Off = ○	Value, factory setting	Adjustment wanted: Do this: *Press for:*
Cooling time 		Value= Min. sec. **0.0 - 9.6** Factory setting: 3.0	
Temperature 50° 		Value = Degrees C. ± 7°C Factory setting: 50°C	
Temperature 70° 		Value = Degrees C. ± 7°C Factory setting: 70°C	
Max running time for automatic residual moisture control		Value = Minutes **20 - 90** Factory setting: 40, but reset to 90. **Note! On this machine parameter 4 has to be set (using the counter) to 90.**	
Reversing		Value = **1 / 0** W/ or w/o reversing Factory setting; 1 with	
Reversing time		Value = Min sec. **0.2 - 9.6** Factory setting: 2.3	
Reversing, pausing time		Value = Sec. **3 - 20** Factory setting: 3	

Parameters no. 8-15 are not used on this variant (w/o payment)

Only on machines with residual moisture control

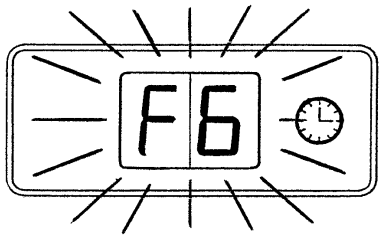
Parameters 16 - 19	LED: On = ☀ Off = ○	Value, factory setting	Adjustment wanted: Do this: *Press for:*
Automatic residual moisture control Extra dry		Value = Residual moisture: **n9 - 30 %** Factory setting: **n6** *n6 = 0% + 6 minutes extra drying* *(n1 - n9 = 1 - 9 minutes)*	
Automatic residual moisture control Dry		Value = Residual moisture **0 - 30 %** Factory setting: **0 %**	
Automatic residual moisture control Iron dry for iron		Value = Residual moisture **0 - 30 %** Factory setting: **13 %**	
Automatic residual moisture control Iron dry for ironing machine		Value = Residual moisture **0 - 30 %** Factory setting: **21 %**	

NB! Parameters 8-15 are not used for this control variant (with automatic residual moisture control).

Parameter programming

Error codes

The machine feature automatic fault reporting, indicated by flashing error codes.



Error code	Error	What is wrong? What to do?
F1	Brown-out	20% lowering of voltage from power plant: Can be started when the voltage is back to normal.
F3	Heating fault	Fault on inlet sensor or heating element: Disconnect mains for a moment. If the fault occurs again: call in service.
F4	Outlet sensor	Fault on outlet sensor: Disconnect mains for a moment. If the fault occurs again: call in service.
F5	Wrong variant	Wrong combination of switches on PCB All lamps go out: call in service.
F6	Electronic fault	Micro-processor fault: call in service.
F7	Service program	Service program wrongfully engaged: is only to be engaged with the machine door open.
F9	Vacuum switch fault	Vacuum switch fault: call in service.