

TUMBLE DRYERS

INSTALLATION, USE AND MAINTENANCE INSTRUCTIONS



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1. INTRODUCTION

This manual refers to industrial tumble dryers installation, use and maintenance.

It is written in compliance with the European Community rules in force. The information here written are addressed to the installer and the user, who must be sure to fully understand them before use of the machine.

This manual must always be available for consultancy. In case it should be lost or damaged, ask for a new copy from the manufacturer.

The producer is not responsible for any consequences coming from incorrect dryer use due to incomplete or misreading of this manual.

The manufacturer reserves itself the right to modify the specifications written in this manual or the characteristics of each machine. Some pictures in this manual may differ from reality. Diagrams and technical data may be changed without previous notice.

The Manual and its attachments are part of the machine itself, so they must be kept together and follow the machine when it is sold to another user.

Attachments and exploded views with spare parts list can be retrieved in the technical area of the manufacturer's website.

Dryer serial number must be available when entering in the web site.



ATTENTION!

Manufacturer is not responsible for any possible incorrect information here written, when the errors are due to a printing or translation error.

The manufacturer reserves themselves the right to modify the product, when necessary or useful, without changing the main characteristics. Without any previous authorization of the manufacturer, to copy completely or partially the text and the pictures of this manual is forbidden.

2. SAFETY RULES



ATTENTION!

Chocking, injury and permanent invalidate risks!

Not respecting the following instruction, may cause damages to people, things and animals.

Installations and maintenance of the here described machines must be trained by authorized personnel, which knows the product and respecting the European Rules in matter of

industrial machines installation.

Reparation made in a not correct way may seriously compromise the user safety.

Instruction must be read in detail before the machine is put in use. Instruction must be available to all the people working with the dryer.

Here described tumble dryers must be used for professionally drying clothing and linen: any other use is forbidden if not before authorized by the manufacturer.

Before removing linen from the dryer, be sure that the drum has stopped. Never put your hands inside the drum, if it is still rotating.

Do not dry in the machine any dissimilar items; do not dry linen, which has entered in contact with dangerous materials like explosives, detonating explosives or inflammables.

Follow always very carefully the cleaning instruction of each linen.

To avoid risks off fire or explosion, do not approach the machine with combustible or inflammable substances.

The use of this machine is forbidden to people under 16 years of age.

Children must not play or be close to this equipment.

Packing materials must be kept out of the reach of children.

Detergents must be kept out of the reach of children. Children and pets must be kept away from the equipment door when it is open.

External supplementary connection to the machine releases the manufacturer from any responsibility if they are not properly done.

WARNINGS

Working with opened sides is forbidden!



In order to avoid burns or accidents it is forbidden to remove, even temporarily, the protection panels and the safety system!

It is forbidden to introduce bars, sticks or metallic objects inside the drum. In case of emergency, please follow always the here described procedures.

Each time the dryer is started, check always the safety device is correctly working!

To know the machine and its safety device working is compulsory!



BURNS DANGERS

The dryer, because of its nature, presents burns danger.

Burns may be caused by:

- The contact with the linen taken out from the dryer;
- The contact with the door inside, following its opening;
- The contact with the heating batteries during the maintenance;
- The contact with the fluxing steam parts.

Following labels are fixed on the machine. If one of them would be damaged, the user must replace it with a new identical one.



Stuck near dried linen exit.



External panels can reach high temperatures when the machine is working.

Dryer must always be used by trained personnel and with at least two operators in the room!

READ CAREFULLY THE INSTRUCTION FOR OPERATING IN CASE OF BLACK OUT, AND INFORM ALL THE USERS ABOUT THEM.



ELECTROCUTION DANGER

Only qualified personnel must operate any service of the electrical parts. Before working

on the machine, cut off the electrical supply. Only manufacturer personnel can modify power and controlled circuits, on the contrary the warranty conditions expire.

On the electric board, the here below warning label was stuck. If this label should be damaged or unstuck, an identical one must replace it.



OPERATOR PSYCHOPHYSICAL CONDITIONS

User must be in perfect psychophysical condition; during the working cycle, the user must always assume a vertical posture in front of the machine. Sudden or not controlled movement must be avoided because of the risks of dangerous knocks against the dryer chassis, i.e.: during the dryer unloading.

The other people present on the laundry room must not distract the operator, who is working on the dryer.

While working, the operator must not be distracted by TV, radio or any other source of distraction.



LIGHTING

In the room where the machine is installed, lighting must be at least of 300-500 lux intensity; unpleasant flashing must be avoided.



ATTENTION!

These instructions do not cover all possible risks. User must always pay high attention and respect carefully the rules.

3. MANUFACTURER LIABILITY

The instructions written in this manual are not replacing, but completing the duties deriving from the safety and accident prevention laws.

With reference to what is written in this manual, the manufacture is not responsible when:

- The machine user does not respect safety and accident prevention laws in force;
- The machine was not correctly installed;
- Periodical and/or programmed maintenance is missing;

- Manual instruction was not respected;
- Defects occur in the power supply;
- Non authorized modification made on the machine;
- Non-authorized personnel use the machine.

4. UNPACKING

The machine must be inspected at the delivery moment, any external or internal damage due to the transport, must be reported immediately to the forwarder.



During the moving of the machine, remember that the dryer center of gravity is located in the last third of the machine height.

Machine must be completely unpacked next to the installation place. Straps must be cut and the covering packing material must be taken off.

Packing materials must be disposed following the rules in subject of environment protection.

Using a key, take away the fixings on the machine base which are attaching the dryer to the pallet (frontal and back).



Check the machine net and gross weight on the technical data sheet sent with the machine: it must comply with the available lifting means.



Pallet cannot be used as normal dryer support! The machine must always be installed without pallet and positioned as described in the relative paragraph.



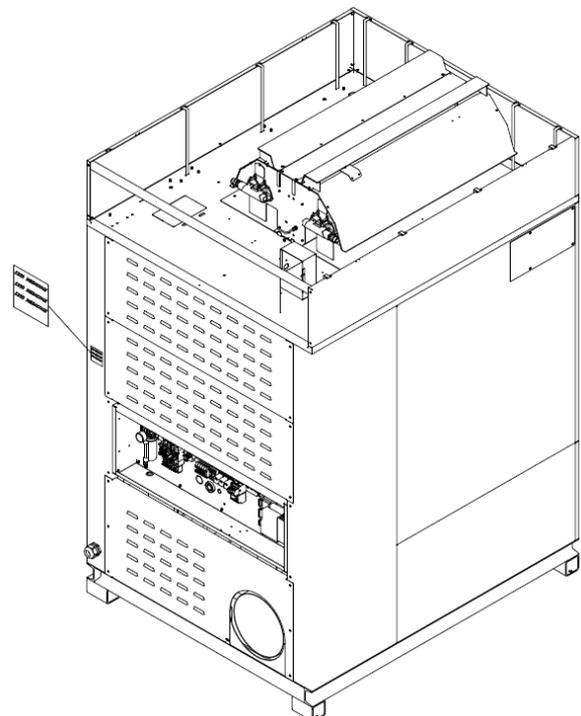
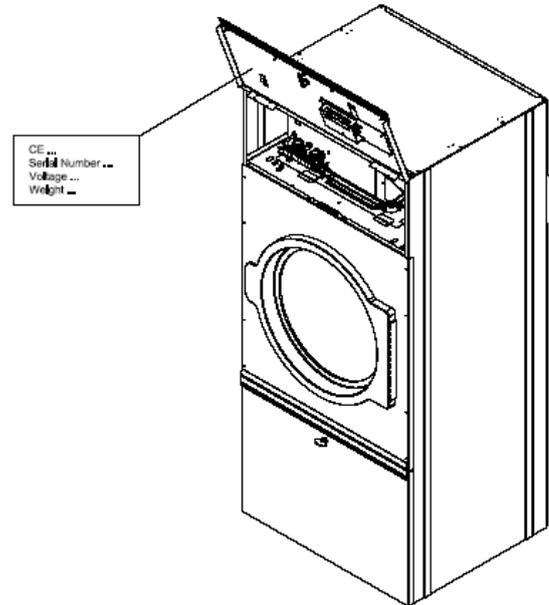
Move the machine only when it is fixed on its pallet: only trained and competent personnel must do the machine handling.

5. MACHINE IDENTIFICATION

The sticker reporting the machine serial number, model, power and technical characteristics

identifies the dryer. Be sure that the electrical, hydraulic, steam, gas, compressed air connections are complying with the sticker data.

Spare parts and/or services require the correct model identification.



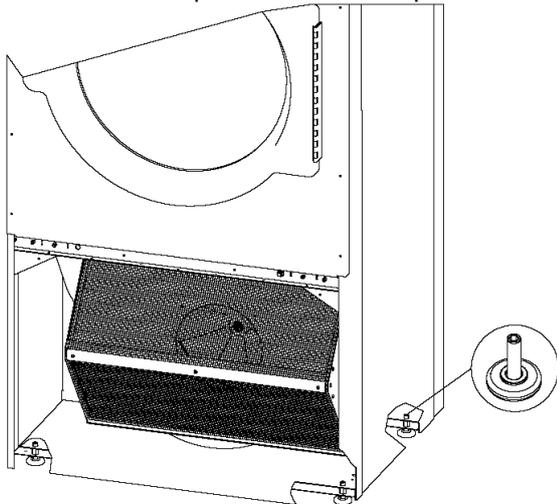
If the sticker with serial number is tampered, missed, removed or damaged in a way that does not allow correct machine identification, the dryer installation and service can be difficult and the warranty automatically expires.

**ATTENTION!**

6. INSTALLATION AND POSITIONING

Installation must be by trained, qualified personnel. Machine must be positioned on a flat surface horizontally and in a stable way using the adjustable feet at the dryer base. Feet can be adjusted from outside, screwing and unscrewing them until the dryer is correctly levelled.

In equipped models, the feet can be adjusted from inside using a 5mm hexagonal key after the filter door and the back panel have been opened.



Always check if the floor can bear the machine weight written in the technical data sheet. The machine load can be considered very static. To calculate the dryer static load, the weight of the wet linen to be loaded must be added to the dryer net weight. Be sure the floor is clean and high temperature resistant. For correct machine use, working and service, leave at least 500 mm free surface around the dryer.

The room temperature must be between +5°C and +40°C.

Protection class is IPX4.

The room where the machine installed must have enough incoming air ventilation. Please note: the machine takes air from the room where it is installed and expels the humid air from the drying cycle to the outside.

The dryer must not be installed behind a door, which can be closed with a key, a sliding door, or a door with hinges mounted on the opposite side to the tumble dryer.

Do not install or use a machine if it is damaged.

Do not install a machine in a position where the door cannot be completely opened (a suitable kit can be provided to change the door hinge from left to right opening and vice versa)

Clean air must be assured to the machine; air combined with chlorine, fluorine or other solvent vapors must be avoided.

Do not use or stock near the machine benzene, petroleum or other inflammable stuffs otherwise fire or explosion may be caused.

Keep near the machine a foam extinguisher, which is periodically controlled in compliance with the rules in force.

7. INSTALLATION: GAS HEATED MACHINES SPECIFICATIONS

Independently from the capacity, every gas-heated machine must be considered as a gas equipment.

During the installation must be respected the following rules:

- Territorial building and fire-prevention rules;
- Accident prevention rules;
- CENELEC rules (electric system);
- Rules about the combustible gas use
- Rules about gas system supplied by public net or LPG gas
- Rules coming from the gas company
- Rules coming from the electricity company
- Other possible local rules.

Air inlet and ventilation openings can be closed only if the opening condition is controlled and if the flame of the gas-heated equipment has opened air inlet and ventilation.

The room must be correctly ventilated, even when the gas exhaust is mechanically operated, if the nominal thermal pollution of this gas equipment does not cause depression in the room. In this way, a regular gas combustion and the complete exhaust of the burn gas are guaranteed.

To dimension the air grating, please refer to the data written on the machine technical sheet and to the rules in force. In this way, a regular gas combustion and the complete gas exhaust are guaranteed.

Air inlet dimensions must comply with the technical sheet requirements and with the subject rules in force.

In case the dryer is supplied with liquid gas and is installed in a basement, forced ventilation system must be provided.

**ATTENTION!**

Never install a gas-heated machine in the same room where there are machines that use solvents (example: dry cleaning machine).

This combination could produce dangerous substances for the operator and it can cause steel corrosion.

If a gas-heated machine and a machine using solvents are installed in two separate rooms, be sure that there is no possibility of air exchange between these two rooms.



ATTENTION!

In case of machine equipped with a tilting system, the machine must be fixed to the floor using some screw anchors.

Machine must be installed perfectly horizontally on a floor without elastic reaction.



ATTENTION!

In case of tilting machines, there are external parts that move during the linen loading and unloading steps.

For machine dimensions and machine-required space during the movement, please refer to the technical data sheet.

8. NOISE LEVEL

The air noise produced by the machine is producing a continuous and weighted acoustic pressure lower than 70 dB.

9. ELECTRIC CONNECTION

Electric connections must be carried out by qualified technicians and must comply with local and National rules in force. Check if the supply data corresponds to the data written on the machine plate.

To connect the machine use a H05 VV – F cable or superior and follow the data label to dimension it correctly.

Install before the machine an Omni-polar disconnecting device (i.e.: a circuit breaker) which has a contact opening that allows the complete disconnection in case one of the conditions of the

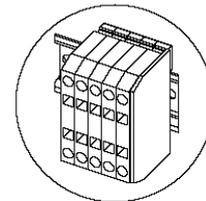
over tension III category is verified. This device must comply with the subject regulation in force.

Check the main switch; it must be in position "0".

Open the electric supply door.

Pass the electric supply cable through the cable holder supplied with the machine. The cable must be correctly dimensioned (check the following table).

Electric supply cable connection must be done on a series of marked terminal.



Following the kind of heating indicated on the serial number plate, connect the cable to the terminals, as indicated:



: Ground, color: yellow/green

L1, L2, L3: phase, color: brown

N: neutral, color: blue

In case of installation or replacement of the supplying cable, the ground cable must be at least 5cm longer than the other cables. The electric diagram is contained in an envelope, near the electric board.



ATTENTION!

Check the fan rotation direction: it must rotate in the direction that allows the exhaust air discharge; it means that the fan motor rotated in the direction indicated by the arrow marked on the motor cover. Check the correct connecting sequence of phases.

The machine must be connected to an efficient ground system: the supplier is not responsible in case this connection is not operated in compliance with the subject rules in force. Before any maintenance, cut the electricity supply to the machine: for the maintenance refer to the machine electric diagram, which is inside the machine; anyway, it can be retrieved at any moment on manufacturer web site.

The minimum section for the electric cable is indicated in the attached technical data sheet and are expressed in mm².



ATTENTION!

The technical data minimum sections can change according to the connection length. In case the cable is longer than 5 meters, the cable diameter must be proportionally increased.



ATTENTION!

The machine connection must always be made respecting the data written in the serial number plate (power, supply tension, frequency).

For a different voltage from the one provided, ask for more information to the manufacturer.



ATTENTION!

For a machine equipped with drum or fan speed control, it means for machine equipped with inverter, a protection by RCD type B device must be provided (sensible to the current medium value).



ATTENTION!

In case the machine is equipped with a supply cable, and the cable is damaged, the manufacturer must replace it or by the authorized technical service; anyway only qualified personnel can service the machine, in order to prevent any risk.

10. GAS CONNECTION

If the machine is gas heated, the necessary connection with the distribution system must be made: check the machine serial number plate data, especially check supply gas pressure.



ATTENTION!

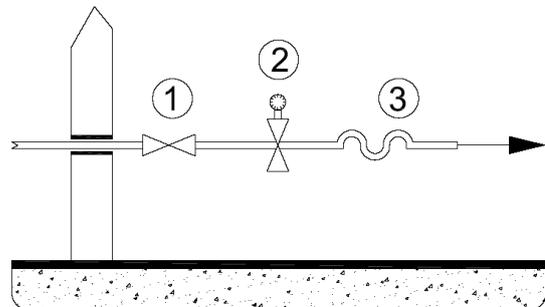
The maximum gas pressure admitted is 50mbar. To supply the gas with a higher pressure, even for short time, may damage the valve.

The gas distribution system must be realized in compliance with the rules in force and it must respect the sections and the pressure suitable for the installed equipment, as per tables at the end of this manual.

Look to the following picture: back to the machine must be installed a rapid gas interceptor valve (1): the gas cock must be near the dryer and in an

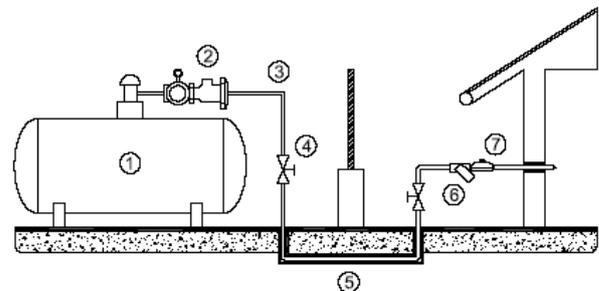
easily reachable position. The cock must comply with the rules in force and must be an approved model.

A low point pressure switch must be provided (2). The connection to the gas system must be made using a no-vibration joint (3); if flexible tubes are used, these must be in stainless steel DIN 3384 or DIN 3383.



The gas system must be realized in compliance with the rules in force. Respect dimension of the dryer gas-connection written in the technical data sheet; this dimension must not be reduced.

The next picture shows how the machine should be connected in case of gas cylinder with high pressure. In this case, a two-step reduction system is necessary; it must be realised in compliance with the rules in force.



At first 1.5mbar governor must be connected after the high pressure gas cylinder (1), after that a safety valve with the appropriate dimension must be installed (2).

The high pressure tube (3) is interrupted by an interceptor cock (4) and then it follows protected (5) below the compartments division area border. Before entering the room where the machine is installed, a second interceptor valve must be provided and then a filter (6) and a second governor (7) which brings the pressure to the correct working value.

11. GAS CONNECTION: TIGHTNESS TEST

All the joints between system and dryer must be tightness tested.

To make this test, use a leak finder spray; otherwise, the joints can be covered with foamy substances, which must not be corrosive. In both cases, bubbles must not appear.



ATTENTION!

It is forbidden to use free flame for tightness test!

12. GAS CONNECTION: THERMAL POWER

Each dryer tested in the factory is prepared for a kind of gas that is written in the sticker near the serial number plate.

If the machine is predisposed for a gas that does not correspond to the kind available in the installation place, then it is compulsory to make the dryer adaptation. In this case, the authorized after sales center must be informed.

A dryer that is working with the expected thermal power depends on the inlet pressure and the gas calorific power, but also depends on the nozzle, the gas pressure arriving to the nozzle and from a correct supply of primary air.

The pressure of the gas arriving to the machine must be included in the limits written on the gas type tables. If the pressure is not included in the limits written in this manual, the dryer cannot be started.

If the verified gas pressure is different from the table values, please contact the gas company or the company that realized the gas system.

The GAS Lower Calorific Power, which must be asked to the gas company, must correspond to the one indicated in the technical data table.

13. GAS CONNECTION: GAS INLET PRESSURE CONTROL

The inlet gas pressure must be controlled using a digital or liquid measuring tool (resolution of 0.1 mbar at least).

- Close the interception device.
- Open the sealing screw on the pressure tube gas valve connection indicated as "Pin".
- Connect the manometer
- Open the interceptor device
- Start the dryer following the user instruction
- Check the inlet pressure, with the burner

working.

- Switch off the dryer.
- Close the interception device.
- Take off the monometre.
- Close the screw of the gas valve pressure tube and control the tightness.
- Open the interceptor device and control test the tightness.

The dryer must not be used if the gas pressure is out of the limit shown in the reference table.

14. GAS CONNECTION: FINAL TEST

Once the connection works are completed, the equipment and the installation must be tested. It is necessary to test:

- That the connection are made respecting the instructions written in this manual;
- That the safety rules and the laws about this subject are respected;
- That gas connections are tightness tested.

Switch on the machine following the user manual instructions controlling the burner lighting on and the flame aspect.

Do a gas test with the volumetric method. Using the gas regulator, control how much gas was used in a fixed time unit: this value must be compared with the values in the tables.

15. HUMID AIR AND BURN GAS EXHAUST

The humid air and burns gas exhaust system must be realized following the rules in force.

To avoid lack of humid air and noise, the exhaust joints to the outside must be made tight with high temperature resistant material (filler, putty, silicone preparation).

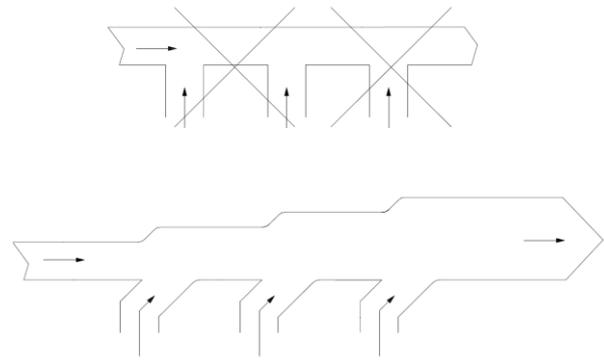
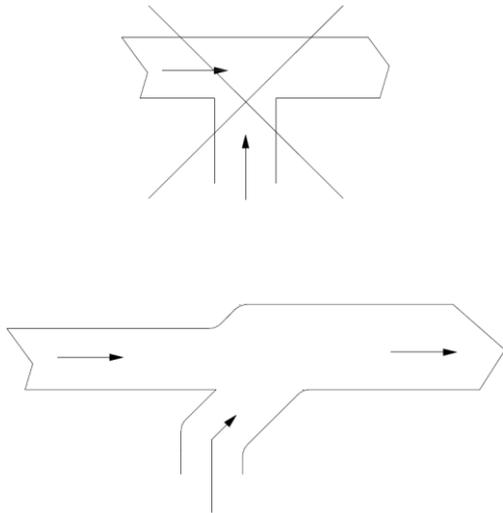
To avoid leakage, don't use spiral ducts: use straight tubes therefore. The material used must be compatible with the exhaust temperatures of the machine. Gas heated tumble dryer are B22 equipment, it means they are gas equipment which depend on an aired room without any wind protection device with blower behind the burning room.

Dryer burned gas must be brought outside through a chimney.

Burnt gas and humid air pipe must be the shortest possible one and it must be rising to the exhaust chimney. To reduce load losses, don't use curves at 90 °, preferring two 45 ° curves.

A condenser drain must be provided in the lowest point. This drain derivation must observe local rules of water drain connection.

In case of a manifold, don't use "T" connections and consider the correct value of the manifold section. If necessary, increase the manifold section.



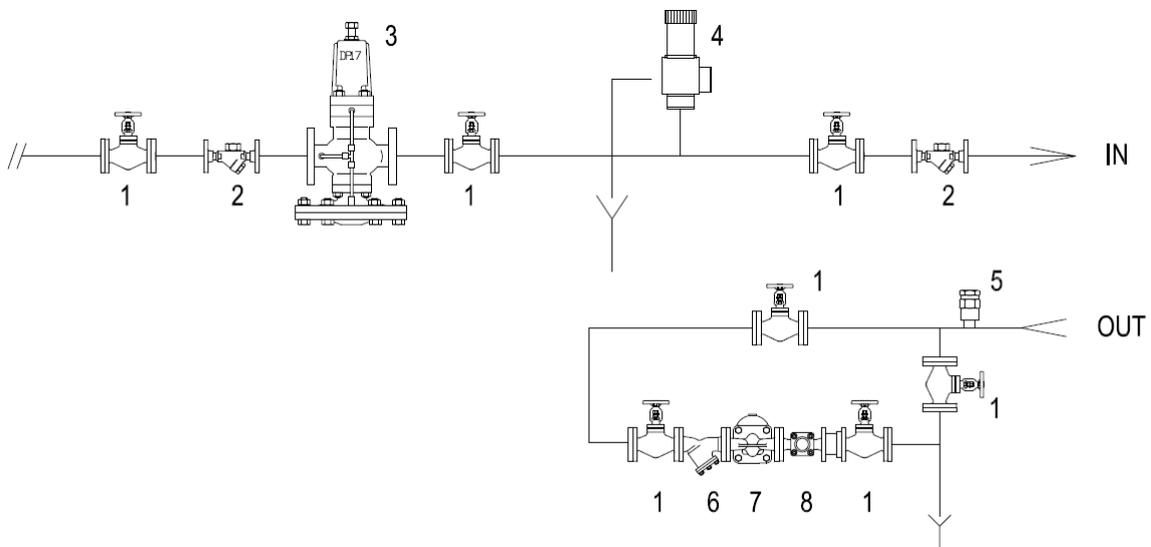
The dryer is equipped with a suction fan that produces its typical noise while working. To reduce the noise level, a muffler can be installed on the drain (it can be found in a specialized shop).

The manifold for multiple machines can't be done for gas machines.

For machines with electric or steam heating it is possible to foresee a collector: do not perform "T" connections and consider the correct value of the manifold section. If necessary, increase the manifold section.

16. STEAM CONNECTION

Only for steam-heated fryers, personnel in compliance with the national and local rules in force must perform a connection. Steam must satisfy the minimum requirement written in the technical data sheet; all component in the system must be certified. The steam system must be realized following the below diagram:



Elements are identified in the system as below:

- 1 On – Off Valve;
 - 2 Filter;
 - 3 Pressure reducing valve (if necessary);
 - 4 Safety valve
- IN) Machine steam exchanger inlet



ATTENTION!

In order to be efficient, the safety valve must be of an adequate size to provide to the maximum steam system rate.

- 5 Vacuum breaker valves
 - 6 Filter
 - 7 Inverted bucket steam trap
 - 8 Flow indicator
- OUT) Machine steam heater outlet



ATTENTION!

Drying productivity depends on the steam heater efficiency.

Dryer can work within the steam pressure range referred in the technical data sheet, anyway lower is the pressure, poorer are the machines performance. In order to avoid too much longer drying time, the pressure should be at least 5bar.



ATTENTION!

Open slowly the shut-off valve (1) to minimize pressure shocks effects.



ATTENTION!

Electric valves MUST NOT intercept steam line nor pneumatics for temperature adjust. Machine damper already does the thermoregulation. The use of valves shorten the life of the exchanger and the warranty automatically lapse.

17. COMPRESSED AIR CONNECTION

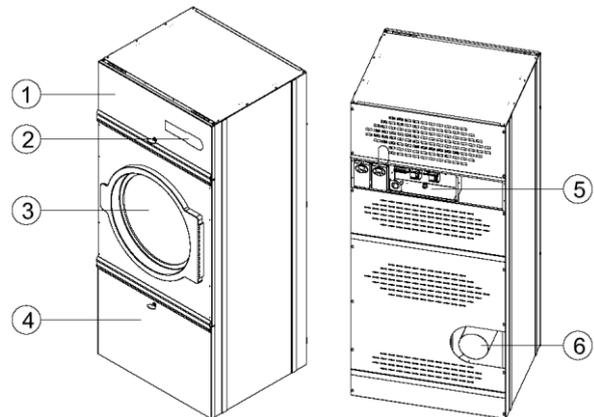
Connection to a compressed air system is necessary for some dryer models: check the equipment data sheet.

Qualified personnel in compliance with national and local rules in force must perform system.

Connections between system and dryer must be tested tightly; it is suggested to use a leak finder spray. In case of leaks, stop them.

18a. 10/34 MACHINE DESCRIPTION

The dryer is characterized by some elements that must be known before using the machine.



The point no. 1 identifies the heater door. In case of service, the door can be opened using the plastic key supplied with the machine, inside the documents. Only competent and specialized personnel are allowed to access to heater.

The point no. 2 identifies the control board area, which can be electronic (microprocessor) or electro-mechanical (double timer).

The point no. 3 identifies the door of the dryer.

The point no. 4 identifies the filter door. It must be opened every time the filter needs to be cleaned. Only specialized and competent personnel must allow the access to the filter.

The point no. 5 identifies the electronic connection box and apart of the electric system. Only competent and specialized personnel are allowed to access to the electric board.

The point no. 6 identifies the humid air exhaust (always) and the burn gas exhaust (in case of gas-heated machines).



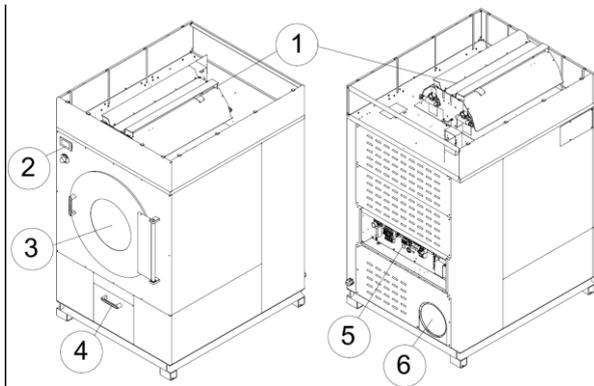
ATTENTION!

Air intakes on the machine back must be

always free. The air passage must not be limited in any way.

18b. 55/75 MACHINE DESCRIPTION

The dryer is characterized by some elements that must be known before using the machine.



The point no. 1 identifies the heater. Only competent and specialized personnel are allowed to access to heater.

The point no. 2 identifies the control board area, which can be electronic (microprocessor) or electro-mechanical (double timer).

The point no. 3 identifies the door of the dryer.

The point no. 4 identifies the filter door. It must be opened every time the filter needs to be cleaned. Only specialized and competent personnel must allow the access to the filter.

The point no. 5 identifies the electronic connection box and apart of the electric system. Only competent and specialized personnel are allowed to access to the electric board.

The point no. 6 identifies the humid air exhaust (always) and the burn gas exhaust (in case of gas-heated machines).

19. PREPARE THE LINEN

Dryer must be loaded following data written on the serial number plate: the dryer must not be loaded with a weight exceeding the nominal load written on the serial number plate.

Before deciding the most adequate program, separate the linen into groups, which should be homogeneous for kind of fabrics or fibres, in order to reach a uniform drying inside the drum.

Avoid loading dripping linen: clothes must be spin-dry before.

Always be sure that measuring caps or other object are not among the linen.

Be sure that during washing, softeners and other similar products would be correctly used.

Before loading the dryer, always check that the label shows the authorization for tumble dryer (and that the linen has been water treated); always stick to linen manufacturer indication.

Here below the meaning of the most important international symbols:



Normal drying temperature



Low drying temperature



Do not tumble



ATTENTION!

Do not use the machine if chemical products were used to wash.

Do not use the machine in case of self-igniting fabrics.

Linen to be dried must not have been in contact with dangerous substances such as explosives, detonating or flammables.

In case of linen soiled with cooking oil, acetone, alcohol, petrol, kerosene, stain removers, turpentine, wax and substances to remove wax, it must be washed in hot water with an enough quantity of detergent to completely remove these substances. This linen must be well rinsed and aired before to be dried.

Subjects such as foam /latex foam, shower caps, waterproof textiles, items with at least one side of rubber, garments or pillows with latex foam parts, and each fabric containing rubber parts, must not be dried.

Do not dry linen that has not been washed before.

Be sure that softener and similar products are used in compliance with their instructions.

Check the padded garments: do not dry damaged padded garments.

Close zippers; button the down jackets, ties ribbons and laces. Empty the pockets.

Metallic elements such a buckles, hooks, closures, must be wrapped in a cloth to

protect the dryer drum from scratches and shocks, which could also damage the linen itself.

20. START A PROGRAM

Switch on the main switch to supply the machine.
In case of steam heated machines open the gate valve to let the steam enter. To limit water hammering, open the gate valve slowly: from close to open position in one minute.
In case of gas heated machine open the gas interceptor valve.

Be sure that the emergency stop button (on the model equipped with this option) is in the correct position and that it has not been activated during last working cycle or during the transport.



ATTENTION!

Before starting the machine, safety devices must always be tested (see the corresponding paragraph).

Before loading the machine, be sure that the drum is completely empty.
The machines must be loaded with homogeneous clothes and with a weight not exceeding the limits on the data sheets. After loading the machines, close the door.



ATTENTION!

Before closing the door, be sure that pieces from linen do not stay closed between the door and the dryer front panel.

After the door is closed, on the display compares the selecting cover.

In every cover there are icons to select the programs:



To select the programs it is necessary to touch the icons.

To visualize other programs in the memory, scroll the display, or touch the arrows on the two sides.

When a program is selected, its name and its position in the list are displayed (the name can be modified: see the relative paragraph), its storage and characteristics,

Example:



The following description shows the programs parameters that can open on the preview phase:

DRYER: TEMPERATURE AND TIME

Are the temperature of drying and the time of the dryer cycle.

COOLING

The last part of the drying cycle is made without warm air (cooling cycle) to be sure that the items inside are not damaged. The panel shows the cooling temperature and the duration of the cooling cycle. The machine will complete the cycle as soon as the first of this set point is reached.

POWER LEVEL

The heating power level is activated during the dryer phase (only for machines that provides it).

The dry heating power are three:

- level 1: minimum power
- level 2: medium power
- level 3: maximum power

The level must be selected according to the kind of fabric to be dried. Higher is the selected level, quicker will be the temperature increasing inside the drum.

DRUM SPEED

It is the speed drum spin (only for the machines that has the optional of speed regulation)

FAN SPEED

It is the speed spin of the vacuum fan (only for machines equipped of speed regulation).
The selection of the fan speed is correlated with the drum air speed: the higher the selected level, the quicker the temperature increases inside the drum.

When the desired program is displayed, press the START key to start.



ATTENTION!

For a correct ironing cycle, the selected program should assure a 10-20 %of linen residual humidity at the end of the cycle.



ATTENTION!

In case of damages or working anomalies, switch off the dryer and call the authorized service center.



ATTENTION!

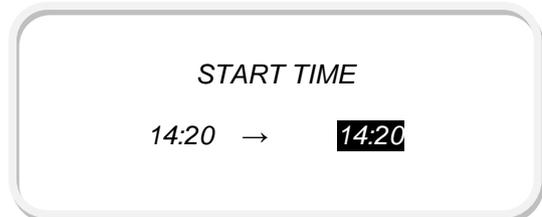
At the end of the program, the linen must never be left inside the machine: it may occur a phenomenon of spontaneous combustion.

21. PROGRAM START DELAYED

If you wish to start a delayed program, proceed as described below, and select the program. After the selection, instead of pressing START, press the clock icon:



It is displayed the following screen:



The time on the left is the current one, on the right the starting time is flashing.

The start can be delayed at maximum for 24 hours.

After you settle the started hour, press START.

Below the name of the program, a countdown shows how many hours, minutes and seconds are missing to the automatic start.

The countdown can be stopped at any time by pressing the key STOP or MENU.

Once the countdown ends, the cycle starts automatically.

If the door is opened during the countdown and nobody close it, when the countdown ends the machine stays in pause (see the appropriate paragraph).

22. PROGRAM PAUSE

While the program is running, it can be temporary or definitely interrupted.

Pressing the key START / PAUSE and the program is temporary interrupted.

The display shows:



ATTENTION!

When the door is open during a dryer pause, please note that the linen temperature could

be very high!

23. PROGRAM STOP

The program can be definitely interrupted at any moment, just pressing the STOP key:



ATTENTION!

Never stop a tumble dryer before the drying program ending, unless all the items are extracted and hung out to cool them down quickly.



ATTENTION!

Do not leave the hot linen inside the stopped machine: you could run into a phenomenon of spontaneous combustion.

24. PROGRAM STEPS

Two steps compose the drying program: heating and end cooling.

Each one of these two steps has two characteristic values: temperature and time.

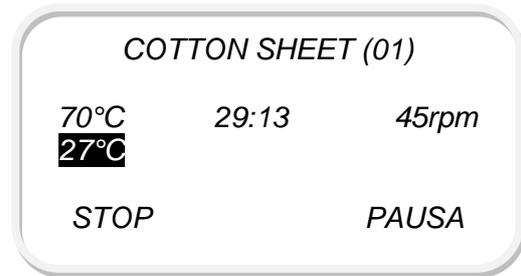
During the heating step, the machine is drying for a certain time at the fixed temperature.

During the cooling time, the machine cools the linen for either the fixed time or when it arrives at the fixed temperature: the step finishes when one of the two parameters is reached.

While the program is running, it is possible to check all the fixed parameters.

During the heating step, the set point temperature is always highlighted (in our example: 70°C): the real drum temperature is flashing below (in our example 27°C).

On its right it is indicated the time remaining to the end of the heating step (in our example: 49' and 59").



The final part of the program is a not heated cycle (cooling step) to ensure the linen will not be damaged.

During the cooling cycle, the set point temperature is always displayed and the real drum temperature flashes on the above line.

A buzzer that play for 10 seconds indicates the end of the cycle. The display shows the end of the cycle.

In case the STOP key is not pressed or the door is opened, if the no wrinkle function is on (look to the relative paragraph), the drum will start to turn again following the set value.

No wrinkle step can be interrupted pressing the STOP key or opening the door. Anyway, this step will stop at the programmed time or at the end of the programmed length.

NOTE: you can add a previous drying step to the program activating the INITIAL COOLING function.

NOTE: by the key ► it is possible to activate a rapid advance that allow stopping the heating step passing directly to the cooling step. Ask for this function to manufacturer after Sales Service.

25. END OF A WORKING DAY

At the end of the working day, the dryer must be put at the end of the cycle and switched off: the drum must be emptied and cleaned.

Close all the energy supplies to the dryer using the appropriate line switches: electricity, gas, steam and compressed air.

The dryer door must be left open.

26. PARAMETERS MODIFICATIONS DURING THE CYCLE

While the program is running, the parameters can

be modified: these changes are not saved.
To modify a program while it is running, press the icon of the parameters that you wish to change and modify it. It is not necessary to do anything else, after a couple of seconds; the views will revert to the normal sequence. The modifications can be done at any time in every phase of the cycle.



ATTENTION!

Only trained personnel must operate program modification.

27. MANUAL CONFIGURATION

Cycle can run also in a manual configuration: when the linen was loaded, set the main drying parameters.

To perform this program, select the icon "MANUAL", set the required data and press START.

The inserted data remains in the memory like default data for the following use of the manual program. During the cycle, it is possible to modify the parameters, like in the case of standard programs (look at the relative paragraph).

The motor times of the manual program are 40 seconds of spin and 5 seconds of pause.

28. SAVED PROGRAMS

The machine is already set with 30 configured programs. In the next page, a table is showing each program parameter.

Programs can be freely modified as explained in the relevant paragraph.

In case of dryers equipped with reversing drum option, the default reversing times are:

- Rotation to the right: 40 seconds
- pause: 5 seconds
- Rotation to the left: 40 seconds

Rotation and pause times can be modified (see

the relevant paragraph).

In case of machine equipped with other options, the default parameters are the same as in all the programs:

- heating power: level 3
- Drum speed: 40 rpm
- Fan speed: speed 2



ATTENTION!

The temperature to be used must comply with the temperature indicated on the garments manufacturer instructions label.



ATTENTION!

Yellow stains on the linen means that the detergent is not well rinsed or the linen dried to a temperature higher than the one allowed!



ATTENTION!

Wrinkles on dried linen can be caused by a too much longer waiting time after the program end. If this event occurs often, the no wrinkle cycle should be activated.



ATTENTION!

Significant difference in the thickness of the fabrics (caused by stitching, for example) may cause an uneven drying.



ATTENTION!

Avoid drying garments with plastic buttons or fabrics with synthetics stitching. High temperatures may cause the plastic to melt and consequently the drum could be soiled.

PROG.	TYPE	DRYING		COOLING	
		°C	Min.	°C	Min.
01	RESIDUAL HUMIDITY	90	DRY	40	3

PROG.	TYPE	DRYING		COOLING	
		°C	Min.	°C	Min.
02	RESIDUAL HUMIDITY	80	IRON DRY	40	3
03	RESIDUAL HUMIDITY	75	DRY	40	3
04	RESIDUAL HUMIDITY	60	DRY	40	3
05	TIME	50	50	40	3
06	TIME	40	50	40	3
07	TIME	90	40	40	3
08	TIME	80	40	40	3
09	TIME	70	40	40	3
10	TIME	60	40	40	3
11	TIME	50	40	40	3
12	TIME	40	40	40	3
13	TIME	90	30	40	3
14	TIME	80	30	40	3
15	TIME	70	30	40	3
16	TIME	60	30	40	3
17	TIME	50	30	40	3
18	TIME	40	30	40	3
19	TIME	90	20	40	3
20	TIME	80	20	40	3
21	TIME	70	20	40	3
22	TIME	60	20	40	3
23	TIME	50	20	40	3
24	TIME	40	20	40	3
25	TIME	90	15	40	3
26	TIME	80	15	40	3
27	TIME	70	15	40	3
28	TIME	60	15	40	3
29	TIME	50	15	40	3
30	TIME	40	15	40	3
Coin Op dryers					
HIGH	TIME	90	50	40	3
MEDIUM	TIME	80	50	40	3

PROG.	TYPE	DRYING		COOLING	
		°C	Min.	°C	Min.
LOW	TIME	70	50	40	3

29. COIN OP DRYER: HOW IT WORKS

After the program is selected, on the display appears the costs of the program that is running. If the payment system allows it, when the coins are inserted, the display shows the missing value to buy the cycle.

Only after the payment is done, press the button START to run the cycle.

If during the drying phase it is necessary to change the selected program, it is enough to push the corresponding button: the selection will be automatically updated without stopping the machine during these changes.



ATTENTION!

In case of changing while the cycle is running, if the programs values are different, credit time will proportionally modify.

If the door is opened during cycle, press the PAUSE or STOP key and the dryer will be in stand-by.

The credit time count down continues also during this pause.



ATTENTION!

If the pause is longer than 5 minutes, the credit is automatically lost.



ATTENTION!

If the door is opened during the cooling step, the cycle is definitely stopped and brought to the end. The credit is not lost, because the payment needs only to buy drying time and not cooling time. While the cooling time is running, the selected program cannot be changed.

30. HOW TO ACCES TO THE PROGRAM AREA

18

Default parameter values can be modified by entering in the user menu.

While the machine is stopped, press the icon menu “:” in the upper right.

The display shows:



Insert the 6 digits code to access in the user menu “159357”.

When the sequence is completed, on the display compares the menu list.

This display is the entry for the user programming area.

Browsing this area, you can reach the setting of:

- LANGUAGE
- DATE/TIME
- TEMPERATURE
- WRINKLE
- QUICK ADVANCE
- SWITCH OFF TOUCH
- CHANGE PASSWORD
- USB PROGRAM LOADING
- REGISTRATION
- ENERGY MENU
- PROGRAMS

For the machines equipped with payment system, the list has also:

- MACHINE NUMBER
- ZERO CREDIT TIME
- AUTOMATIC START

On the following paragraphs, description of every setting.

31. PROGRAMS

Enter into the programming area to modify setting programs or to add new ones.

Here below the programs that can be modified and their values.

PROGRAM NAME

It is the description of a program displayed during the selection and the execution. It can be maximum 16 characters long.

PROGRAM TYPE

Selecting this parameter, the user can decide to make the program working on an automatic way (deciding the residual humidity at the end of the cycle) or on a traditional way (deciding the cycle length).

- HUMIDITY
- TIME

RESIDUAL HUMIDITY AT THE CYCLE END

(Only programs with "RESIDUAL HUMIDITY")
Select the value of the residual humidity at the end of the cycle; once this value is reached, the cycle is ended:

- IRON DRY
- DRY
- EXTRA DRY

WDT T SET

(Only programs with "RESIDUAL HUMIDITY")
This area can fix the safety time for the program stop and the set point temperature for the automatic cycle.

- DRYING TIME OUT: 1' ÷ 120'
- TEMPERATURE: 0°C ÷ 90°C

N. STEP

(Only programs "TIME")
A number of heating steps (or cooling steps) can be set:

- 1 ÷ 10

STEP 1

(Only programs "TIME")
For each step that compose the cycle, it is possible to set the drying temperature and length:

- TIME: 1' ÷ 120'
- TEMPERATURE: 0°C ÷ 90°C

STEP 2 ... 10

(Only programs STEP >1)
For each step that compose the cycle, it is possible to set the drying temperature and length:

- TIME: 1' ÷ 120'
- TEMPERATURE: 0°C ÷ 90°C

COOLING TIME

It corresponds to the length of the cooling cycle at the end of the drying cycle. This time is automatically reduced if the set point cooling temperature is reached before the end of the cycle:

- 0' ÷ 30'

COOLING TEMPERATURE SET POINT

The cooling temperature determines the end of the program. If the cooling time elapse before the temperature is reached, the program will end however.

- 0°C ÷ 90°C

REVERSING DRUM

(Only machine with reversing options)

In case the machine is equipped with reversing drum option, this function can be excluded from the program.

If the parameter "WITHOUT" is selected, the drum will always turn in the same direction (right).

- WITH
- WITHOUT

DRUM RIGHT ROTATION TIME

(Machines and programs WITH REVERSING DRUM)

It is the drum clockwise turning time:

- 0" ÷ 5'

DRUM STOP ROTATION TIME

(Machines and programs WITH REVERSING DRUM)

It is the drum rotation pause:

- 1" ÷ 5'

DRUM LEFT ROTATION TIME

(Machines and programs WITH REVERSING DRUM)

It is the drum counterclockwise turning time:

- 0" ÷ 5'

DRUM SPEED

(Dryers equipped with DSC option)

It is the drum speed in revolutions per minute:

- 20rpm ÷ 80rpm

FAN SPEED

(Dryers with reversing drum and FSC fan speed control)

POWER LEVEL CONTROL

(Dryers equipped with a power level control)

This parameter allows reducing the heating power of the electric heater, in case of needs:

- MIN 1
- MED 2
- MAX 3

STARTING COOLING LENGTH

(Dryers where this function is activated)

Length of the initial cooling cycle before the drying cycle.

- 0' ÷ 30'

32. PROGRAM: LANGUAGE SELECTION

Allows modifying the language for communicating to the user.

33. PROGRAM: DATE/TIME

Allows modifying the calendar, date and time.

34. PROGRAM: ENERGY CONSUMPTION

Allows verifying all data the installer has configured on the machine during the test phase.

35. PROGRAM: NO WRINKLE

Allows activating, deactivating or modifying the no-wrinkle function.

The parameters that can be modified are the following:

- NO WRINKLE: can be:
 - o YES: no-wrinkle cycle will start after the end of the cooling cycle, if the door is not open and respecting parameters fixed below.
 - o NO: no-wrinkle cycle will not start after the end of the cooling cycle, even if the door is not open.
- END CYCLE PAUSE: it is the waiting time after the end of the cooling cycle before the no wrinkle cycle start established in minute: seconds.
- FORWARD: it is the right rotation time established on minutes: seconds during the no wrinkle cycle.
- PAUSE: how long the drum stopped

established on minutes: seconds during the no wrinkle cycle between a right rotation and left rotation time.

- BACK: it is the left rotation time established on minutes: seconds during the no wrinkle cycle.
- MAX TIME CYCLE: it is the no wrinkle length before the dryer definitely stops.

36. PROGRAM: INITIAL COOLING

Activating this function there is the possibility to define the starting time for cooling on each program: it is an introducing phase that starts when the cycle starts and that anticipate the normal heating phase.

37. PROGRAM: PAYMENT SYSTEM

On machines equipped with a payment system, some special parameters are not available in the standard version. These parameters are the ones into the ADVERTISEMENT or COIN BOX menu, plus two additional read-only parameters:

- TOTAL CREDIT: total amount of the credit, starting from the installation date.
- DAILY CREDIT: total amount of credit of the day (starting from 00:00).

38. PROGRAM: COIN BOX MENU

The "COIN BOX MENU" is available only in Coin Op dryers.

Here below, the parameter list of this menu:

- COIN: it identifies the currency that is displayed.
- TOKEN 1: it identifies the value (expressed in parameter COIN) of each impulse given to the electronic board input (terminal identified by TOKEN 1).
- TOKEN 2: it identifies the value (expressed in parameter COIN) of each impulse given to the electronic board input (terminal identified by TOKEN 2).
- DECIMALS: number of decimals shown when the price is displayed:
 - o XX: no decimal
 - o XX,X: one decimale
 - o XX,XX: two decimale
- AUTOMATIC START:
 - o if "YES": when the payment has been completed, the cycle automatically starts.

- If "NO": when the payment is completed, the cycle starts only if START is pressed.

To exit the menu or to go back to the previous program level, just press STOP one or more time.

39. EMERGENCY STOP BUTTON

In case of an emergency or that a quick stop of the machine necessary, press the emergency stop button (if present) on the machine front.

When the emergency stop button is pressed, the drum stops and the dryer turns off.

When the emergency ends, set again the emergency stop button, turning it in the direction written on it.

40. BLACK OUT

In case of black out, there is the possibility that one or more clothes inside the drum would catch fire.

In this case, open the door, unload the dryer and leave it opened.

The interrupter program number is displayed (the number one, on the example), by pressing START, it is possible to start it again.

Load the machine again and close the door: the cycle restarts from the point where it was interrupted.

41. WHAT MUST BE DONE IN CASE OF GAS SMELL

In case of smell of gas where the dryer has been installed:

- Stop immediately the program;
- Open immediately all doors and windows;
- Close immediately the valve and the gas gate valve on the front of the machine;
- Do not light on the room, matches or lighter;
- Do not smoke.

Call the installer to check the gas leak.

42. DISPLAYED WARNING

The microprocessor reports a diagnostic both in case of failures and in case of simply highlight of a

status.

Here below a complete list of displayed alarms. The manufacturer suggests anyway to call a center to solve the problem.

A buzzer also acoustically signals each one of the following alarms.

In case of a dual timer dryer, there is no possibility of warning: in case the machine should stop, ask directly to the authorized service center.

FIRE ESCAPE ALARM

It is displayed in case of risk of fire.



ATTENTION!

In this case, switch off the electricity and close immediately the hose that supplies the gas or the steam.

AIR SWITCH PRESSURE CLOSED

When the air switch pressure is closed when pushed START. This situation can be if you try to start the cycle while the vacuum is still turning.

It can be also if the air switch pressure is broken. Call for the intervention of an authorized assistance center.

INSUFFICIENT AIR DRAIN

It is displayed to identify problems during installation of the humid air drain, or a filter obstruction. Switch off the machine, open the below door and clean the filter: do not use sharpen or pointed object!

THERMIC MOTOR FAN

It is displayed if the motor fan is overheating. Switch off the machine and ask for intervention of an authorized assistance center.

THERMIC MOTOR DRUM

It is displayed if the motor drum is overheating. Switch off the machine and ask for intervention of an authorized assistance center.

STUCK COIN

It is displayed only on machines equipped with Coin Box system. It means that the credit get stuck inside the coin for more than 5 seconds. Verify the coin op box and eventually ask for the intervention of an authorized assistance center.

This alarm can be displayed also when the coin get stuck during a program is working and in a

running of credits. In this case, the cycle is completed keeping the alarm displayed. If the coin op will be unlocked, the alarm is automatically resettled.

TEMPERARURE PROBE DAMAGE

It appears if the temperature probe is broken. The machine works in the same way as per the overheating event seen before. Ask for the intervention of an authorized assistance center.

GAS DEVICE LOCKING

This signal appears only on steam-heated machines. When this message is displayed, the machine go on working, but the heating system goes in standby waiting for a reset. To restart the heating push the button RESET. Check if the steam valve is opened. If this signal repeats often, require the intervention of an authorized assistance center.

OVERHEATING

In case the temperature inside the drum is 30°C higher that the set point temperature, the display indicates the written "OVERHEATING". In this case, the heating is stopped until the temperature goes below the safety value.



ATTENTION!

In this case, the suction continues working and the drum turning to cool the linen. If this alarm is repeating very often, ask for a check to an authorized service center.

MAINTENANCE NEEDED

When the number of hours of maintenance is reached, the machine does not stop. At the first power off and the following power on the display is displayed: "MAINTENANCE NEEDED". Pressing one key, the machine starts again without any other signal. Anyway, it is necessary to call the authorized service center for the ordinary maintenance.



ATTENTION!

Risk of injures or damaging the equipment.

Qualified personnel must operate each ordinary and extraordinary maintenance intervention. All the dryer supply connections must be unplugged before any maintenance intervention on the machine.

Do not use water or stem for cleaning.

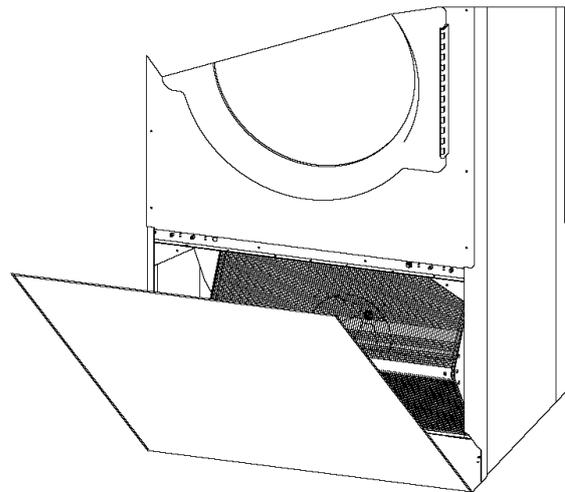
Necessary ordinary and extraordinary maintenance and their schedule are listened here below.

Avoid the fluff backlog around the dryer (this note is not necessary in case of dryer with external exhaust).

For daily cleaning, a wet and soft cloth must be used. Do not use abrasive products, abrasive sponge, solvents or metallic object.

EACH CYCLE

At the end of each drying cycle, clean the filter from fluff.

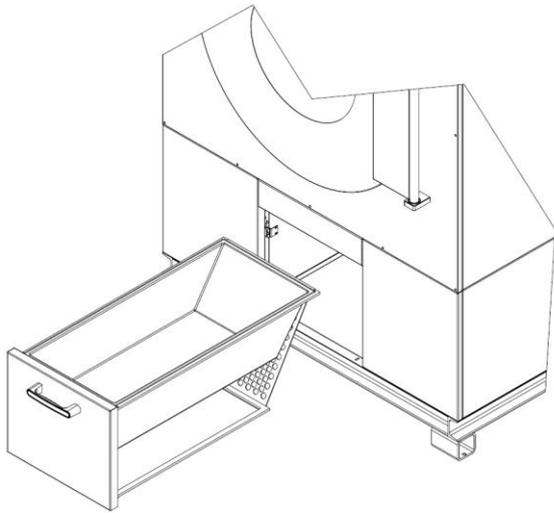


To clean the filter, open the door or pull the drawer (for some models), in order to access to the filter.

In case of model with filter door, do not remove the filter.

For model with filter drawer, empty the filter bag paying attention not to damage the net.

43. DRYER MAINTENANCE



In both cases, the fluff must be removed from the filter using hands, do not use sharpened object.



ATTENTION!

Never use the dryer without the fluff filter. If the filter is damaged, replace it immediately.

EACH WEEK

Check the drum cleanliness condition: there must be no deposit on the drum. Be sure that there are not stains due to melted nylon seams, buttons and other. Verify the integrity of the inside door.



ATTENTION!

To clean the drum, do not use a high pressure or a water continuously jet.
The drum must be cleaned with a dried and soft cloth.

EACH THREE MONTHS

Check the fan and the suction cleanliness. Check the drum and the ventilator motor cooling fans cleanliness.

EACH YEAR

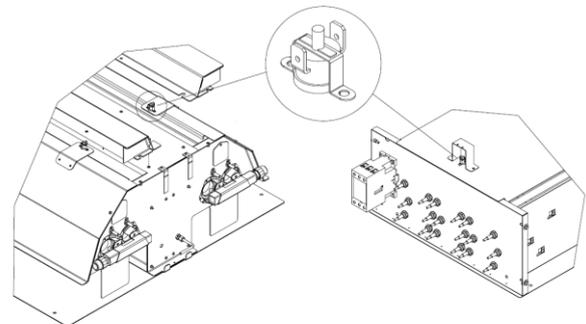
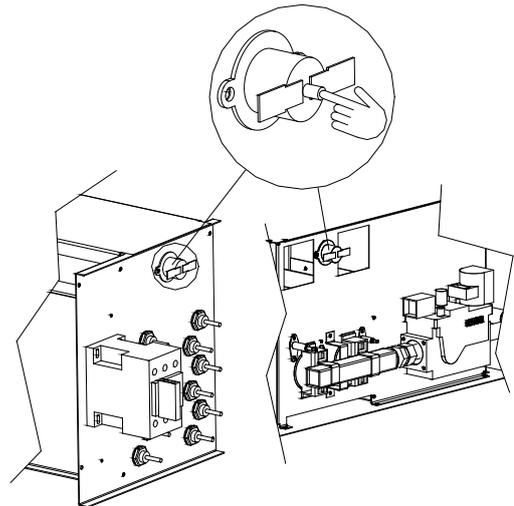
An authorized service center must be contacted to:

- Cleaning of the burner or the heating element from fluff and other
- Cleaning internal side of the dryer
- The leakage the pneumatic circuit
- The leakage of the gas valve

WHEN NECESSARY

In case the temperature inside the burner reaches too much higher values, a safety thermostatic paste stops the heating system: the drum continues to rotate, but the heating system stay deactivated.

The thermostatic paste needs to be manually rearmed, in this case, it is necessary to turn off the dryer, cut all the energy supply, open the above frontal door and press the brown colored push button near the thermostatic paste.



If the problem should repeat, switch off the dryer and call the authorized service center.



ATTENTION!

In case of tilting dryers, before starting any maintenance service, ensure that the air system is completely discharged and no pneumatic movement can be activated, even when if there is no electricity supply.

In case of maintenance with mechanism,

which are not in the rest position, be sure to mechanically and safety block the pneumatic mechanism.

44. DRYING PROBLEMS

In case of not satisfying drying results, please check the following table to find a solution to the most usual problems.

PROBLEM	SOLUTION
The linen presents yellow stains.	Check if the linen is correctly rinsed and all the soap is washed away. The PH value must be included between 5 and 6.
The linen is turned yellow.	Check the drying temperature matches with the linen temperatures: the drying temperature is too high
At the end of the cycle, linen is still wet	Check the selected temperature; it could be too low. Check the air suction system, it could be blocked and its efficiency limited. Check the exhaust system: it could be blocked avoiding the air to pass through the linen.
At the end of the cycle, linen is hardened	Check the cycle temperature, especially in case of linen fabrics. If temperature is too high, the fabrics may harden.

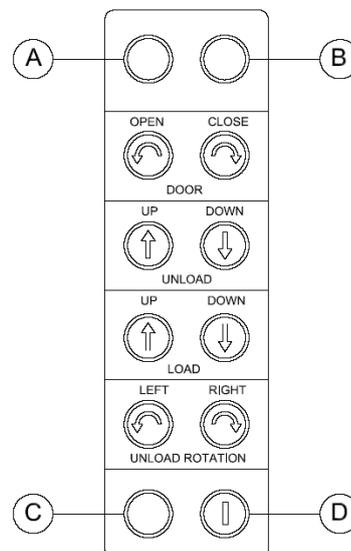
PROBLEM	SOLUTION
At the end of the cycle linen is felted	Check clothing label and their conformity with the dryer use, especially in case of wool or mixed wool fabrics. To avoid a complete drying is suggested.
The drum is scratched. Some clothes are damaged, torn	Metallic object like buckle, hook, and fastenings must be covered with a cloth before drying, so the drum is protected from scratches or collisions, which could also damage the linen.

45. TILTING DRYER: USE

On dryers equipped with a tilting forward and/or backward system, consider also following remarks because controls can be given using a remote keyboard.



When the machine is in the tilting step, or the pneumatic door is opened, the user must stay far from the machine and control the dryer using the remote keyboard.



Before starting the tilting, always wait for the end of the running cycle. To activated or deactivated the keyboard use the key-switch (D).
 When the keyboard is on, the microprocessor is off. When the keyboard is on, the green light is also on (A).

LOADING (for machines equipped with this option)

Switch on the keyboard using the key. To open the door press at the same time the activation key (below at left) and the "DOOR OPEN" key. When the door opening is completed, make the dryer tilting backward pressing at the same time the activation key (C) and the "LOAD UP" key. When the loading is completed, bring the dryer in the starting position pressing at the same time the activation key (C) and the "LOAD DOWN" key. Close the door pressing at the same time the activation key (C) and the "CLOSE DOOR" key. Switch off the keyboard using the key (D).

UNLOADING

Switch on the keyboard using the key (D). To open the door press at the same time the activation key (C) and the "DOOR OPEN" key. When the door opening is completed, make the dryer tilting forward pressing at the same time the activation key (C) and the "UNLOAD DOWN" key. When the machine is in the unloading position, the linen can exit easily using the slow alternate rotation of the drum (right and left): to make the drum rotate, press at the same time the activation key (C) and the "UNLOAD ROTATION" key (RIGHT and/or LEFT). When the unloading operation ends, bring the dryer to the original position pressing at the same time the activation key (below – left) and the "UNLOAD UP" key. Close the door pressing at the same time the activation key (C) and the "CLOSE DOOR" key. Switch off the keyboard using the key (D).

46. SAFETY DEVICE CONTROL

After the machine is turned on, before starting the drying cycle, it is necessary to control the safety device correct working. The user must always respect the following procedures:

ACTION SEQUENCE	REACTION
Starting a drying cycle and open the door...	... the dryer must stop and stay in pause.

ACTION SEQUENCE	REACTION
Starting a drying cycle and open the filter door...	... the dryer must stop and stay in pause.
Press (if present) the emergency stop button	... the drum must stops and the dryer must turn off.
Just supplied the electricity to the dryer the machine must be in stand-by waiting for a command (drum stopped, fan and heating deactivated)



ATTENTION!

Safety devices must always be tested when the machine is switched on and before starting the working shift.

47. SCRAPPING

When the machine life cycle arrives to the end, please proceed with the machine scrapping following the country rules, keeping separate the metallic, the plastic, the glass, the electric/electronic parts.

Under Article. 13 of Legislative Decree 25 "in July 2005, n. 151 "Implementation of Directives 2002/95 / EC, 2002/96 / EC and 2003/108 / EC on the use of hazardous substances in electrical and electronic equipment as well as waste disposal"



The above symbol on the appliance or on the package means that at the end of its life cycle this product must be collected separately from other waste material.

The appliance waste separated collection is managed and organized by the producer. The user who wants to dismantle that appliance must contact the producer and follow the system it decides to take when the appliance reaches the end of its life.

A correct waste separation avoid dangerous

impact on the environment and make easier the material recycling.
Unlawful disposal may cause application of administrative sanction, following the rules in force in the Country where the dryer is installed.

**ATTENTION!**

In case the machine fall into disuse, before dismantling the dryer, make the door lock out of service to avoid that somebody close himself inside risking his life.

Electric supply cable must be disconnected and dismantled.

48. WARRANTY CONDITION

For the warranty condition, check the manufacturer price list.

**ATTENTION!**

To benefit the manufacturer warranty conditions, the user must follow carefully all instructions described on this manual and in particular:

- Work always respecting the dryer use limits;
- Maintenance must be always correctly operated;
- The dryer must be used only by well trained personnel,
- Use only original parts.

49. GAS PRESSURE

Only in case of gas heated dryers, please check the nominal pressure data and the nozzle dimension in the next tables.

COUNTRIES TABLE - CATEGORIES – NOMINAL PRESSURE – MIN/MAX PRESSURE					
Category	COUNTRIES	Gas	Nominal pressure	Max pressure	Min pressure
			(mbar)	(mbar)	(mbar)
II2H3B/P	AL, BA, BG, HR, MK, UA	G20	20	20	17
II2H3B/P	DK, FI, SE, BG, EE, LV, LT, CZ, SI, TR, HR, RO				
I2H	NO				
I2E	LU, PL				
I2EK	NL				
II2H3+	ES, GB, GR, IE, IT, PT, SK				
I2Er	FR, BE				
II2ELL3B/P	DE			18	
II2H3B/P	AT, CH				
I2H	HU				33
I2L	NL			G25	25
I2Er	FR, BE				
II2ELL3B/P	DE	20	25	18	
I2EK	NL	G25.3	25	30	20
I3B/P	CY, MT, NL, NO, HU	G30/G31	28-30	35	25
II2H3B/P	AL, BA, BG, HR, MK, UA				
II2H3B/P	DK, FI, SE, BG, EE, LV, LT, CZ, SI, TR, HR, RO				
I3B/P	PL		37	45	
II2H3B/P	AT, CH		50	57,5	42,5
II2ELL3B/P	DE		28-30/37	35	25
I3+	LU, FR, BE			35/45	20/25
II2H3+	ES, GB, GR, IE, IT, PT, SK				

10/14/18 Kg	COUNTRIES	Nozzle pressure [mbar]	Nozzle Diameter 1/100	Power kW
G20	AL, BA, BG, HR, MK, UA DK, FI, SE, BG, EE, LV, LT, CZ, SI, TR , HR, RO NO NL ES, GB, GR, IE, IT, PT, SK DE AT, CH HU	20	290	29,93
	FR, BE	20	260	29,93
	LU, PL	20	290	29,93
G25	NL	25	300	29,52
	FR, BE	25	300	29,52
	DE	20	320	29,58
G25,3	NL	---	---	---
G30/31	CY, MT, NO AL, BA, BG, HR, MK, UA BG, EE, LV, LT, CZ, SI, TR , HR, RO PL AT, CH	29	185	29,08
	DK, FI, SE	29	185	29,08
	NL	29	185	29,08
	LU, FR, BE	29	185	29,08
	DE, HU	50	165	30,04
* = pressure regulator not used : screw completely screwed down				

23/34 Kg	COUNTRIES	Nozzle pressure [mbar]	Nozzle Diameter 1/100	23 Power kW	34 Power kW
G20	AL, BA, BG, HR, MK, UA DK, FI, SE, BG, EE, LV, LT, CZ, SI, TR , HR, RO NO NL ES, GB, GR, IE, IT, PT, SK DE AT, CH HU	20	270	38,91	51,88
	FR, BE	20	240	38,91	51,88
	LU, PL	20	270	38,91	51,88
G25	NL	25	290	38,79	51,72
	FR, BE	25	290	38,79	51,72
	DE	20	300	38,2	50,93
G25,3	NL	---	---	---	---
G30/31	CY, MT, NO AL, BA, BG, HR, MK, UA BG, EE, LV, LT, CZ, SI, TR , HR, RO PL AT, CH	29	175	38,41	51,21
	DK, FI, SE	29	175	38,41	51,21
	NL	29	175	38,41	51,21
	LU, FR, BE	29	175	38,41	51,21
	DE, HU	50	150	38,35	51,13
* = pressure regulator not used : screw completely screwed down					

55 Kg	COUNTRIES	Nozzle pressure [mbar]	Nozzle Diameter 1/100	Diaphragm primary air	Diaphragm secondary air	Power kW
G20	AL, BA, BG, HR, MK, UA DK, FI, SE, BG, EE, LV, LT, CZ, SI, TR , HR, RO NO LU, PL NL ES, GB, GR, IE, IT, PT, SK FR, BE DE AT, CH HU	15,5	405	SI	NO	105
G25	NL FR, BE DE	15,5	405	NO	NO	105
G25,3	NL	15,5	405	NO	NO	105
G30/31	CY, MT, NL, NO, HU AL, BA, BG, HR, MK, UA DK, FI, SE, BG, EE, LV, LT, CZ, SI, TR , HR, RO PL AT, CH DE	27	255	NO	SI	105
G30/31	LU, FR, BE ES, GB, GR, IE, IT, PT, SK	27*	255	NO	SI	105
* = pressure regulator not used : screw completely screwed down						

75 Kg	COUNTRIES	Nozzle pressure [mbar]	Nozzle Diameter 1/100	Diaphragm primary air	Diaphragm secondary air	Power kW
G20	AL, BA, BG, HR, MK, UA DK, FI, SE, BG, EE, LV, LT, CZ, SI, TR , HR, RO NO LU, PL NL ES, GB, GR, IE, IT, PT, SK FR, BE DE AT, CH HU	13	500	NO	NO	135
G25	NL FR, BE DE	13	500	NO	NO	110
G25,3	NL	27	300	NO	SI	140
G30/31	CY, MT, NL, NO, HU AL, BA, BG, HR, MK, UA DK, FI, SE, BG, EE, LV, LT, CZ, SI, TR , HR, RO PL AT, CH DE	27	300	NO	SI	140
G30/31	LU, FR, BE ES, GB, GR, IE, IT, PT, SK	27*	300	NO	SI	140
* = pressure regulator not used : screw completely screwed down						

