Model	From Machine No.
ED260	2,215,001
ED340	2,240,001
ED460	2,265,001
ED660	2,290,001
ED900	2,480,001
ED1250	2,470,001

Installation Instruction Manual for ED dryers

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EN
Installation

ED260/ED340
ED460/ED660
ED900/ED1250

Code No. 549758
Rev. nº 14/0719

CONTENTS

IMPORTANT SAFETY INSTRUCTIONS

WARNING – Risk of Fire:

WARNING – To reduce the risk of fire, electric shock, or injury to persons when using your appliance, follow basic precautions, including the following:

- Clothes dryer installation must be performed by a qualified installer.
- Install the clothes dryer according to the manufacturer's instructions and local codes.
- Do not install a clothes dryer with flexible plastic venting materials. If flexible metal (foil type) duct is installed, use duct that has been investigated and found acceptable for use with clothes dryers. Flexible venting materials are known to collapse, be easily crushed, and trap lint. These conditions will obstruct clothes dryer airflow and increase the risk of fire.
- To reduce the risk of severe injury or death follow all installation instructions.

SAVE THIS INSTRUCTIONS.

WARNING!

TRANSPORT, INSTALLATION, INSPECTION, MAINTENANCE, REPAIR OR MODIFICATION ROUTINES ON GIRBAU EQUIPMENT

1. The actions described in these instructions are strictly reserved for contractually **AUTHORISED TECHNICAL SERVICES** (**ATS**) and personnel who have successfully completed training by Girbau SA.
2. The company responsible for the Authorised Technical Service accepts full liability for the work done and any possible consequences that may derive from it.
3. Any actions carried out by personnel who are not authorised by the manufacturer will be considered to be improper and will result in the automatic voiding of the machine's warranty.
4. The manufacturer will not accept responsibility for any physical and/or material damage caused by actions performed on the machine undertaken by unauthorised personnel.
5. Do not store or install the machine in areas exposed to the ELEMENTS or where it may be splashed by water.
6. The room where the machine is located MUST comply with the environmental conditions (air venting, temperature, humidity, etc.) specified in the technical specifications table. NEVER INSTALL THE MACHINE IN ENVIRONMENTS where it will be splashed with water or where there is a very high level of humidity in the atmosphere.
7. All installations required for the proper operation of the machine MUST be carried out by a duly accredited Registered Installation Contractors, in compliance with the legal regulations applicable in the country of use.
8. Once the corresponding operation has been performed, the ATS staff must perform the final machine inspection.
9. Avoid carrying out any action on the machine without having first read and understood the machine's Installation and Operating Manuals, paying special attention to the Safety Instructions.
10. In any action that modifies the values of the machine's specifications plate, it should be borne in mind that:
    - It is the responsibility of the ATS to check that the external installation for the machine has been modified and adapted to the new requirements, particularly to those regarding ducting and electrical protection.
    - It is the responsibility of the ATS to update the specifications plate, in accordance with the new operation conditions, once the final machine inspection has been performed.

11. Carrying out transport, installation, inspection routines, adjustments, maintenance, repairs, cleaning or any work on the machines without applying safety measures or having the necessary technical know-how can lead to **ELECTRICAL SHOCK OR SERIOUS ACCIDENTS.**
12. When tools designed for specific transport, installation, maintenance and repair routines are available, their use is compulsory in order to avoid unnecessary risks.
13. Before carrying out any procedures on machines fitted with pneumatic or hydraulic circuits:
    - Make the machines COMPLETELY SAFE by following the instructions set out in the corresponding Manuals or by wedging them with wooden blocks where necessary.
    - Bear in mind that working on a component without having previously understood the role that it performs in the circuit as a whole involves a high risk of suffering a **SERIOUS ACCIDENT**.
14. **BEFORE CARRYING OUT ANY** inspection routine, adjustment, maintenance, repairs, cleaning or any work on the machine, DISCONNECT IT FROM ALL THE ENERGY SOURCES.
    - **COMPLETELY** disconnect the machine from the power supply and prevent the possibility of accidental reconnection by mechanically locking the automatic external switch and/or the switch breaker. Stopping the machine with the NORMAL STOP key or push-button is not enough.
    - Disconnect the electrical connection of any circuit external to the machine; for example external dosing equipment, external vending units, folders or ironer feeders. These circuits are independent of the supply to the machine.
    - Before beginning any procedure on machines equipped with an inverter or equipment with capacitative loads, wait for at least five minutes (10 minutes on equipment with a power rating greater than 25 kW) after the electrical disconnection, to eliminate risk of residual voltage.
    - Close and mechanically lock the manual WATER, GAS, STEAM, THERMAL OIL, COMPRESSED AIR, etc. supply valves.
    - Check that no part of the machine is at an excessively high temperature and that no parts are in movement through inertia.
15. **DANGER!** Some fault localisation procedures require checking at different points of the electric circuit with the machine connected to the power supply and other supply sources. When carrying out these procedures, respect the following instructions:
    - The appropriate checks must be carried out by ONLY ONE PERSON.
    - During these procedures, ONLY remove the protective covers from the electric circuit and/or the inverter. Never remove the covers protecting the moving parts of the machine.
16. **THE MANUFACTURER ACCEPTS NO RESPONSIBILITY IF THESE SAFETY INSTRUCTIONS AND ALL THE INFORMATION IN THE CORRESPONDING MANUALS ARE NOT FOLLOWED. KEEP THESE INSTRUCTIONS IN A SAFE PLACE.**

SYMBOLS USED IN MACHINE LABELLING

Electrical risk
Protective guard for elements carrying an electric current.

High temperature risk
Handle with caution.
Use adequate protection.

Mechanical risk
Protective guard for moving parts.

Risk of inhaling harmful or irritant vapours
Keep the doors/covers closed.
Use adequate protection.

Flame risk (only on some machines)
Protective guard for flame.

Risk of falling
Use proper access and safety methods.

Access prohibited

Refer to instruction manual/booklet

SYMBOLS USED IN THIS MANUAL

Symbol used to highlight a possible HAZARD, WARNING or NOTE.

This symbol is used to emphasise a particular explanation.

TRANSLATION OF THE ORIGINAL MANUAL

1. GENERAL DESCRIPTION OF THE MACHINE

This INSTALLATION, OPERATION AND MAINTENANCE manual applies to dryer models ED240, ED340, ED460, ED660, ED900 and ED1250 in the different heating and control systems.

1.1. Dryer description

The essential features of the dryer are as follows:

1.1.1. Construction features

- Front-loading rotary dryer.
- Stainless steel drum.
- Drum with large perforation area consisting of pressed holes that aid the distribution of the drying air flow.
- Drum with rear axle supported by double bearings.
- Double glazed drum access door with air cavity (an option without air cavity is also available).
- Lint filter that has a large surface area and is easy to access for cleaning.
- Rust resistant external structure.
- The drum rotation by an asynchronous AC motor controlled by an inverter.
- Suction by an asynchronous AC motor controlled by inverter for ED900 and ED1250 models only.
- Drying flow output adjustable with variable opening flap.
- Three possible heating options:
    - Electric heaters
    - Atmospheric burner with gas input controlled by double winding solenoid, Class B and Class J (in accordance with EN1020).
    - Pressurised steam exchanger.

1.1.2. Functional features

- Dryer operation controlled by microprocessor.
- Control of the temperature, drying time, drum rotation speed and linen wetness.
- Suction motor speed control on ED900 and ED1250 models only. This motor is operated by an inverter, which makes it possible to adjust the ventilation to the particular characteristics of each facility and optimise its performance.
- Operation of the machine adaptable to the possibilities of the installation and the needs of the user.
- Motor rotation safety control.
- Transmission by belt between the motor and the drum shaft.
- Detection of air flow losses by pressure switch on models ED260, ED340, ED460 and ED660; and by mechanical pressure switch on models ED900 and ED1250.
- Inverter activated motor controlled by the microprocessor. This technology takes advantage of all the features offered by inverter technology, resulting in a significant reduction in noise, vibration and wear on all the machine components and the matching of the drum rotation speed to the specific needs of each program.
- Multiple controls that ensure the safe use of the machine.

1.2. Machines with gas heating. Diagram and description of the burner

1.2.1. Models ED260, ED340, ED460 and ED660

Diagram of the burner (Fig. 1.1)

A.....Connection point
B.....Control
C.....Solenoid valve
D.....Injector
E.....Venturi pipe
F.....Ducting
G .....Ignition electrode
H.....Ionisation electrode
J .....Burner

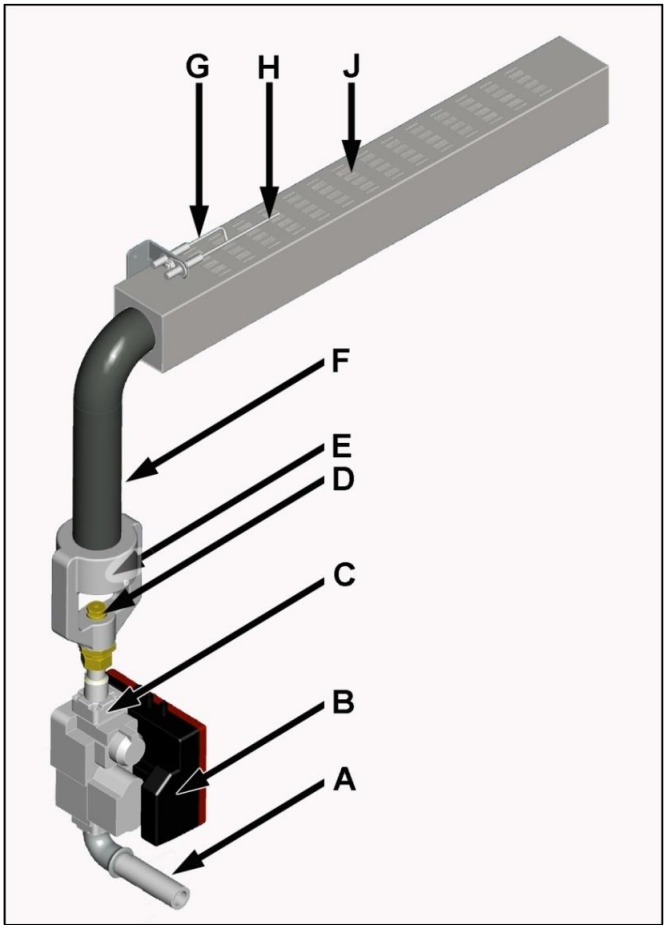

Fig. 1.1

Description of the operation (Fig. 1.2**)**

When the dryer control requests heating, the burner control system (**B**) activates the ignition electrode (**G**) to generate a spark; simultaneously power is fed to the solenoid valve (**C**) to open the gas flow.
The gas enters the burner via a single nozzle (**D**).
The ionisation electrode (**H**) detects the flame. If the presence of a flame has not been detected after a certain time following the ignition order, the solenoid valve closes, an alarm report is issued and the burner control enters safety mode.

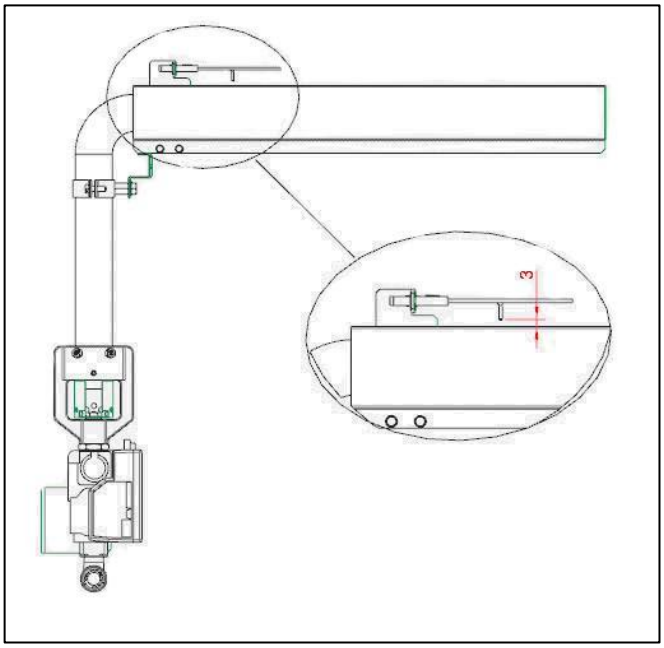

Fig. 1.2

For further information refer to paragraph 1.6. Protection, safety and control elements.

1.2.2. Models ED900 and ED1250

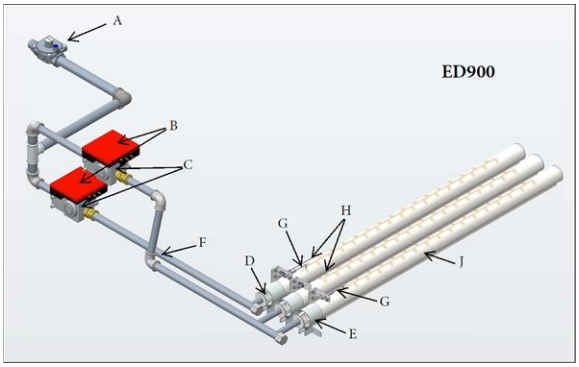

Fig. 1.3

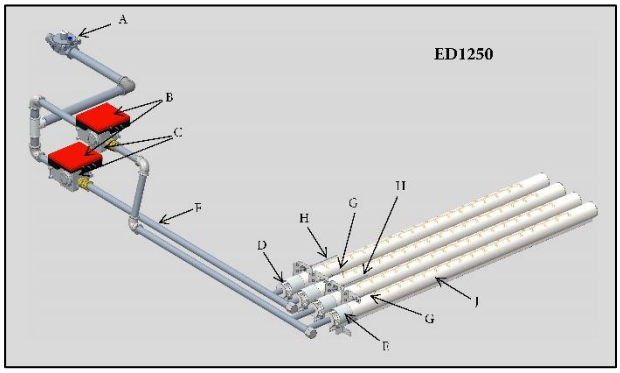

Fig. 1.4

Diagram of the burner

A.....Pressure regulator
B.....Control
C.....Solenoid valve
D.....Injector
E.....Deflector
F.....Ducting
G.....Ignition electrode
H.....Ionisation electrode
J.....Burner

Description of the operation (Fig. 1.3 and Fig. 1.4)

When the dryer control requests heating, the burner control system (**B**) activates the ignition electrode (**G**) to generate a spark; simultaneously power is fed to the solenoid valve (**C**) to open the gas flow. The gas enters the burner via a single nozzle (**D**). Then, the ionisation electrode (**H**) detects the flame. If the presence of a flame has not been detected after a certain time following the ignition order, the solenoid valve closes, an alarm report is issued and the burner control enters safety mode.

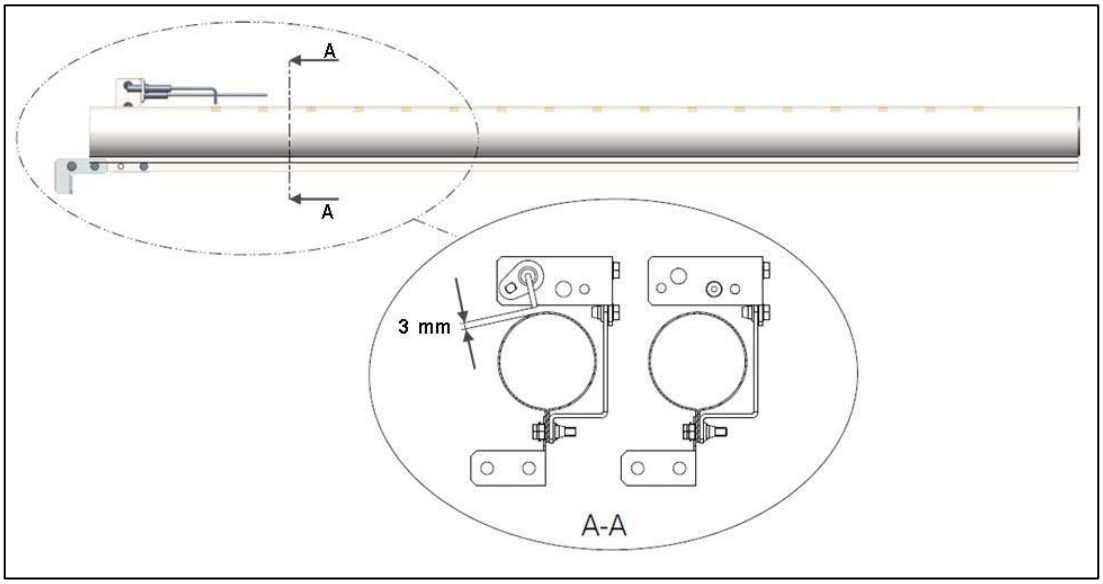

Fig. 1.5

For further information refer to paragraph 1.6. Protection, safety and control elements.

ED900 and ED1250 models are equipped with 2 electronic ignition controls (Fig. 1.3/B and Fig. 1.4/B). One of the controls operates two electrodes and another triggers the third electrode on model ED900 or the other two electrodes on model ED1250. A modular system makes it possible to turn on only two burners or all the burners, as required.

1.3. Machines with electric heating. Description of the electric circuit

Electric heaters
Electric heating elements mounted in an array, which heat the air entering the dryer.

Description of the operation
When the dryer control calls for heating, the contactors supplying the electric heaters are activated.

Further information, see the wiring diagram provided with the machine.

1.4. Machines with steam heating. Description of the steam heat exchanger

Steam heat exchanger
An array of pipes for pressurised steam that heat the air entering the dryer.

Description of the operation
When the dryer control requests heating, this activates the solenoid valve that allows the passage of steam through the heat exchanger and heats the air entering the drum.

Additionally, models ED900 and ED1250 have a flap that enables a bypass for the cooling phase. In the cooling phase, a linear actuator is activated which tilts the flap that shuts of the passage of air through the coil and enables the passage of air through a duct without heating.

1.5. Dos and don'ts in using the machine

CAUTION!
APPROPRIATE USE:
THIS MACHINE HAS BEEN CONCEIVED AND DESIGNED FOR THE INDUSTRIAL DRYING OF LAUNDRY ITEMS WASHED IN WATER FREE FROM INFLAMMABLE OR EXPLOSIVE PRODUCTS. ANY USE OTHER THAN DESCRIBED, CARRIED OUT WITHOUT WRITTEN AUTHORISATION FROM THE MANUFACTURER, WILL BE TAKEN AS INAPPROPRIATE TO THE TERMS OF USE.

Further information on the intended use of the machine and the contraindications for use can be found in the Operating Instruction Manual.

1.6. Protection, safety and control elements

- **Fixed guards:** Covers. These protect the user from contact with dangerous points and material accidentally ejected from the machine.
- **Mobile guards:** Filter cover.
- **Breaker switch:** These connect or disconnect the electrical power from the machine (on some models only in accordance with Standard EN60204-1).
- **Start safety:** If a momentary interruption of the power supply occurs, the machine shuts down at once and does not resume until the corresponding start button is pressed.
- **Drum access door microswitch**: If the door is opened during operation, the machine switches off the heating and halts the drum rotation.
- **Filter cover microswitch:** If the filter cover is opened during operation, the machine switches off the heating and halts the drum rotation.
- **Electric circuit safety measures:** To protect the electric circuit against external malfunctions and prevent any malfunctioning causing damage to the operator.
- **Audible alarm**: Among other functions, the alert beep warns of possible alarms.
- **Drum movement detector (Reed):** This detects the rotation of the drum. If rotation halts unexpectedly, the machine switches off the heating to avoid damaging the linen.
- **Input thermostat:** A passive safety system that limits the input temperature. This protects against overheating caused by a fault in the system regulating the temperature.
- **Output thermostat:** A passive safety system that limits the output temperature. This protects against overheating caused by a fault in the system regulating the temperature.
- **Input temperature probe and output temperature probe:** These constantly monitor the temperature at the inlet and outlet, adapting it to the programmed value.
- **Pressure-switch:** Controls the vacuum in the exhaust circuit.
- **Safety device to prevent back-flow of fumes.** Oscillating shutter that prevents air from entering through the extraction tube in the event of a back-flow situation.
- **Thermal protection for the motors:** Protection against overheating of the drum drive and vacuum motors.

EMERGENCY STOP BUTTON

Safety device that halts the machine immediately and keeps it halted. This device is identified by a red button on a yellow background located on the upper front cover.

Applying the emergency stop, depending on models

Professional control

Models ED260 and ED340. The emergency stop device is optional. (According to Standard EN60335-1, the emergency stop device is not required in these models).

Models ED460, ED660, ED900 and ED1250. The emergency stop device is installed in all the machines. (According to Standard EN60204-1).

Coin control

Applying the emergency stop in coin-op facilities described in Chapter 6 of this manual.

1.7. EU declaration of conformity

Models ED-260, ED-340, ED-460, ED-660

EU DECLARATION OF CONFORMITY

Manufacturer: GIRBAU S.A.

Address: Ctra. de Manlleu, km 1, 08500 Vic, Barcelona, SPAIN

Identification of the machine

Generic denomination:	Function:	Type:
Air dryer	Extracting misture from a load of moist fabric material	Rotatory
Secadora de aire	Extraer humedad de una carga de material textil húmedo	Rotativa
Lufttrockner	Extrahieren von Feuchtigkeit aus einer Ladung feuchten Textilmaterials	Rotierend
Séchoir à air	Extraire l'humidité d'une charge de matériel textile humide	Rotatif
Essiccatore ad aria	Estrazione di umidità da un carico di tessuti bagnati	Rotativo
Assecadora d'aire	Extreure humitat d'una càrrega de material tèxtil humit	Rotativa
Secadora de ar	Remover a umidade de uma carga de material têxtil úmido	Rotativa
空气干燥器	自湿纺织物加载中抽湿	旋转式

Model: **ED-260, ED-340, ED-460, ED-660**

The manufacturer declares under its sole responsibility that the specified equipment has been manufactured in compliance with:

El fabricante declara bajo su exclusiva responsabilidad que el producto especificado se ha fabricado conforme a:

Der Hersteller bestätigt, dass das vorstehend bezeichnete Produkt gemäß den folgenden Richtlinien:

Le fabricant déclare, sous sa seule responsabilité, que le produit spécifié a été fabriquée conformément á:

Il fabbricante dichiara, sotto la sua esclusiva responsabilità, che il prodotto specificato é fabbricato secondo:

El fabricant declara, sota la seva exclusiva responsabilitat, que el producte especificat s'ha fabricat conforme a:

O fabricante declara sob a sua inteira responsabilidade que o produto referido é fabricado em conformidade com:

制造商全权声明，指定产品的制造符合以下要求:

2006/42/EC Machine Safety Directive
Main harmonized standards: EN ISO 10472-1:2008, EN ISO 10472-4:2008, EN 12100:2010, EN 13849-1:2015

2014/35/EU Low Voltage Directive
ED-260, ED-340 models harmonised standards: EN 60335-1:2012
ED-460, ED-660 models harmonised standards: EN 60204-1:2010

2014/30/EU Electromagnetic Compatibility Directive
Main harmonized standards: EN 61000-6-3:2007, EN 61000-6-2:2005, EN 61000-3-2:2014, EN 61000-3-3:2013

2016/426/EU Gas Appliances Regulation (for models with gas heating). Conformity assessment: Modules B+D.
Main standard: EN1020:2009.
N.B.: LGAI Technological Center S.A. Number: 0370. Barcelona (Spain).
Module B: EU Type-Examination. Certificate: 370 CT3017. Date of issue: 25/05/2018. Expiry date: 25/05/2028.
Module D: Quality Management System . Certificate: 0370-GAR-3018/D. Date of issue: 25/05/2018. Expiry date: 01/12/2019.

2011/65/EU Hazardous Substances in Electrical and Electronic Equipment Directive
Main harmonized standards: EN 50581:2012

2012/19/EU Waste Electrical and Electronic Equipment Directive (not a CE Marking Directive)

Models ED900 and ED1250

EU DECLARATION OF CONFORMITY

Manufacturer: GIRBAU S.A.

Address: Ctra. de Manlleu, km 1, 08500 Vic, Barcelona, SPAIN

Identification of the machine

Generic denomination:	Function:	Type:
Air dryer	Extracting misture from a load of moist fabric material	Rotatory
Secadora de aire	Extraer humedad de una carga de material textil húmedo	Rotativa
Lufttrockner	Extrahieren von Feuchtigkeit aus einer Ladung feuchten Textilmaterials.	Rotierend
Séchor à air	Extraire l'humidité d'une charge de matériel textile humide	Rotatif
Essiccatore ad aria	Estrazione di umidità da un carico di tessuti bagnati	Rotativo
Assecadora d'aire	Extreure humitat d'una càrrega de material tèxtil humit	Rotativa
Secadora de ar	Remover a umidade de uma carga de material têxtil úmido	Rotativa
空气干燥器	自湿纺织物加载中抽湿	旋转式

Model: **ED-900, ED-1250**

The manufacturer declares under its sole responsibility that the specified equipment has been manufactured in compliance with:

El fabricante declara bajo su exclusiva responsabilidad que el producto especificado se ha fabricado conforme a:

Der Hersteller bestätigt, dass das vorstehend bezeichnete Produkt gemäß den folgenden Richtlinien:

Le fabricant déclare, sous sa seule responsabilité, que le produit spécifié a été fabriquée conformément á:

Il fabbricante dichiara, sotto la sua esclusiva responsabilità, che il prodotto specificato é fabbricato secondo:

El fabricant declara, sota la seva exclusiva responsabilitat, que el producte especificat s'ha fabricat conforme a:

O fabricante declara sob a sua inteira responsabilidade que o produto referido é fabricado em conformidade com:

制造商全权声明，指定产品的制造符合以下要求:

2006/42/EC Machine Safety Directive
Main harmonized standards: EN ISO 10472-1:2008, EN ISO 10472-4:2008, EN 12100:2010, EN 13849-1:2015

2014/35/EU Low Voltage Directive
Main harmonised standards: EN 60204-1:2010

2014/30/EU Electromagnetic Compatibility Directive
Main harmonized standards: EN 61000-6-3:2007, EN 61000-6-2:2005, EN 61000-3-2:2014, EN 61000-3-3:2013

2016/426/EU Gas Appliances Regulation (for models with gas heating). Conformity assessment: Modules B+D.
Main standard: EN1020:2009.
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2011/65/EU Hazardous Substances in Electrical and Electronic Equipment Directive
Main harmonized standards: EN 50581:2012

2012/19/EU Waste Electrical and Electronic Equipment Directive (not a CE Marking Directive)

2. RECEIPT, STORAGE AND TRANSPORT

2.1. Receipt

Upon delivery inspect the dryer:

- Check that the product has not suffered any damage in transit. Any damage caused in this way will not be attributable to the manufacturer, and the appropriate claim should be made against the party responsible for transporting the product.

- The data on the delivered machine's specification nameplate complies with the requirements stipulated in the order: **MODEL, VOLTAGE, FREQUENCY AND TYPE OF HEATING.**

The nameplate is located on the rear of the machine. (Fig. 2.1/**A** and Fig. 2.2/**A**).

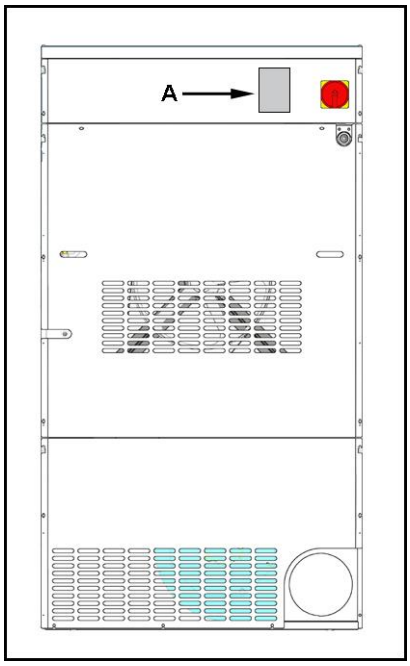


Fig. 2.1

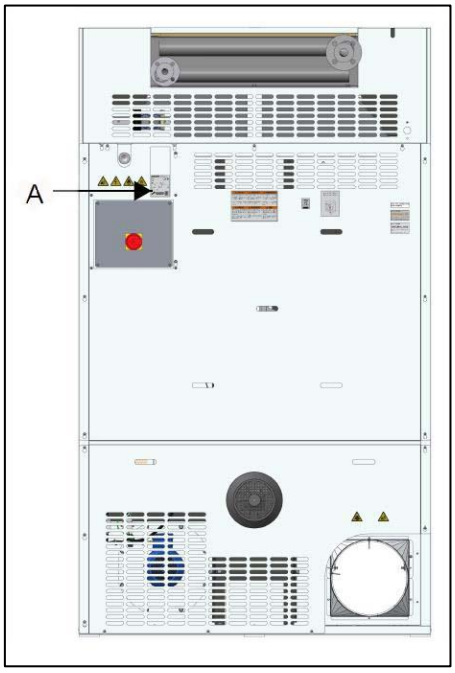


Fig. 2.2

2.2. Storage

When storing the machine, keep in mind the following points:

- Never store the machine where it will be exposed to the weather.
- Store the machine in a moisture free location (oxidation could appear on some components).
- Apply anti-corrosion protection if they are to be stored in a humid ambient (mainly exposed to maritime humidity).

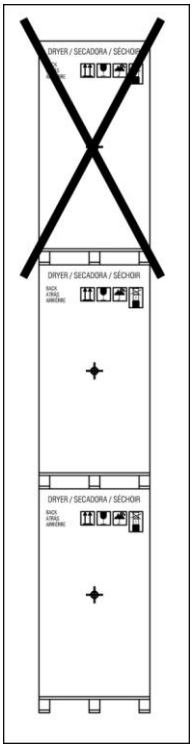


Fig. 2.3

Stacking machines

- The maximum quantity of machines that can be stacked is one unit. (Fig. 2.3).

- ED900 and ED1250 models are not stackable in any circumstances.
- In the case of machines with steam heating, it is not possible to stack any machine on top of another (Fig. 2.4).

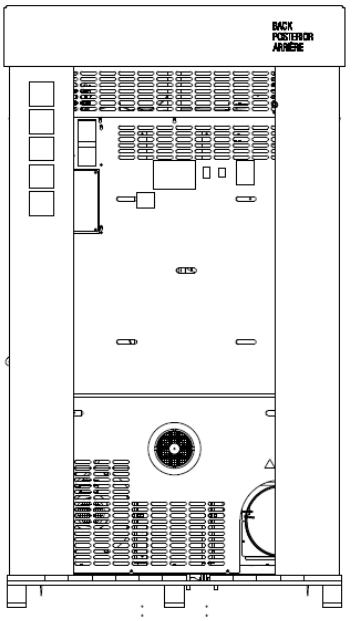


Fig. 2.4

2.3. Transport

CAUTION!

IT IS COMPULSORY FOR ALL MANOEUVRING TO BE CARRIED OUT BY STAFF SPECIALISING IN SUCH TRANSPORTING.

ALL HOISTING OR TRANSPORT TOOLS AND DEVICES MENTIONED IN THIS SECTION MUST BE AUTHORISED FOR LOADS HIGHER THAN THE MACHINE GROSS WEIGHTS, AND SUITABLE FOR THE MACHINE SIZES (Refer to Section 2.4).

VERY IMPORTANT!

DO NOT OVERLOAD THE SLINGS. USE SLINGS OF SUFFICIENT LENGTH.

ALWAYS TRANSPORT THE MACHINE IN AN UPRIGHT POSITION.

DO NOT USE ROLLERS TO MOVE THE MACHINE.

TO MOVE THE MACHINE ACROSS THE FLOOR, USE A FORK-LIFT TRUCK.

THE FRONT IS DISTINGUISHED BY THE LABEL INDICATING FRONT/FRENTE/AVANT.

THE REAR IS DISTINGUISHED BY THE LABEL INDICATING BACK/ATRÁS/ARRIÈRE.

2.3.1. Transporting with packaging. Fork-lift truck

Before moving the machine, make sure the items to be used are suitable and capable of bearing its weight.

See weights and measures in the table in Section 2.4.
Move the machine **with the crate**, using a fork-lift truck.

On models **ED260, ED340, ED460 and ED660**, the machine's centre of gravity is displaced towards the rear, and for this reason, the blades of forklift trucks should always be inserted **from the rear** (Fig. 2.5). Do not lift the machine by inserting the blades of the forklift truck from the front or from the sides.

On models **ED900 and ED1250** the blades of forklift trucks should be inserted **from the rear or from the sides.** Do not lift the machine by inserting the blades of the forklift truck from the front.

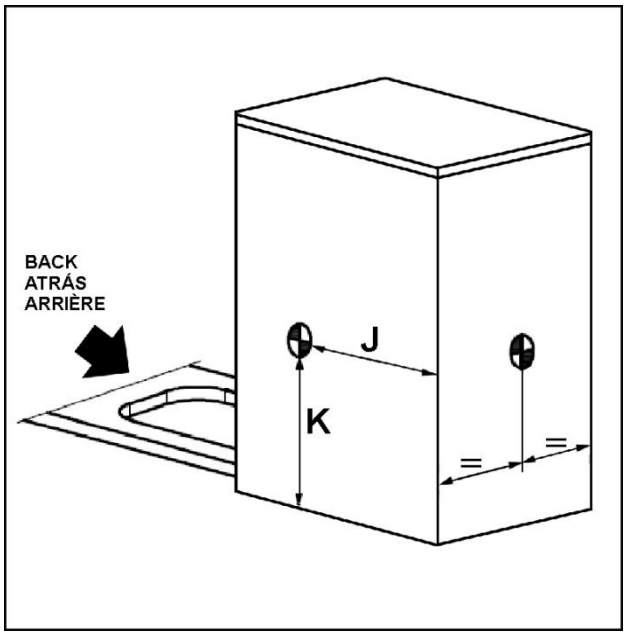


Fig. 2.5

2.3.2. Transporting with packing crate using a hoist

Only for models **ED260, ED340, ED460 and ED660**

Before moving the machine, make sure the items to be used are suitable and capable of bearing its weight.

See weights and measures in the table in Section 2.6.

Pass **TWO** slings inside the transport base as shown in FigureFig. 2.6. To prevent the machine from tipping sideways excessively, take care to follow the positioning instructions indicated in the detail of the figure.

The angle between the slings at the top should never be greater than that indicated in the figure.

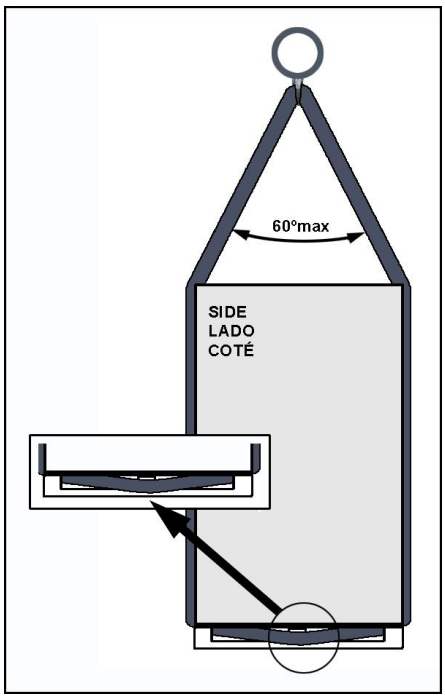


Fig. 2.6

2.3.3. Separating the machine from the base of the packing crate

A three-man team is recommended to perform this operation. Before moving the machine, make sure the items to be used are suitable and capable of bearing its weight.

The weight of the machine and the position of its centre of gravity indicated in Section 2.4 and Figures Fig. 2.5 and Fig. 2.6 must be taken into account at all times.

The machine comes fully assembled in a single crate.

Tools needed

- Fitting covers:.....Torx T25 screwdriver.
- Attaching to the base: 17 mm (11/16 in) open end spanner
- Levelling the feet:.....7 mm set spanner

Models ED260, ED340, ED460 and ED660

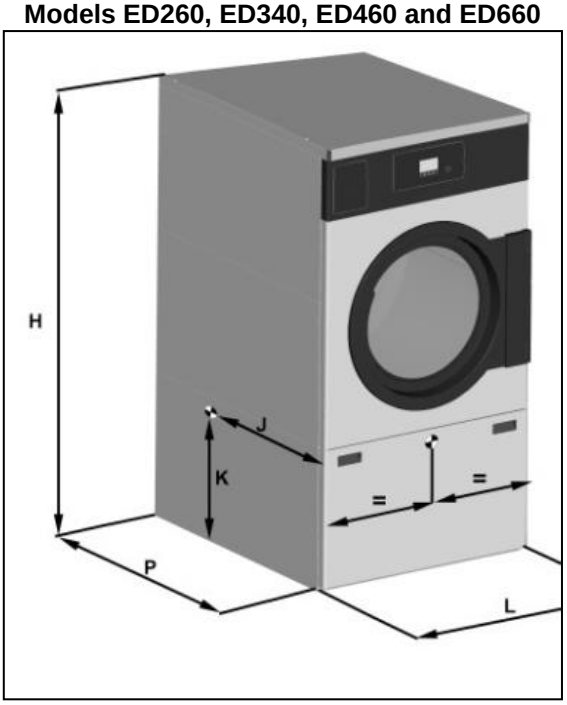


Fig. 2.7

Models ED900 and ED1250

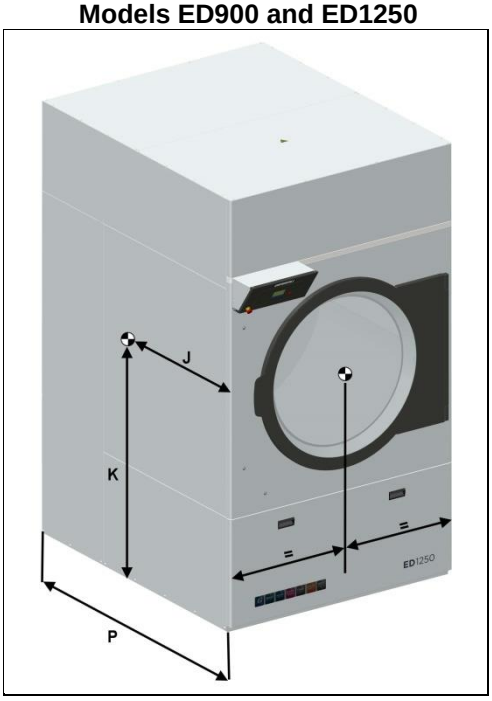


Fig. 2.8

Move the machine on the transporting crate base as close as possible to the final location.

Remove the bottom rear cover from the dryer. Remove the bolts (Fig. 2.9/**A**) securing it to the transport base.

Refit the lower rear cover and fasten properly.

Keep the spacers (Fig. 2.9/**B**) from the securing bolts. These should be used if necessary to attach the machine to the floor.

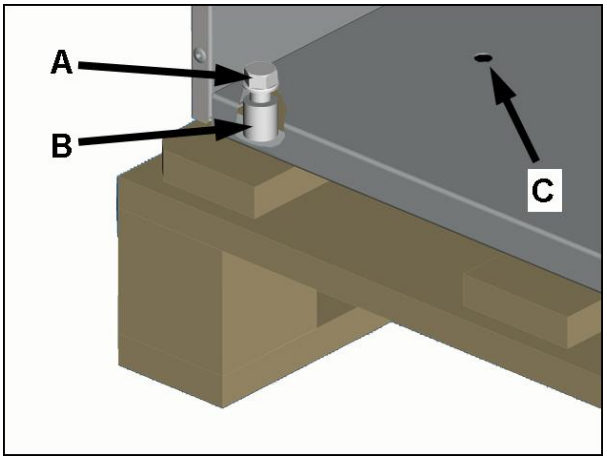


Fig. 2.9

Using a lever inserted at the sides of the back of the machine, lift the rear.

Insert a thick block (Fig. 2.10/**A**) at both sides of the rear of the base to aid in inserting a roller (Fig. 2.10/**B**) that allows the machine to slide over the transporting crate base.

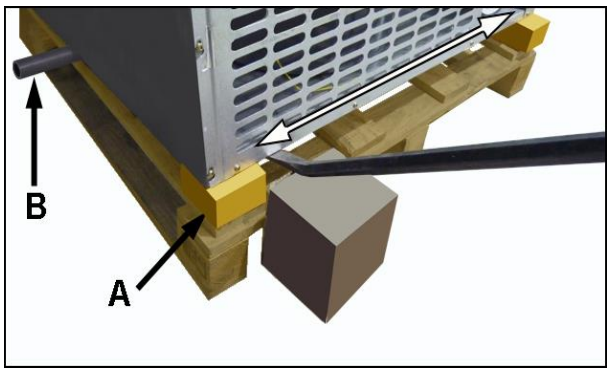


Fig. 2.10

CAUTION!

Never lift the machine at the middle or without the rear cover fitted and secured (Fig. 2.11).

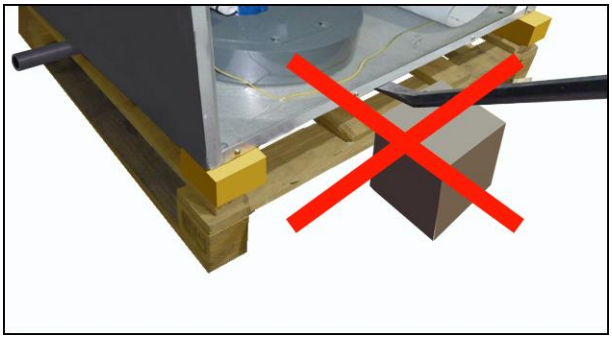


Fig. 2.11

Slide the machine towards the rear of the transporting crate base until it is positioned at the final location (Fig. 2.12).

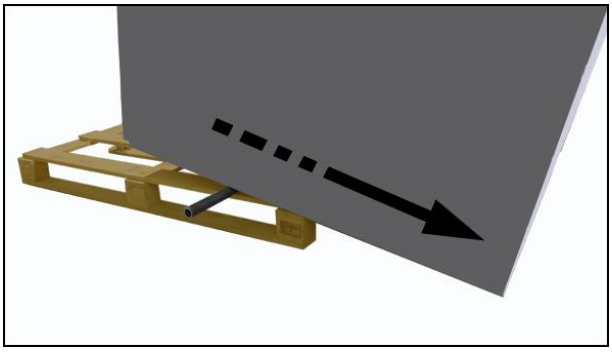


Fig. 2.12

Only for models ED260, ED340, ED460 and ED660: Lift the rear of the machine and wedge it with a thick block, as described in this section.

Fit the feet supplied with the machine (Fig. 2.13). The mounting points for the feet are visible from inside the machine (Fig. 2.9/**C**).

Insert the two rear feet.

Repeat the operation with the front feet.

Adjust the height of the feet to level the machine properly.

Do not drag the machine once the feet are fitted.

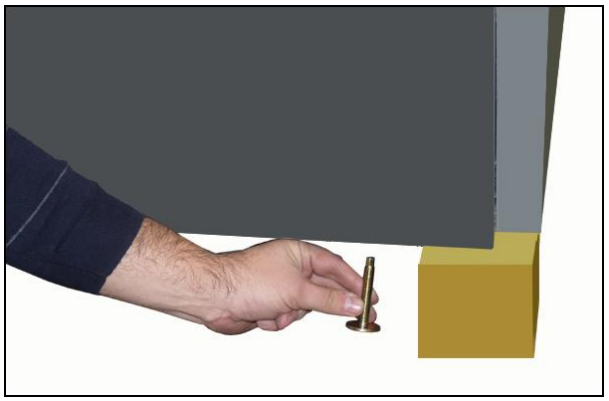


Fig. 2.13

For gas and electric heated ED900 and ED1250 models, the option of unloading using a hoist and slings is also available.

Disassemble the upper rear cover.

Fit a sling suitable of bearing the weight indicated on the nameplate. The angle between the slings at the top should never be greater than that indicated in the figure Fig. 2.15.

When lifting, the machine will slightly tilt towards the front.

After transport, refit the upper rear cover.

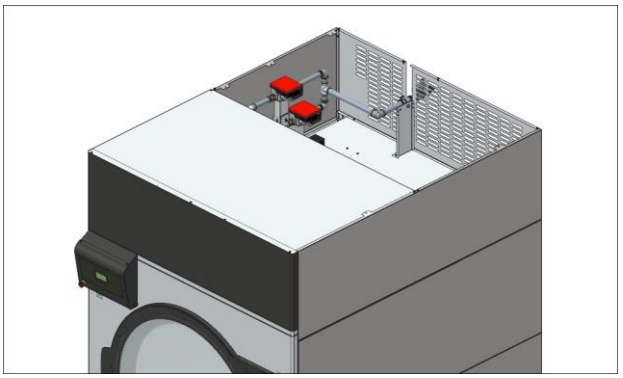


Fig. 2.14

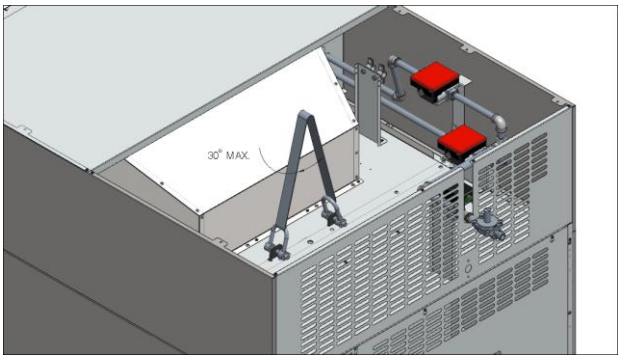


Fig. 2.15

2.4. Table of weight and dimensions

See Figures 2.3 and 2.5.

		Unit	ED260	ED340	ED460	ED660	ED900	ED1250
Dimensions and weight WITH crating	L	mm	826	826	1030	1030	1429	1429
		(in)	(32.5)	(32.5)	(40.6)	(40.6)	(56.3)	(56.3)
	P	mm	1092	1280	1163	1450	1651	1940
		(in)	(43.0)	(50.4)	(45.8)	(57.1)	(65)	(76.4)
	$H_{E,G}$	mm	1680	1680	1985	1985	2526	2526
		(in)	(66.1)	(66.1)	(78.1)	(78.1)	(99.4)	(99.4)
	H_V	mm	1673	1673	1948	1948	2526	2526
		(in)	(65.8)	(65.8)	(76.7)	(76.7)	(99.4)	(99.4)
	J	mm	510	635	570	740	670	845
		(in)	(20.1)	(25.0)	(22.4)	(29.1)	(26.4)	(33.3)
	K	mm	880	890	1092	1050	1315	1365
		(in)	(34.6)	(35.0)	(43.0)	(41.3)	(51.8)	(53.7)
	weight	kg	269	299	361	409	783	868
		(lb)	(593)	(660)	(795)	(902)	(1725)	(1914)
Dimensions and weight WITHOUT crating	L	mm	798	798	1002	1002	1370	1370
		(in)	(31.4)	(31.4)	(39.4)	(39.4)	(53.9)	(53.9)
	P	mm	985	1173	1056	1343	1585	1874
		(in)	(38.8)	(46.2)	(41.6)	(52.9)	(62.4)	(73.8)
	$H_{E,G}$	mm	1522	1522	1828	1828	2377	2377
		(in)	(59.9)	(59.9)	(72.0)	(72.0)	(93.8)	(93.8)
	H_V	mm	1553	1553	1859	1859	2377	2377
		(in)	(61.1)	(61.1)	(73.2)	(73.2)	(93.6)	(93.6)
	J	mm	510	635	570	740	670	845
		(in)	(20.1)	(25.0)	(22.4)	(29.1)	(26.4)	(33.3)
	K	mm	740	750	952	910	1180	1230
		(in)	(29.1)	(29.5)	(37.5)	(35.8)	(46.5)	(48.4)
	weight	kg	249	279	339	386	732	818
		(lb)	(549)	(616)	(747)	(850)	(1615)	(1803)

3. LOCATION

CAUTION!
THE LOCATIONS WHERE THE MACHINES ARE TO BE SITED MUST COMPLY WITH THE LEGAL REGULATIONS IN FORCE IN THE COUNTRY OR AREA WHERE THESE MACHINES ARE TO BE USED.
PROVISION SHOULD BE MADE FOR AN ERGONOMIC USE OF THE MACHINE, ESPECIALLY FOR LOADING, AND UNLOADING OPERATIONS, AND FOR ACCESS TO THE CONTROLS.

NEVER INSTALL THE DRYER IN AREAS CONTAINING EXPLOSIVE OR HIGHLY FLAMMABLE ENVIRONMENTS.

CAUTION!

THE MANUFACTURER IS OBLIGED TO ADVISE YOU THAT FAILURE TO INSTALL THIS MACHINE PROPERLY MAY PRODUCE A FAULT OR CAUSE POOR MACHINE OPERATION RESULTING IN SERIOUS BODILY INJURY. THE MANUFACTURER DECLINES ALL RESPONSIBILITY IN SUCH CASES.

CAUTION!

THE DRYER MUST BE INSTALLED ON A FLAT FLOOR SURFACE THAT IS PERFECTLY EVEN AND CAPABLE OF SUPPORTING THE WEIGHT OF THE MACHINE.
ANY INFLAMMABLE SUBSTANCES COVERING THE FLOOR SUCH AS RUGS AND CARPETS MUST BE REMOVED.

A FIRE EXTINGUISHER MUST BE PLACED INSIDE THE PREMISES, IN A PLACE EASILY VISIBLE AND EASILY ACCESSIBLE. FOLLOW THE RULES OF THE COUNTRY WHERE THE DRYER IS INSTALLED TO LEARN THE TYPE AND LOCATION OF THE FIRE EXTINGUISHER.

CAUTION!

SPECIFIC WARNING FOR GAS-HEATED DRYERS.

BEFORE CARRYING OUT THE INSTALLATION OF THE MACHINE, CHECK THAT THE LOCAL GAS SUPPLIES (TYPE OF GAS AND PRESSURE) ARE COMPATIBLE WITH THE EQUIPMENT REQUIREMENTS.

THIS APPLIANCE MUST BE INSTALLED IN ACCORDANCE WITH THE RULES IN FORCE, AND MUST BE USED ONLY IN AREAS THAT ARE ADEQUATELY VENTILATED. CONSULT THE INSTRUCTIONS BEFORE INSTALLING AND USING THIS APPLIANCE.

CAUTION!

SPECIFIC WARNING FOR MACHINES INSTALLED ON USA/CANADA PREMISES.

TO REDUCE THE RISK OF FIRE, THIS MACHINE MUST BE INSTALLED ON A CONCRETE FLOOR WITHOUT ANY COVERING.

DANGER!

DRY CLEANING MACHINES
THE INSTALLATION OF DRY CLEANING MACHINES AND DRYERS WITH GAS HEATING IN THE SAME PREMISES IS INCOMPATIBLE.

SOME DRY CLEANING MACHINES IN POOR CONDITION MAY EMIT GASES FROM SOLVENTS INTO THE LOCAL ATMOSPHERE, AND THESE, ON INTERACTING WITH TEMPERATURE, MAY BECOME HIGHLY TOXIC AND CORROSIVE GASES. EXTREME CARE MUST BE TAKEN IN THE MAINTENANCE OF THESE MACHINES.

3.1. General information and location

To ensure that the machine functions properly and safely, the location and installation instructions set out in the corresponding sections must be complied with, in particular:

- Hazard warnings
- Installing the different protection elements indicated
- Indications relating to the location of the machine
- Indications relating to the areas of use indicated in the corresponding plans
- Size and connection of the ducts for the heating supply: gas
- Size and connection of the electricity supply conduits
- Size and connection of the exhaust duct.

Technical features on the dryer and complementary information on the installation Chapter 4 and 5.

CAUTION!
THE OPERATIONS INVOLVED IN LOCATING THE MACHINE MUST BE CARRIED OUT BY AUTHORISED TECHNICAL SERVICES.

The machine must be installed on a flat floor surface that is perfectly even and capable of supporting the weight of the machine.
A concrete floor with a **resistance equal to or greater than 250 kg/cm^2 (4,000 psi)** is recommended.

The location surface must be free of any inflammable covering.
Take into account the minimum amount of space required for use. This space facilitates good working conditions and machine maintenance. Refer to operating zones and values in Section 3.2.
If the dryers are installed on metal surfaces the aforementioned surfaces must be earthed by an electric connection independent to the earth connection of the machine.

3.2. Areas of usage

FIRE HAZARD

Strictly observe the safety distance between the dryer and the ceiling and walls of the premises and any fixtures and flammable objects therein.

On positioning the machine, pay careful attention to:

- The minimum distances between the machine and walls or combustible materials.
- The minimum amount of space set aside for its use.
- The minimum amount of space set aside for maintenance.

The minimum distances are the following:

A. Front (Fig. 3.1).

ED260, ED340, ED460 ED660	ED900, ED1250
1000 mm (39.37 in)	1300 mm (51.18 in)

B. Rear (Fig. 3.1).

ED260, ED340, ED460 ED660	ED900, ED1250
500 mm (19.69 in).	

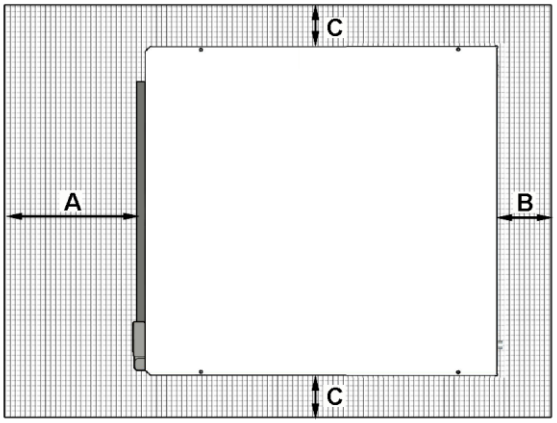


Fig. 3.1

C. Sides (Fig. 3.1): Unrestricted. To be chosen according to requirements.

D. Minimum height from the top cover of the dryer to the ceiling (Fig. 3.2): 500 mm (19.69 in).
It is important to note that on ED900 and ED1250 models with steam heated, the folding shutter describes an upward trajectory that increases the overall height of the machine by 250 mm (9.84 in).

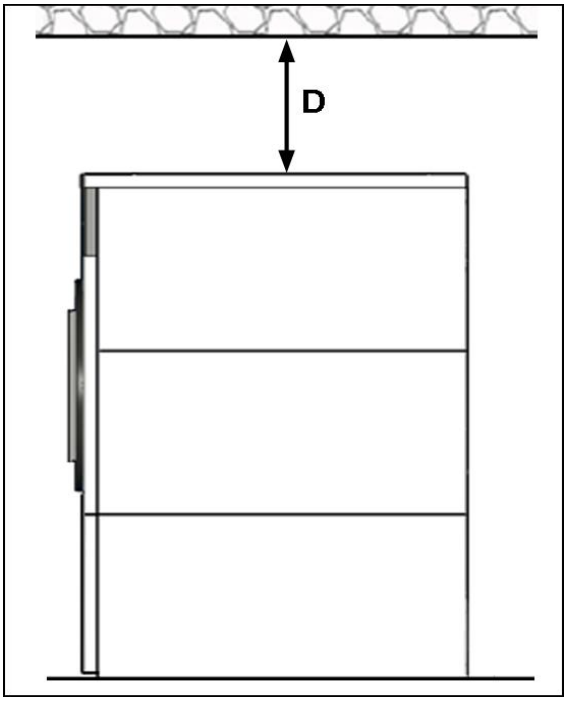


Fig. 3.2

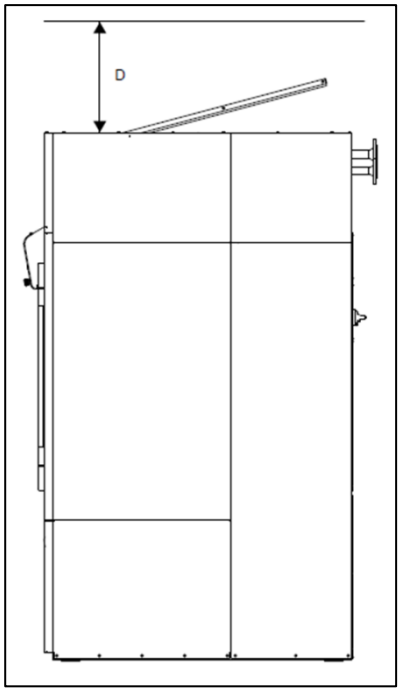


Fig. 3.3

VERY IMPORTANT

Never disconnect the power supply until you have fully completed the cooling cycle, except in an emergency.
If the machine is running a cycle and the fan stops, the power supply is disconnected or the door is opened, the heat accumulated in the heater box is released through the grille in the top cover as hot air. Therefore:

- Do not touch the upper cover rear area.
- Do not place any object or substance on the upper cover.
- Strictly observe the safety distances between the dryer and the ceiling and walls of the premises and any fixtures and flammable objects therein.

Ensure a correct ventilation of the top and rear of the dryer, particularly in case of installing a partition wall around the machine.

3.3. Positioning and levelling the machine

Remove the bolts securing the dryer to the base of the crate.
Separate the machine from the crate.
On models ED260, ED340, ED460 and ED660 adjust the levelling of the machine correctly by turning the dryer's feet (Fig. 3.4/**A**).

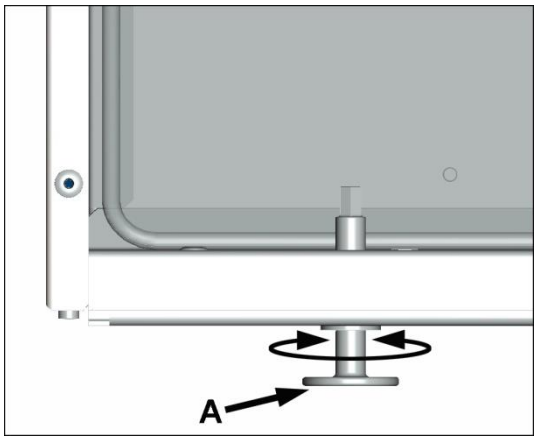


Fig. 3.4

3.4. Anchoring the dryer

In most installations, it is not considered necessary to anchor the dryer.
If in particular cases it is considered appropriate to fasten the dryer to the floor, the mounting holes at the base of the packing case can be used.

Values of the measurements in Figure 3.5

		ED260 ED340	ED460 ED660	ED900 ED1250
A	mm (in)	720 (28.3)	924 (36.4)	1137 (44.8)
B	mm (in)	17 (0.7)	17 (0.7)	19 (0.7)
C (diam)	mm (in)	11 (0.4)	11 (0.4)	11 (0.4)

The arrow indicates the front of the machine.

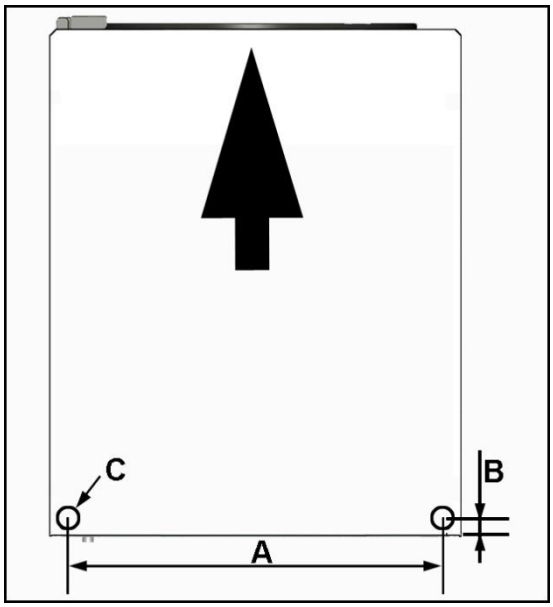


Fig. 3.5

Observations concerning the construction of the anchor

Due to the low level of vibrations produced by the dryer, attaching the machine using metal studs is sufficient. For a more rigid mounting, insert the separators indicated as **B** in Figure 2.9.

3.5. Environment conditions

For ideal running and operating conditions for the machine, at the installation site the following work environment conditions must never be exceeded regardless of the day or time of year:

TEMPERATURE		RELATIVE HUMIDITY	ALTITUDE	ELECTROMAGNETIC DISTURBANCES	VIBRATIONS	LIGHTING LEVEL
minimum	maximum	maximum	maximum			minimum
5°C 41°F	40°C 104°F	80% without condensation	3,000 m 10,000ft	Refer to the **CE** declaration of conformity depending on the model	free	300 lux.

3.6. Ventilation conditions and extraction in the premises

CAUTION!

THE VENTILATION IN THE PREMISES MUST COMPLY WITH THE REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY IN WHICH THE MACHINE IS TO BE INSTALLED AND MUST BE APPROVED BY A COMPETENT TECHNICIAN.

IN COUNTRIES WHERE THERE ARE NO REGULATIONS GOVERNING THE VENTILATION OF PREMISES WITH GAS HEATING, THE VENTILATION CONDITIONS SET FORTH IN SECTIONS 3.6.1 and 3.6.2 ARE RECOMMENDED.

THIS DRYER MUST NOT BE INSTALLED IN PREMISES WITHOUT ADEQUATE VENTILATION.

INADEQUATELY VENTILATED PREMISES CAN SERIOUSLY AFFECT PEOPLE'S HEALTH.

ALWAYS KEEP THE VENTILATION SYSTEM CLEAR.

NEVER PLACE OBJECTS IN PLACES WHERE THEY CAN OBSTRUCT THE PREMISE'S VENTILATION OPENINGS.

In there are various forced draught or convection boilers/machines in the same premises, the complete cross-section of the opening to the outside must amount to at least the sum of the ventilation cross-sections for each piece of equipment.

To avoid the presence of crossed air currents never install equipment with convection ventilation between forced exhaust equipment and the ventilation openings.

3.6.1. Minimum ventilation openings. Machines with electric heating

To replace the air used by the extraction, the premises must be sufficiently ventilated. (Fig. 3.6).

Refer to extraction flow **(B)**.

EV value in Chapter 4: **Technical and connection details for the machine.**

Minimum ventilation openings (**A**) (data for illustrative purposes).

- Models ED260 and ED340: 0.07 m² (105 sq.in)
- Models ED460 and ED660: 0.15 m² (225 sq.in)
- Models ED900 and ED1250: 0.30 m² (450 sq.in)

Minimum ventilation openings (**A**) protected by a deflecting grill (data for illustrative purposes).

- Models ED260 and ED340: 0.1 m² (150 sq.in)
- Models ED460 and ED660: 0.2 m² (300 sq.in)
- Models ED900 and ED1250: 0.40 m² (600 sq.in)

In the case of rectangular air openings, the longest side must not be more than double the length of the smaller side.

This opening must be located close to the dryer and near the floor.

The ventilation air openings must not come into contact with the possible air cavities in the walls.

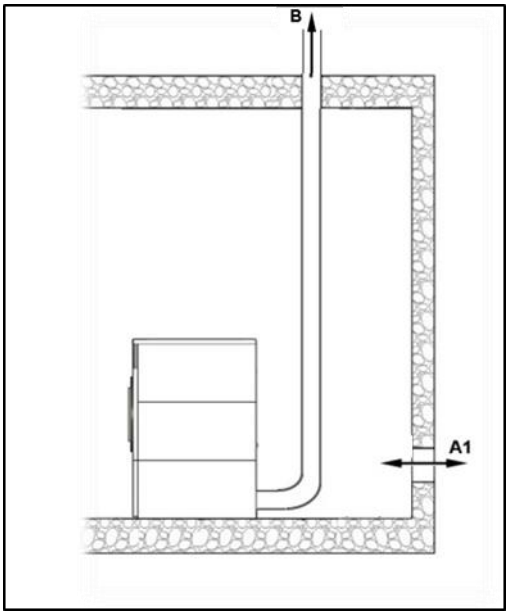


Fig. 3.6

3.6.2. Ventilation openings. Machines with gas heating

The air must be supplied through openings in the walls of the premises in direct contact with the outside air.
These openings must be protected to prevent entry of water or foreign bodies.

Refer to extraction flow in Chapter 4.8: **Technical and connection details for the machine**.

Figure Fig. 3.7
Recommendations are for 2 communication openings to the outside, one located at the top of the premises (**A2**) and the other at the bottom (**A1**), close to the machine. It is advisable to create the openings in opposite walls.
In the case of rectangular air openings, the longest side must not be more than double the length of the smaller side.

The machine's exhaust duct **(B)** should always lead directly to a secure outside location and never be connected to any other duct, a chimney, a wall, a ceiling, an attic, a crawl space, or a concealed space of a building.

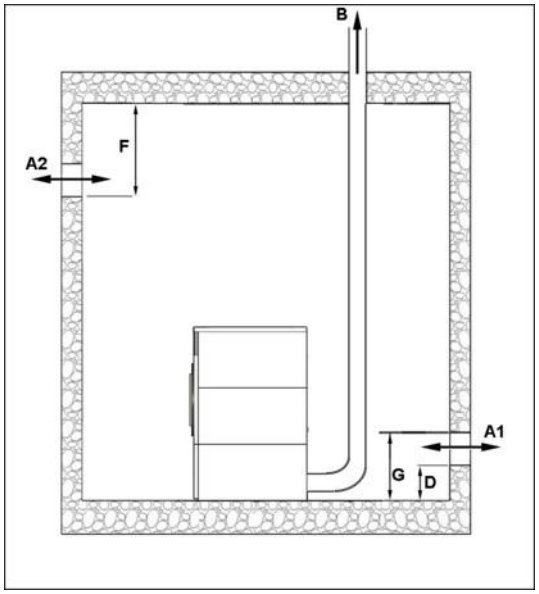


Fig. 3.7

Size of the A1 and A2 openings

- The minimum free surface area of the openings **(Si)** should be 5 cm^2 (0.75 sq.in) per kW of nominal heat consumption (referred to as Hs) installed.
- For models ED260, ED340, ED460 and ED660 the minimum area for each of the openings should never be less than 250 cm^2 (37.5 sq.in).
- For models ED900 and ED1250 the minimum area for each of the openings should never be less than 600 cm^2 (93 sq.in).
- In openings protected with protective grilles, the free surface of the opening must be equal to or greater than the minimum area indicated.

Position of the openings:

Bottom opening (A1):

- The bottom edge should be at a height (**D**) of less than or equal to 15 cm (5.9 in) from the floor of the premises.
- The top edge should be at a height (**G**) of less than or equal to 50 cm (20 in) from the floor of the premises.

Top opening (A2):

The bottom of the opening should be at a maximum distance (**F**) of 30 cm (11.8 in) from the ceiling.

3.7. Height of the work stations

3.7.1. Models ED260, ED340, ED460 and ED660

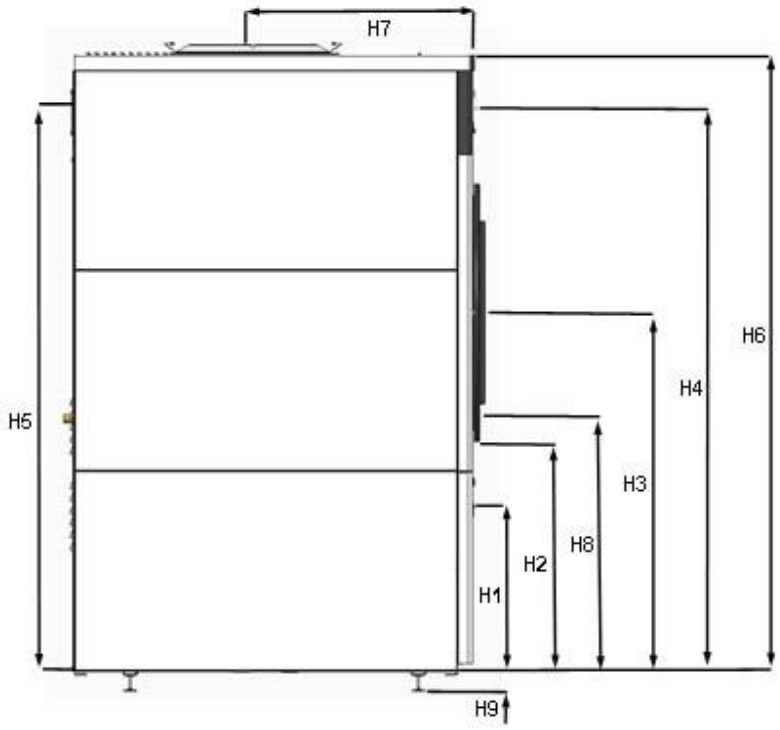


Fig. 3.8

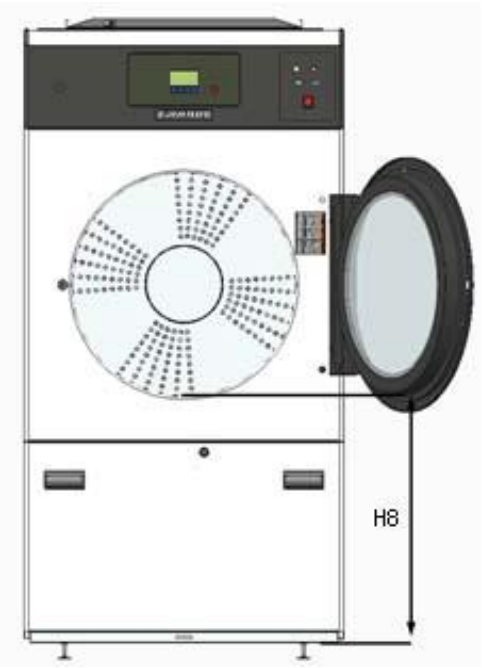


Fig. 3.9

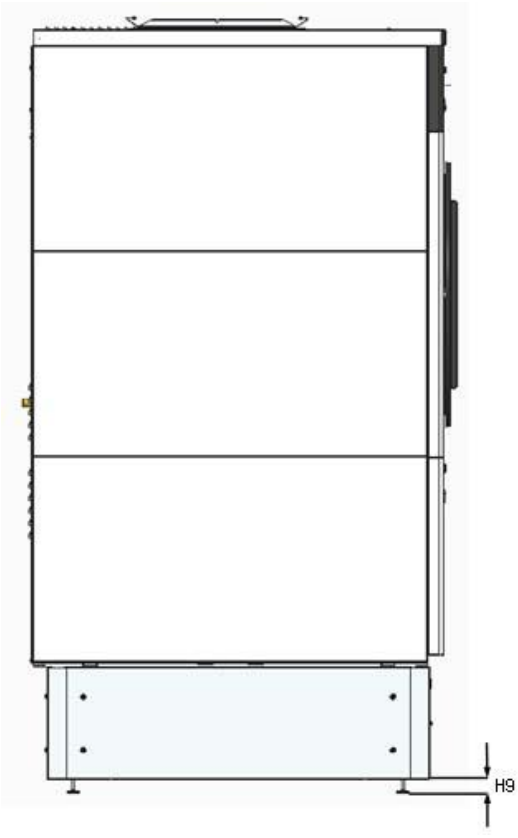


Fig. 3.10

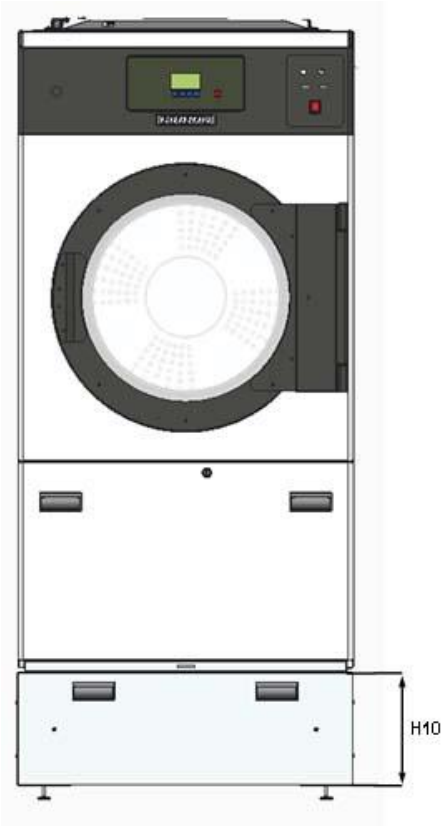


Fig. 3.11

Height of the work stations			ED260 ED340	ED460 ED660
H1	Air filter handles	mm	496	598
		(in)	(19.5)	(23.5)
H2	Door opening height	mm	570	695
		(in)	(22.4)	(27.4)
H3	Door handle	mm	888	1092
		(in)	(35.0)	(43.0)
H4	Control panel	mm	1382	1689
		(in)	(54.4)	(66.5)
H5	Breaker switch	mm	- - - - -	1677
		(in)	- - - - -	(66.0)
H6	Steam air filter (vertical)	mm	1553	1859
		(in)	(61.1)	(73.2)
H7	Steam air filter (horizontal)	mm	331/519	382/668
		(in)	(13)/(20.4)	(15)/(26.3)
H8	Loading orifice	mm	612	737
		(in)	(24.1)	(29.0)
H9	Feet	mm	3-35	3-35
		(in)	(0.1)-(1.37)	(0.1)-(1.37)
H10	Pedestal	mm	264	145.5
		(in)	(10.4)	(5.7)

3.7.2. Models ED900 and ED1250

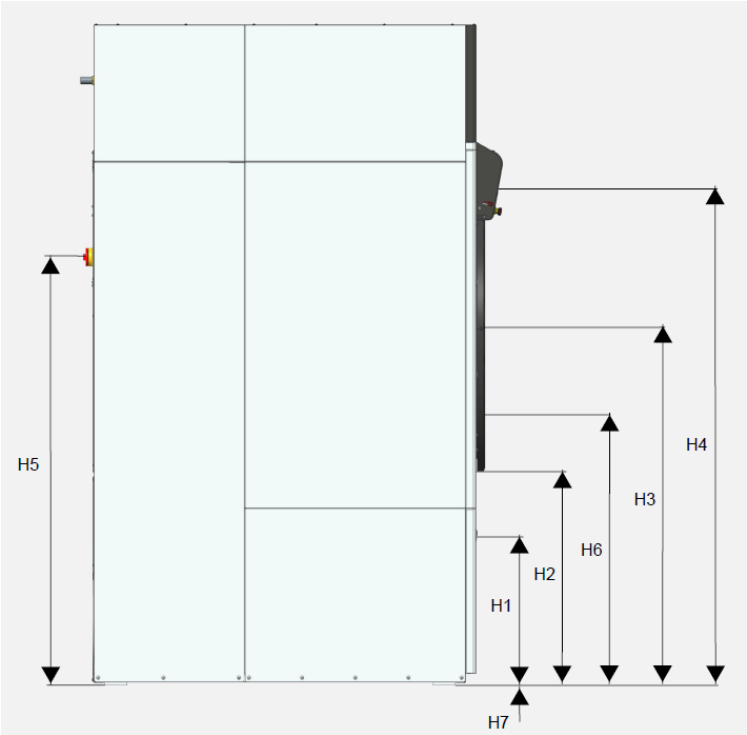


Fig. 3.12

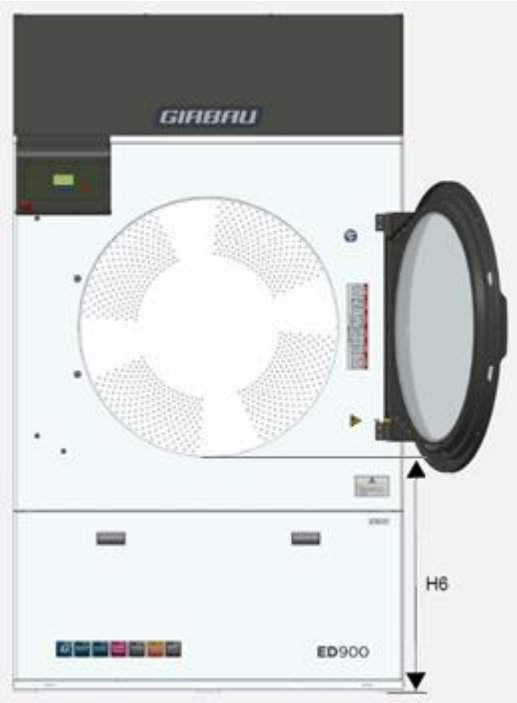


Fig. 3.13

Height of the work stations			ED900 ED1250
H1	Air filter handles	mm	550
		(in)	(21.6)
H2	Door opening height	mm	776
		(in)	(30.5)
H3	Door handle	mm	1280
		(in)	(50.4)
H4	Control panel	mm	1770
		(in)	(69.7)
H5	Breaker switch	mm	1542
		(in)	(60.7)
H6	Loading orifice	mm	836
		(in)	(32.9)
H7	Shims	mm	10
		(in)	(0.4)

4. TECHNICAL AND CONNECTION DETAILS FOR THE MACHINE

4.1. General technical details

CONCEPT		UNIT	MACHINE MODEL					
			ED260	ED340	ED460	ED660	ED900	ED1250
Capacity (filling factor 1/20)		kg (lb)	13 (28.7)	17 (37.5)	23 (50.7)	33 (72.8)	45 (99.2)	62.5 (137.8)
Capacity (filling factor 1/25)		kg (lb)	10.4 (22.9)	13.6 (30.0)	18.4 (40.6)	26.4 (58.2)	36 (79.4)	50 (110.2)
Drum volume		liters (cu ft)	260 (9.2)	340 (12.0)	460 (16.2)	660 (23.3)	900 (31.8)	1250 (44.1)
Drum diameter		mm (in)	736 (29.0)	736 (29.0)	940 (37.0)	940 (37.0)	1250 (49.2)	1250 (49.2)
Drum depth		mm (in)	612 (24.1)	800 (31.5)	663 (26.1)	950 (37.4)	733 (28.8)	1022 (40.2)
Heating	Gas	**G**	Yes	Yes	Yes	Yes	Yes	Yes
	Electric	**E**	Yes	Yes	Yes	Yes	Yes	Yes
	Steam	**V**	Yes	Yes	Yes	Yes	Yes	Yes
Evaporation capacity (nominal heating power)	Gas	l/h (cu ft/h)	14 (0.49)	18 (0.64)	26 (0.92)	34 (1.20)	55.6 (2.0)	63.9 (2.3)
	Electric	l/h (cu ft/h)	12 (0.42)	16 (0.57)	21 (0.74)	28 (0.99)	40 (1.4)	46 (1.6)
Drum motor current	△/人	A	1.20/-	1.70/-	2.00/-	3.40/-	8.3/4.8	8.3/4.8
Drum motor power capacity	50/60Hz	kW	0.25	0.25	0.55	0.55	1.5/1.7	1.5/1.7
Extraction motor current	△/人	A	1.20/-	1.70/-	2.00/-	3.40/-	4.09/2.32	4.09/2.32
Extraction motor power capacity	50/60Hz	kW	0.25	0.25	0.55	0.55	1.1	1.1
Sound level		dB (A)	<61	<61	<64	<64	<67	<67

4.2. Electrical connection details. Electrical protection devices

CAUTION!
- Always use copper wiring.
- Neutral wire. On some models the neutral wire inside the machine is black and marked with the number 0. For further information, see the machine's wiring diagram.
- The earth connection wire is identified by the initials **PE/GND**.

Warnings related to Sections 4.2.1 and 4.2.2

Options for connecting the machine to the mains power supply based on the electrical values set out on the dryer's **specification nameplate** and the characteristics of the mains power supply to which the machine is to be connected.
There are different connection possibilities depending on the voltage rating of the machine and the characteristics of the **mains power supply** to which the machine is to be connected.

It should be stressed that:
- The information in these sections should be supplemented with the images and information in Section 5.1 and the information in the machine's wiring diagram.
- The box identified as **Q0** in the wiring diagram shows the machine's breaker switch or connection terminals.
- Machines with electric heating:
  ED* EN:** Machines with **NOMINAL** heating power.
  ED* ER:** Machines with **REDUCED** heating power.

Explanation of the connection board boxes

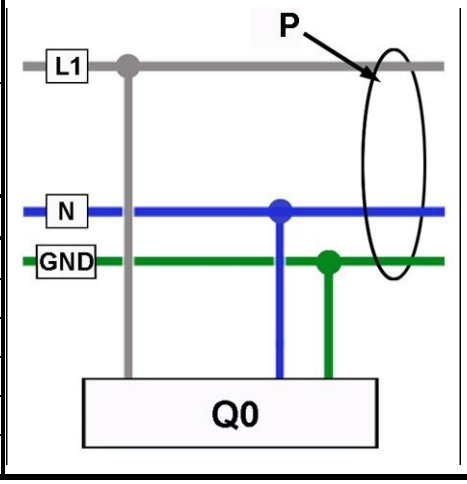
A. Specification nameplate: values on the machine's specification nameplate.
Allows the electrical characteristics of the machine to be identified.

B. Mains supply available (P): characteristics of the mains electricity supply where the machine is to be connected. Voltage and number of phases.
The mains supply is identified as **P** in the CONNECTION DIAGRAM box.

C. Connection: Defines the characteristics of the conductor to use for connecting the machine and the value of the external breaker switch.

Nameplate: **Heating** .....**G/V** **Voltage** .....200…240 **Phases**.....1Ph + N		**A**		
Mains supply available (P): **Voltage** .....200…240 **Phases**.....1Ph + N		**B**		
Number of wires			2+PE/GND	
ED260 G **ED340 G**	**Wire sec**	**C**	**mm²**	1.5
			AWG	14
	Automati		**A**	6
ED460 G **ED660 G**	**Wire sec**		**mm²**	1.5
			AWG	14
	Automatic external switch		**A**	10

CONNECTION DIAGRAM



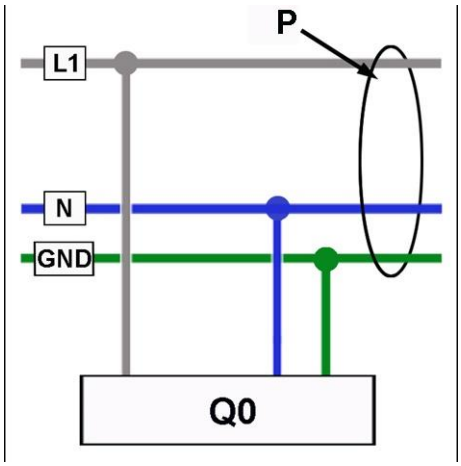
4.2.1. Models with gas or steam heating

Nameplate:
Heating ..... G/V
Voltage ..... 200…240
Phases ..... 1Ph + N

Mains supply available (P):
Voltage ..... 200…240
Phases ..... 1Ph + N

Number of wires		2 + PE/GND	
ED260 ED340	**Wire section**	**mm²**	1.5
		AWG	14
	Automatic External Switch	**A**	6
ED460 ED660	**Wire section**	**mm²**	1.5
		AWG	14
	Automatic External Switch	**A**	10

CONNECTION DIAGRAM

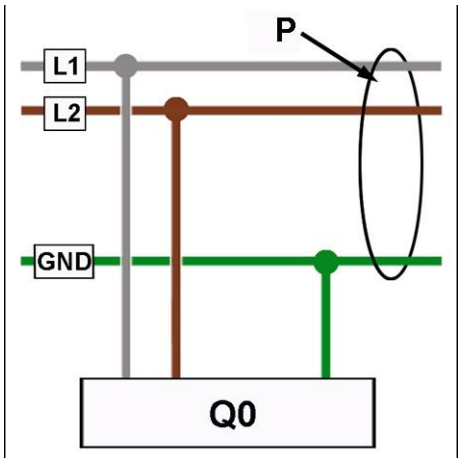


Nameplate:
Heating ..... G/V
Voltage ..... 200…240
Phases ..... 1Ph + N

Mains supply available (P):
Voltage ..... 200…240
Phases 2Ph

Number of wires		2 + PE/GND	
ED260 ED340	**Wire section**	**mm²**	1.5
		AWG	14
	Automatic External Switch	**A**	6
ED460 ED660	**Wire section**	**mm²**	1.5
		AWG	14
	Automatic External Switch	**A**	10

CONNECTION DIAGRAM

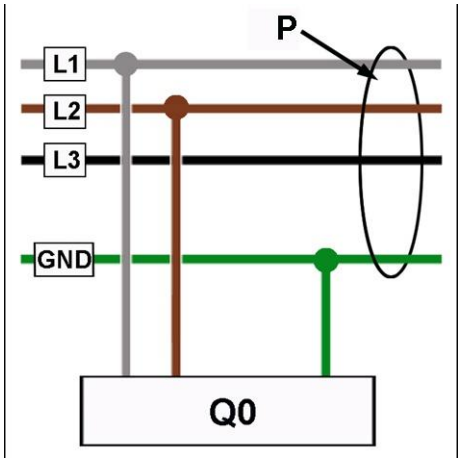


Nameplate:
Heating ..... G/V
Voltage ..... 200…240
Phases ..... 1Ph + N

Mains supply available (P):
Voltage ..... 200…240
Phases 3Ph

Number of wires		2 + PE/GND	
ED260 ED340	**Wire section**	**mm²**	1.5
		AWG	14
	Automatic External Switch	**A**	6
ED460 ED660	**Wire section**	**mm²**	1.5
		AWG	14
	Automatic External Switch	**A**	10

CONNECTION DIAGRAM

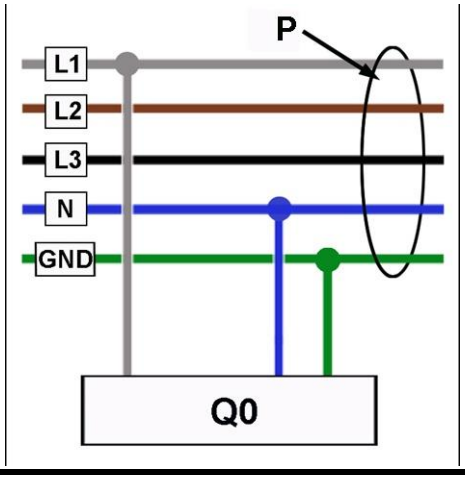


Nameplate:
Heating .....G/V
Voltage .....200…240
Phases.....1Ph+N

Mains supply available (P):
Voltage .....380…415
Phases.....3 Ph + N

Number of wires		2 + PE/GND	
ED260 ED340	**Wire section**	**mm²**	1.5
		AWG	14
	Automatic External Switch	**A**	6
ED460 ED660	**Wire section**	**mm²**	1.5
		AWG	14
	Automatic External Switch	**A**	10

CONNECTION DIAGRAM

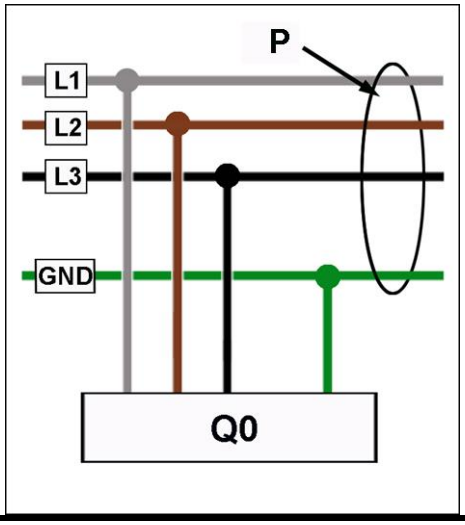


Nameplate:
Heating .....G/V
Voltage .....200…240
Phases.....3Ph

Mains supply available (P):
Voltage .....380…480
Phases.....3 Ph

Number of wires		2 + PE/GND	
ED900 ED1250	**Wire section**	**mm²**	2.5
		AWG	14
	Automatic External Switch	**A**	10

CONNECTION DIAGRAM



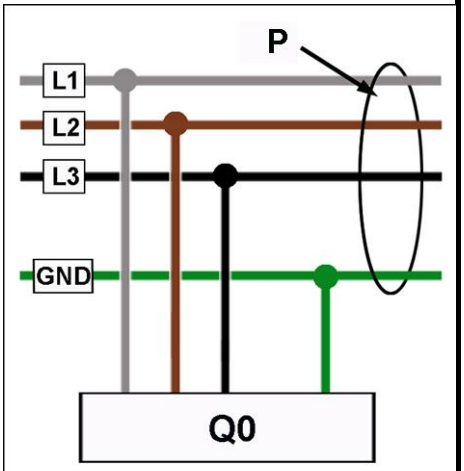
4.2.2. Machines with electric heating

Nameplate:
Heating ..... E
Voltage ..... 200…240
Phases 3Ph

Mains supply available (P):
Voltage ..... 200…240
Phases 3Ph

Number of wires		3Ph + PE/GND	
ED260 ER	**Wire section**	**mm²**	6
		AWG	10
	Automatic External Switch	**A**	32
ED260 EN ED340 ER	**Wire section**	**mm²**	10
		AWG	8
	Automatic External Switch	**A**	40
ED340 EN ED460 ER	**Wire section**	**mm²**	10
		AWG	4
	Automatic External Switch	**A**	63
ED460 EN ED660 ER	**Wire section**	**mm²**	25
		AWG	2
	Automatic External Switch	**A**	80
ED660 EN	**Wire section**	**mm²**	35
		AWG	1
	Automatic External Switch	**A**	100

CONNECTION DIAGRAM

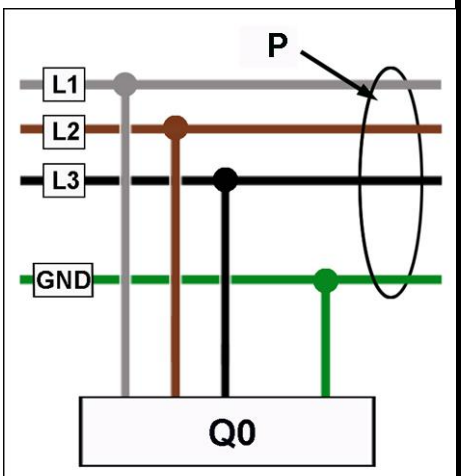


Nameplate:
Heating ..... E
Voltage ..... 230…240
Phases 3Ph

Mains supply available (P):
Voltage ..... 230…240
Phases 3Ph

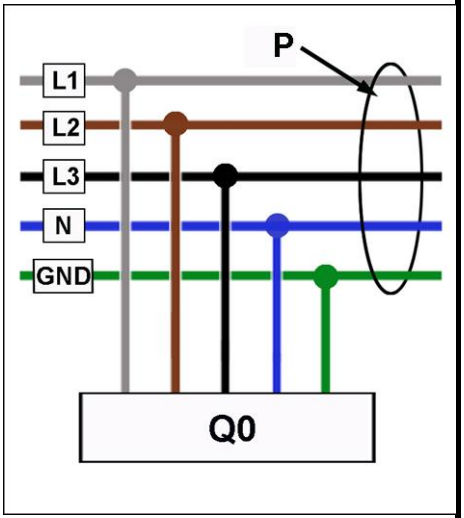
Number of wires		3Ph + PE/GND	
ED900	**Wire section**	**mm²**	95
		AWG	3/0
	Automatic External Switch	**A**	139.1

CONNECTION DIAGRAM



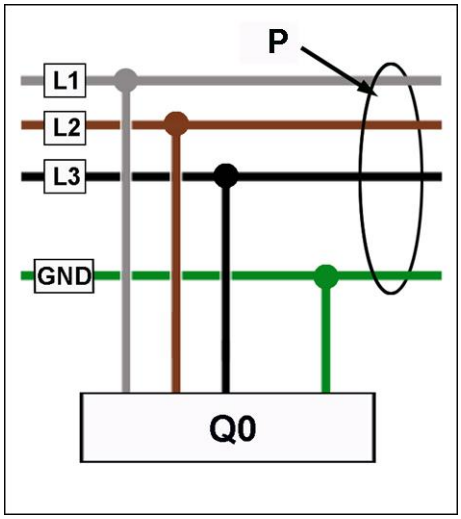
Nameplate: **Heating** ..... E **Voltage** ..... 380…415 **Phases** ..... 3Ph + N			
Mains supply available (P): **Voltage** ..... 380…415 **Phases** ..... 3Ph + N			
Number of wires		4 + PE/GND	
ED260 ER	**Wire section**	**mm²**	4
		AWG	12
	Automatic External Switch	**A**	20
ED260 EN **ED340 ER**	**Wire section**	**mm²**	4
		AWG	10
	Automatic External Switch	**A**	25
ED340 EN **ED460 ER**	**Wire section**	**mm²**	6
		AWG	8
	Automatic External Switch	**A**	40
ED460 EN **ED660 ER**	**Wire section**	**mm²**	10
		AWG	6
	Automatic External Switch	**A**	50
ED660 EN	**Wire section**	**mm²**	16
		AWG	4
	Automatic External Switch	**A**	63

CONNECTION DIAGRAM



Nameplate: **Heating** ..... **E** **Voltage** ..... 380…415 **Phases** 3Ph			
Mains supply available (P): **Voltage** ..... 380…415 **Phases** ..... 3 Ph			
Number of wires		2 + PE/GND	
ED900	**Wire section**	**mm²**	50
		AWG	2
	Automatic External Switch	**A**	87
ED1250	**Wire section**	**mm²**	70
		AWG	1
	Automatic External Switch	**A**	108.7

CONNECTION DIAGRAM



4.3. EC certified models. Specific values for models with GAS heating

See the description of the burner in Section 1.2.

VERY IMPORTANT!

NOTES RELATING TO POWER AND GAS DETAILS

- **Volumetric consumption and mass consumption**. Values calculated at 15 ºC (59 ºF); 1013 mbar (14.7 P.S.I.).

4.3.1. Heating data

EC CERTIFIED MODELS – GAS HEATING								
Combustible gases circuit: **type B14** in accordance with EN1020 (Append. B)		UNITS	ED260 G	ED340 G	ED460 G	ED660 G	ED900	ED1250
Natural **G20**	Supply pressure	mbar	20	20	20	20	20	20
		(in wc)	(8.03)	(8.03)	(8.03)	(8.03)	(8.03)	(8.03)
	Pressure after regulator	mbar	-	-	-	-	16	16
		(in wc)	-	-	-	-	(6.4)	(6.4)
	Pressure after valve	mbar	-	-	-	-	13	13
		(in wc)	-	-	-	-	(5.2)	(5.2)
	Volumetric consumption	m^3/h	1.97	2.22	3.28	4.13	7.09	9.73
		(cu ft/h)	(69.5)	(78.5)	(115.8)	(147.5)	(250.4)	(343.5)
	Nominal calorie consumpt. with regard to H_s	kW	20.7	23.3	34.4	40.4	74	102
		(BTU/h)	(70480)	(79575)	(117467)	(137929)	(253881)	(348612)
	Nominal calorie consumpt. with regard to H_i	kW	18.6	21.0	31.0	36.4	67	92
		(BTU/h)	(63466)	(71655)	(105776)	(124202)	(228613)	(313917)
	Injector diameter	mm (in)	3.30 (0.13)	3.40 (0.13)	4.30 (0.17)	4.60 (0.18)	3.8 (0.15)	3.9 (0.15)
Natural **G25**	Supply pressure	mbar	25	25	25	25	25	25
		(in wc)	(10.04)	(10.04)	(10.04)	(10.04)	(10.00)	(10.00)
	Pressure after regulator	mbar	-	-	-	-	16	16
		(in wc)	-	-	-	-	(6.4)	(6.4)
	Pressure after valve	mbar	-	-	-	-	13	13
		(in wc)	-	-	-	-	(5.2)	(5.2)
	Volumetric consumption	m^3/h	2.15	2.35	3.59	4.39	7.86	11.31
		(cu ft/h)	(76.0)	(82.3)	(126.9)	(154.3)	(277.4)	(399.6)
	Nominal calorie consumpt. with regard to H_s	kW	20.7	23.3	34.4	40.4	74	102
		(BTU/h)	(70480)	(79575)	(117467)	(137929)	(253881)	(348612)
	Nominal calorie consumpt. with regard to H_i	kW	18.6	21.0	31.0	36.4	67	92
		(BTU/h)	(63466)	(71655)	(105776)	(124202)	(228613)	(313917)
	Injector diameter	mm	3.45 (0.14)	3.50 (0.14)	4.50 (0.18)	4.90 (0.19)	4 (0.16)	4.05 (0.16)
Propane **G3137**	Supply pressure	mbar	37	37	37	37	37	37
		(in wc)	(14.9)	(14.85)	(14.85)	(14.85)	(14.90)	(14.90)
	Pressure after regulator	mbar	-	-	-	-	30	28
		(in wc)	-	-	-	-	(12.0)	(11.2)
	Pressure after valve	mbar	-	-	-	-	28.5	26
		(in wc)	-	-	-	-	(11.4)	(10.4)
	Massic consumption	kg/h	1.42	1.60	2.37	2.78	5.11	7.01
		(lb/h)	(3.13)	(3.53)	(5.21)	(6.12)	(11.27)	(15.46)
	Nominal calorie consumpt. with regard to H_s	kW	20.7	23.3	34.4	40.4	74	102
		(BTU/h)	(70480)	(79575)	(117467)	(137929)	(253881)	(348612)
	Nominal calorie consumpt. with regard to H_i	kW	18.6	21.0	31.0	36.4	67	92
		(BTU/h)	(63466)	(71655)	(105776)	(124202)	(228613)	(313917)
	Injector diameter	mm	2.20 (0.09)	2.30 (0.09)	2.90 (0.11)	3.10 (0.12)	2.5 (0.10)	2.55 (0.10)
Propane **G3150**	Supply pressure	mbar	50	50	50	50	50	50
		(in wc)	(20.07)	(20.07)	(20.07)	(20.07)	(20.10)	(20.10)
	Pressure after regulator	mbar	-	-	-	-	30	28
		(in wc)	-	-	-	-	(12.0)	(11.2)
	Pressure after valve	mbar	-	-	-	-	28.5	26
		(in wc)	-	-	-	-	(11.4)	(10.4)
	Massic consumption	kg/h	1.42	1.60	2.37	2.78	5.11	7.01
		(lb/h)	(3.13)	(3.53)	(5.21)	(6.12)	(11.27)	(15.46)
	Nominal calorie consumpt. with regard to H_s	kW	20.7	23.3	34.4	40.4	74	102
		(BTU/h)	(70480)	(79575)	(117467)	(137929)	(253881)	(348612)
	Nominal calorie consumpt. with regard to H_i	kW	18.6	21.0	31.0	36.4	67	92
		(BTU/h)	(63466)	(71655)	(105776)	(124202)	(228613)	(313917)
	Injector diameter	mm	2.10 (0.08)	2.20 (0.09)	2.70 (0.11)	2.90 (0.11)	2.5 (0.10)	2.55 (0.10)

4.3.2. Maximum NOx values and classification

Maximum NOx values obtained and corrected in accordance with EN1020:2009:

- For 2nd family gases (G20 and G25): 127 mg/kWh. Class 3.
- For 3rd family gases (G31): 155 mg/kWh. Class 2.

4.3.3. Categories of commercially available gases

(Summary of the B1 & B4 tables taken from the EN437:2003+A1:2009 standards)
The specification nameplate identifies the type of gas prepared for the dryer.

Common to all models

COUNTRY		NATURAL GAS		PROPANE GAS
		G20	G25	G31
Austria	AT	I2H, II2H3P		I3P, II2H3P
Belgium	BE	12E+,II2E+3P		I3P, 12E+,II2E+3P
Bulgaria	BG			
Switzerland	CH	I2H, II2H3P		I3P, II2H3P
Cyprus	CY			
Czech Rep .	CZ	I2H, II2H3P		I3P, II2H3P
Germany	DE	I2E		I3P
Denmark	DK	I2H		
Estonia	EE	I2H		
Spain	EN	I2H, II2H3P		I3P, II2H3P
Finland	FI	I2H		
France	FR	12H, I2E+II2H3P, II2E+3P	I2L, II2L3P	I3P, II2E+3P, II2H3P, II2L3P
U.K.	GB	I2H, II2H3P		I3P, II2H3P
Greece	GR	I2H, II2H3P		I3P, II2H3P
Hungary	HU	I2H		I3P
Ireland	IE	I2H, II2H3P		I3P, II2H3P
Iceland	IS			
Italy	IT	I2H, II2H3P		I3P, II2H3P
Lithuania	LT	I2H, II2H3P		I3P, II2H3P
Luxembourg	LU	I2E		
Latvia	LV	I2H		
Malta	MT			
Netherlands	NL	I2H	I2L, II2L3P	I3P, II2L3P
Norway	NO	I2H		
Poland	PL	I2E		I3P
Portugal	PT	I2H, II2H3P		I3P, II2H3P
Romania	RO	I2H, I2E, II2H3P	I2L, II2L3P	I3P, II2H3P, II2L3P
Sweden	SE	I2H		
Slovenia	YES	I2H, II2H3P		I3P, II2H3P
Slovakia	SK	I2H, II2H3P		II2H3P

4.3.4. Details of gas connection

EC CERTIFIED MODELS – GAS HEATING							
		ED260	ED340	ED460	ED660	ED900	ED1250
G20 **G25** **G31**	**BSP** male thread	1/2 in	1/2 in	1/2 in	1/2 in	3/4 in	3/4 in

4.3.5. Electric power and consumption. Machines with gas heating

EC CERTIFIED MODELS – GAS HEATING							
	VOLTAGE (50/60Hz)			ED260	ED340	ED460	ED660
Maximum electrical power	200…240	1Ph+N 2Ph	kW	0.9	0.9	1.6	1.6
Total nominal consumpt.	200…240	1Ph+N 2Ph	A	4.6	4.3	7.8	8.2

	VOLTAGE (50/60Hz)			ED900	ED1250
Maximum electrical power	200…240	3Ph	kVA	1.1	2.3
	380…480	3Ph	kVA	1.1	2.3
Total nominal consumpt.	200…240	3Ph	A	6.6	6.6
	380…480	3Ph	A	3.1	3.1

Note. This information should be supplemented with images and information from Section 4.6.

4.4. AGA certified models. Specific values for models with gas heating

4.4.1. Heating data

AGA CERTIFIED MODELS – GAS HEATING						
		UNIT	ED260	ED340	ED460	ED660
Natural gas	Injector diameter	mm in	3.80 (0.15)	4.05 (0.16)	4.90 (0.19)	5.75 (0.23)
	Test Point Pressure (TPP)	kPa	0.70			
	Gas consumption (Total NGC)	MJ/h	65.0	75.0	110.0	140.0
Propane LPG	Injector diameter	mm in	2.30 (0.09)	2.50 (0.10)	3.00 (0.12)	3.30 (0.13)
	Test Point Pressure (TPP)	kPa	2.50	2.50	2.30	2.50
	Gas consumption (Total NGC)	MJ/h	65.0	75.0	110.0	140.0

4.4.2. Details of gas connection

AGA CERTIFIED MODELS – GAS HEATING							
		ED260	ED340	ED460	ED660	ED900	ED1250
Natural gas and Propane gas	**BSP** male thread	1/2 in	1/2 in	1/2 in	1/2 in	3/4 in	3/4 in

4.4.3. Electric power and consumption. Machines with gas heating

AGA CERTIFIED MODELS – GAS HEATING							
	VOLTAGE (50/60Hz)			ED260	ED340	ED460	ED660
Maximum electrical power	200…240	1Ph+N 2Ph	kW	0.9	0.9	1.6	1.6
Total nominal consumpt.	200…240	1Ph+N 2Ph	A	4.6	4.3	7.8	8.2

	VOLTAGE (50/60Hz)			ED900	ED1250
Maximum electrical power	200…240	3Ph	kVA	1.1	2.2
	380…480	3Ph	kVA	1.1	2.2
Total nominal consumpt.	200…240	3Ph	A	6.6	6.6
	380…480	3Ph	A	3.1	3.1

Note. This information should be supplemented with images and information from Section 4.6.

4.5. ETL certified models. Specific values for models with gas heating

4.5.1. Heating data

ETL CERTIFIED MODELS – GAS HEATING								
		UNIT	ED260	ED340	ED460	ED660	ED900	ED1250
Natural gas	Injector diameter	mm in	3.4 (0.13)	3.6 (0.14)	4.4 (0.17)	4.8 (0.19)	3.9 (0.15)	4.0 (0.16)
	Supply pressure	mbar in.w.c	17.4 (7.0)					
	Minimum supply pressure	mbar in.w.c	17.4 (7.0)					
	Maximum supply pressure	mbar in.w.c	26.1 (10.5)					
	Pressure after valve (manifold)	mbar in.w.c	-	-	-	-	14.7 (5.9)	14.1 (5.7)
	Input rating (Hs)	BTU/h	70480	79575	117467	147781	266423	359715
Propane LPG	Injector diameter	mm in	2.30 (0.09)	2.50 (0.10)	3.00 (0.12)	3.30 (0.13)	2.6 (0.10)	2.6 (0.10)
	Supply pressure	mbar in.w.c	27.4 (11.0)					
	Minimum supply pressure	mbar in.w.c	27.4 (11.0)					
	Maximum supply pressure	mbar in.w.c	32.3 (13.0)					
	Pressure after valve (manifold)	mbar in.w.c	-	-	-	-	25.8 (10.4)	25.8 (10.4)
	Input rating (Hs)	BTU/h	70480	79575	117467	147781	277298	357555

4.5.2. Details of gas connection

ETL CERTIFIED MODELS – GAS HEATING							
		ED260	ED340	ED460	ED660	ED900	ED1250
Natural gas and Propane gas	NPT male thread	1/2 in	1/2 in	1/2 in	1/2 in	3/4 in	3/4 in

4.5.3. Electric power and consumption. Machines with gas heating

ETL CERTIFIED MODELS – GAS HEATING							
	VOLTAGE (50/60Hz)			ED260	ED340	ED460	ED660
Maximum electrical power	200…240	1Ph+N 2Ph	kW	0.9	0.9	1.6	1.6
Total nominal consumpt.	200…240	1Ph+N 2Ph	A	4.6	4.3	7.8	8.2

	VOLTAGE (50/60Hz)			ED900	ED1250
Maximum electrical power	200…240	3Ph	kVA	1.1	2.2
	440…480	3Ph	kVA	1.1	2.2
Total nominal consumpt.	200…240	3Ph	A	6.6	6.6
	440…480	3Ph	A	3.1	3.1

Note. This information should be supplemented with images and information from Section 4.6.

4.6. Specific values for models with steam heating

4.6.1. Steam heating details

MODEL WITH STEAM HEATING								
			ED260	ED340	ED460	ED660	ED900	ED1250
Heating power at 9 bar (130.5 PSI)		kW (BTU/h)	19.93 (68003)	20.61 (70324)	41.84 (142764)	42.67 (145596)	105.4 359742	107.69 367453
Volume of pressurised vessel		dm^3 (cu ft)	0.5 (0.0177)	0.5 (0.0177)	0.9 (0.0318)	0.9 (0.0318)	7.5 (0.265)	7.5 (0.265)
Steam flow rate		kg/h	35	37	74	76	138	140
Pressure	Nominal	bar (PSI)	8 (116)	8 (116)	8 (116)	10 (145)	10 (145)	10 (145)
	Min / Max	bar (PSI)	6 / 9 (87/130.5)	6 / 9 (87/130.5)	6 / 9 (87/130.5)	6/15 (87/217.6)	6/15 (87/217.6)	6/15 (87/217.6)
Steam inlet connection		BSP male thread	1/2 in	1/2 in	3/4 in	3/4 in	DN32	DN32
Steam outlet connection		BSP male thread	1/2 in	1/2 in	1/2 in	1/2 in	DN25	DN25

4.6.2. Electric power and consumption. Machines with steam heating

MODELS WITH STEAM HEATING							
	VOLTAGE (50/60Hz)			ED260	ED340	ED460	ED660
Maximum electrical power	200…240	1Ph+N 2Ph	kW	0.9	0.9	1.6	1.6
Total nominal consumpt.	200…240	1Ph+N 2Ph	A	4.6	4.3	7.8	8.2

	VOLTAGE (50/60Hz)			ED900	ED1250
Maximum electrical power	200…240	3Ph	kVA	1.1	2.2
	380…480	3Ph	kVA	1.1	2.2
Total nominal consumpt.	200…240	3Ph	A	6.6	6.6
	380…480	3Ph	A	3.1	3.1

Note. This information should be supplemented with images and information from Section 4.6.

4.7. Specific values for models with electric heating

4.7.1. NOMINAL HEATING power

	MODELS WITH NOMINAL ELECTRIC HEATING								
	VOLTAGE (*1) 50/60 Hz		UNIT	ED260 EN	ED340 EN	ED460 EN	ED660 EN	ED900 EN	ED1250 EN
Heating power	200V	3Ph	kW	11.4	16.6	22.7	28.4		-
	208V	3Ph	kW	12.3	18.0	24.6	30.8		-
	220V	3Ph	kW	11.3	16.5	22.5	28.1		-
	230V	3Ph	kW	12.3	18.0	24.6	30.8	49.2	-
	240V	3Ph	kW	12.3	18.0	24.6	30.8	49.2	-
	380V	3Ph	kW	11.2	16.4	22.4	25.7	44.8	66.3
	400V	3Ph	kW	12.4	18.1	24.8	31.0	49.6	73.5
	415V	3Ph	kW	12.3	17.9	24.5	30.6	49.0	72.7

	VOLTAGE (*2) 50/60 Hz		UNIT	ED260 EN	ED340 EN	ED460 EN	ED660 EN	ED900 EN	ED1250 EN
Total electrical power	200V	3Ph	kW	12	17	24	30		-
	208V	3Ph	kW	13	19	26	32		-
	220V	3Ph	kW	12	17	24	30		-
	230V	3Ph	kW	13	19	26	32	50.3	-
	240V	3Ph	kW	13	19	26	32	50.3	-
	380V	3Ph+N	kW	12	17	24	30		-
	400V	3Ph+N	kW	13	19	26	32		-
	415V	3Ph+N	kW	13	19	26	32		-
	380V	3Ph	kW	12	17	22	27	45.9	68.6
	400V	3Ph	kW	12	18	26	33	50.7	75.8
	415V	3Ph	kW	13	18	25	32	50.2	75.0
Total electrical consumption	200V	3Ph	A	37	52	72	85		-
	208V	3Ph	A	38	54	75	92		-
	220V	3Ph	A	33	47	66	81		-
	230V	3Ph	A	34	49	68	84	126.5	-
	240V	3Ph	A	33	47	66	81	121.2	-
	380V	3Ph+N	A	20	29	40	46		-
	400V	3Ph+N	A	21	30	42	52		-
	415V	3Ph+N	A	21	29	41	50		-
	380V	3Ph	A	19	27	39	44	69.8	104.4
	400V	3Ph	A	20	29	40	50	73.3	109.5
	415V	3Ph	A	19	27	39	48	69.9	104.4

Note 1: voltage and connection phases of the heaters.
Note 2: voltage and connection phases of the dryer.

4.7.2. REDUCED HEATING power

MODELS WITH REDUCED ELECTRIC HEATING							
	VOLTAGE (*1) 50/60 Hz		UNIT	ED260 ER	ED340 ER	ED460 ER	ED660 ER
Heating power	200V	3Ph	kW	8.3	11.4	16.6	22.7
	208V	3Ph	kW	9.0	12.3	18.0	24.6
	220V	3Ph	kW	8.2	11.3	16.5	22.5
	230V	3Ph	kW	9.0	12.3	18.0	24.6
	240V	3Ph	kW	9.0	12.3	18.0	24.6
	380V	3Ph	kW	8.2	11.2	16.4	22.4
	400V	3Ph	kW	9.1	12.4	18.1	24.8
	415V	3Ph	kW	9.0	12.3	17.9	24.5

	VOLTAGE (*2) 50/60 Hz		UNIT	ED260 ER	ED340 ER	ED460 ER	ED660 ER
Total electrical power	200V	3Ph	kW	9	12	18	24
	208V	3Ph	kW	10	13	19	26
	220V	3Ph	kW	9	12	18	24
	230V	3Ph	kW	10	13	19	26
	240V	3Ph	kW	10	13	19	26
	380V	3Ph+N	kW	9	12	18	24
	400V	3Ph+N	kW	10	13	19	26
	415V	3Ph+N	kW	10	13	19	26
	380V	3Ph	kW	9	12	18	24
	400V	3Ph	kW	10	13	20	26
	415V	3Ph	kW	9	12	25	26
Total electrical consumption	200V	3Ph	A	28	37	55	73
	208V	3Ph	A	29	38	57	75
	220V	3Ph	A	25	33	50	66
	230V	3Ph	A	26	35	52	69
	240V	3Ph	A	25	34	50	66
	380V	3Ph+N	A	16	21	31	41
	400V	3Ph+N	A	17	22	33	43
	415V	3Ph+N	A	16	21	31	41
	380V	3Ph	A	15	20	30	39
	400V	3Ph	A	15	20	31	41
	415V	3Ph	A	15	19	30	39

Note 1: voltage and connection phases of the heaters.
Note 2: voltage and connection phases of the dryer.

4.8. Exhaust ducting. Technical and connection details

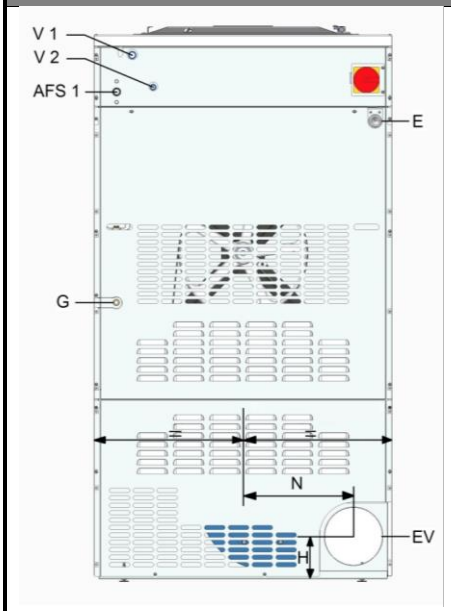
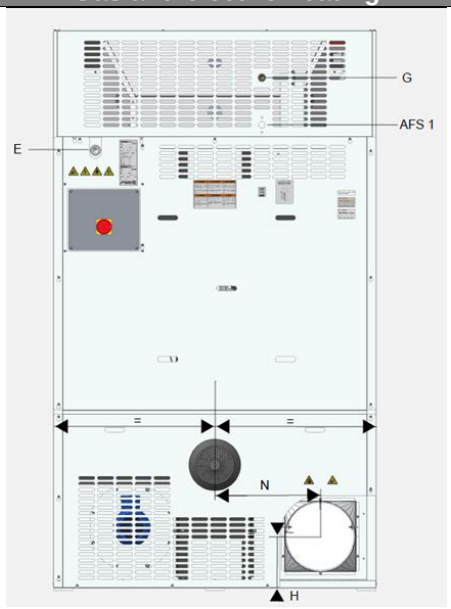
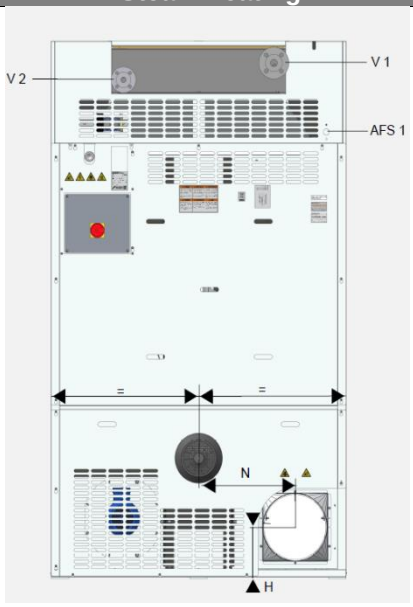
This information should be supplemented with images and information from Section 5.5.

	UNIT	ED260	ED340	ED460	ED660	ED900	ED1250
Connection diameter of the exhaust duct	mm (in)	150 (5.9)	150 (5.9)	200 (7.9)	200 (7.9)	300 (11.8)	300 (11.8)
Connection height of the exhaust duct	mm (in)	115 (4.5)	115 (4.5)	140 (5.5)	140 (5.5)	228.3 (9.0)	228.3 (9.0)
Extraction flow (*1)	m3/h (cu ft/h)	665 (23484)	697 (24614)	1363 (48116)	1402 (49511)	2500 (88287)	2500 (88287)
Maximum pressure of the extraction duct (*2)	mmH_2O (in wc)	7 (0.28)	7 (0.28)	7 (0.28)	7 (0.28)	7 (0.28)	8 (0.31)

Note 1: Values registered with the machine empty and output free.
Note 2: Maximum pressure. Registered with the machine running empty and at a distance of approximately 1 m (40 in) from the exhaust duct connection.

4.9. Wiring diagram

CAUTION!
See areas of use in Section 3.2.
See heights for the work areas in Chapter 3 of this manual.

Models ED260, ED340, ED460 and ED660	Models ED900 and ED1250	
	Gas and electric heating	Steam heating
 Fig. 4.1	 Fig. 4.2	 Fig. 4.3

CAPTION	
V1	Steam inlet
V2	Steam outlet
AFS1	AFS steam inlet
N	Distance from the axis of symmetry of the unit
H	Height from the machine base
E	Electrical conductor inlet
G	Gas inlet
EV	Fan extraction

4.9.1. Measurements for the installation plan and location

				ED260	ED340	ED460	ED660	ED900	ED1250
E	Electrical connection	N	mm	340	340	444	444	507	507
			(in)	(13.4)	(13.4)	(17.5)	(17.5)	(20)	(20)
		H	mm	1239	1239	1539	1539	1868	1868
			(in)	(48.8)	(48.8)	(60.6)	(60.6)	(73.5)	(73.5)
		diam	mm	37	37	37	37	37	37
			(in)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)
G	Gas connection	N	mm	325	325	427	427	200	200
			(in)	(12.8)	(12.8)	(16.8)	(16.8)	(7.9)	(7.9)
		H	mm	627	627	927	927	2177	2177
			(in)	(24.7)	(24.7)	(36.5)	(36.5)	(85.7)	(85.7)
		diam	BSP (in)	(1/2)	(1/2)	(1/2)	(1/2)	(3/4)	(3/4)
V	Steam connection	N inlet	mm	347	347	372	372	349	349
			(in)	(13.7)	(13.7)	(14.6)	(14.6)	(13.7)	(13.7)
		N outlet	mm	277	277	302	302	349	349
			(in)	(10.9)	(10.9)	(11.9)	(11.9)	(13.7)	(13.7)
		H inlet	mm	1467	1467	1763	1763	2280	2280
			(in)	(57.8)	(57.8)	(69.4)	(69.4)	(89.8)	(89.8)
		H outlet	mm	1363	1363	1655	1655	2206	2206
			(in)	(53.7)	(53.7)	(65.2)	(65.2)	(86.8)	(86.8)
		Inlet diam.	BSP (in)	(1/2)	(1/2)	(3/4)	(3/4)	349	349
		Outlet diam.	BSP (in)	(1/2)	(1/2)	(1/2)	(1/2)	(13.7)	(13.7)
		Inlet Clamp		-	-	-	-	DIN2633 DN32	DIN2633 DN32
		Outlet clamp		-	-	-	-	DIN2633 DN25	DIN2633 DN25
EV	Exhaust connection	N	mm	295	295	372	372	447	447
			(in)	(11.6)	(11.6)	(14.6)	(14.6)	(17.6)	(17.6)
		H	mm	115	115	140	140	228	228
			(in)	(4.5)	(4.5)	(5.5)	(5.5)	(9)	(9)
		diam	mm	150	150	200	200	298	298
			(in)	(6.3)	(6.3)	(7.9)	(7.9)	(11.7)	(11.7)
AFS	Water connection	N	mm	323	323	425	425	593 E/S 200 G	593 E/S 200 G
			(in)	(12.7)	(12.7)	(16.7)	(16.7)	E/S (23.3) G (7,9)	E/S (23.3) G (7,9)
		H	mm	1334	1334	1640	1640	1976	1976
			(in)	(52.5)	(52.5)	(64.5)	(64.5)	(77.8)	(77.8)
		diam	Gas (in)	(3/4)	(3/4)	(3/4)	(3/4)	(3/4)	(3/4)

5. CONNECTING THE MACHINE

5.1. Electrical requirements

CAUTION!

THE ELECTRICAL WIRING EXTERNAL TO THE MACHINE, ITS CONNECTION TO THE MACHINE AND SUBSEQUENT ADJUSTMENTS MUST BE CARRIED OUT BY A REGISTERED INSTALLATION CONTRACTOR.

ALL THE MATERIALS USED IN THE ELECTRIC WIRING AS WELL AS ITS INSTALLATION MUST COMPLY WITH THE LEGALLY APPROVED REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY OR AREA IN WHICH THE MACHINE IS BEING USED.

ALL THE INSPECTIONS AND TESTS CONCERNING ELECTRICAL WIRINGS MUST BE CARRIED OUT IN ACCORDANCE WITH THE REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY OR AREA IN WHICH THE MACHINE IS BEING USED.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, THE EARTHING FOR THE MACHINE SHOULD BE CHECKED BY A QUALIFIED TECHNICIAN. AN INADEQUATELY EARTHED INSTALLATION CAN CREATE A RISK OF ELECTRIC SHOCK.

LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN CAUSE IMPROPER OPERATION.

CAUTION!

CHECK THAT THE VOLTAGE AND FREQUENCY ON THE MACHINE'S SPECIFICATION NAMEPLATE CORRESPOND TO THE MAINS VOLTAGE AND FREQUENCY.

THE VOLTAGE OF THE MACHINE'S CONTROL CIRCUIT IS 230 V AC.

CHECK THE DIRECTION OF ROTATION OF THE EXTRACTOR MOTOR.

CAUTION!

SPECIFIC WARNING FOR CE CERTIFIED MODELS, in accordance with Standard EN-61000-3-11:2002.

THE SUPPLY NETWORK IMPEDANCE MUST BE LOWER THAN:
ED460E / ED660E MODELS: (0.265+j0.172) Ohm.

CAUTION!

SPECIFIC CAUTION FOR USA/CANADA MACHINES

GROUNDING INSTRUCTIONS

THIS APPLIANCE MUST BE CONNECTED TO A GROUNDED METAL, PERMANENT WIRING SYSTEM, OR AN EQUIPMENT-GROUNDING CONDUCTOR MUST BE RUN WITH THE CIRCUIT CONDUCTORS AND CONNECTED TO THE EQUIPMENT-GROUNDING TERMINAL OR LEAD ON THE APPLIANCE.

THIS APPLIANCE MUST BE ELECTRICALLY GROUNDED IN ACCORDANCE WITH LOCAL CODES OR, IN THE ABSENCE OF LOCAL CODES, WITH THE NATIONAL ELECTRICAL CODE, ANSI/NFPA 70 OR THE CANADIAN ELECTRICAL CODE, CSA C22.1.

5.1.1. Characteristics of the electrical wiring

See the **Technical and Connection details for the machine** for the corresponding model (Chapter 4) for values regarding power consumption, electrical protection, wire section and number of wires.
Electrical cable. The conducting cable must meet the following specifications:

- The data referring to conductors are based on those of a copper multi-wire conductor.
- The length of the conductor from the RCD/GFCI and overcurrent branch protection to the dryer must not be longer than 10 metres (33 ft).
- If using single-wire conductors, these must be encased within a safety conduit (armoured or flexible metallic pipe for ETL).
- The conductor must be secured against any pulling, crushing or rubbing.
- Additional specifications for the conductor: must comply with the statutory regulations of the country in which it is to be installed.

Wire securing

- The protective cone must be removed from the electric cable input hole (**E**, Fig. 4.1) and replaced by a device suitable for the section and type of cable to be used.
- In systems with a multi-wire cable, the attachment device must match the protective conduit.

RCD Residual current circuit breaker / GFCI Ground fault circuit interrupter. An RCD/GFCI must be installed outside the dryer, for the individual protection of each machine.

Characteristics:

- Installed in an easily accessible place.
- For the number of poles and current rate: see ELECTRICAL CONNECTION details (Section 4.2).
- **A** type.

Overcurrent branch protection. An overcurrent branch protection, for the individual protection of each machine must be installed.

Characteristics:

- UL 489, CSA 22.2 No. 5.02 for ETL, IEC 60947-2 for CE and others.
- Number of poles and current rate: see ELECTRICAL CONNECTION details (Section 4.2).
- **C** type
- It must isolate electrical source phases and the neutral cable.
- Mechanically lockable.
- Installed in an easily accessible place.

5.1.2. Transformer connection. Configuring the voltage of the machine

Models ED260, ED340, ED460 and ED660

- Place the breaker switch handle in the OFF position.
- Remove the screws securing the dryer's top cover and remove it.
- Connect the voltage selector (Fig. 5.1/**A**) onto the transformer connector (Fig. 5.1/**B**), in accordance with the mains supply and with the attached table (Table 1).

Models ED900 and ED1250

- Place the breaker switch handle in the OFF position.
- Remove the screws securing the intermediate rear cover and remove it.
- Remove the screws holding the junction box cover and remove it.
- Connect the voltage selector (Fig. 5.1/**A**) onto the transformer connector (Fig. 5.1/**B**), in accordance with the mains supply and with the attached table (Table 2).

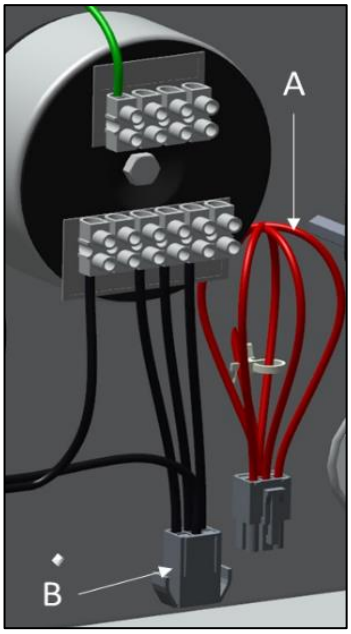


Fig. 5.1

Table 1

Mains Voltage	Selector A
200V	200V-208V
208V	200V-208V
220V	220V-230V-240V
230V	220V-230V-240V
240V	220V-230V-240V
380V	380V
400V	400V-415V
415V	400V-415V

Table 2

Mains Voltage	Selector A
200V	200V-208V
208V	200V-208V
220V	220V
230V	230V-240V
240V	230V-240V
380V	380V
400V	400V-415V-440V
415V	400V-415V-440V
440V	400V-415V-440V
480V	460V-480V

5.1.3. Models with breaker switch

Models ED260, ED340, ED460 and ED660

- Place the breaker switch handle in the OFF position.
- Remove the dryer top cover securing screws and remove it to allow removal of the rear cover.
- Remove the upper rear cover.
- Remove the caps covering the breaker switch terminals.
- Insert the electric cable inside the dryer through the hole (Fig. 4.1/**E**).
- Connect the power supply cable to the terminals of the breaker switch (Fig. 5.2). Replace the covers protecting the terminals.
- Connect the earth cable.
- Assemble all the covers and fix them. Assemble the switch handle.
- Check that the cable or the cable protection conduit is correctly attached to the back cover of the machine.

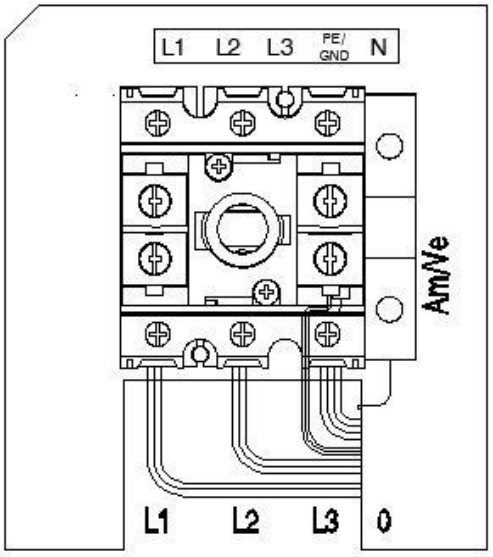


Fig. 5.2

Fig. 5.2**:** Example of a connection for electrically heated machines connected to a 3Ph + N + Earth line.

Machines with gas heating

On these models, the connection is **ALWAYS SINGLE-PHASE (1Ph+N) or TWO-PHASE**. (**2Ph**). However, they can be connected to a three-phase installation. (See the wiring diagrams in Section 4.2).

Models ED900 and ED1250 gas and steam

- Place the breaker switch handle in the OFF position.
- Remove the isolator switch cover.
- Remove the caps covering the breaker switch terminals.
- Insert the electric cable inside the dryer through the hole (Fig. 5.3/**E**).

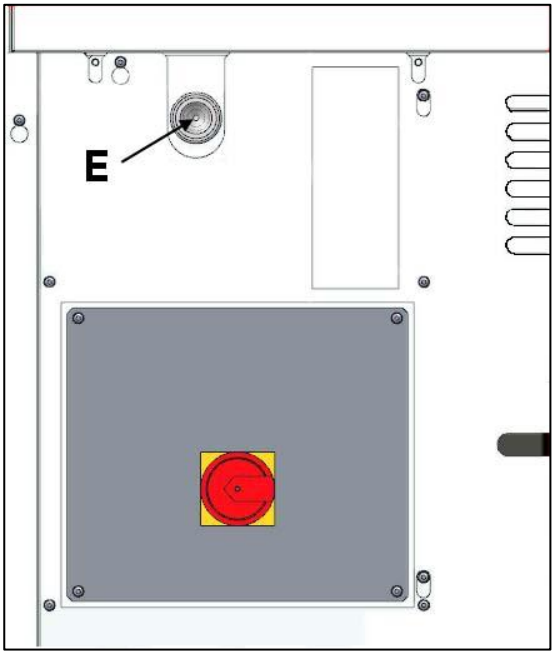


Fig. 5.3

- Connect the power supply cable to the terminals of the breaker switch. (Fig. 5.4: Models with gas and steam heating; Fig. 5.5: Models with electric heating).

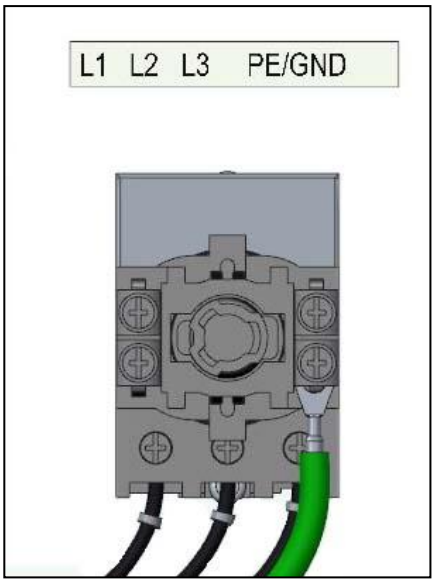


Fig. 5.4

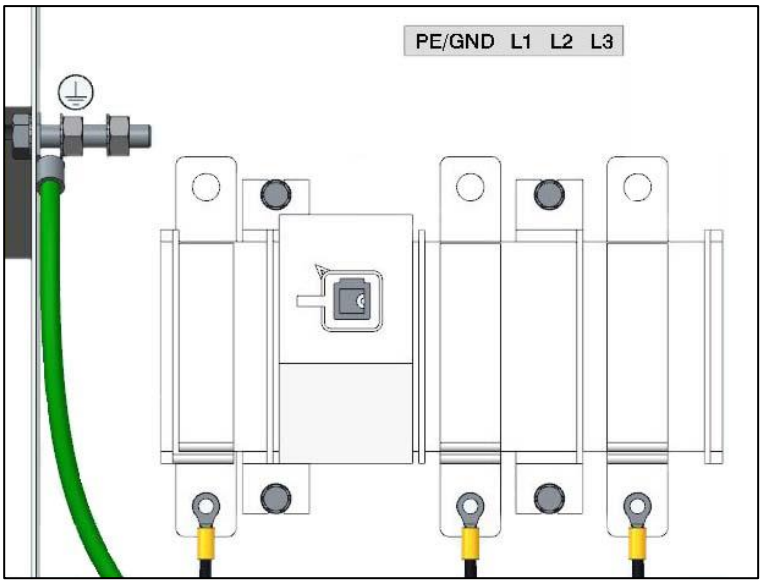


Fig. 5.5

- Replace the covers protecting the terminals.
- Connect the earth cable.
- Assemble all the covers and fix them. Assemble the switch handle.
- Check that the cable or the cable protection conduit is correctly attached to the back cover of the machine.

CAUTION!

The earth connection cable is a protection device. Attach it correctly.

5.1.4. Models without breaker switch

- Remove the top cover securing screws and remove it to allow to disassemble the rear cover.
- Remove the upper rear cover.
- Insert the electric cable inside the dryer through the hole (Fig. 4.1/**E**).
- Connect the power supply cable to the terminals of the breaker switch(Fig. 5.6).
- Connect the earth cable.
- Assemble all the covers and fix them.
- Check that the cable or the cable protection conduit is correctly attached to the back cover of the machine.

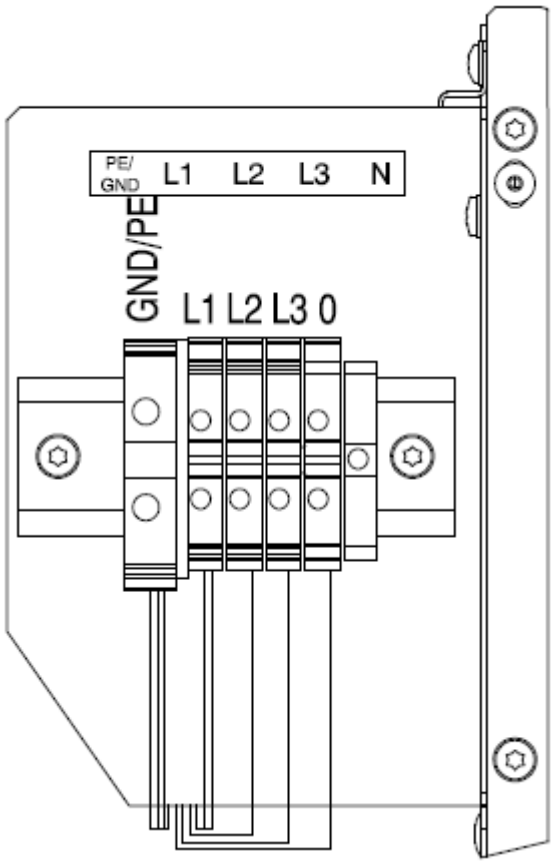


Fig. 5.6

Fig. 5.6**:** Example of a connection for electrically heated machines connected to a 3Ph + N + Earth line.

Machines with gas heating
On these models, the connection is **ALWAYS SINGLE-PHASE or TWO-PHASE**. However, they can be connected to a three-phase installation. (See the wiring diagrams in Section 4.2).

5.2. Steam connection

5.2.1. Characteristics of the installation

Before connecting the installation to the solenoid valve, purge the pipe conduits. Fit a mechanically lockable flow shutoff valve in the steam inlet in an accessible place. Check dimensions and connection diameters in the Installation specs (section **4.7**).

Generally the body of the steam solenoid valve and the filter are shipped disassembled from the electric installation. The coil is connected to the end of the electrical installation.

Fitting and connecting the solenoid valve
Should the machine include the optional solenoid valve, the coil will previously have been withdrawn from the transport position.
The electrical wiring must be fastened to the cut-out on the rear cover, next to the steam inlet (see Fig. 4.1). Fit the solenoid valve on the end of the steam inlet pipe of the machine.

Respect the steam circulation direction indicated by an arrow on each part. Connect the steam supply of the installation to the washer inlet. Safeguard the installation against accidental contact. It is advisable to insulate the installation to prevent heat loss. Fit the coil on the solenoid valve body and fasten it with the core end screw. Open the manual valve and check for leaks in the installation.

SEAL ALL THREADED UNIONS WITH A PRODUCT WHICH IS APPROPRIATE FOR STEAM PIPE CONDUITS.

5.3. Gas connection

CAUTION!

INFORMATION FOR MACHINES WITH GAS HEATING ONLY

CAUTION!

THE INSTALLATION OF THE GAS SUPPLY EXTERNAL TO THE MACHINE, ITS CONNECTION TO THE MACHINE AND SUBSEQUENT ADJUSTMENTS MUST BE CARRIED OUT BY A REGISTERED INSTALLATION CONTRACTOR.

ALL THE MATERIALS USED IN THE INSTALLATION MUST ALSO COMPLY WITH THE LEGALLY APPROVED REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY OR AREA IN WHICH THE MACHINE IS BEING USED.

ALL THE INSPECTIONS AND CHECKS MUST BE CARRIED OUT ON GAS APPLIANCES DEMANDED BY THE REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY OR AREA IN WHICH THE MACHINE IS TO BE USED.

THE VENTILATION IN THE PREMISES MUST COMPLY WITH THE REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY IN WHICH THE MACHINE IS TO BE INSTALLED AND MUST BE APPROVED BY A COMPETENT TECHNICIAN.

THIS DRYER MUST NOT BE INSTALLED IN PREMISES WITHOUT ADEQUATE VENTILATION.

INADEQUATELY VENTILATED PREMISES CAN SERIOUSLY AFFECT PEOPLE'S HEALTH.

CAUTION!

BEFORE CONNECTING THE MACHINE TO THE GAS PIPE, CHECK THAT THE TYPE OF GAS AND THE PRESSURE SUPPLIED CORRESPOND TO THOSE DETAILED ON THE DRYER SPECIFICATIONS NAMEPLATE.

BEFORE CONNECTING THE MACHINE TO THE GAS PIPE, CLEAN THE PIPES OF SOLID PARTICLES.

INSTALL A MECHANICALLY LOCKABLE MANUAL SHUT-OFF VALVE IN AN ACCESSIBLE LOCATION.

IT IS ALSO ADVISABLE TO INSTALL A GAS PASS FILTER TO PREVENT ENTRY OF IMPURITIES THAT CAN PREVENT THE PROPER FUNCTIONING OF THE DRYER'S VALVE.

THE PIPE BETWEEN THE MANUAL SHUT-OFF VALVE AND THE MACHINE MUST BE RIGID.

ALWAYS SEAL THE THREADED JOINTS USING PRODUCTS SUITED TO THE GASES BEING USED.

CHECK THAT THE ENTIRE INSTALLATION IS AIRTIGHT BEFORE OPENING THE MANUAL SHUT-OFF VALVE.

CAREFULLY CLEAN AND MAINTAIN ALL THE FILTERS. POOR FILTERING REDUCES THE FLOW AND PERMITS THE ACCESS OF FOREIGN MATERIALS INSIDE THE DEVICES, BLOCKING ITS OPERATION.

TO IMPROVE SAFETY IN GAS INSTALLATIONS, IT IS ESSENTIAL TO INSTALL A GAS LEAK DETECTOR NEAR THE MACHINE.

CAUTION! (ONLY FOR AUSTRALIAN MACHINES)

THIS MACHINE MUST BE INSTALLED BY AUTHORISED PERSONNEL IN ACCORDANCE WITH THIS INSTRUCTION MANUAL, AS/NZS 5601-GAS INSTALLATIONS (INSTALLATION AND PIPE SIZING) REGULATIONS, LOCAL GAS FITTING REGULATIONS, LOCAL WATER REGULATIONS, LOCAL HEALTH REGULATIONS, THE BUILDING CODE OF AUSTRALIA AND ANY OTHER GOVERNMENT AUTHORITY.

NATURAL GAS: THE SUPPLIED REGULATOR MUST BE FITTED TO THE MACHINE INLET CONNECTION. GAS PRESSURE MUST BE ADJUSTED TO 0.7 kPa WHEN THE BURNER IS OPERATING. THE APPLIANCE TEST POINT IS LOCATED ON THE COMBINATION CONTROL.

GAS LPG: WHEN THE BURNER IS OPERATING, GAS PRESSURE MUST BE ADJUSTED TO 2.30 kPa FOR ED460, AND TO 2.50 kPa FOR ED260, ED340 AND ED660. THE APPLIANCE TEST POINT IS LOCATED ON THE COMBINATION CONTROL.

CAUTION! (ONLY FOR ETL CERTIFIED MACHINES)

THIS MACHINE MUST BE INSTALLED BY AUTHORISED PERSONNEL IN ACCORDANCE WITH LOCAL CODES OR, IN THE ABSENCE OF LOCAL CODES, WITH THE NATIONAL FUEL GAS CODE, ANSI Z223.1/NFPA 54 OR THE NATURAL GAS AND PROPANE INSTALLATION CODE, CSA B149.1.

THE DRYER AND ITS MANUALLY OPERATED APPLIANCE MAIN GAS VALVE MUST BE DISCONNECTED FROM THE GAS SUPPLY PIPING SYSTEM DURING ANY PRESSURE TESTING OF THAT SYSTEM AT TEST PRESSURES IN EXCESS OF ½ PSI (3.5 KPA).

THE DRYER MUST BE ISOLATED FROM THE GAS SUPPLY PIPING SYSTEM BY CLOSING THE EQUIPMENT SHUT-OFF VALVE DURING ANY PRESSURE TESTING OF THE GAS SUPPLY PIPING SYSTEM AT TEST PRESSURES EQUAL TO OR LESS THAN ½ PSI (3.5 KPA).

A MINIMUM 1/8 IN NPT PLUGGED TAPPING, ACCESSIBLE FOR TEST GAGE CONNECTION, MUST BE INSTALLED IMMEDIATELY UPSTREAM OF THE GAS SUPPLY CONNECTIONS TO THE DRYER.

5.3.1. Characteristics of the gas installation

See the **Technical and Connection details for the machine** for the corresponding model (Chapter 4) for values regarding pressure, power consumption, and the diameter and position of the connection.

General installation requirements

VERY IMPORTANT!
In all operating conditions, the gas supply pressure at the dryer's inlet must never be less than the specified minimum pressure.

In order to ensure the supply pressure indicated, it is recommended to:

- **Install a pressure regulator capable of supplying the required flow, and fit a pressure gauge to the regulator inlet and outlet.**
- **Ensure that the gas conducting pipe is of a sufficient size.**
- **Avoid the use of flexible joints where possible.**
- **As protection for the burner, it is recommended to install a device to protect against excess pressure.**

Australian Installation requirements

VERY IMPORTANT!
In all operating conditions, the gas supply pressure at the dryer's inlet must never be less than the specified minimum pressure.

In order to ensure the supply pressure indicated, it is recommended to:

- **Install the supplied pressure regulator (certified according to AGA specs.) capable of supplying the required flow, and fit a pressure gauge to the regulator inlet and outlet test points and located on the combination control.**
- **Ensure that the gas conducting pipe is of a sufficient size.**
- **Avoid the use of flexible joints where possible.**
- **As protection for the burner, it is recommended to install a device to protect against excess pressure.**

5.3.2. Gas supply connection

The connection should be made at the input to the ducting, located at the rear of the machine (Fig. 4.1).
The machine intake connection pipe must meet the specifications in the table in Section 4.3.4.

WARNING!
MAKE SURE THE SUPPLY PRESSURE IS ALWAYS CORRECT. AN INCORRECT PRESSURE MAY CAUSE SERIOUS DAMAGE.
THE MANUFACTURER DECLINES ALL RESPONSIBILITY IN SUCH CASES.

5.4. Changing the type of gas

CAUTION!

THE OPERATION TO CHANGE THE TYPE OF GAS SHOULD ONLY BE CARRIED OUT BY AN AUTHORISED TECHNICAL SERVICE (ATS).

THE COMPANY RESPONSIBLE FOR THE AUTHORISED SERVICE ACCEPTS FULL RESPONSIBILITY FOR THE WORK CARRIED OUT AND ANY POSSIBLE CONSEQUENCES ARISING FROM IT.

ANY WORK NOT CARRIED OUT BY PERSONNEL AUTHORISED BY THE MANUFACTURER SHALL BE CONSIDERED INADMISSIBLE AND AUTOMATICALLY LEAD TO THE LOSS OF THE MACHINE'S WARRANTY.

THE PERSON FROM THE TECHNICAL SERVICE RESPONSIBLE FOR CHANGING THE TYPE OF GAS MUST FILL IN THE INFORMATION ON THE SPECIFICATION NAMEPLATE CORRESPONDING TO THE NEW TYPE OF GAS AND AFFIX IT INSTEAD OF THE MACHINE'S ORIGINAL SPECIFICATION NAMEPLATE.

BEFORE CHANGING THE TYPE OF GAS, THE TECHNICIAN MUST:

READ AND ENSURE HE/SHE UNDERSTANDS CORRECTLY THE SAFETY INSTRUCTIONS SET OUT IN THE INITIAL SECTION OF THIS MANUAL.

MAKE SURE THE SITTING OF THE MACHINE AND THE GAS INSTALLATION COMPLY WITH EXISTING REGULATIONS CONCERNING GAS APPLIANCES FOR THE COUNTRY OR AREA WHERE THE MACHINE IS TO BE USED.

MAKE SURE THE NEW TYPE OF GAS IS LISTED AMONG THE DIFFERENT TYPES OF GAS REFERRED TO IN PARAGRAPH 4.3. OF THIS MANUAL. IF IN DOUBT, CONSULT THE COMPANY SUPPLYING THE GAS.

A FLUE GAS ANALYSER MUST BE USED TO PERFORM THIS OPERATION.

For ETL certified models:

WARNING

THIS CONVERSION KIT SHALL BE INSTALLED BY A QUALIFIED SERVICE AGENCY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND ALL APPLICABLE CODES AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

IF THE INFORMATION IN THESE INSTRUCTIONS IS NOT FOLLOWED EXACTLY, A FIRE, EXPLOSION OR PRODUCTION OF CARBON MONOXIDE MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.

THE QUALIFIED SERVICE AGENCY IS RESPONSIBLE FOR THE PROPER INSTALLATION OF THIS KIT. THE INSTALLATION IS NOT PROPER AND COMPLETE UNTIL THE OPERATION OF THE CONVERTED APPLIANCE IS CHECKED AS SPECIFIED IN THE MANUFACTURER'S INSTRUCTIONS SUPPLIED WITH THE KIT.

In order to adapt the machine to a new type of gas, the corresponding kit for changing the type of gas should be requested from the manufacturer:

	ED260	ED340	ED460	ED660	ED900	ED1250
Gas conversion kit to G20 natural	792481	792440	792408	792366	11164159	10143097
Gas conversion kit to G25 natural	792499	792457	792416	792374	11165164	10144194
Gas conversion kit to ETL natural	647495	647511	647537	647552	11166956	10147247
Gas conversion kit to AGA natural	627125	627109	627083	627067	-	-
Gas conversion kit to G3137 propane	792507	792465	792424	792382	11165685	10116549
Gas conversion kit to G3150 propane	792515	792473	792432	792390	11166337	10148641
Gas conversion kit to ETL propane	647487	647503	647529	647545	11167285	10153104
Gas conversion kit to AGA propane	627133	627117	627091	627075	-	-

The kit for changing the type of gas is made up of the following components:

- Injector/s.
- Gas type change label
- Deflector. In accordance to the model.
- Regulator. In accordance to the model.
- Information on the location of the details needed to fill in the label in the machine's Instruction manual.

In addition to the conventional tools (spanners and screwdrivers) the following **tools and measuring devices** are needed.

- Vernier calliper
- Flue gas analyser
- Pressure gauge adjusted to the pressure range to be measured
- Allen key No. 4

CAUTION!

AFTER CHANGING THE TYPE OF GAS:

- **Fill in and affix the gas type change label**
- **Check the machine operation as described in chapter 8 - initial start-up.**
- **Assemble and fix all the machine's covers back in place.**

5.4.1. Gas type change label

THIS EQUIPMENT WAS CONVERTED ON (DAY-MONTH-YEAR)……(1)…..…
TO……(2)……. **GAS WITH KIT No** ….(3)……**BY**……(4)……

(name and address of organization making this conversion, who accepts the responsibility for the correctness of this conversion).

PRESSURE ..... (5)
mbar

CONSUMPTION (PROPANE GAS) ..... (6) ..... kg/h
(NATURAL GAS) ..... (7) ..... **m^3/h**

NOMINAL HEAT CONSUMPTION (Hi) ..... (8) ..... **kW**

ORIFICE (DIAMETER) ..... (9) ..... **mm**

Gas type change label fields

(1) Date of the change
(2) Type of gas the dryer is to be changed to
(3) Part number of the gas change kit
(4) Organisation, company or ATS that has carried out the change.
(5) Gas supply pressure
(6) Massic consumption; models supplied with propane gas
(7) Volumetric consumption; models supplied with natural gas
(8) Nominal calorie consumpt. with regard to H_i
(9) Injector diameter.

See Section 4.3 for values of fields 5, 6, 7, 8 and 9.

5.4.2. Changing the combustion adjustment elements. Models ED260, ED340, ED460 and ED660

Changing the type of fuel gas requires modifying the combustion adjustment elements: the **injector** and the **venturi** (Fig. 5.7).

This should be carried out as follows:

- Remove the back cover (ED260 and ED340) or the intermediate back cover (ED460 and ED660) as appropriate.
- Replace the gas injector (**A**) with the appropriate injector for the new type of gas (see injector values in the table in Section 4.3.1).
- Change the position of the Venturi (**B**) in accordance with Measurement **E** in the enclosed table. Set the position of the Venturi using the screw **C**.
- On models ED460 adapted for propane gas, the gas deflector (**D**) must also be fitted. (Except for machines installed in Australia, see next paragraph).

Australian Machines: On ED260 and ED460 models adapted for propane gas, the 120º gas deflector (D) must also be fitted.

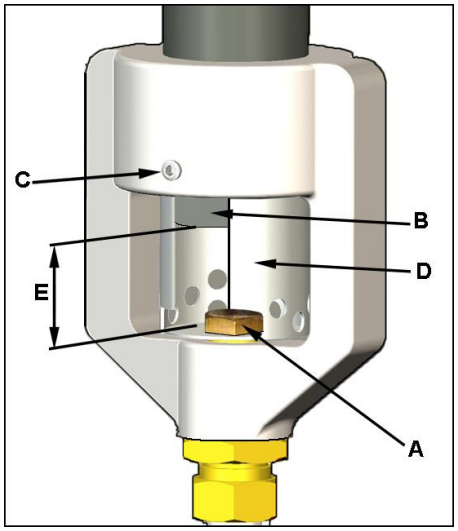


Fig. 5.7

CAUTION!

THE GAS VALVE ADJUSTMENT MUST BE LEFT UNALTERED.

- Replace and secure ALL the covers.
- Start up the machine and select a program with temperature to cause the burner to ignite (see directions in Chapter 8).
- Based on the result of the analysis of the combustion gases, if necessary, adjust the position of the Venturi until the correct amount of combustion is obtained.

Adjusting the position of the Venturi

TYPE OF GAS	ED260 mm (in)	ED340 mm (in)	ED460 mm (in)	ED660 mm (in)
NATURAL	30 (1.18)	25 (0.98)	25 (0.98)	25 (0.98)
PROPANE 37 mbar / 14.85 in.wc	30 (1.18)	13 (0.51)	30 (1.18)	25 (0.98)
PROPANE 50 mbar / 20.07 in.wc	30 (1.18)	13 (0.51)	30 (1.18)	15 (0.59)

Adjusting the position of the Venturi (Australian machines only)

TYPE OF GAS	ED260 mm (in)	ED340 mm (in)	ED460 mm (in)	ED660 mm (in)
NATURAL	30 (1.18)	25 (0.98)	25 (0.98)	25 (0.98)
PROPANE	30 (1.18)	13 (0.51)	30 (1.18)	25 (0.98)

5.4.3. Changing the combustion adjustment elements. Models ED900 and ED1250

Changing the type of fuel gas requires modifying the combustion adjustment elements: **injector, movable deflector, fixed deflector and pressure regulator**. To do so, proceed as described below:

- Remove the two top covers.
- Then also remove the top cover on the left-hand side.
- Loosen the nuts (**F**) and clamps (**G**) in order to then remove the gas ducts (**H**). (Fig. 5.8).

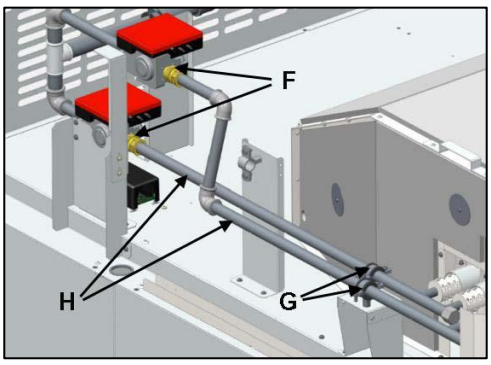


Fig. 5.8

- With the ducts removed and out of the machine, change the injectors (**K**) and the deflectors (**J**) in accordance with the new type of gas. (See the injector values in the table in Section 4.3.1). (Fig. 5.9).

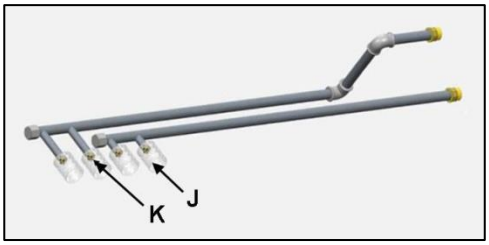


Fig. 5.9

- Refit and secure the gas ducts in their original position on the machine, ensuring that the joint with the nuts (**F**) is airtight.
- Loosen the screwed joint (**C**) in order to then adjust the shutter (**B**) by sliding it until it is at the correct position for the new gas, in accordance with measurement (**A**) in the attached table. (Fig. 5.10).

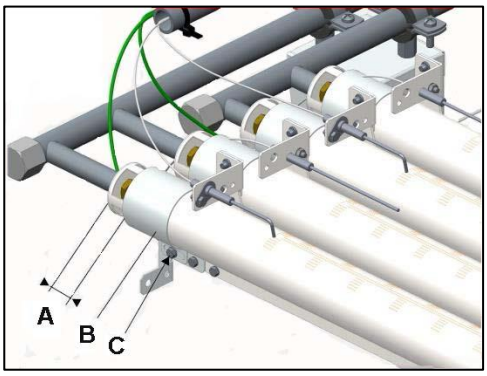


Fig. 5.10

- To convert to propane gas, **L**, **M** and **N** will also need to be added. (Fig. 5.11 and Fig. 5.12).

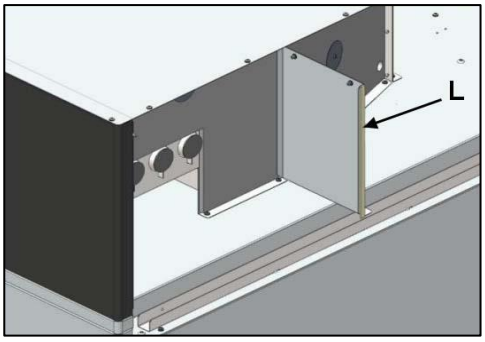


Fig. 5.11

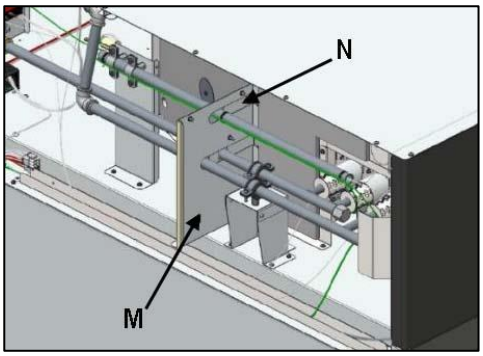


Fig. 5.12

CAUTION!

THE GAS VALVE ADJUSTMENT MUST BE LEFT UNALTERED.

• Finally, the pressure regulator **P** must be replaced (Fig. 5.13). Ensure that the pressure at the gas valve inlet matches the one stated on the specification nameplate.

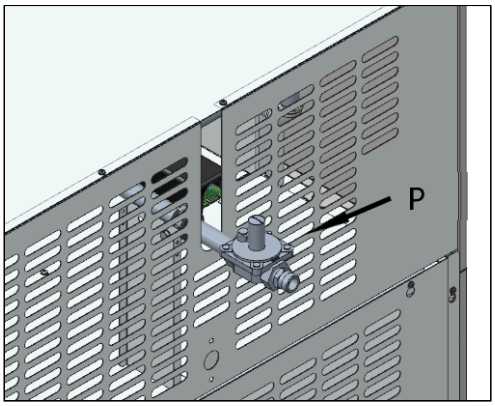


Fig. 5.13

- Replace and secure ALL the covers.
- Start up the machine and select a program with temperature to cause the burner to ignite (see directions in Chapter 8).
- Based on the result of the analysis of the combustion gases, if necessary, adjust the position of the deflector until the correct amount of combustion is obtained.

Adjusting the position of the deflector

TYPE OF GAS	ED900	ED1250
	mm (in)	mm (in)
NATURAL	20 (0.79)	20 (0.79)
PROPANE	20 (0.79)	20 (0.79)

5.5. Connecting the exhaust ducting

CAUTION!

IT IS COMPULSORY FOR EXHAUST DUCTS TO BE INSTALLED BY AN REGISTERED INSTALLATION CONTRACTOR, AND SUCH INSTALLATIONS MUST CONFORM TO THE EXISTING LAWS IN THE COUNTRY OR AREA WHERE THE MACHINE IS USED.

DANGER!

SOOT AND LINT MUST BE PERIODICALLY CLEANED FROM THE INSIDE OF THE EXHAUST DUCTING FROM THE MACHINE TO OUTSIDE. DO NOT FORGET THAT BOTH LINT AND SOOT ARE HIGHLY COMBUSTIBLE MATERIALS. WE RECOMMEND CARRYING OUT THIS OPERATION AT LEAST EVERY THREE MONTHS.
A FAULTY EXTRACTION SYSTEM CAN CAUSE SERIOUS RISKS TO THE HEALTH OF OPERATORS.

DANGER!

SPECIFIC WARNING FOR MACHINES WITH GAS HEATING.

- **THE EXHAUST DUCT MAY EXTRACT UNBURNT GAS.**
- **SOME COMPONENTS FROM DRY CLEANING PROCESSES MAY DECOMPOSE INTO TOXIC AND/OR CORROSIVE PRODUCTS IF THEY PASS THROUGH BURNER FLAMES.**

FOR THIS REASON, THE MACHINE'S EXHAUST DUCT SHOULD ALWAYS LEAD DIRECTLY TO A SECURE OUTSIDE LOCATION AND NEVER BE CONNECTED TO ANY OTHER DUCT OR CHIMNEY.

CAUTION!

SPECIFIC CAUTION FOR USA/CANADA MACHINES

CANADA: ONLY THOSE FOIL-TYPE FLEXIBLE DUCTS, IF ANY, SPECIFICALLY IDENTIFIED FOR USE WITH THE APPLIANCE BY THE MANUFACTURER SHALL BE USED.

USA: ONLY THOSE FOIL-TYPE FLEXIBLE DUCTS, IF ANY, SPECIFICALLY IDENTIFIED FOR USE WITH THE APPLIANCE BY THE MANUFACTURER AND THAT COMPLY WITH THE UL 2158A, SHALL BE USED.

5.5.1. Specifications for the ducting

See the **Wiring diagram** (Chapter 4.6) for the corresponding model for flow, diameter and position of connection. Identified in this manual as **EV**.

- It should be as short as possible, and the section specified in **Exhaust ducting**. **Technical and connection details** (Section 4.8) must be maintained throughout the whole ducting. If the maximum pressure of the exhaust duct exceeds the value indicated in the table in Section 4.8, it may require a wider diameter duct.
  Section 9.1 sets out the procedure for controlling the exhaust duct pressure.
- It must be fire-resistant, rigid, anti-corrosive with a smooth inside surface and these properties must remain unaltered at a minimum of 150 ºC (302 ºF).
- The duct is not to be assembled with screws or other fastening means that extend into the duct and catch lint.
- It must be airtight all around and thermally insulated up to a height from the floor of at least 2.7 metres (107 in).
- Only rigid or flexible metal duct should be used for exhausting. Plastic ducting is not to be used.
- If flexible metal ducting is used, its length shall not exceed 2.4 m.
- If the extraction produces a significant noise, it is advisable to fit soundproofing.
- It shall have the minimum number of bends. To avoid losing contents, the angle of the bends shall not be more than 45º.
- It must always be conducted in an upwards direction. An upwards gradient of at least 3% and the shortest length possible.
- The outlet shall be clear and separate, and shall never be joined to any other duct.
- When passing through walls or roofs made of wood or other combustible materials, the diameter of the cavity has to be 100 mm (4 in) greater than the ducting. In these cases the ducting must be protected by fire resistant material.
- To aid in analysing combustion products and exhaust duct pressure, two measurement points must be provided that can be closed during normal operation (see Figure 9.1).
  Height of these openings: 1 m (40 in) from the floor.
  Opening for inserting the flue gas analyser sensor: Approximate diameter 10/12 mm (0.5 in).
  Pressure control opening: Approximate diameter: 3.5 mm (0.14 in).
- In ducting longer than 10 m (400 in) or if there is a lot of water from condensation, install a 1/2**”**(12,7 mm) o 3/4**”**(19,05 mm) drain at the lowest point, to drain the water. In cold temperatures, insulate the ducting to reduce condensation.
- It is advisable to follow the instructions set forth in the local regulations currently in force regarding the exhaust duct outlet.

Assembling the exhaust ducting

Once the dryer is situated in its final position and levelled, secure the exhaust duct to the outlet on the dryer.

DANGER!

To prevent accidental contact with the dryer fan through the extraction output, the extraction pipe joint must be fitted using a device that is secure and requires a tool for its disconnection.

See the **Technical and Connection details** for the machine in Chapter 4.

5.5.2. Exhaust extraction for several machines

The best extraction is achieved by connecting the extraction ducts individually for each machine. However, when several machines need to be connected to a main manifold, bear in mind that its dimensions should be as indicated below (Fig. 5.14).

- The diameter of the main duct should increase progressively as individual ducts are added (Fig. 5.14/**A**). The minimum diameters should increase proportionally if the approximate length of the collector (Fig. 5.14/**B**) exceeds 6 metres (20 ft) or has several elbow joints.
- The cross-section can be circular or square, provided that the area is not reduced.
- The assembly and layout of the ducts should ensure that the internal surfaces are uniformly smooth, in order to prevent lint from accumulating at the joints and be easy to clean.
- The extraction ducts from each of dryers to the manifold (Fig. 5.14/**A**) should:
  - have an input angle of 45º in the direction of flow (Fig. 5.14/**C**).
  - have rounded elbow-joints (Fig. 5.14/**C**).
  - be connected to the bottom or to one side of the main duct (Fig. 5.14/**C**)
  - be made of sheet metal or other non-combustible material.
  - Incorrect dimensions or poor fitting of any of the sections of the ducts may cause excessive backpressures, which can cause build up of fluff, slow drying and an increased risk of fire.
- Where the extraction duct passes through a wall or a ceiling made of combustible material, the opening to be made should be at least 5 cm (2 in) greater than the diameter of the duct, and the latter should be centred in the opening (Fig. 5.14/**D**)
- The main manifold should have an access point for inspection and maintenance at the end (Fig. 5.14/**E**).

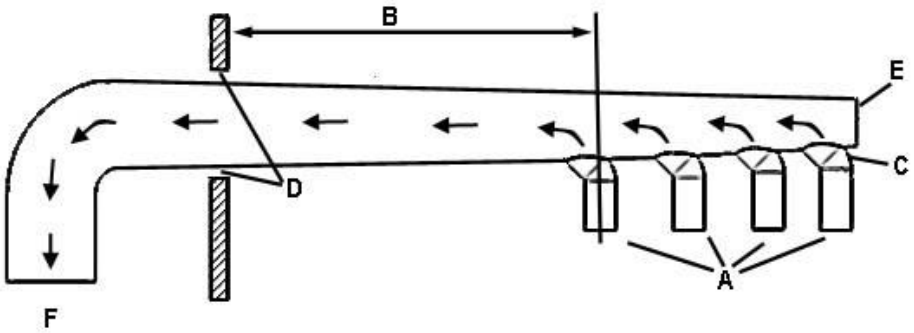


Fig. 5.14

	Description
A	Individual dryers
B	Length of the manifold to the dryers
C	Input angle of 45º in the direction of flow
D	Opening 5 cm (2 in) greater than the diameter of the manifold
E	A cleaning and inspection cover
F	Air output

6. EMERGENCY STOP IN COIN-OP INSTALLATIONS

IN ACCORDANCE WITH SAFETY REQUIREMENTS FOR INDUSTRIAL MACHINERY STANDARD (UNE-EN ISO 10472-1,5-2) AND OTHER SAFETY REQUIREMENTS, THE LAUNDRY OWNER/MANAGER IS RESPONSIBLE FOR INSTALLING AN EMERGENCY STOP DEVICE THAT AFFECTS ALL THE MACHINES IN THE LAUNDRY.

Device features
It should be located in a visible place, separated from all machines and easily accessible.
It should break the electrical supply for all machines.
It should be designed with a capacity to disconnect all the machines safely at the moment of maximum consumption.
A START order is required to reconnect the whole installation after the Emergency Stop Push-button has been unlocked.

7. STARTING A DRYING CYCLE FROM AN EXTERNAL DEVICE

VERY IMPORTANT!!!

A drying cycle should only be started by voluntary activation of an activating element designed for this purpose.

In the case of machines connected to a remote control start-up system (e.g.: a central vending unit, etc.), this control must be located so as to ensure that the operator may be absolutely certain that no person is exposed to any dangerous area of the machine (warning based on Machine Directive 98/37/CE, Appendix 1).

7.1. Connecting to a central vending unit and configuring the machine

Consult the manual for INSTALLING AND CONFIGURING THE VENDING CIRCUIT part number 430731.

8. OPTIONS

8.1. AFS option (Fire prevention)

Consult the AFS System Installation and Operation Instruction Manual, part number 627307.

9. INITIAL START-UP OF THE MACHINE

CAUTION!

THE OPERATIONS IN THIS CHAPTER MUST BE CARRIED OUT BY AUTHORISED TECHNICAL SERVICES.

It is highly recommended to have the following measuring devices available to monitor the machine during the initial start-up:

For all dryer models:
- **Multimeter.** Reading range: from 0 to 1,000 VAC.
- **Clamp ammeter**. Reading range: higher than 300 AAC.
- **Pressure gauge.** Capable of measuring pressure and suction.

For dryer models with gas-heating:
Also necessary, in addition to the above:
- **Gas analyser**. Suitable for the analysis required to comply with the legislation in the country where the machine is installed.

9.1. Initial checks

CAUTION!

BEFORE STARTING UP THE MACHINE, REMOVE ALL THE ACCESSORIES DELIVERED STORED INSIDE THE DRUM.

- Check the levelling and stability of the machine. All four feet must be in contact with the floor.
- Check that all the machine's covers are fitted and secured correctly.
- Check that the installation details relating to the sources of energy (electric, steam or gas) match those on the machine's specification nameplate.
- Check that the vents and extraction ducts are constructed as shown in Chapters 3 and 4 of this manual.
- In **gas heated** machines, open the manual valve for the gas supply circuit and check that the gas supply pressure is correct.
- In **steam heated** machines, check that the steam pressure matches the one stated on the specification nameplate.
- Connect the breaker switch.
- Start up the machine and select a program with a high temperature (approx. 90 ºC / 190 ºF) that will cause the heating system to turn on (see the operating instructions in the corresponding Operating Instruction Manual).
- Check that the heating system is connected properly.
- After the start of the program, and before the machine reaches room temperature, check that the pressure in the exhaust duct complies with the maximum pressure data stipulated in the table in Section 4.8. (See the measurement conditions in the same section.)
- Check that the power consumption is in agreement with the values set out in the tables in Chapter 4.
- In **gas heated** machines, check through the rear cover that the burner lights up, and that the flame is blue, stable and uniform. Analyse the combustion products as described in Section 9.2. If the flame is not stable or the combustion products do not comply with the requirements in force in the country where the machine is installed. stop the drying program immediately.
- In **electric heated** machines, check that the machine's power consumption is correct and consistent with the values set out in the table in Section 4.4.
- Stop the machine from operating by pressing the STOP key, depending on the control, and check that the heating system has been disconnected. On machines with gas heating, check that the burner flame is completely extinguished.
- Check that the drying air output adjustment flap is swinging freely.
- If any anomaly is detected, stop the dryer immediately, disconnect the power supply and the gas input and inspect the installation.

CAUTION!

Check the free movement of the flap for regulating the exhaust output.

This flap is a safety device that blocks the entry of air through the exhaust pipe in the event of a blow back.

For this reason IT SHOULD NEVER BE REMOVED.

9.2. Machines with gas heating. Analysis of the combustion gases

Once the drying program has begun:

Wait a few minutes until the exhaust temperature exceeds 80 ºC (176 ºF).
Analyse the combustion products (Fig. 9.1). **THE RESULT MUST COMPLY WITH THE REQUIREMENTS IN FORCE IN THE COUNTRY WHERE THE DRYER IS INSTALLED.**
Some operating conditions may call for slight modification of the combustion control devices, particularly the Venturi. See Section 8.2.1 on how to adjust the position of the Venturi.

Fig. 9.1

9.2.1. Adjusting the position of the Venturi. Models ED260, ED340, ED460, ED660

- Stop the machine.
- Switch off or close and mechanically lock the power supply and the manual gas inlet valve.
- Wait a reasonable time to ensure that there are no high temperature surfaces inside the machine.
- Remove the back cover (ED260 and ED340) or the intermediate back cover (ED460 and ED660) or the upper rear left-hand side cover (ED900 and ED1250) as appropriate.
- Loosen the Allen screw (**C**, Fig. 9.2 and 9.3) and adjust the position of the Venturi body (**B**).

In ED260, ED340, ED460, ED660 models:
- Moving the Venturi upwards: increases the combustion air flow.
- Moving the Venturi downwards: reduces the combustion air flow.

In ED900, ED1250 models:
- Moving the Venturi towards the burner: increases the combustion air flow.
- Moving the Venturi towards the injector: reduces the combustion air flow.

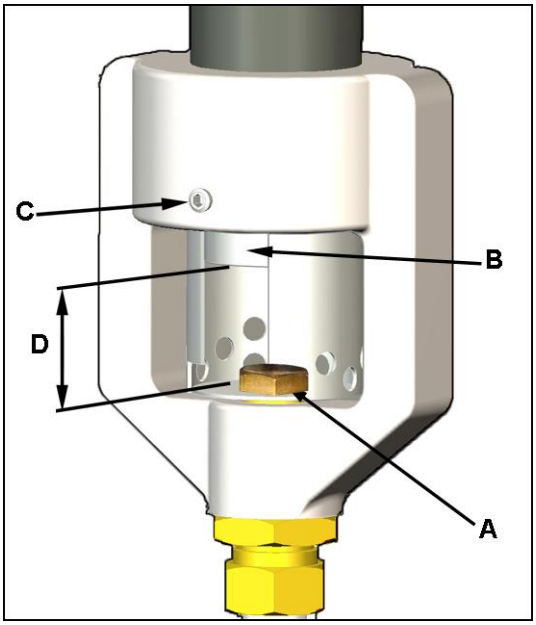


Fig. 9.2

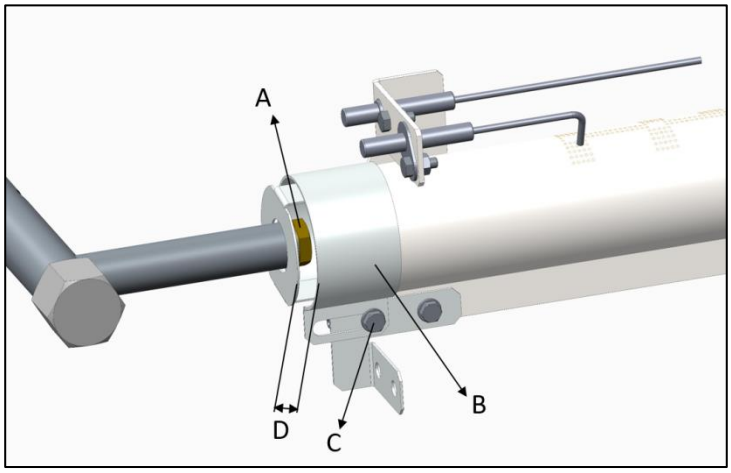


Fig. 9.3

- As a guide:
  - The lack of combustion air produces an orange flame and the combustion is smoky.
  - An increase in combustion air produces a blue flame. If air flow is excessive, it tends to separate the flame from the burner.
- Set the position of the Venturi.
- Replace all the covers and connect the electricity and gas supply.
- Repeat the initial test and analyse the combustion products (Fig. 9.1).
- Repeat the operations described as many times as necessary in order to achieve combustion values consistent with the current requirements in the country where the dryer is installed.

It is advisable to keep a log of the gas analyser readings along with the machine's technical documentation.

10. REMOVAL FROM SERVICE AND DISMANTLING

CAUTION!

- **Taking the dryer out of service must be performed by a specialised service or contractor.**
- **Under no circumstances must the dryer be left unchecked.**
- **When it comes to handling and transporting the machine, the same precautions and regulations must be taken into account as for the installation process.**

On taking the dryer out of service

- Disconnect and mechanically lock the external switch. Remove all the supply cables.
- If the dryer is gas heated, close and mechanically lock the manual gas inlet valve . Remove gas supply hoses.
- Remove the exhaust duct.

Dismantling

Most of the dryer's components are made with recyclable or recoverable materials.

The injected pieces bear information on the materials that were used to make them.

The main materials are:

- Steel plates
- Stainless steel plates
- Aluminium
- Glass
- Copper
- Electronic components.

CAUTION!

In compliance with Directive 2002/96/EC on the management of waste from electronic devices, it is the obligation of the manufacturer to warn that:
The electronic components installed in the machine must be dismantled and delivered to treatment facilities authorised for this purpose.