Installation manual
Ironers

IC63316 — IC63320

Original language

Electrolux PROFESSIONAL

01103054/EN

Contents

The manufacturer reserves the right to make changes to design and component specifications.

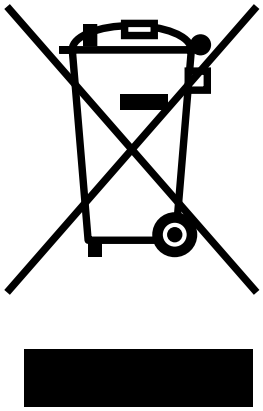
1 Environmental information

Concerned by providing the end user with useful and necessary environmental information, we wish to precise:

- Data about energetic consumptions, wastes (atmospheric and liquid) and sound level are indicated in the paragraph «Technical characteristics».
- Foreseeing its recycling, this machine is fully dismantable.
- This machine is free from any asbestos.
- In conformity with French regulations.
- In the other countries, we recommend that you comply with the legislation in force in the country where the machine is installed.
- In France, all owners of packing waste producing a weekly volume below 1100 litres can forward these to the local collection and treatment department. If exceeding this volume, the owners of packing waste will ensure their valuation by reuse, recycling or, any other action aiming at producing reusable materials or energy... or provide them contractually to a certified intermediate authorised to transport, trade or broke waste.

  Therefore, this forbid:
  – land filling raw waste;
  – open air burning or incineration without energy collection.
- Packaging of our machines are according with the french legislation related to environment requirements.

For additional information, do not hesitate to consult with our environmental department.



Scrapping of machine
When the machine is no longer to be used, it must be submitted to a recycling facility for destruction.
The majority of the components in the machine can be reused, but it also contains other materials that must be taken care of in the correct way.
Therefore, never mix the machine or its parts with domestic waste as this may lead to health hazards or damage to the environment.

2 Preliminary instructions

This machine should be installed in conformance to the health and safety regulations, and only used in a sufficiently aerated area. Check the instructions before installing or using the machine.

Caution

The mechanical and electrical installation of the machine should only be done by qualified personnel.

Do not use the machine unless it is plugged into a correctly earthed power socket complying with standards in force.

Warning

Make sure the machine is disconnected from the mains before repairing or servicing.

Important

Any repairing or maintenance operation should be carried out by a specialist.

Important

The machine is delivered with a wall instructions paper to be clearly fixed near the machine.

Caution

Under no circumstances should a gas-heating machine be installed in a building which includes a **dry-cleaning machine.**

Caution

It is specially advised not to install the machine on a synthetic floor covering. The frictional electricity may hinder the good working of the machine.
Earthing is compulsory.

Important

After the installation, Send back the commissioning form ,signed document, to ElectroluxProfessional to validate the warranty of the product.

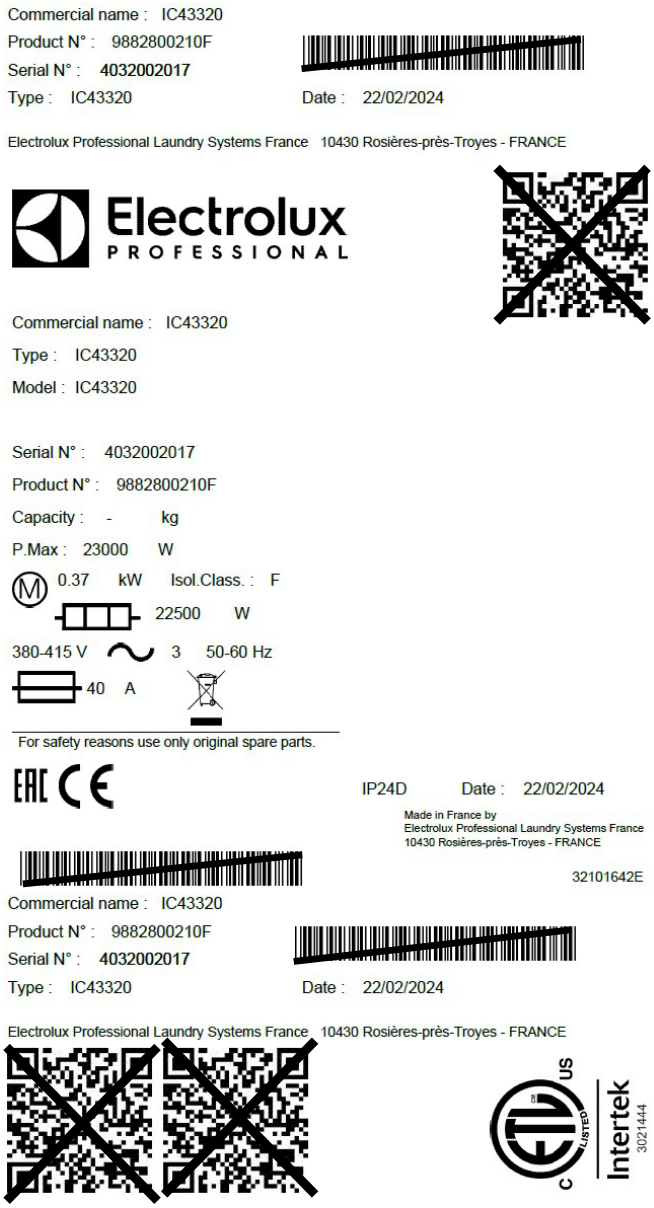
3 Data plate explanation

In this chapter, you will find the explanation of the different data input on the data plate of your product.

- Commercial name : Usual name of your product (i.e. IC43320).
- Type : Type of your product (you have the same on the Declaration of Conformity CE if delivered with CE certification).
- Model : Model of your product (can be different of commercial name) .
- Serial Number : serial number of your product which indicate the week of the production of your product (the first 4 digit indicate the year and the week of production)
  and the plant where it has been produced (finish by 17)
- Product N°: Product number of your product.
- Date : The date of the end of manufacture of your product
- Some technical data depending of the heating of your product : see list below :
- Some technical data depending of the voltage ordered.
  the voltage looks like that 380–415V 3 50–60Hz
  under this, you find the protection request for your product (i.e 16 A)
- Different logos are available on your data plate .
  They represent the different certification obtained for your product
  CE, EAC
  ETL intertek for USA and Canada countries
- QR code : when you scan it, you will be able to obtain the full documentation for your product (Complete installation and user manuals)
- Standardized protection index of your product : IP24D

Electric heating :

- P.Max : maximum power installed of your product
- Power of the motorization in kW and its isolation class (F) .
- Heating power in W .



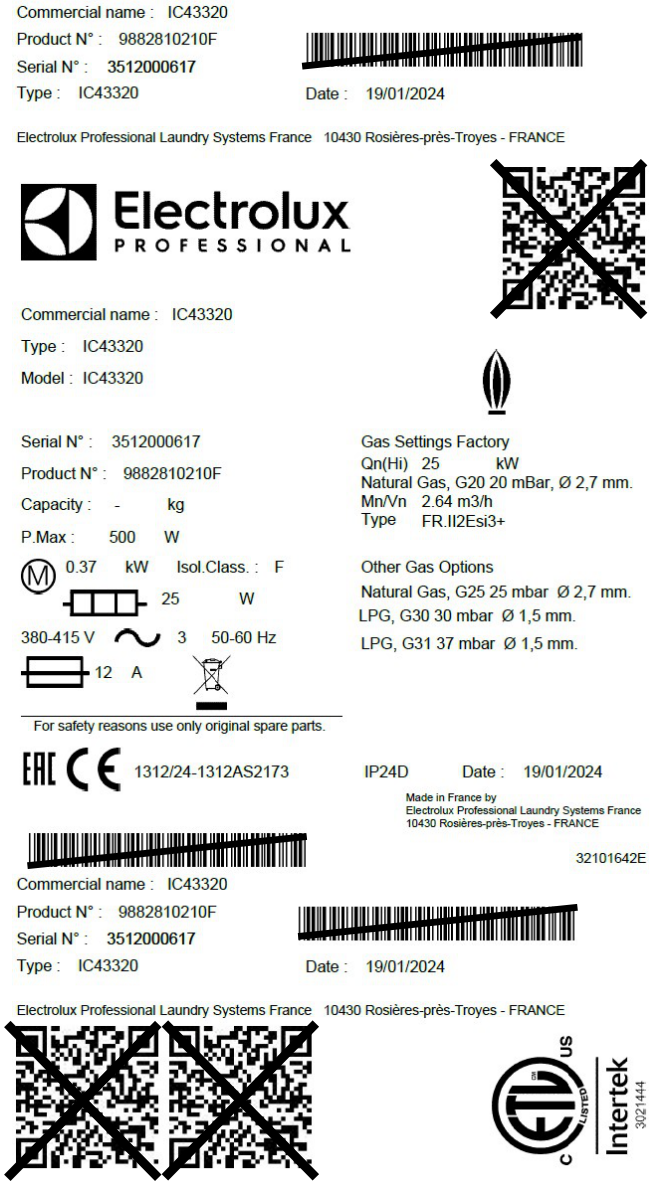
Gas heating :

Left side

- P.Max : maximum power installed of your product
- Power of the motorization in kW and its isolation class (F) .
- Heating power in W .
- Gas approval number depending on your machine except ETL product (begin by1312/.....)

Right side

- Qn (Hi) : heating power of your product
- Installed gas type , its pressure, its injector diameter and its consumption .
- Gas type for approval
- 3 Other gas type compatible with their pressure, their injectors diameter



4 Note about the A.C. power

According to the EN 60204-1:2018 standard, the machine is provided for A.C. supplies corresponding to the extracted characteristics below :

4.3.2 A.C. supplies

Voltage:

Steady state voltage: from 0.9 to 1.1 of nominal voltage.

Frequency:

from 0.99 to 1.01 of nominal frequency continuously.

from 0.98 to 1.02 short time.

Harmonics:

Harmonic distortion not to exceed 10 % of the total r.m.s. voltage between live conductors for the sum of the second through to the fifth harmonic. An additional 2 % of the total r.m.s. voltage between live conductors for the sum of the sixth through to the 30th harmonic is permissible.

Voltage unbalance:

Neither the voltage of the negative sequence component nor the voltage of the zero sequence component in three-phase supplies shall exceed 2 % of the positive sequence component.

Voltage interruption:

Supply interrupted or at zero voltage for not more than 3 ms at any random time in the supply cycle. There shall be more than 1 second between successive interruptions.

Voltage dips:

Voltage dips shall not exceed 20 % of the peak voltage of the supply for more than one cycle. There shall be more than 1 second between successive dips.

5 Safety precautions

CAUTION

Before any use, it is compulsory to read the instruction handbook.
Users must have learnt how the machine operates.
This device must not be installed in places accessible to the public.
Do not allow minors to use the machine.
Do not hose down the machine with water.
If the machine develops a fault, this must be reported to the person in charge as soon as possible. This is important both for your safety and that of others.
DO NOT MODIFY THIS APPLIANCE.
Servicing shall be carried out only by authorized personnel.
Only authorized spare parts shall be used.
When performing service or replacing parts, the power must be disconnected.
When the power is disconnected, the operator must see that the machine is disconnected (that the plug is removed and remains removed) from any point to which he has access. If this is not possible, due to the construction or installation of the machine, a disconnection with a locking system in the isolated position shall be provided.
In accordance with the wiring rules : mount a multi-pole switch prior to the machine to facilitate installation and service operations.
In order to prevent damage to the electronics (and other parts) that may occur as the result of condensation, the machine should be placed in room temperature for 24 hours before being used for the first time.
In case of a gas heated machine, do not assemble the machine on premises containing a dry cleaning machines or other similar machines.

CAUTION

For the following countries : AT, BE, BG, HR, CY, CZ, DK, EE, FI, FR, DE, GR, HU, IS, IE, IT, LV, LT, LU, MT, NL, NO, PL, PO, PT, RO, SK, SI, ES, SE, CH, TR, UK : This appliance shall not be installed where the public has access.
For other countries : This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety and understand the hazards involved. Children should be supervised to ensure that they do not play with the appliance.

IMPORTANT

After the installation, Send back the commissioning form ,signed document, to ElectroluxProfessional to validate the warranty of the product.

IMPORTANT

The identification plate is located on the left side, near the main switch.
You find a QR code on this data plate and in front of the machine: with it, you have access to ElectroluxProfessional website to register your product.

IMPORTANT

Sound pressure level is found in Technical data.

CAUTION

Disconnect all the sources of energy before any intervention on the machine.

The machines comply with the European Directive EMC (Electromagnetic Compatibility). They have been tested in laboratory and approved as such. It is so prohibited to add wires or nonshielded electric cables in the cabinets, strands or cables' troughs.

CAUTION

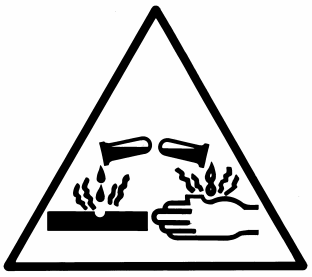
The machine can work without the protective casing when the electric supply is not cut off.
Interlock the main isolating switch with a padlock.
Close the steam or gas inlet valves.

THINK OF THE ENVIRONMENT!

The use and handling of chemical products such as detergent, chlorine, acids, descaling agents, etc may create hazards for health and environment ; the following precautions should be taken:

- Do not breathe the dusts or steam;
- Avoid contact with skin or eyes (may cause burns);
- In case of important spillage, wear a protecting mask, gloves, and eye protectors;
- Handle with care;
- Consult the use and first aid advice on the packing;
- Do not dispose pure products in the environment.

WARNING



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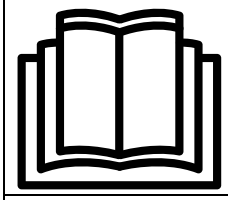
- In case of important spillage, wear a protecting mask, gloves, and eye protectors.
- Handle with care.
- Consult the use and first aid advice on the packings.
- Do not dispose pure products in the environment.

5.1 Symbols

	Caution. An exclamation mark inside an equilateral triangle offers the user important advice about usage, servicing and hazardous conditions.
	Caution, presence of dangerous current. A flash of lightning with an arrow at its end displayed inside an equilateral triangle, warns the user about the presence of uninsulated "dangerous current" sufficient in intensity to cause electrocution.
	Caution, hot surface. This symbol warns the user of the presence of high temperatures which could cause severe burns. Some surfaces can reach close to 200 °C (392 °F).
	Read the instructions before using the machine.
	Warning, do not operate with casing removed. This symbol warns the user that there are mechanisms inside the machine which can be dangerous. The protective housing must be in place during use.

5.2 Personal protection equipment

Given below is a summary table of the Personal Protection Equipment (PPE) to be used during the various phases of the machine's service life.

Phase	Protection garments 	Safety footwear 	Gloves 	Glasses 	Ear protectors 	Mask 	Safety helmet 
Transport		**X**	O				
Handling		**X**	O				
Unpacking		**X**	O				
Installation		**X**	O				
Normal use	**X**	**X**	**X**	**X**			
Adjustments	O	**X**					
Routine cleaning	O	**X**	**X**	O			
Extraordinary cleaning	O	**X**	**X**	O			
Maintenance	O	**X**	O				
Dismantling	O	**X**	O				
Scrapping	O	**X**	O				

Legend : **X** : PPE required ; **O** : PPE available or to be used if necessary.

Normal use : Safety footwear must be defined for a use on a wet floor. And use glasses and gloves to manipulate chemical products.

6 Handling

Important

It is obligatory that all these operations are undertaken by handling specialists.

6.1 Unpacking

You should have found an instruction handbook and keys to open the machine casings, in the machine.

Depending on its destination, the ironer is delivered bare or may be placed on a transport pallet and/or packed with plastic film.

In some cases, it may be delivered in a crate, or in maritime packing (wood box).

Take off the plastic film or remove the wood with a spanner.

Caution

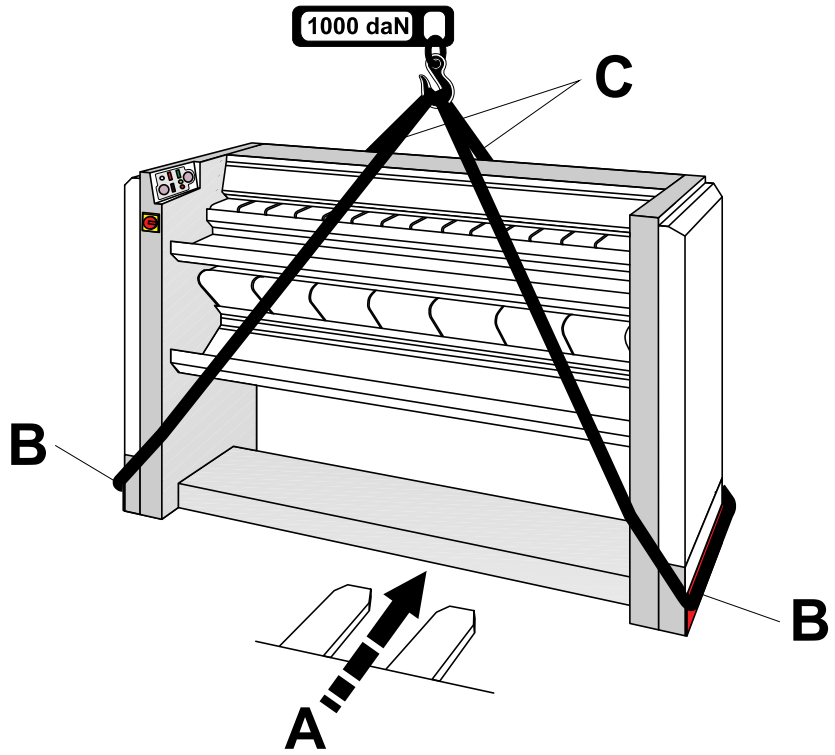
Check that no damage has been caused during transport.

6.2 Lifting with a fork-lift truck

Warning

You should never handle the machine in its longitudinal side (any other than shown on the drawing below (A)) with a fork-lift truck. Important risk of parts deterioration for those fixed under the machine.

This can be carried out from the front or back, and at the centre of the machine using forks with minimum length of 1.50 m (59”) .



6.3 Lifting with handlings straps

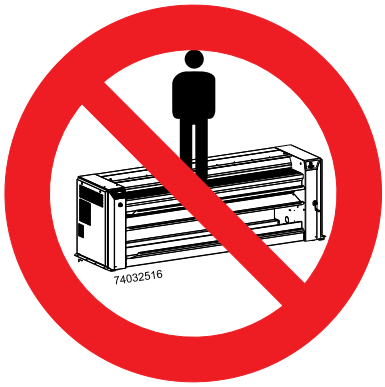
Lifting in that case can only be done with handling straps (C : minimum capacity 1000 daN / L : minimum length 4m (13.1 ft)) which bear weight of the machine.

Caution

Make sure to place the straps correctly to avoid any bending of parts of the machine.

Caution

In order to avoid any bending of casings, you should never climb and stand on top of the machine.



6.4 Moving along the ground

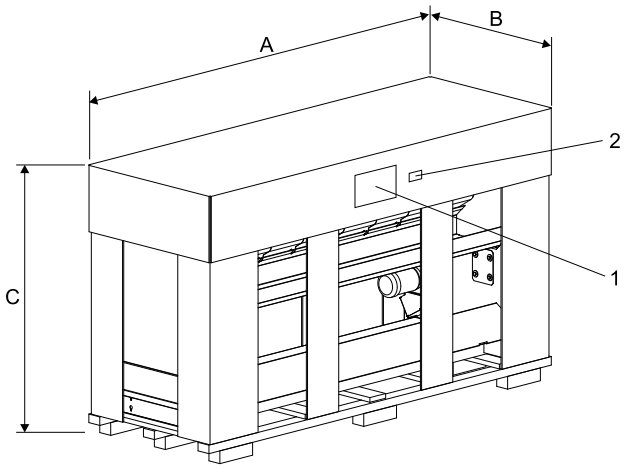
The machine frame includes a girder, so that the machine can be moved along the ground using rollers, grinding tracks or a trolley.

The two handling angles (B) can be used to lift the machine using hydraulic jacks or poles, so that rollers can be slipped under the girder.

7 Packaging-Weight

The ironing machine is secured to a transport pallet and packaged in a cardboard box.

Ironing width	Units	3316	3320
Packaging dimensions (boxed)			
Length (A)	**mm/ in**	2200 / 86.61	2620 / 103.15
Width (B)	**mm/ in**	770 / 30.31	770 / 30.31
Height (C)	**mm/ in**	1380 / 54.33	1380 / 54.33
Weight gas heating (machine + pallet)	**kg / lb**	350 / 772	465 / 1025
Weight electric heating (machine + pallet)	kg / lb	340 / 750	450 / 992



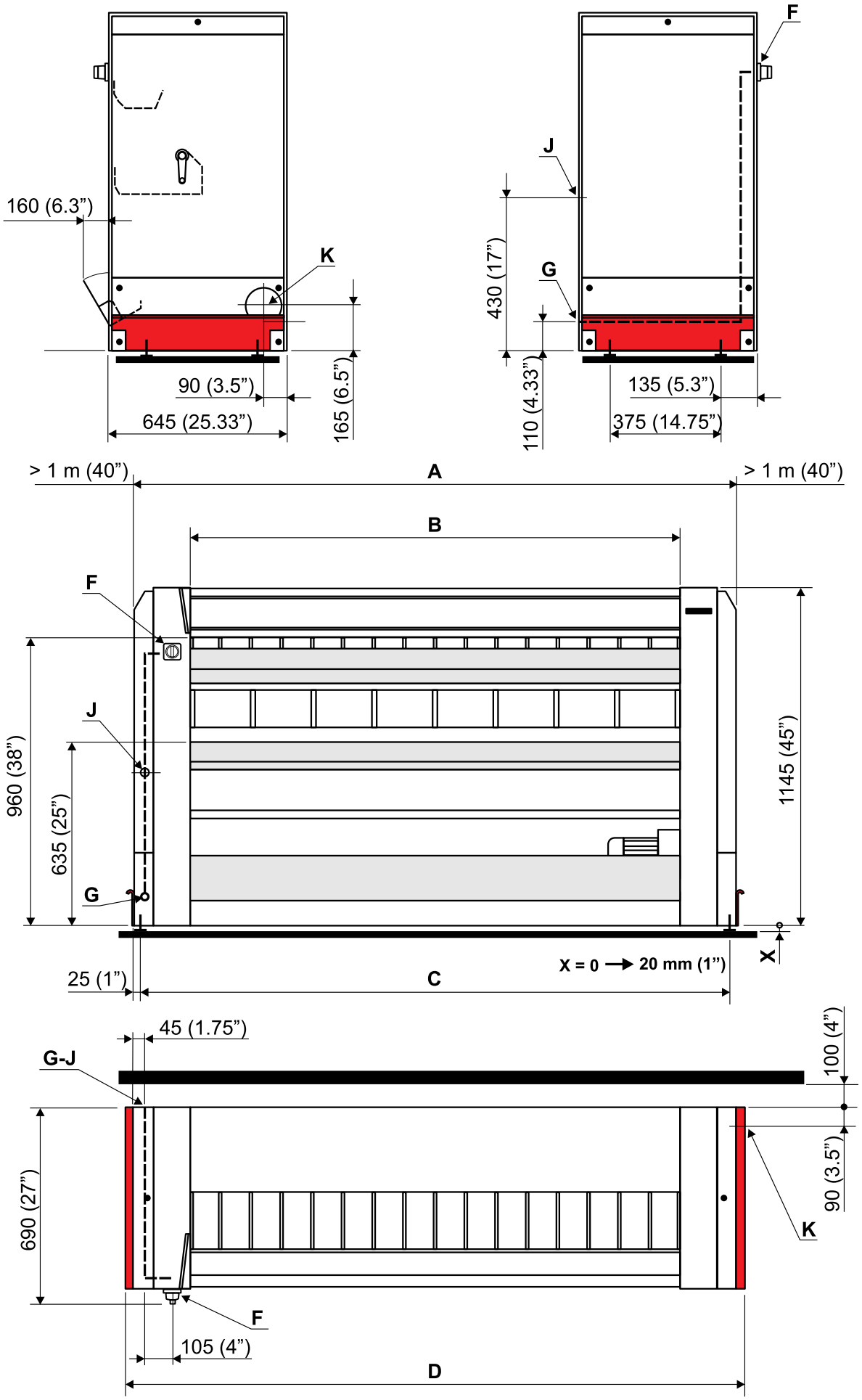
1 : Identification plate

2 : Adjustment label (for gas machine only)

8 Technical characteristics

Neither base nor sealing are indispensable.

It is yet possible to fix the ironer to the floor.
To do so, use the holes made to block the machine on the transport pallet.


160 (6.3”)
K
90 (3.5”)
645 (25.33”)
165 (6.5”)
F
J
G
430 (17”)
110 (4.33”)
135 (5.3”)
375 (14.75”)
> 1 m (40”)
A
> 1 m (40”)
B
F
J
960 (38”)
635 (25”)
G
1145 (45”)
X = 0 → 20 mm (1”)
X
25 (1”)
C
45 (1.75”)
G-J
100 (4”)
690 (27”)
90 (3.5”)
K
F
105 (4”)
D

Machine type		Units	3316	3320
A	Width	mm / “	2030 / 79.92	2445 / 96.26
B	Length of feeding table = Effective working width	mm / “	1650 / 64.96	2065 / 81.3
	Cylinder diameter	mm / “	325 / 12.8	325 / 12.8
C	Distance between feet	mm / “	1975 / 77.75	2390 / 94.09
D	Overall width	mm / “	2100 / 82.68	2515 / 99
	Floor area	m² / ft²	1.4 / 15.07	1.7 / 18.3
F	Main switch to connect electric main cable			
G	Inlet for electric main cable			
J	Gas Inlet	mm / ”	20 / 3/4”	20 / 3/4”
K	Drain of vapour or burnt gas diameter	mm / “	125 / 4.9	125 / 4.9
	Power supply cable	—	see table	see table
	Electric power, total load electric heating	kW / hp	18.5 / 24.8	23 / 30.8
	Electric power, total load gas heating	kW / hp	0.5 / 0.7	0.5 / 0.7
	Electric heating power	kW / hp	18 / 24.1	22.5 / 30.2
	Gas heating power	kW / Btu/h	20 / 68240	25 / 85300
	Max. hourly consumption electric heating	kWh / kcal	18.5 / 15917.8	22.5 / 19359.5
	Max. hourly consumption gas heating	kWh / kcal	0.5 / 430.2	0.5 / 430.2
	Max. water evaporation capacity[1]	kg/h / lb/h	19.5 / 43	24.5 / 54
	Heat loss (3% of installed heating power)	W / hp	150 / 0.2	260 / 0.3
	Exhaust air max. with no pressure at 15°C (59°F) (gas heating)	m3/h (f3/min)	426 (141)	515 (303)
	Total pressure with no flow ‘gas heating)	Pa / Psi	540 / 0.07832	540 / 0.07832
	Admissible pressure drop on evacuation (gas heating)	Pa / Psi	200 / 0.029	200 / 0.029
	Ironing speed mini	m/min / ft/min	0.5 / 1.64	0.5 / 1.64
	Ironing speed maxi	m/min / ft/min	7.5 / 26.4	7.5 / 26.4
	Heating surface	m² / ft²	1.1 / 11.8	1.4 / 15.1
	Net Weight Gas Heating	kg / lb	295 / 650	325 / 717
	Net Weight Electric Heating	kg / lb	290 / 639	315 / 695

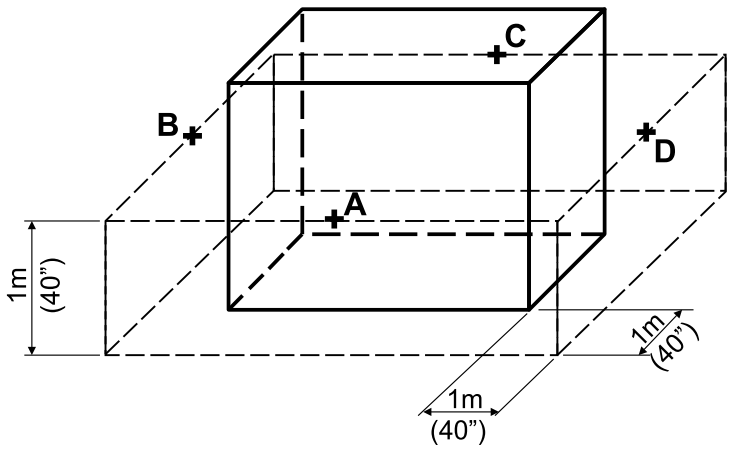
1. With 20 % residual moisture content and 100 % roller utilization (according to ISO 93.98 standard).

Model	Heating	Appro-val	Supply voltage	Rated intensity	Main switch	Connection ca-ble section	Protection
3316	Electric	EC & AGA	400 V 3 ~ 50/60 Hz	26.7 A	3 x 32 A	4 x 6 mm² / AWG10	3 x 32 A
	Electric	EC	220–240 V 3 ~ 50/60 Hz	46.5 A	3 x 63 A	4 x 10 mm² / AWG8	3 x 63 A
	Gas	EC & AGA	400 V 3 ~ 50/60 Hz	1 A	4 x 20 A	4 x 2.5 mm² / AWG12	3 x 12 A
	Gas	EC	220–240 V 3 ~ 50/60 Hz	2.5 A		4x 2.5 mm² / AWG14	3 x 12 A
	Gas	ETL (US market)	120 V 1 ~ 60 Hz	5.5 A		4x 2.5 mm² / AWG14	10 A
	Gas	ETL (US market)	208/240 V 1 ~ 60 Hz	3 A	3 x 20 A	4x 2.5 mm² / AWG14	10 A
	Gas	EC	230 V mono ~ 50/60 Hz	3 A	2 x 32 A	3 x 6 mm² / AWG10	12 A

Model	Heating	Appro-val	Supply voltage	Rated intensity	Main switch	Connection ca-ble section	Protection
3320	Electric	EC & AGA	400 V 3 ~ 50/60 Hz	32.5 A	3 x 32 A	4 x 6 mm² / AWG10	3 x 32 A
	Electric	EC	220–240 V 3 ~ 50/60 Hz	58 A	3 x 63 A	4 x 10 mm² / AWG8	3 x 63 A
	Gas	EC & AGA	400 V 3 ~ 50/60 Hz	1 A	4 x 20 A	4 x 2.5 mm² / AWG12	3 x 12 A
	Gas	EC	220–240 V 3 ~ 50/60 Hz	2.5 A		4x 2.5 mm² / AWG14	3 x 12 A
	Gas	ETL (US market)	120 V 1 ~ 60 Hz	5.5 A		4x 2.5 mm² / AWG14	10 A
	Gas	ETL (US market)	208–240 V 1 ~ 60 Hz	3 A	3 x 32 A	4x 2.5 mm² / AWG14	10 A
	Gas	EC	230 V mono ~ 50/60 Hz	3 A	3 x 32 A	3 x 6 mm² / AWG10	12 A

9 Sound level

Airborne noise emitted by the machine (values established as from measurements made on the machine at points A, B, C, D).



Ironing width		3316	3320
Weighted acoustic pressure level (A) in dB(A)	Point A	63	63
	Point B	62	62
	Point C	63	63
	Point D	65	65

Important

This ironing machine should only be used for previously washed and pre-dried, machine-ironable textiles.

Important

In this normal case of use, it is not necessary to connect the exhaust duct to the open air.

In the opposite case, the exhaust duct must be connected to the open air, by the shortest way, and with as few bents as possible.

Incline the flexi-hose downwards, as compared to the machine.

Protect the end of the exhaust duct from the bad weather.

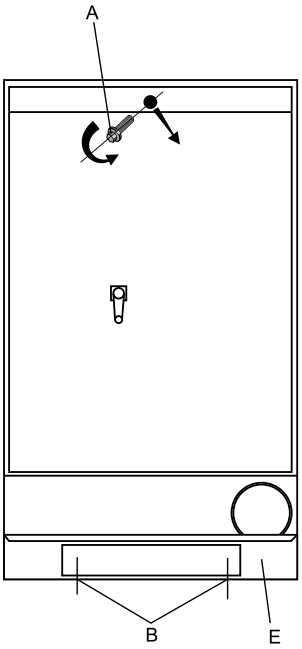
Do not connect the exhaust duct to a gas, coal, fuel oil furnaces chimney. Separate it also from any other ducting (tumble dryer, finishing cabinet).

10 Installation

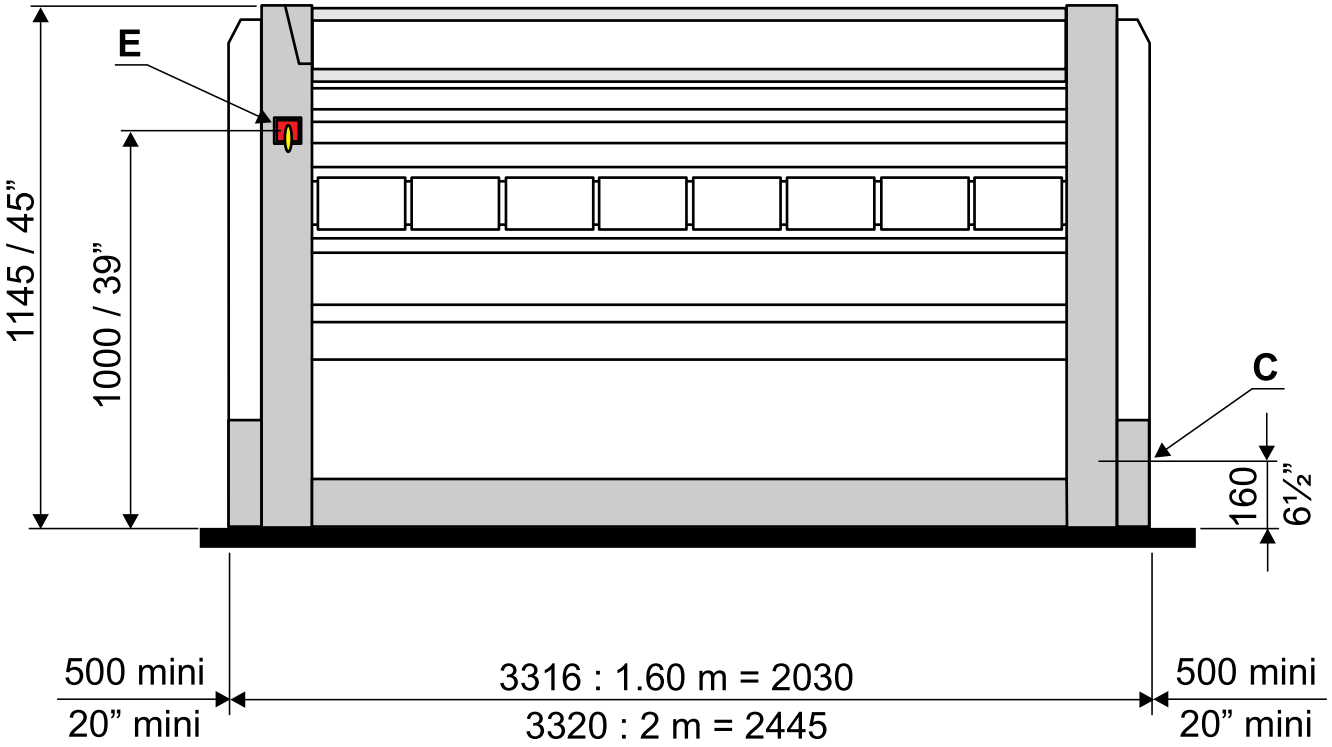
The ironer must be transported to its final position in the laundry before the pallet is removed.

Remove the cardboard box and the two side panels (key included).

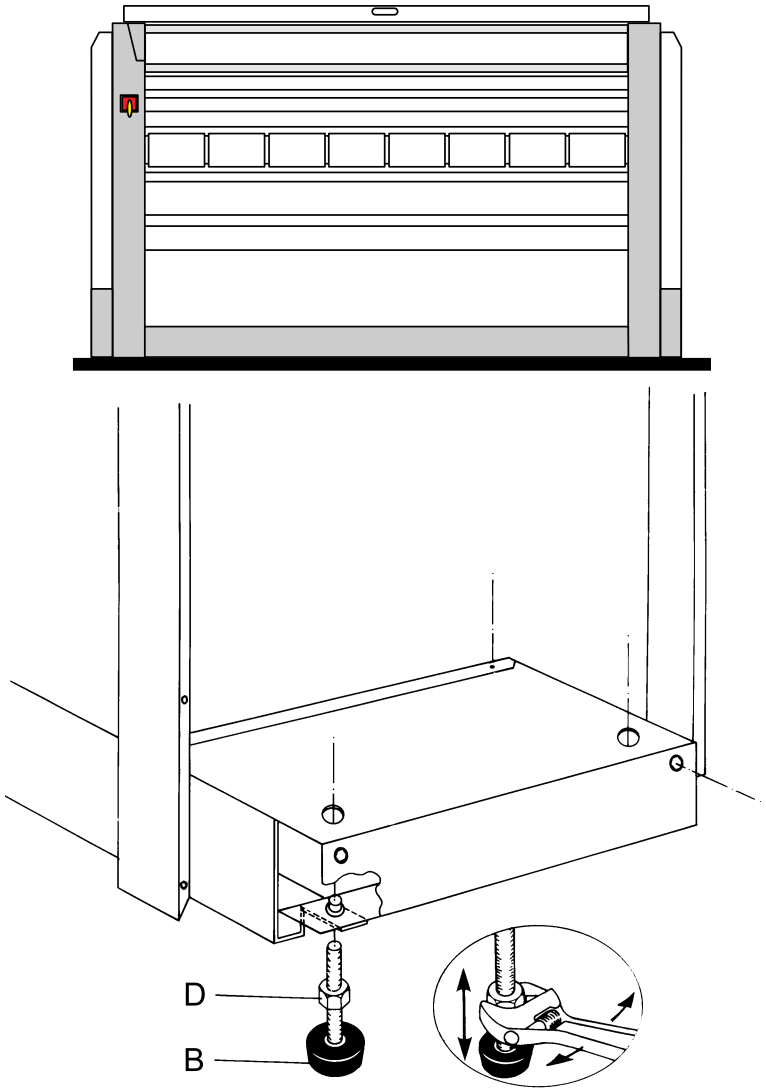
1. Remove the 2 fixing screws (1 screw by casing) which fix the machine to the transport pallet and unload the machine.



2. Install the ironer in an area where it is easily accessible by both operators and service technicians.
   Make sure that the side of the machine is at least 500 cm (20”) away from walls or other machines.
   Leave at least 1 m (40") **(according to standards applicable)** between the machine and a wall or another machine on the left side in order to be able to carry out an intervention on the caisson.
   In addition, leave a minimum of 10 cm (4”) between the machine and any rear wall.



3. Install the four adjustable feet and counternuts delivered with the machine as shown on the Fig. 2 below.
   Place the machine on a perfectly stable and level floor. Check the horizontality of the machine using a spirit level at both its centre and ends.
   Act on the adjusting feet (B), and level the machine and then fix by thelocknut (D).
   Control the floor space (E) between the two casings in order for the treadle to move correctly.


D
B

11 Working place lighting

The lighting should be designed so as to avoid eye strain for the operator ; it should be uniform without any glare, and should be sufficient to detect any hazards.

The average lighting value on the working place recommended by the clothing industry for inspecting linen is **500 lux**.

Whenever possible, the working place should be illuminated by daylight.

12 Electrical connection

Prior to use, the machine should be plugged into a correctly earthed power socket complying with the standard in force.

Important

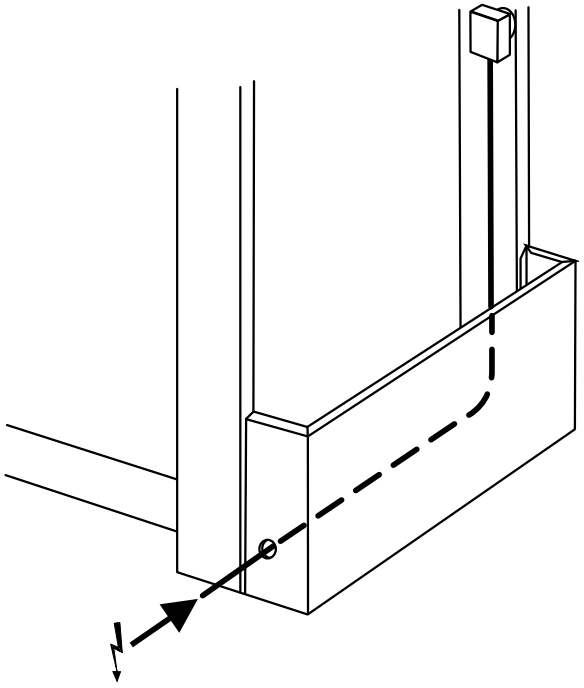
The mechanical and electrical installation of the machine should only be done by qualified personnel.

Important

Make sure that both the power voltage is correct and the power supply of your installation is sufficient before connecting the machine.Use only a cable to supply the machine.

For each machine, install a fixed multipole circuit breaker (or fuses protector) in the laundry main cabinet.

Pass the machine power supply cable through the orifice (see sketch).



Important

Check that the mains voltage is correct and that your installation is powerful enough before connecting the machine (see chapter 5 page 9 for the cross sectional areas of cables).

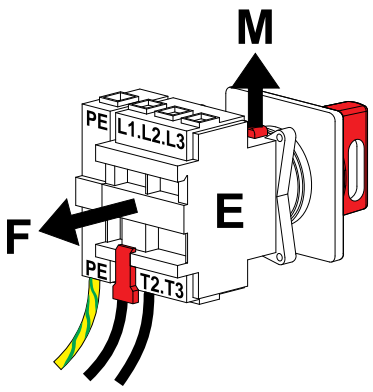
Insert the feeding cable in the designed port (letter B on the foundation plan on the rear left side of the caisson)

Dismantle the general switch (E) by activating the red lever (M) upward to separate the body from the head of the switch, and then pull it backward following arrow (F).

Connect this cable on the general switch (E) observing the location of the threads.

To reassemble the body of the switch, reverse the operation (activate (M) downward to lock).

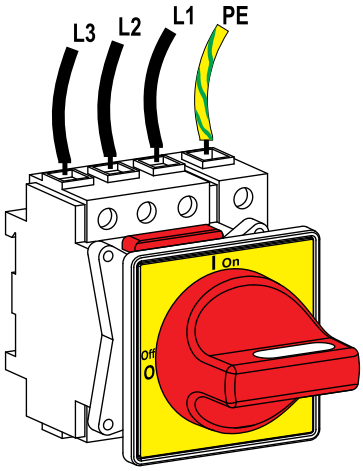
L1	Phase no 1
L2	Phase no 2
L3	Phase no 3
PE	Earth connection



Connect the power supply cable on the machine main switch.

Check the order of phases on the switch terminals (see marks L1, L2, L3 and PE on the switch).

NOTE : you must respect the fan rotation direction.

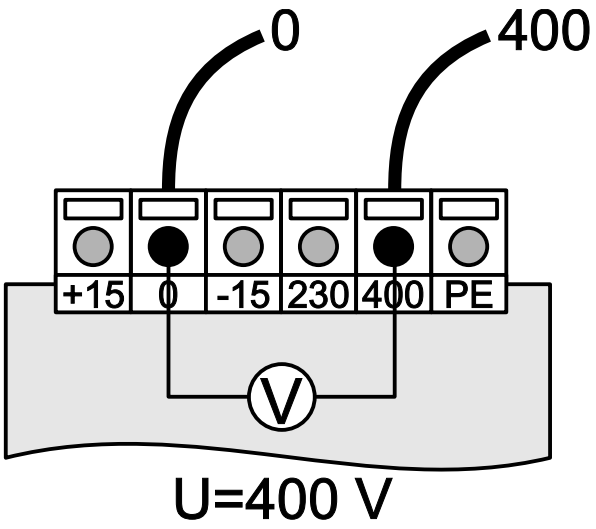


Connection diagrams for the control circuit power supply transformer (T1) as a function of the various customer power supply voltages.

400 Volts supply

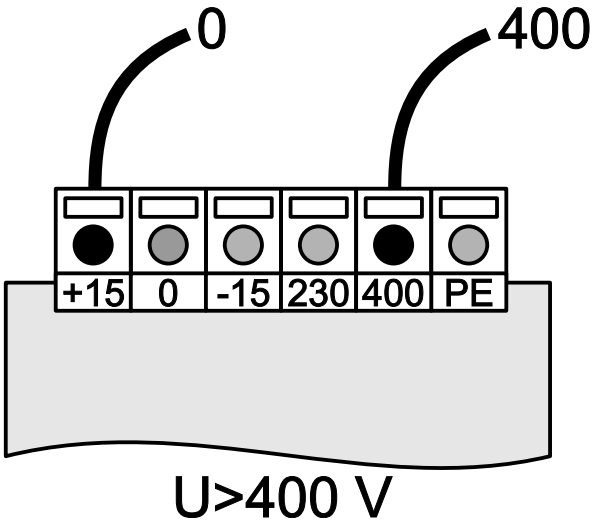
Measure the power supply voltage at the transformer primary with a voltmeter between the transformer 0 and 400 volt terminals.

If the voltage is equal to 400 volts, do not touch the transformer connection which must be as shown in the adjacent figure.

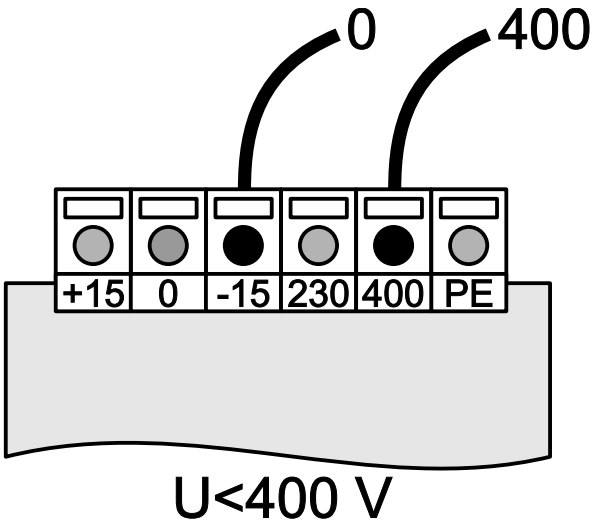


If the voltage is > 400 volts (for example: 420 or 430 volts), connect the wires to the transformer as shown in the adjacent figure.

Note!
we recommend that you should adopt this solution even if the voltage is normally equal to 400 volts but may be subjected to temporary variations, so that you do not apply an overvoltage to the electrical equipment in your machine.



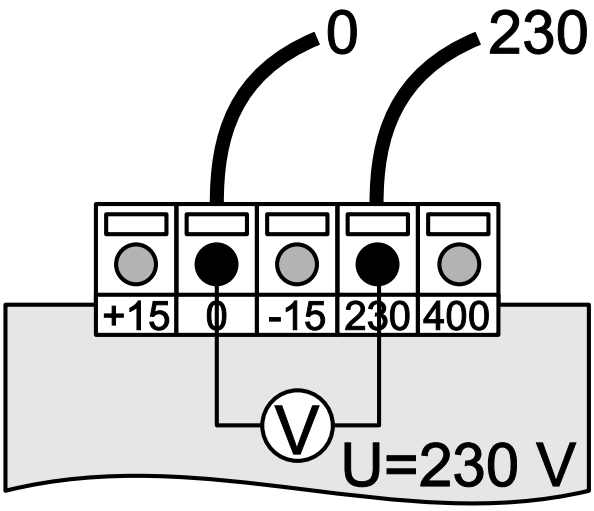
If the voltage is < 400 volts (for example: 370 or 380 volts), connect the wires to the transformer as shown in the adjacent figure.



230 Volts supply

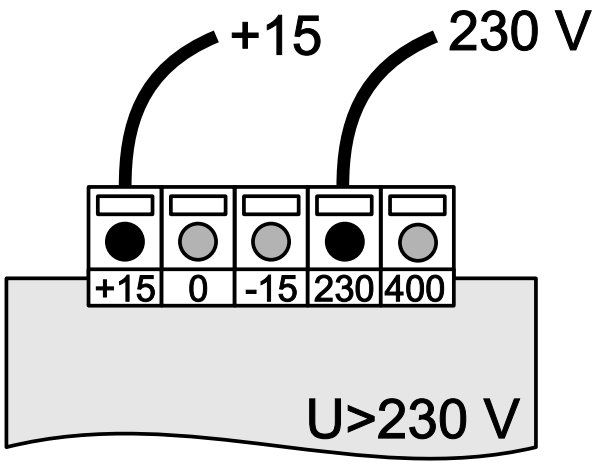
Measure the power supply voltage at the transformer primary with a voltmeter between the transformer 0 and 230 volt terminals.

If the voltage is equal to 230 volts, do not touch the transformer connection which must be as shown in the adjacent figure.

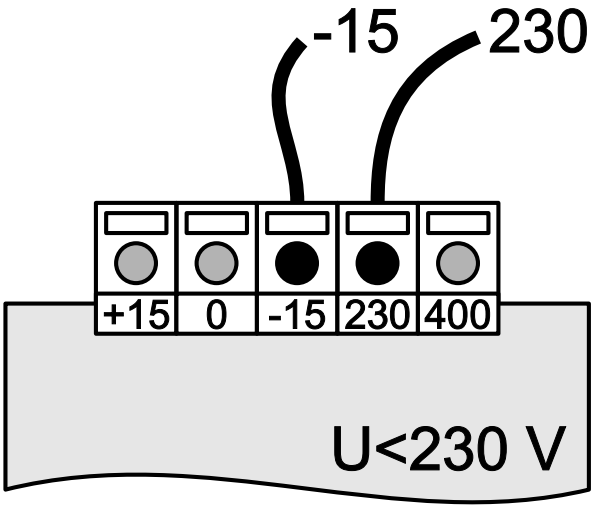


If the voltage is > 230 volts (for example: 240 or 250 volts), connect the wires to the transformer as shown in the adjacent figure.

Note!
we recommend that you should adopt this solution even if the voltage is normally equal to 230 volts but may be subjected to temporary variations, so that you do not apply an overvoltage to the electrical equipment in your machine.

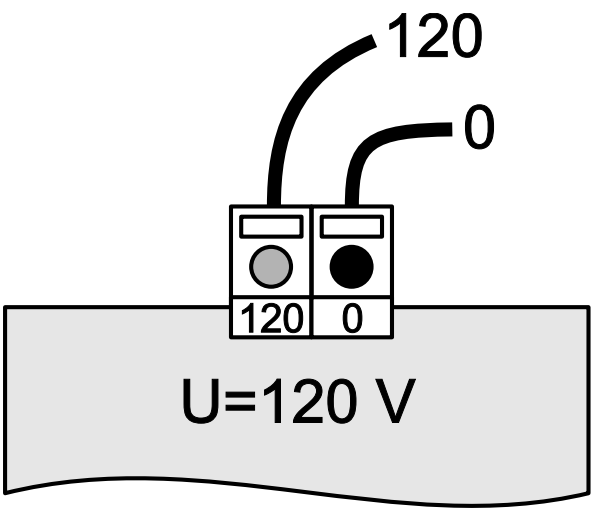


If the voltage is < 230 volts (for example: 210 or 220 volts), connect the wires to the transformer as shown in the adjacent figure.



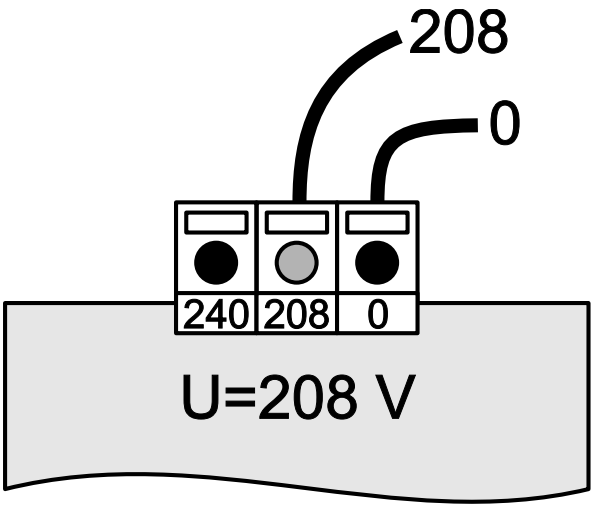
120 Volts supply

If the voltage is equal to 120 volts, do not touch the transformer connection which must be as shown in the adjacent figure.



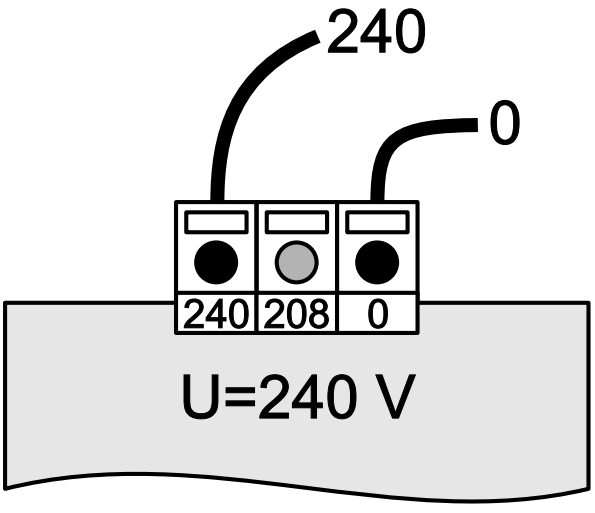
208 Volts supply

If the voltage is equal to 208 volts, do not touch the transformer connection which must be as shown in the adjacent figure.



240 Volts supply

If the voltage is equal to 240 volts, do not touch the transformer connection which must be as shown in the adjacent figure.



Important

Once connected, make sure to check the correct order of phase connections.

12.1 Electric power supply :

The feeder cable sections mentioned in our literature are given **only as a guide** .

To obtain a value perfectly suited to your own application and which takes account of the different correction factors in respect of your plant, refer to the tables below.

12.1.1 TABLE 1 (in accordance with EN standard 60204–1)

Values given for :

Cable with copper conductors.

Cable with PVC insulation (for other insulants see TABLE 3).

Ambient temperature 40°C (104°F) max. (for others see TABLE 2)

Three-phase cable under load without including starting currents.

BT / C / E cable layout.

MAXIMUM ADMISSIBLE CURRENT

Cable section	Seated in Cable Duct or Cable Trough B2	Wall Fixing C	Cable Tray E
3 x 1.5 mm² — AWG16	12.2 A	15.2 A	16.1 A
3 x 2.5 mm² — AWG14	16.5 A	21 A	22 A
3 X 4 mm² — AWG12	23 A	28 A	30 A
3 x 6 mm² — AWG10	29 A	36 A	37 A
3 x 10 mm² — AWG8	40 A	50 A	52 A
3 x 16 mm² — AWG6	53 A	66 A	70 A
3 x 25 mm² — AWG4	67 A	84 A	88 A
3x 35 mm² — AWG2	83 A	104 A	114 A
3 x 50 mm² — AWG1/0	-	123 A	123 A
3 x 70 mm² — AWG2/0	-	155 A	155 A

12.1.2 TABLE 2 correction factors for different ambient temperatures :

Ambient temperature	Correction factor
30 ° C (86° F)	1.15
35 ° C (95° F)	1.08
40 ° C (104° F)	1
45 ° C (113° F)	0.91
50 ° C (122° F)	0.82
55 ° C (131° F)	0.71
60 ° C (140° F)	0.58

12.1.3 TABLE 3 correction factors for different cable insulating materials :

Insulating material	Maximum working temperature range	Correction factor
PVC	70 ° C (158° F)	1
Natural or Synthetic Rubber	60° C (140° F)	0.92
Silicone Rubber	120° C (248° F)	1.60

12.1.4 TABLE 4 B2, C and E correction factors for cable grouping :

	B2	C	E
Number of cables	**Seated in Cable Duct**	**Wall fixing or Cable Trough**	**Cable Tray**
1	1.00	1.00	1.00
2	0.80	0.85	0.87
4	0.65	0.75	0.78
6	0.57	0.72	0.75
9	0.50	0.70	0.73

12.1.5 Calculation

The total current included for using Table 1 should be the maximum rated current for the machine divided by the product of the different correction factors. Other correction factors may also be applied ; consult cable manufacturers.

Calculation : example

The machine has a rated current of 60 A

The ambient temperature is 45°C (113° F) ; Table 2 gives a correction factor of 0.91.

Rubber cable insulant : Table 3 gives a correction factor of 0.92.

The cable is fixed directly to the wall (Column C), with 2 cables side by side. The Table 4 gives a correction factor of 0.85.

Total current : _____**60A**_____=**84A**

.....0.91x0.92x0.85.....

Taking Column C in Table 1 (wall fixing), we obtain a minimum cable section of : **3x 25 mm² — AWG4**

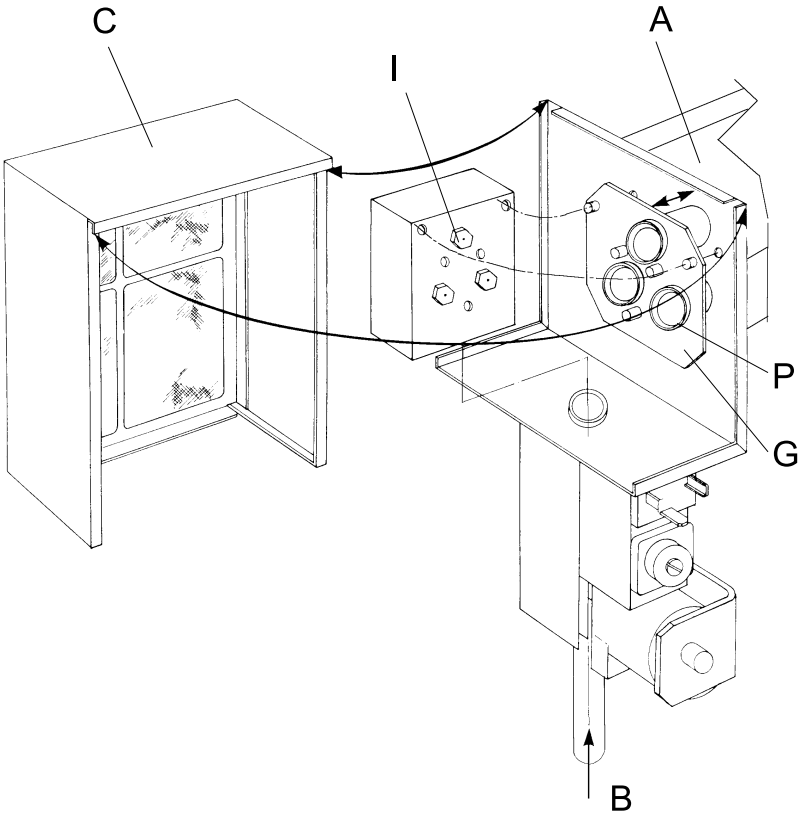
13 Gas connection :

Caution

The installation, connection and gas arrival adjustments for the machine must be done by qualified personnel only.

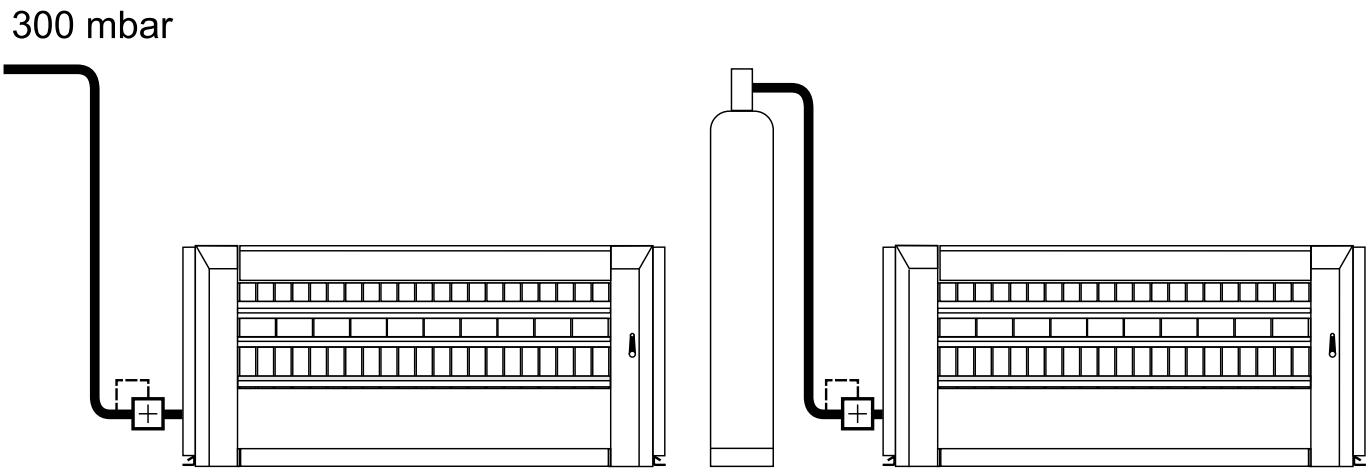
13.1 Gas supply DN 20 (3/4” BSP) :

The customer must install a filter and a manual stop valve on the supply side of the machine if natural gas is used.
For butane or propane, the customer must install a filter, a manual closing valve and a pressure reducer.
Connect the installation at the back of the machine.

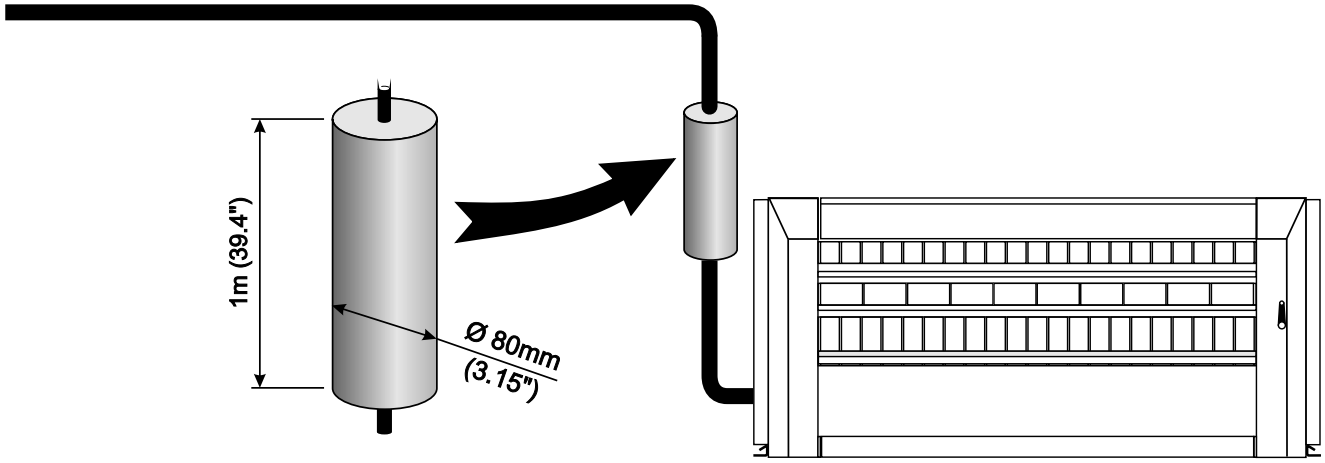


- A : Gas burner
- B : Gas admission
- C : Filter
- I : Injectors
- P: Venturis
- G : Venturis support plate

If the machine is connected to gas mains of 300 mbar or directly behind a gas bottle, it is compulsory that a pressure reducing valve be added as close as possible to the machine.



If the gas inlet pressure (P1) is identical to the nominal pressure of the machine (P2), it is possible to insert a reservoir as close as possible to the machine in order to protect against any falls in pressure when the machine starts up. Anfd increase the diameter of gas pipe supply to allow the flow rate.



13.2 Determinate the gas type :

Check with the customer the gas type that will be used to supply the machine. According this gas type the machine must be set to corresponding to the gas type. For different gas that can be use with this ironer refer to appendices chapter “Gas settings characteristics”

The gas pressure will be determinate by the gas type supply to the machine. According this pressure and gas type the gas valve and injectors must be set in accordance to machine size.

Check appendices chapter “Gas settings characteristics” for complete information.

13.3 Gas valve setting

Machine was tested at the factory in natural gas.

If you are running natural gas check the valve is still in natural gas setting.

In case of other gas type the gas valve must be set.

Refers to appendices “Gas settings characteristics” for gas valve setting.

13.4 Injectors setting

Machine was tested at the factory in natural gas.

If you are running natural gas check the injectors are still in natural gas setting.

In case of other gas type the injectors must be set.

Refers to appendices “Gas settings characteristics” for injectors setting.

14 Gas setting characteristics Ix 33xx :

Caution

The installation, connection and gas arrival adjustments for the machine must be done by qualified personnel only.

14.1 Legend of symbols used :

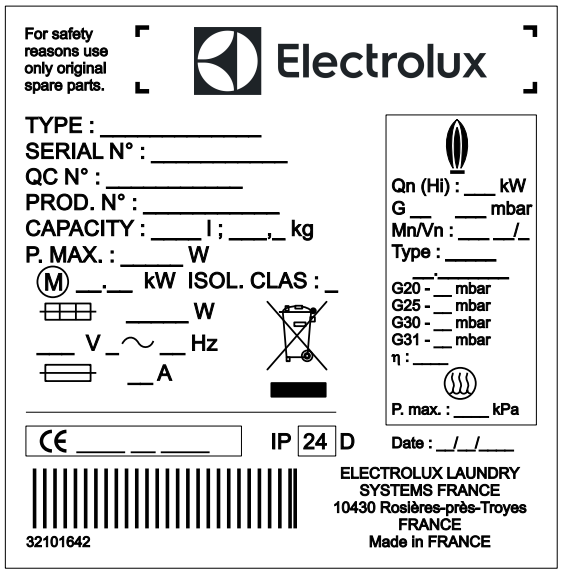
- I : Machine working with only one gas family
- II : Machine working with two gas families
- 1 : 1st family : caol gas or town gas (for information : not used here)
- 2 : 2nd family : Natural gas
- 3 : 3rd family : liquefied petroleum gas (LPG)
- H : Natural gas with high calorific value (type G20)
- L : Natural gas with low calorific value (type G25)
- E : Natural gas with high and low calorific value (type G20)
- LL : Natural gas with low calorific value (type G25)
- Esi : Natural gas with high and low calorific value with adjustment (type G20)
- B : Butane gas (type G30)
- P : Propane gas (type G31)
- B/P : Butane and propane gas (type G30 and G31)
- 3+ : Butane/Propane gas with couple of pressure 30/37 (type G30 and G31)

AT : Austria	FR : France	MT : Malta
BE : Belgium	GB : Great Britain	NL : Netherlands
BG : Bulgaria	GR : Greece	NO : Norway
CH : Switzerland	HU : Hungary	PL : Poland
CY : Cyprus	HR : Croatia	PT : Portugal
CZ : Czech Republic	IE : Irland	RO : Romania
DE : Germany	IS : Iceland	SE : Sweden
DK : Denmark	IT : Italy	SI : Slovenia
EE : Estonia	LT : Lithuania	SK : Slovakia
Es : Spain	LU : Luxemburg	TR : Turkey
FI : Finland	LV : Latvia	

Qn (Hi) : Nominal heat emission express in relation to the net calorific value.

Mn : Nominal mass (for butane/propane gas).

Vn : Nominal volume (for natural gas)



Country	Category	Gas	Pressure (mbar)
AT	II2H3B/P	G20	20
		G31	50
DE — LU	II2E3B/P	G20	20
		G31	50
BE	I2E(R)B;I3+	G20/ G25	20/25
		G31	37
BG — DK — EE — FI – HR — HU — SE — RO —TR	II2H3B/P	G20	20
		G31	37
FR	II2Esi3P	G20/ G25	20/25
		G31	37/50
CH — CY — CZ — ES — GB — GR — IE — IT — LT — PL — PT — SI — SK	II2H3+	G20	20
		G31	37
CH — ES — LV	II2H3P	G20	20
		G31	50
NL	II2L3P	G25	25
		G31	50
NO	I3B/P	G31	50
DE — MT	I3P	G31	50

14.2 Testing pressure :

According to the EN 437 standard, the values of the testing pressures mentionned in our various documents are values for static pressures taken at the gas inlet connection of the machine ; heating of the machine being on.

14.3 Setting gas adjustment :

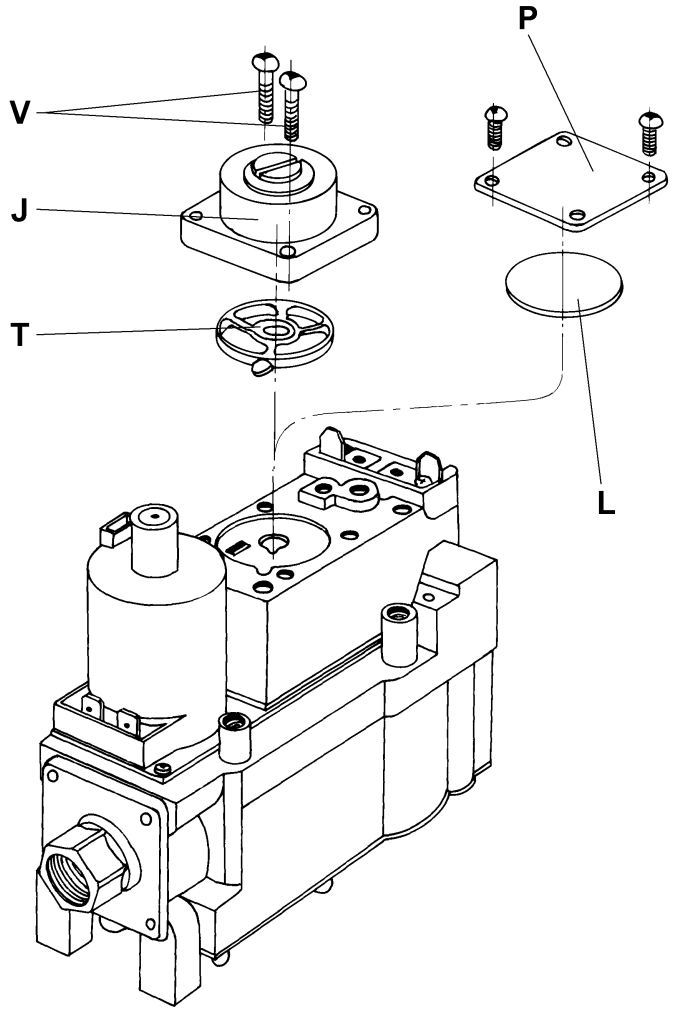
The machine is adjusted at the plant to be suitable for the kind of gas specified on the order. If you have to supply your machine with gas in a familly different from the gas for which your machine was adjusted , proceed as follows :

Check that the diameter of the injectors is adequate for the kind of gas of your installation (see Table of injectors below). The machine is delivered with extra injectors in a plastic envelope.

14.3.1 Changing to a gas in the same family (Type H or L):

Adjust the gas outlet pressure (see correspondence in the tables below)

14.3.2 Changing to a gas in a different family (from type H or L to butane or propane)



Change the 3 injectors with joints (see correspondence in the tables)

Unscrew the fixing screws (V) and remove the adjusting head (J) as weel as its cork (T), keep these parts in case a change would be necessary.

Replace it by the cork (L) and the plate (P).

Screw the 2 screws and block.

14.3.3 Changing to a gas in a different family (from butane or propane to type H or L)

Change the 3 injectors with joints (see correspondence in the tables)

Unscrew the fixing screws (V) and remove the plate (P) as weel as its cork (L), keep these parts in case a change would be necessary.

Replace it by the cork (T) and the adjustment head (J).

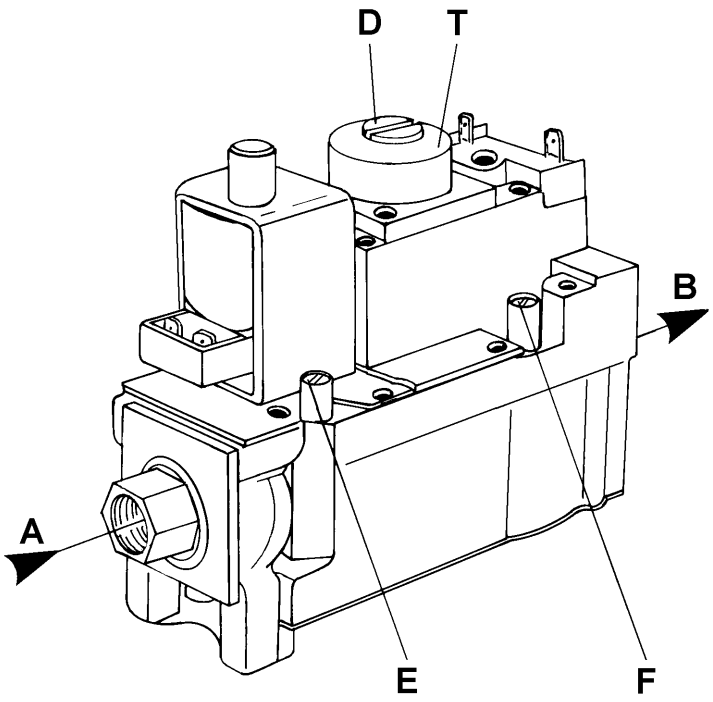
Screw the 2 screws (V) and block.

Important

Adjustments should be made by qualified personnel only.

14.4 Adjustment and checking of the outlet pressure

The gas outlet pressure of the solenoid valve is adjusted at the factory. If you have to make another adjustment, proceed as follows :



- **A** : Inlet
- **B** : Outlet
- **D** : Outlet pressure regulator

Adjustment screw plug

- **E** : Inlet pressure tapping
- **F** : Outlet pressure tapping
- **T** : Head regulation

1 : Close the gas inlet and remove the binding screw from the pressure tapping (F) and connect the manometer tube.

2 : The electricity supply must be energized otherwise gas will not be supplied to the burner.

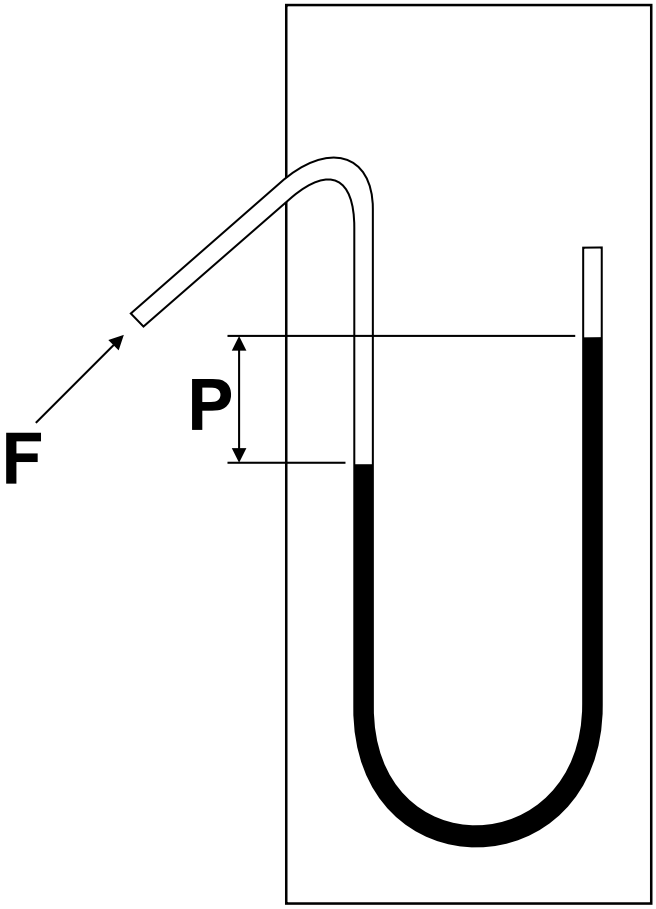
3 : Open and check the gas inlet main burner using the manometer on the pressure tapping (F)

4 : Remove pressure regulator cap (D)

5 : Using a screwdriver , slowly turn the adjustment screw until the required pressure (P) is indicated on manometer (see tables on following pages).

Turn the adjustment screw clockwise to increase and counter-clockwise to decrease gas pressure.

6 : Reset the pressure regulator cap, close off the gas inlet, remove the manometer tube and put the binding screw back in (F).



14.5 Tables of Correspondences :

TABLE OF CORRESPONDENCES : IRONER 3316								
Category Index	Type of Gas	Working supply pressure in mbar (inch w.c.)	Hi	Diameter of injectors in mm	Pressure at injectors in mm H2O / inch w.c.	Heat emission Qn in kW (Btu/h) (Hi)	Consumption Mn in kg/h	Consumption Vn in M3/h
*2E, 2H , 2ESI	G20	20 (8)	34.02 MJ/M3	2.30	112 / 4.41	20 (68240)	-	2.115
2L, 2ESI	G25	25	29.25 MJ/M3	2.30	142	20	-	2.459
3+	G30 G31	28–30 37 (14.9)	45.65 MJ/kg 46.34 MJ/kg	1.40 1.30	. ./ 14	20 20 (68240)	1.58 1.55	- -
3 P	G31	50	46.34 MJ/kg	1.20	-	20	1.55	-
* For Belgium, no work is allowed between G20 and G25								

TABLE OF CORRESPONDENCES : IRONER 3320								
Category Index	Type of Gas	Working supply pressure in mbar (inch w.c.)	Hi	Diameter of injectors in mm	Pressure at injectors in mm H2O / inch W.C.	Heat emission Qn in kW (Btu/h) (Hi)	Consumption Mn in kg/h	Consumption Vn in M3/h
*2E, 2H , 2ESI	G20	20 (8)	34.02 MJ/M3	2.70	97 / 3.88	25 (85300)	-	2.64
2L, 2ESI	G25	25	29.25 MJ/M3	2.70	117	25	-	3.07
3+	G30 G31	28–30 37 (14.9)	45.65 MJ/kg 46.34 MJ/kg	1.50 1.50	. . / 14	25 25 (85300)	1.97 1.94	- -
3 P	G31	50	46.34 MJ/kg	1.40	-	25	1.94	-
* For Belgium, no work is allowed between G20 and G25								

Important

G20 (H) = natural gas , Lacq Type (20 mbar)G25 (L) = natural gas , Groningue Type (20 or 25 mbar)G30 (H) = Butane gas (28/30, 50 mbar)G31 = Propane gas (28/30, 37 , 50 mbar)

Important

Tightness test after installationThe gas leak test is performed as follows :1/ Paint pipe joints, pilot gas tubing connections and inspect outlets with rich soap and water solution ; do not use an aggressive soap.2/ Put the machine into service. Bubbles indicate a gas leak.
3/ Eliminate this leak.

Caution

Check-outBefore leaving, put the appliance into operation and allow to run a complete cycle. Watch to ensure that all burner system components function correctly.

15 Connection of the ironer evacuation system :

You should have found an instruction handbook and keys to open the machine casings, in the machine.

Depending on its destination, the ironer is delivered bare or may be placed on a transport pallet and/or packed with plastic film.

In some cases, it may be delivered in a crate, or in maritime packing (wood box).

Take off the plastic film or remove the wood with a spanner.

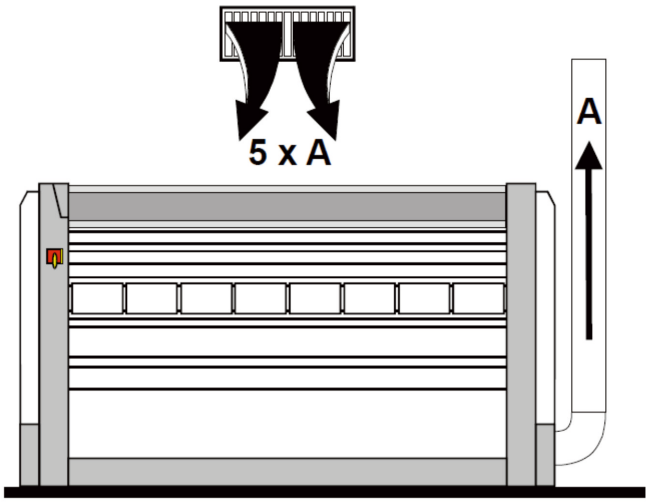
Caution

Check that no damage has been caused during transport.

15.1 Fresh air inlet

To allow the dryer ironer to work at its best, it is important that the laundry air inlet passes through an opening from the outside.

The fresh air arrival must be equivalent to the volume of evacuated air (please refer to the output of the fans at zero pressure in the technical characteristics)



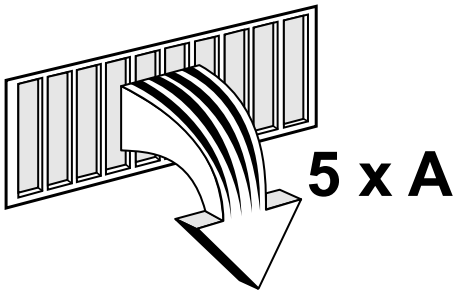
Important

In the case of several machines, these values should be added together.

In order to prevent drafts in the room, the best solution is to place the air inlet behind the machine.

In the case of a machine with gas heating, it is essential that the rooms should be ventilated.

The free section of the air inlet must be 5 times greater than the section of the evacuation pipe.



Do not forget to allow for the fact that grills often occupy half the total area of the free air opening.

15.2 Evacuation duct

It is recommended that a separate smooth-walled evacuation duct should be connected to each dryer, providing the least possible resistance to air.

Check that the shaft flow is at least twice the capacity of the ironer exhaust fan.

Danger

To prevent any risk of burnings, the vapours'evacuation duct of the flatwork ironers of the linen has to be insulated (to be done by the customer)

Warning

It is essential that the diameter of the evacuation pipe should be selected as a function of each installation so that the pressure loss never exceed 200 Pa (0.029 Psi) (Value measured at ambient temperature with a manometer connected to the vertical air outlet (dia 6 or 8 mm) (dia 0.23 or 0.31 ") located minimum 1 m (39.37") after the elbow of the machine exit).

Important

These conditions are **ABSOLUTELY ESSENTIAL** for correct working of the ironer.

15.3 Specifications :

15.3.1 Electric heating :

Fan maximum flow rate with no pressure : 880 Pa.

Average temperature of exhaust at the machine outlet :

electric heating : 64 °C (150 °F)

15.3.2 Gas heating :

Fan maximum flow rate with no pressure : 880 Pa.

Average temperature of exhaust at the machine outlet : 95 °C (200 °F)

For the gas heating, the required combustion fresh air supply should be not less than 2 M3/h (1.17cfm) per kW :

machine 3316 : 426 m3/h (250 cfm)

machine 3320 : 515 m3/h (303 cfm)

Important

NOTE : If the flow is insufficient due to an excessive head loss, a safety pressure switch will automatically switch the heating off.

15.3.3 Values of adjustment of safety pressure switch :

machine 3316 : 147 Pa (15 mmH2O)

machine 3320 : 88 Pa (9 mmH2O)

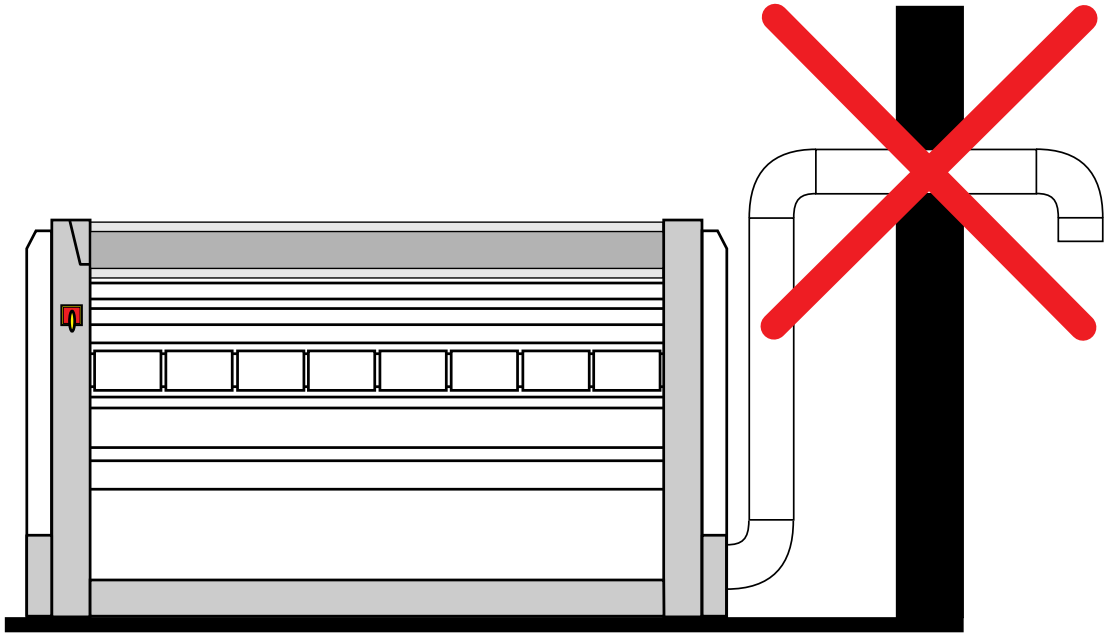
15.4 Exhaust pipes pressure control :

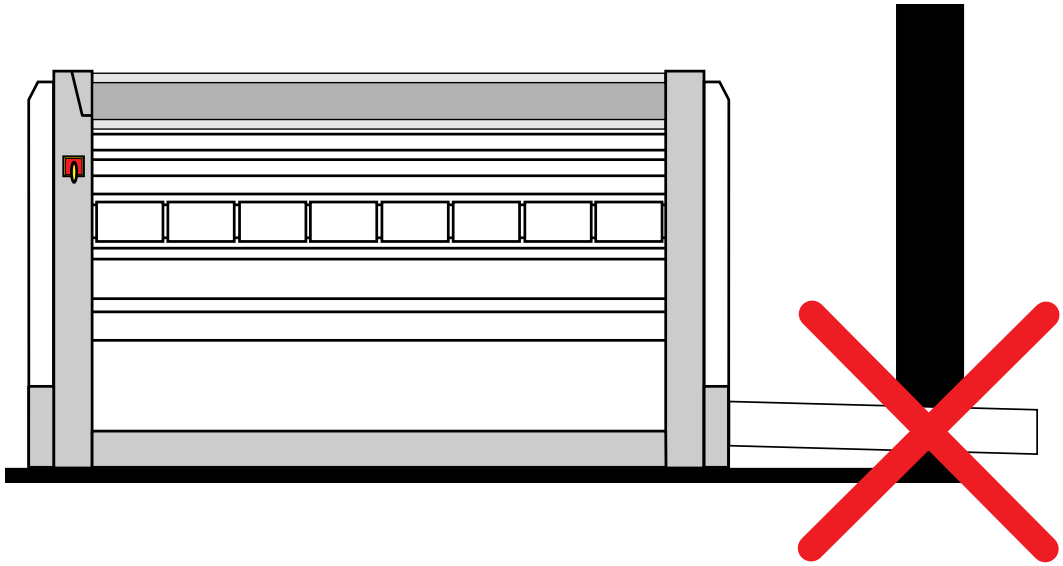
In order to achieve proper operation, this exhaust pipes must always be kept as short as possible and must have as few bends as possible.

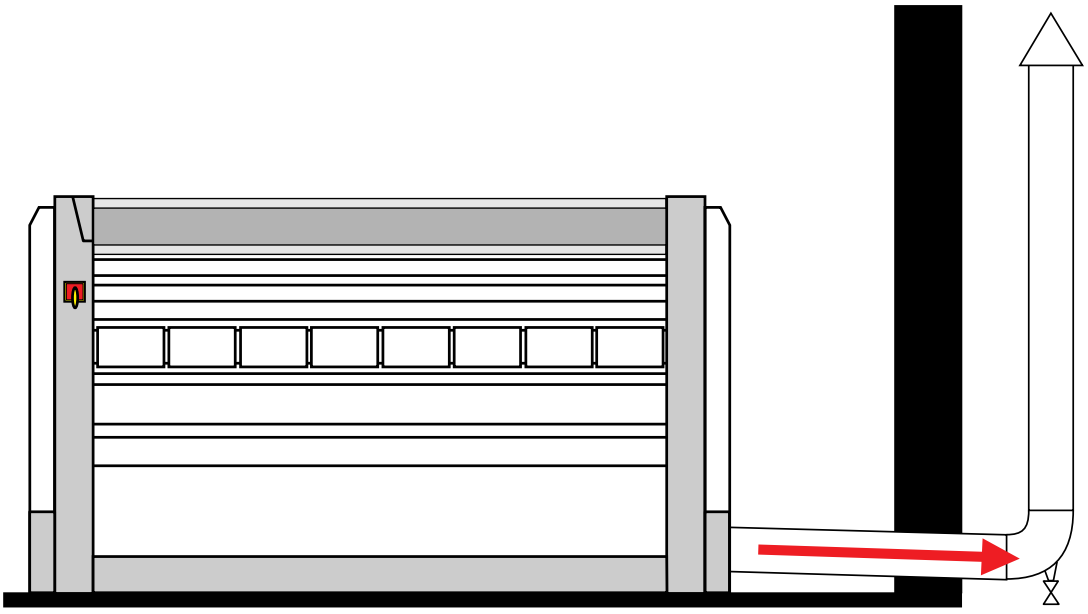
If an outlet channel joins a main channel, the angle of incidence must not exceed 45°.

Insulate both the outlet pipes for user safety.

The duct must lead to the outside and must be fitted with protection against the weather and foreign bodies.





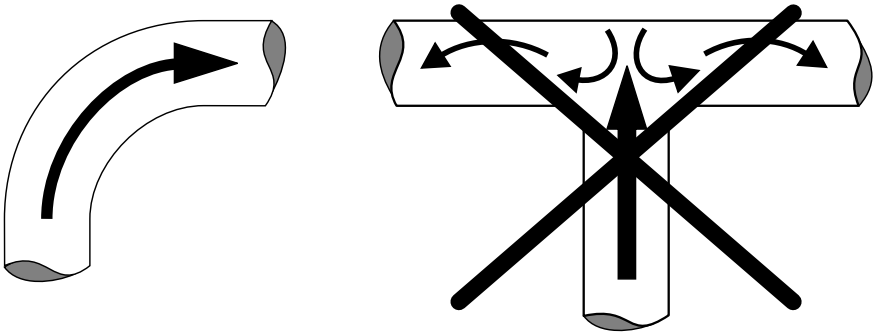


15.5 Evacuation system if several dryers are connected to a common evacuation duct (except gas heating machines):

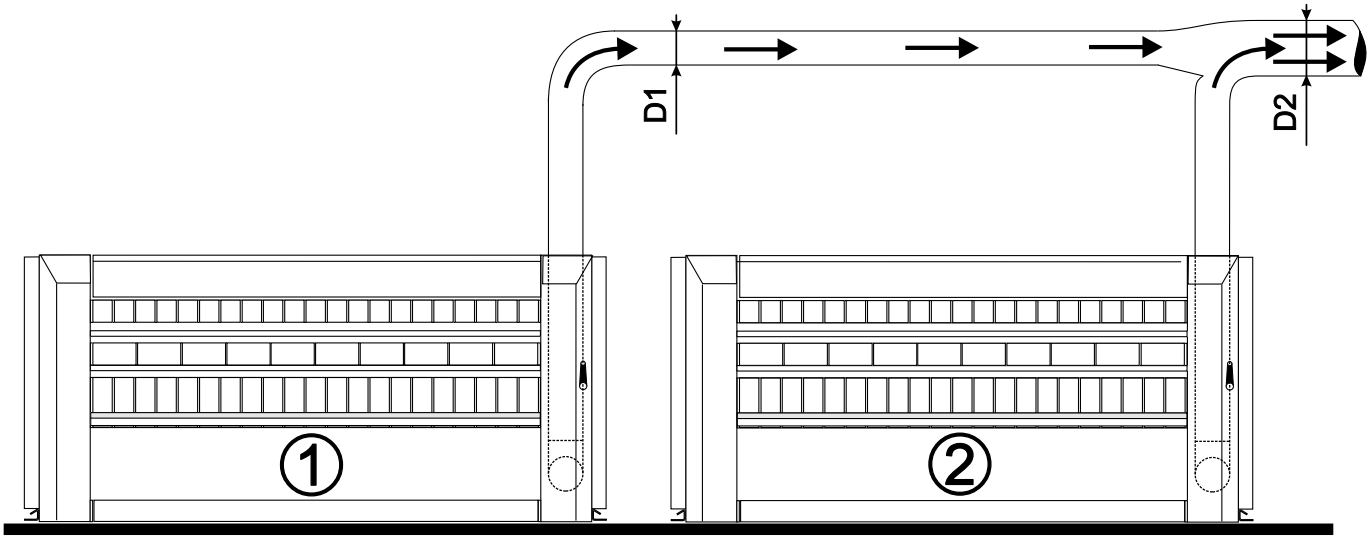
If several ironers are installed with a common evacuation duct, the cross section of the evacuation duct must increase as a function of the number of installed machines so that each of them operates at the same value of air resistance..

Use elbows (and not Tees) to allow the air to pass forwards.

The simplified figure below shows the principle on which the evacuation duct shape is designed.



Number of ironers	D1	D2	D3	D4
Outlet diameter of the exhaust pipe in mm / ”	125 / 4.92	160 / 6.30	225 / 8.86	315 / 12.4
Ventilation aperture required section in dm² / “²	1.25 / 19.37	2.5 / 38.75	4 / 62	8 / 124



The indicated evacuation diameter is the dryer outlet diameter.

Cross-sections of ducts between dryers and the outside of the building must be designed taking account of the flow and the allowable head loss on each machine and the routing of ducts (elbows and lengths).

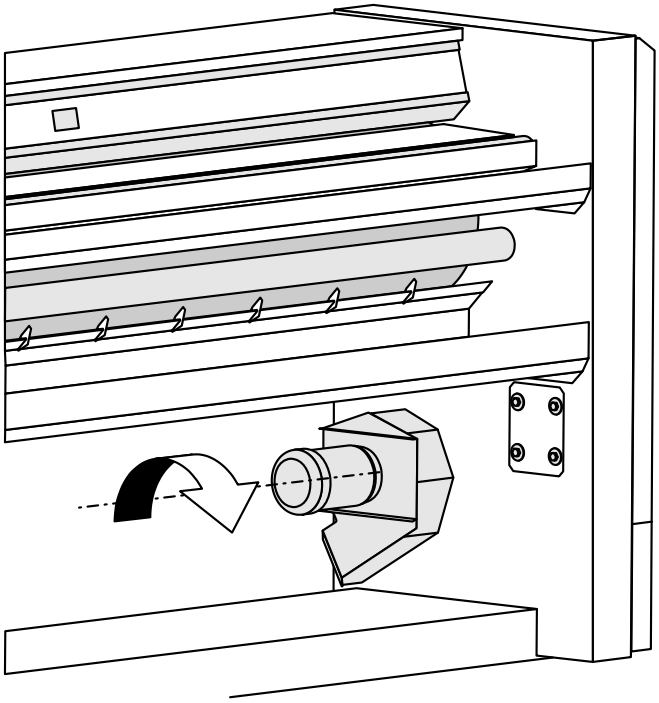
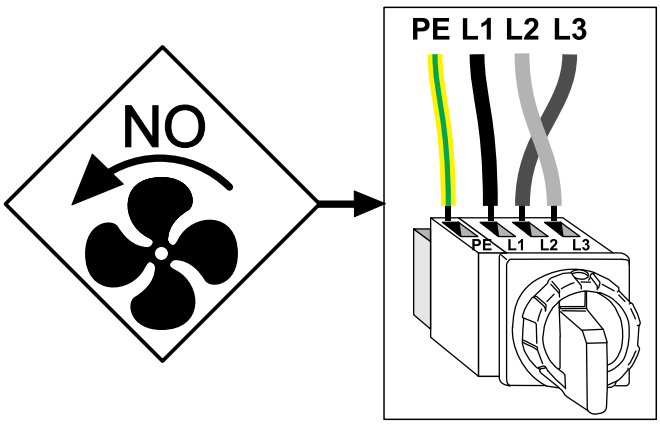
Please call us if you are in any doubt about the layout of your exhaust device if you are modifying an existing installation.

16 Check before use

The operating inspection must be done by an approved technician.

Warning

Always make sure that the fan is rotating in the right direction.
The fan must rotate in the direction shown on the arrow glued inside the right compartment (see illustration).

Check the direction of rotation of the fan and the arrow indicating the direction of rotation on the fan.	
If it is rotating in the wrong direction, invert two of the three phases on the power supply isolating switch to reverse the direction of rotation of the fan.	

Check again the direction of the rotation of the fan then replace the hose and its collar.

Important

Before leaving, put the appliance into operation and allow to run a complete cycle. Watch to ensure that all burner system components function correctly.

17 Conversion of measurement units

This following is a list of correspondences of the main frequency used units, to avoid the need to use measurement unit conversion table.

bar	1 bar = 100 000 Pa 1 bar = 1.019 7 kg/cm² 1 bar = 750.06 mm Hg 1 bar = 10 197 mm H2O 1 bar = 14.504 psi	**British thermal unit**	1 Btu = 1 055.06 J 1 Btu = 0.2521 kcal
calorie	1 cal = 4.185 5 J 1 cal = 10–6 th 1 kcal = 3.967 Btu 1 cal/h = 0.001 163 W 1 kcal/h = 1.163 W	**Continental horse power**	1 ch = 0.735 5 kW 1 ch = 0.987 0 HP
cubic foot	1 cu ft = 28 316 8 dm³ 1 cu ft = 1 728 cu in	**cubic inch**	1 cu in = 16.387 1 dm³
foot	1 ft = 304.8 mm 1 ft = 12 in	**gallon (U.K.)**	1 gal = 4.545 96 dm³ or l 1 gal = 277.41 cu in
gallon (U.S.A.)	1 gal = 3.785 33 dm³ or l 1 gal = 231 cu in	**horse power**	1 HP = 0.745 7 kW 1 HP = 1.013 9 ch
inch	1 in = 25.4 mm	**joule**	1 J = 0.000 277 8 Wh 1 J = 0.238 92 cal
kilogramme	1 kg = 2.205 62 lb	**kg/cm²**	1 kg/cm² = 98 066.5 Pa 1 kg/cm² = 0.980 665 bar 1 kg/cm² = 10 000 mm H2O 1 kg/cm² = 735.557 6 mm Hg
pound	1 lb = 453.592 37 g	**meter**	1 m = 1.093 61 yd 1 m = 3.280 83 ft 1 m = 39.37 in
cubic meter	1 m³ = 1 000 dm³ 1 m³ = 35.214 7 cu ft 1 dm³ = 61.024 cu in 1 dm³ = 0.035 3 cu ft	**pascal**	1 Pa = 1 N/m² 1 Pa = 0.007 500 6 mm Hg 1 Pa = 0.101 97 mm H2O 1 Pa = 0.010 197 g/cm² 1 Pa = 0.000 145 psi 1 MPa = 10 bar
psi	1 psi = 0.068947 6 bar	**thermie**	1 th = 1 000 kcal 1 th = 10+6 cal 1 th = 4.185 5 x 10+6 J 1 th = 1.162 6 kWh 1 th = 3 967 Btu
watt	1 W = 1 J/s 1 W = 0.860 11 kcal/h	**watt-hour**	1 Wh = 3 600 J 1 kWh = 860 kcal
yard	1 yd = 0.914 4 m 1 yd = 3 ft 1 yd = 36 in	**temperature degrees**	0 °K = —273.16 °C 0 °C = 273.16 °K t °C = 5/9 (t °F-32) t °F = 1.8 t °C + 32

Electrolux Professional AB
341 80 Ljungby, Sweden
www.electroluxprofessional.com