| Model | From Machine No. |
|---|---|
| **PB32** | 2,175,001 |
| **PB/PBP51** | 2,190,001 |
| **X13** | 2,205,001 |
| **X20** | 2,210,001 |

# Installation, Operation and Maintenance Instruction manual for Flatwork Ironer


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## EN
## PB32
## PB/PBP51
## X13***W
## X20***W/F


Code no. 550038
Rev. no. 17/0520

**CONTENTS**


## IMPORTANT SAFETY INSTRUCTIONS

**CAUTION**: To reduce the risk of fire, electric shock or injury to persons when using the machine, follow basic precautions, including the following:

1. **READ** all instructions before using the washer and **KEEP** them in a prominent location for customer use.

   For your safety, **do not use the machine without having read the Instruction Manual**. **KEEP IT** in an easily accessible place in order to resolve any queries, and in case of loss request a new one from your dealer.

2. Do not use this machine to handle laundry that has previously been sprayed, washed or impregnated with petrol, dry cleaning solvents or explosive or inflammable substances. These substances **GIVE OFF VAPOURS** that could ignite, explode or break down into toxic and/or highly explosive products.

3. **DO NOT ADD** petrol, dry-cleaning solvents, or other flammable or explosive substances to the wash water. These substances give off vapours that could ignite or explode.

4. **Specific note for machines supplied by water heating appliances**. In exceptional conditions, water heating appliances that have not been used for a minimum period for two weeks can produce hydrogen. If the water heating appliance has not been used for a time, open the taps and purge the pipes, allowing water to flow for a few minutes, before using any machine connected to it. This operation will allow the evacuation of any accumulated gas. **HYDROGEN GAS IS EXPLOSIVE**, so do not smoke or light any flames during this operation.

5. This machine must not be used by children.

   Do not allow children to play with or inside the machine. **KEEP** children under strict supervision when they are to be found in the vicinity of a machine in operation.

6. Before removing a machine from service or disposing of it, **CONSULT THE INDICATIONS CONCERNING DISMANTLING**. As a general rule, **BLOCK** all moving parts of the machine and **PREVENT THE RISK OF BECOMING TRAPPED** inside.

7. **DO NOT GO INSIDE THE MACHINE OR DISMANTLE ANY KIND OF COVER ON THE MACHINE** while it is working.

8. Do not store or install the machine in areas exposed to the **ELEMENTS** or where it may be splashed by water.

9. Do not tamper **UNNECESSARILY** with the machine's controls.

10. **DO NOT DISMANTLE ANY KIND OF COVER OR REPAIR OR REPLACE** any part of the machine or carry out any kind of maintenance unless it is properly identified and explained in the user instruction manual. Even if it is, make sure you understand the instructions properly and have the proper skills and knowledge to do the job.

11. **DO NOT REMOVE** any safety device **OR MODIFY OR MANIPULATE** any component or part of the machine. **DO NOT INSTALL** any foreign components inside the machine.

12. Any part of the machine that is replaced may affect its operation and the user's safety. For this reason, **USE ONLY THE MANUFACTURER'S ORIGINAL SPARE PARTS**. Failure to comply with this warning can cause serious accidents, malfunctions and the loss of the machine's guarantee and certifications.

13. Breach of or failure to observe the legislation and regulations covering health, safety and prevention of workplace risks applicable in the country where the machine has been installed, or actions contrary to common sense **CAN CAUSE** personal injury or even death to the user.

14. Utilise the machine only for the uses established by the manufacturer and following the usage instructions defined in the instruction manuals. Any use not defined in the manuals can cause additional risks. Pay special attention to information headed DANGER, WARNING and PRECAUTION.

15. The room where the machine is located **SHALL** 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 with high ambient humidity.

16. Delimitate danger areas and **PREVENT** public access to them with machine in operation. Do not expose yourself to drainage areas or to vapour, condensation, fume or ventilation outlets.
17. All machines working with temperature present a fire risk. Take **EXTREME** care: Periodically the machine of inflammable materials: lint, fluff, soot... **KEEP** the environment free of combustible materials and **PLACE**, suitable extinguishers near the machine in easily accessible places.

    Safety measures. Do not store or use petrol or other flammable vapours and liquids in the vicinity of this or any other machine.
18. All installations necessary for the proper operation of the machine MUST be carried out by a duly accredited Authorised Installation Company (see note 3) following the applicable legal regulations in the country of use.
19. The machine **MUST** be commissioned by the Authorised Technical Service in the presence of the customer's technical service (see notes 2 and 4) or a responsible person appointed by the customer.
20. This machine **MUST BE USED** by personnel who are properly trained in how to use it (see note 1).
21. **NEVER** START THE MACHINE NOR USE IT IN THE ABSENCE, INCORRECT POSITION OR MALFUNCTION OF:
    - COVERS ( GUARDS) AND PROTECTIONS
    - SAFETY DEVICES
    - CONTROL ELEMENTS
22. **DO NOT USE** the machine if you notice any abnormal noise or smell or if you suspect that the machine is faulty or defective.
23. If you smell gas, CLOSE the general gas line valve, DO NOT LIGHT flames, DO NOT SWITCH ON any appliance, DO NOT TURN ON any electrical switch, OPEN doors and windows, EVACUATE the occupants of the room, the building or the area and WARN the supply company or the fire service. DO NOT USE ANY TELEPHONE INSIDE THE PREMISES.
24. On completion of the day's work, **TURN OFF** the manual fluid supply valves and **DISCONNECT** the electrical power.
25. The inspections required by the regulations applicable to the country where the machine is being used must be carried out. You are also recommended to request an overall, detailed service of the machine by the Authorised Technical Service every year (see note 2).

26. **INSPECTION, MAINTENANCE OR REPAIR OPERATIONS**

**DANGER!**

Incorrect installation, adjustment, alteration, repair or maintenance of this machine may lead to material damage, injury or even death.
Read the installation, operation and maintenance instructions carefully before installing the equipment or carrying out maintenance work.

Before carrying out any action on the machine:
- Close and mechanically lock the manual fluid supply valves.
- Check that the bath has COMPLETELY drained, that no part of the machine is at a high temperature and that no circuits or containers are under pressure.
- Check that all moving parts of the machine are stopped or at rest. Securely fix all moving parts of the machine that could cause an accident.

To reduce the risk of electrical shock:
- **COMPLETELY** disconnect the machine from the original power source and check for accidental reconnection. **TURNING OFF THE ON SWITCH OR PRESSING THE STOP KEY ARE NOT ENOUGH.**
- Disconnect the electrical connection of any circuit external to the machine; for example external dosing equipment, central vending points, feeders or folders, etc. The electrical connection of these circuits is independent of the machine electrical connection.
- To prevent the risk of electrical discharge caused by residual voltage, wait at least five minutes before removing any guard or cover from the machine.
- **Failure to follow these warnings may cause a serious accident.**

27. **CONTACT** the Installation Companies or the Authorised Technical Service (see notes 3 and 2) if you have any doubt, anomaly or problem.

28. It is advisable to copy and enlarge the **SAFETY INSTRUCTIONS** and put them in a visible place in the laundry.
29. **THE MANUFACTURER ACCEPTS NO RESPONSIBILITY IF THESE SAFETY INSTRUCTIONS AND ALL THE INFORMATION IN THE CORRESPONDING MANUALS ARE NOT FOLLOWED. KEEP THIS MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE.**

**Special note for gas-heated machines (as stipulated in EN 1020:2009).**

**These instructions are only valid if the symbol for the country is displayed on the apparatus. If the symbol does not appear on the device, the technical instructions containing the information needed to adapt the device to the operating conditions of the country need to be used.**

| **Languagesused in many countries of the European Union or associated.** | |
|---|---|
| **LANGUAGE** | **COUNTRY** |
| German | DE, CH, AT, LU |
| English | GB, IE |
| French | FR, BE, CH, LU |
| Dutch | NL, BE |
| Italian | IT, CH |
| Swedish | SE, FI |

NOTES:

*(1)* **Trained personnel** refers to those who have read and understood the Instruction Manual, who have been trained by the Authorised Technical Service or by a representative of the customer present at the start-up who is familiar with the operation of the machine and is authorised to use it.

*(2)* **Authorised Technical Service (ATS)** is one that has been recognised under contract and properly trained by the manufacturer.

*(3)* **Registered Installation Contractors** are those officially approved by the government of the country the machine is to be installed.

*(4)* **Customer Technical Service (CTS)** is one that has been authorised by the customer and which has sufficient basic technical knowledge to correctly interpret and carry out the actions attributed to it in this manual. The manufacturer strongly recommends that the customer should have its own technical service, particularly in laundries with large-scale machinery installations.

## SYMBOLS USED IN MACHINE LABELLING

**Electrical risk**
Safety warning indicating element with electricity.

**High Temperature risk**
Handle with caution.
Use adequate protection.

**Mechanical risk**
Protection 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 give relevance to any precise explanation . |

## TRANSLATION OF THE ORIGINAL MANUAL

## IMPORTANT INSTRUCTIONS FOR USE AND PRESERVATION

1. **INTENDED USE OF THE MACHINE AND INAPPROPRIATE USE**. This machine is conceived and designed only for processing fabrics in a water bath or those that have previously been treated under these conditions. Any use other than this is contraindicated without written authorisation from the manufacturer.
2. Maximum output, performance, reliability and durability are achieved when the machine is installed, used and maintained correctly, and if a comprehensive and detailed service is carried out annually by the Authorised Technical Service.
3. The machine's **MATERIALS** that are in direct contact with the chemical products involved in treating the laundry are detailed in the manual.
4. The user must consult the supplier of the chemical products USED THROUGHOUT THE WHOLE LINEN TREATMENT PROCESS regarding the risks associated with its products and their combination. It must be confirmed that the products are not flammable, **ARE MUTUALLY COMPATIBLE**, and that they will not cause oxidisation or deterioration of the machine or any injury to the people using them.
   It should be noted that, under certain usage conditions, hypochlorite (bleach) generates chlorine gas.
   Chlorine is a corrosive, oxidising substance which, at high concentrations and temperatures, damages stainless steel and elastomers.
   This same effect can also be caused by other strongly oxidising agents, including ozone.
5. **FOLLOW** the treatment recommendations for each fabric indicated by its manufacturer. **THE MANUFACTURER OF THE MACHINE ACCEPTS NO RESPONSIBILITY FOR DAMAGE CAUSED BY INAPPROPRIATE TREATMENT OF A FABRIC**.
6. Periodically **CLEAN** the outside of the machine to prevent damage to its metal parts. This will improve safety and extend its life. To clean the machine, use water and detergent. Rinse with a damp cloth and dry. To remove accumulated lint, use a suitable vacuum cleaner. **Water jet or pressurised steam cleaning is prohibited.**
7. **NEVER** use aggressive products to clean the machine or the premises. There are products on the market that give off highly corrosive vapours.
8. If machine is left idle for long periods of time, it must be **PROTECTED** from humidity and temperature variations.
9. Faults arising from improper machine operation may **VOID WARRANTY.**
10. When asking for information on your machine, **MENTION** the model and serial number. This information can be found on the characteristics plate incorporated into the machine.
11. With every machine, the manufacturer provides all necessary technical information and the documents required for its use. **KEEP IT IN GOOD CONDITION**.

**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 carried out and any possible consequences that arising 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 SHALL 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 with high ambient humidity.
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 the water bath has **COMPLETELY** drained, 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. SAVE THESE INSTRUCTIONS.**

# 1. GENERAL DESCRIPTION OF THE MACHINE

This INSTALLATION, OPERATION AND MAINTENANCE manual applies to flatwork ironers models/ PB32, X13, PB51, PBP51, W *** X20, X20 *** F, in the different models in terms of different size, heating and control systems.

**EQUIPMENT NAME**
**Although the laundry equipment to which this manual refers is known as the FLATWORK IRONER, for the purposes of this present manual it will be generally referred to as the Ironer.**

## 1.1. Ironer description

The ironer consists mainly of the following elements:

**Structural support, consisting of:**
Two side base-frames with various longitudinal connecting elements.
An ironing roll, supported by wheels attached to the side base-frames. The surface of the roll is machined to provide even ironing.
In systems with gas or electric heating, the roll is open at the ends and allows the burner or the heating element to be fitted inside.
In the steam heating system, the roll forms an internal chamber through which the steam circulates.
A set of ironing straps drawn by the roll that press the linen down against the roll.
An upper roller that presses the linen through the ironing straps.
A rear roller that maintains the tension of the ironing straps.
A table equipped with feeding straps for feeding in linen.
Two trays the same length as the roll, one for feeding in articles, and the other for receiving items being processed.

**Roll rotation**
Roll rotation is produced by an electric gear motor controlled by an inverter that allows the speed to be changed.
Motor rotation safety control.
Chain-driven transmission between the output of the gear motor and a ring gear at one end of the roll.

**Three heating systems**
Gas heating.
- A gas burner housed inside the roll.
- A fume suction pipe located inside the roll.
- Monitoring of lighting and presence of flame.
- Option of an atmospheric burner. Gas input controlled by a double winding solenoid coil: Class B and Class J (in accordance with EN1020).
- Option of a radiant burner. Gas input controlled by a Class B double winding solenoid coil (in accordance with EN1020). Air and gas premixing fan.

Steam heating (only available on Models PB/PBP51 and X20).
- Roll with inner chamber (pressurised vessel in accordance with Directive 97/23/EC). The steam input is controlled by a solenoid valve and the corresponding ducts and filters for transporting steam and condensates.
- The steam input and drainage of the roll condensates take place through a rotary seal.
- A pressure relief valve prevents overpressure in the steam circuit.
- A pressure gauge indicates the pressure in the steam circuit.

Electric heating.
- The temperature of the roll is obtained from electric heaters located inside the roll and controlled by contactors.

**Fume and vapour extraction**
Centrifugal extraction of the vapours from the linen ironing, and of the fumes from the combustion (gas version).
Exhaust circuit lint filter.
Extractor operation safety control.
In models with gas heating, the fume extraction system has a flow rate control system that allows the combustion to be adjusted.

**Controls**
Overall ironer operation controlled by a microprocessor.
Serial communication with the inverter.
Analogue temperature control.
Specific software that allows control and management of the ironing processes. The roll's temperature and speed parameters during the ironing process can be selected automatically or manually at the discretion of the user.
Control panel. Operator/system interface consisting of keyboard and display.
Alarm messages to aid in diagnosing possible malfunctions.

**LOGI CONTROL**. Models PB32 and X13
Interface: alphanumeric display and keyboard.
10 pre-recorded and modifiable ironing programs.
Manual and automatic roll speed control.
Changing of the ironing parameters while a program is running.
TEST program for diagnosing problems.

**INTELI CONTROL**. Models PB/PBP51 and X20
Interface: graphic screen and keyboard.
Storage capacity for 50 ironing programs.
Manual and automatic roll speed control.
Changing of the ironing parameters while a program is running.
TEST program for diagnosing problems.

**PBP51 and X20***F models**. Models with a linen folder.
Description of the folder.
Longitudinal linen folding system located at the lower front and based on a swinging arm driven by an electric linear actuator.
Straps and linen extraction tray powered by an electric motor and clutch.
Photocells that detect the linen passing. There is one ore more photocells fitted to the feeding tray and another before the linen reception area.
As an option, the machine can be equipped with three pairs of photocells to aid in ironing narrow articles using the entire surface of the ironer.
Software to measure the length of the folded pieces and determine the number and width of the folds. These calculations can be made manually or automatically, as the operator wishes.

**Specific information relating to protection, safety and control elements. See Section 1.6 of this chapter.**

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

### 1.2.1. Atmospheric burner

**Diagram of the burner (Fig. 1.1)**

**A**..... Filter
**B**..... Solenoid valve
**C**..... Flexible section
**D**..... Injector
**E**..... Venturi pipe
**F** ..... Primary air filter
**G**..... Burner
**H**..... Control system
**I** ..... Ignition electrodes
**J** ..... Ionisation electrode
**K**..... Manual stop-valve

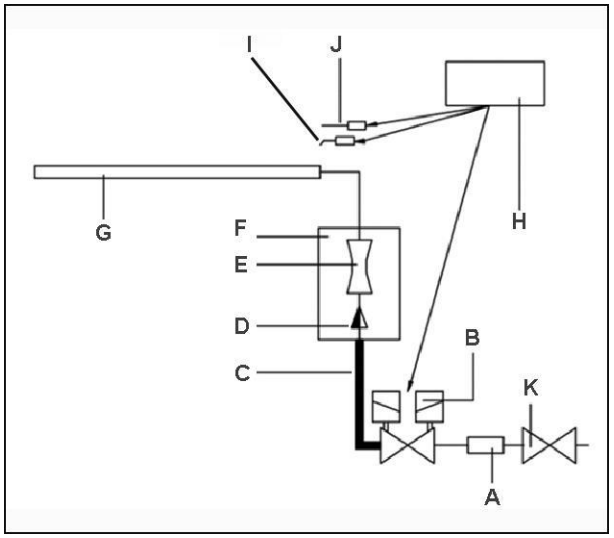


Fig. 1.1

**Diagram of the AGA burner (Fig. 1.2)**

**A**..... Filter
**B**..... Solenoid valve
**C**..... Flexible section
**D**..... Injector
**E**..... Venturi pipe
**F** ..... Primary air filter
**G**..... Burner
**H**..... Control system
**I** ..... Ignition electrodes
**J** ..... Ionisation electrode
**K**..... Manual stop-valve
**L** ..... Ignition transformer

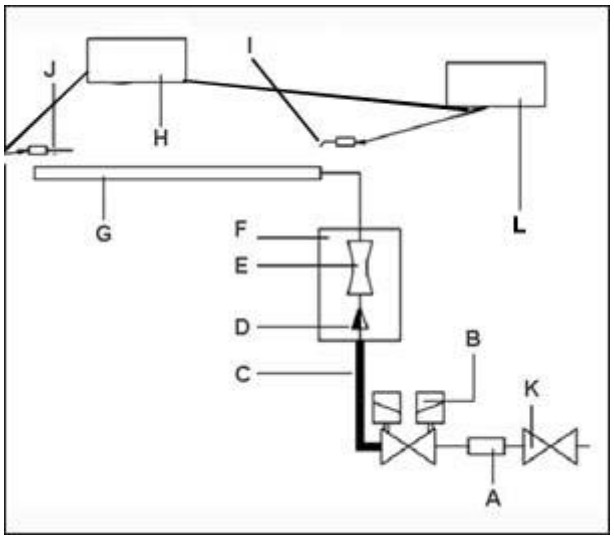


Fig. 1.2

**Description of operation (Fig. 1.1 and 1.2)**

When the ironer control requests heating, the burner control system (**H**) subjects the ignition electrodes (**I**) to a high voltage for a limited time to produce an electrical discharge; while power is simultaneously fed to the solenoid valve (**B**) to open the gas flow.
The gas enters the burner via a single nozzle (**D**).
The ionisation electrode (**J**) detects the flame.
If the presence of a flame has not been detected after a certain time following the ignition order, the solenoid valve is closed, an alarm report is issued and the burner control enters safety mode.
See Section 1.6. Safety and control elements.

### 1.2.2. Radiant burner

**Diagram of the burner (Fig. 1.3)**

**A** ..... Filter
**B** ..... Solenoid valve
**C** ..... Flexible section
**D** ..... Injector
**E**..... Venturi
**F**..... Air filter
**G** ..... Burner
**H** ..... Control system
**I**..... Ignition/Ionisation electrode
**J**..... Ionisation electrode
(USA/CANADA models only)
**K** ..... Manual stop-valve
**L**..... Premix fan

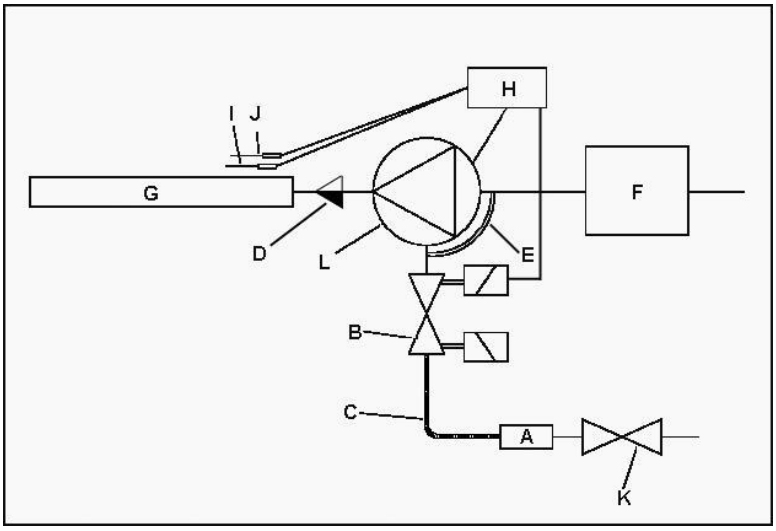


Fig. 1.3

**Description of operation** (Fig. 1.3)

When the ironer control requests heating, the burner control system (**H**) starts up the air premixing fan (**L**) and subjects the ignition electrodes (**I)** to a high voltage for a limited time to produce an electrical discharge; while power is simultaneously fed to the solenoid valve (**B**) to open the gas flow.
The gas enters the burner via a single nozzle (**D**).
The ionisation electrode (**J**) detects the flame.
If the presence of a flame has not been detected after a certain time following the ignition order, the solenoid valve is closed, an alarm report is issued and the burner control enters safety mode.

**Electrical specifications of the premix fan**

| | |
|---|---|
| CE certified models: | 230V/50Hz. 55W. Class B |
| ETL certified models: | 120V/50/60Hz. 68W. Class H |

## 1.3. Machines with steam heating. Diagram and description of the steam circuit

Only available on models PB/PBP51**, X20

**Diagram of the steam circuit (Fig. 1.3)**

**A**..... Input filter
**B**..... Solenoid valve
**C**..... Safety valve
**D**..... Flexible input pipe
**E**..... Rotating seal
**F**..... Camera in the roll occupied by the steam
**G**..... Condensation
**H**..... Syphon pipe
**I**..... Flexible output pipe
**J**..... Output filter
**K**..... Purger
**L**..... Pressure gauge

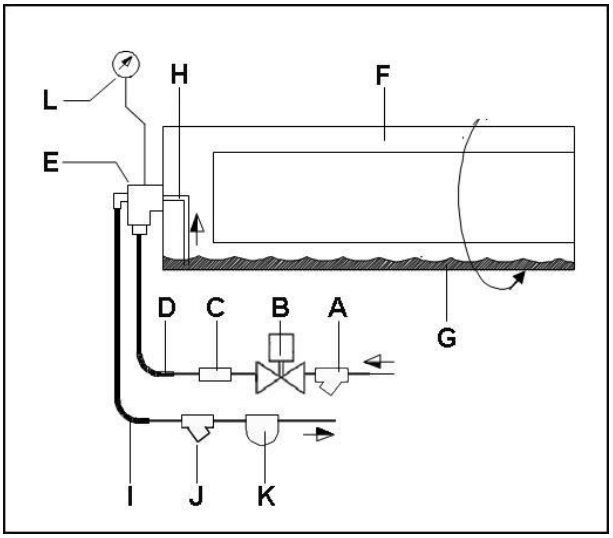



Fig. 1.4

**Description of operation** (Fig. 1.4)

When the ironer control requests heating, the microprocessor opens the solenoid valve (**B**), allowing the steam to enter the roll (**F**) through a two-way rotary seal (**E**).
The contact of the fabric with the ironing surface cools the steam inside the container. As the steam changes to liquid (**G**), the condensate (under pressure) is drawn by a siphon tube (**H**) through the same rotary seal and expelled to the outside via a steam trap (**K**) that prevents the exit of steam and releases any air that may be found inside.
The input filter (**A**) protects the valve from any impurities that may be present in the steam supply circuit.
The output filter (**J**) protects the steam trap from any impurities.
The safety valve (**C**) prevents the container from being subjected to a pressure higher than the maximum allowed.
The pressure gauge (**L**) indicates the pressure inside the roll.

## 1.4. Machines with electric heating. Description

Set of electrical elements mounted on a support that keeps them positioned close to the inner surface of the roll.

Depending on the model and voltage of each machine, they are controlled by one or two contactors.

See the wiring diagram in the documentation supplied with the machine.

### 1.5. Expected machine use and don'ts

**CAUTION!**

**APPROPRIATE USE:**
**THIS MACHINE HAS BEEN CONCEIVED AND DESIGNED FOR THE INDUSTRIAL IRONING AND DRYING OF FLAT LAUNDRY ITEMS WASHED IN WATER FREE FROM INFLAMMABLE OR VOLATILE PRODUCTS. ANY OTHER USE DIFFERENT TO THAT DESCRIBED, WITHOUT WRITTEN AUTHORISATION FROM THE MANUFACTURER, WILL BE TAKEN AS INAPPROPRIATE TO THE TERMS OF USE.**

**CAUTION!**

**ONCE THE WASHING PROCESS HAS ENDED, THE RESIDUAL MOISTURE LEVEL OF THE LINEN MUST BE HIGHER THAN 40%.**

**In order to obtain the required residual moisture level, proceed as follows:**

- **If a washing machine with a high spin speed is used, once the washing process has ended, proceed directly to the ironing without using the dryer.**
- **If not using a washing machine with a high spin speed, once the washing process has ended, dry the linen previously using a dryer until an approximate residual moisture content of 50% is reached.**

**INADVISABLE USE:**
**NEVER** operate the machine without all the covers and protection devices being correctly in place and fastened.
To avoid deterioration of the ironer, the following points must be taken into account:

- Do not iron linen previously treated or washed with petrol, dry cleaning solvents, and other flammable or explosive substances. These substances GIVE OFF VAPOURS that could ignite or explode.
- Do not iron articles of linen whose composition impedes water retention.
- Do not insert linen with hard components which can damage the surface of the roll or the fabric of the ironing straps, such as buttons, zippers, metal components, tissues containing rubber etc. into the ironer.
- Do not iron fabric or fibres at temperatures above those recommended by the manufacturer of the material.
- Do not put linen containing components unable to withstand ironing temperatures into the ironer.
- While ironing, avoid mixing articles of different thicknesses and humidities, since this will slow down the ironing to the detriment of fine materials.
- Do not use reverse rotation for any use other than to free a trapped person or object. See Section 11, RELEASE OF A TRAPPED PERSON.
- On machines with steam heating, avoid operating when the roll is cold. THE ROTARY SEAL CAN BE DAMAGED IF RUN DRY.
- NEVER IRON WITHOUT ALTERNATELY COVERING THE IRONING AREA (RIGHT/ LEFT). Follow the screen to cover the hottest area of the roll at all times.
- Do not switch off the power with the machine at a temperature above 110ºC EXCEPT IN CASE OF EMERGENCY.
- In the case of small items, do not leave excessive space free across the width of the roll.
- Do not put the machine on minimum speed during the roll's warming and cooling cycles.
- Do not halt the machine if the ironing straps are not completely dry, EXCEPT IN CASE OF EMERGENCY.
- To prevent the ironing straps from remaining damp and causing rusting in the roll, avoid ironing during the cooling cycle.
- Do not iron at temperatures below 100ºC, since this could lead to rusting in the roll.

**FOLDER VERSION**

- Do not attempt to fold items without covering the photocell.
- Do not fold more than one article at a time except on a machine fitted with the optional triple photocell, in which case three items can be fed in at a time provided that they are of equal length.

## 1.6. Protection, safety and control elements

**DANGER!**

**NEVER OVERRIDE A PROTECTION, SAFETY OR CONTROL DEVICES.**
**NEVER OPERATE THE MACHINE WITHOUT ALL THE SAFETY GUARDS CORRECTLY IN PLACE AND FIXED.**

**Safety guards**
To safeguard the operator, a set of guards screen the machine from its surroundings.

**Switch breaker**
To connect or disconnect the machine from the external power supply.

**Emergency stop button**
The emergency stop button is a SAFETY device. The machine is equipped with 1 emergency stop device which is identified with a red button on a yellow background and which is located on the right-hand front cover. The function of this element is to STOP the machine IMMEDIATELY and keep it halted.

**Hand protection (movable guard with locking device)**
The hand protection guard is a SAFETY element consisting of a tilting cover located on the machine's feeding tray designed to prevent the hands from being inserted into the roll and the trapping point between it and the pressure roller.
Pushing or pulling the movable cover HALTS the roll immediately. The machine will remain in this state until the cover is moved back to the resting position.
The hand guard stop is also assigned to operate as a safety stop from any part of the introduction zone.
Checking the proper functioning of the hand guard is an essential prerequisite for starting up the ironer.

**Temperature probes**
These constantly monitor the temperature of the surface of the ironing roll, adapting it to the programmed value.
PB/PBP51, X20 models with steam heating and PB3215, X13 models: 1 probe.
Other models: 3 probes.

**Electric circuit safety measures**
To protect the electric circuit against external malfunctions and prevent any malfunctioning causing damage to the operator. The principal ones are: Automatic switches, circuit separation transformer, protection for the motors, external protection (EP). Protection fuses of the control circuit.

**Pressure switch of maximum pressure**
Controls the suction in the exhaust circuit.
Minimum operating pressure: PB32, X13: 6 mm.c.a. (0.24 in.wc.)
PB/PBP51, X20: 4 mm.c.a. (0.16 in.wc.)
In case of a drop in suction in the exhaust circuit, the pressure value decreases, and the pressure switch stops the machine from running and also emits an alarm.

**Safety thermostat**
This limits the surface temperature of the roll. It protects against an overheating of the roll caused by a fault in the system regulating the ironing temperature. Tared to 200ºC (392ºF).

**Safety when starting the flatwork ironer**
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.

**Heating system start-up safety feature**
A power cut or the detection of an alarm automatically switches off the heating system, and it does not resume until the corresponding **I** and and buttons are pressed.

**ADDITIONAL SAFETY MEASURES FOR STEAM MACHINES**: Viewing and controlling the pressure in the steam circuit.

**Pressure gauge for viewing steam circuit**
This displays the steam pressure as it enters the machine.

**Safety valve**
This prevents the steam pressure inside the roll from exceeding the authorised operating limit.

**ADDITIONAL SAFETY FEATURES FOR GAS-HEATED MACHINES**:

**Flame control**
Burner flame safety detection.

**Ignition delay**
With each ignition order, there is a delay of 15 seconds before the gas safety valve opens. During this time any gases that may remain inside the roll are flushed out.
If the gas burner fails to ignite, or there is an alarm, there is an ignition delay of 90 seconds. This time period is stored in the ironer control memory, and the delay will be implemented in full even if the machine is disconnected from the power supply.

## 1.7. EU Declaration of conformity

**MODEL PB32**

**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: |
|---|---|---|
| Flatwork ironer<br>Planchadora – secadora<br>Zylindermangeln<br>Sécheuse – repaseuse<br>Mangano asciugante<br>Planxadora – assecadora<br>Passadora – secadora<br>熨烫机 – 烘干机 | Ironing and drying flat clothes washed in water<br>Planchar y secar ropa plana lavada en agua<br>Heiß- und Trockenmangeln von im Wasserbad gewaschener Flachwäsche<br>Repasser et sécher du linge plat lavé à l'eau<br>Stirare asciugare biancheria piana lavata in acqua<br>Planxar i assecar roba plana rentada en aigua<br>Passar e secar roupa plana lavada em água<br>湿洗的布草的熨烫和烘干 | Cylinder<br>De cilindro<br>Walzenmangel<br>À rouleau<br>A rullo<br>De cilindre<br>De calha<br>汽缸式 |

Model: **PB-32**

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/CE Machine Safety Directive
Main harmonized standards: EN ISO 10472-1:2008, EN ISO 10472-5:2008, EN 12100:2010, EN 13849-1:2015

2014/35/EU Low Voltage Directive
Main harmonized 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 CT3016. 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)

## MODEL PB51

## 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: |
|---|---|---|
| Flatwork ironer<br>Planchadora – secadora<br>Zylindermangeln<br>Sécheuse – repaseuse<br>Mangano asciugante<br>Planxadora – assecadora<br>Passadora – secadora<br>熨烫机 – 烘干机 | Ironing and drying flat clothes washed in water<br>Planchar y secar ropa plana lavada en agua<br>Heiß- und Trockenmangeln von im Wasserbad gewaschener Flachwäsche<br>Repasser et sécher du linge plat lavé à l'eau<br>Stirare asciugare biancheria piana lavata in acqua<br>Planxar i assecar roba plana rentada en aigua<br>Passar e secar roupa plana lavada em água<br>湿洗的布草的熨烫和烘干 | Cylinder<br>De cilindro<br>Walzenmangel<br>À rouleau<br>A rullo<br>De cilindre<br>De calha<br>汽缸式 |

Model: **PB-51**

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/CE Machine Safety Directive
Main harmonized standards: EN ISO 10472-1:2008, EN ISO 10472-5:2008, EN 12100:2010, EN 13849-1:2015

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

2014/30/EU Electromagnetic Compatibility Directive
Main harmonized standards:
For PB-51: EN 61000-6-3:2007, EN 61000-6-2:2005, EN 61000-3-2:2014, EN 61000-3-3:2013
For PB-5132-G: EN 61000-6-4:2007, 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 CT3016. 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.

2014/68/EU Directive Pressure Equipment. Modules B+D (Models with steam heating)
Main harmonized standards: EN 10028-2:2009. Desing and manufacturing code: AD 2000 – Merkblatt

N.B. for module B: TÜV Rheinland Ibérica Inspection, Certification & Testing, S.A. Number: 1027
Address: Parque Negocios Mas Blau, Ed.Océano, C.Garrotxa, 10-12, E-08820, El Prat de Llobregat, Barcelona
EC type examination: Module B. Certificate: DEP.B.000068

N.B. for module D: TÜV Rheinland Industrie Service GmbH. Number: 0035
Address: Am Grauen Stein D-51105 Köln
Quality assurance system: Module D. Certificate: 01 202 E/Q – 13 1410

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. RECEPTION STORAGE AND TRANSPORT

## 2.1. Receipt

The nameplate is located on the rear of the machine. (Fig. 2.1).

Upon delivery inspect the ironer:

- 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.**

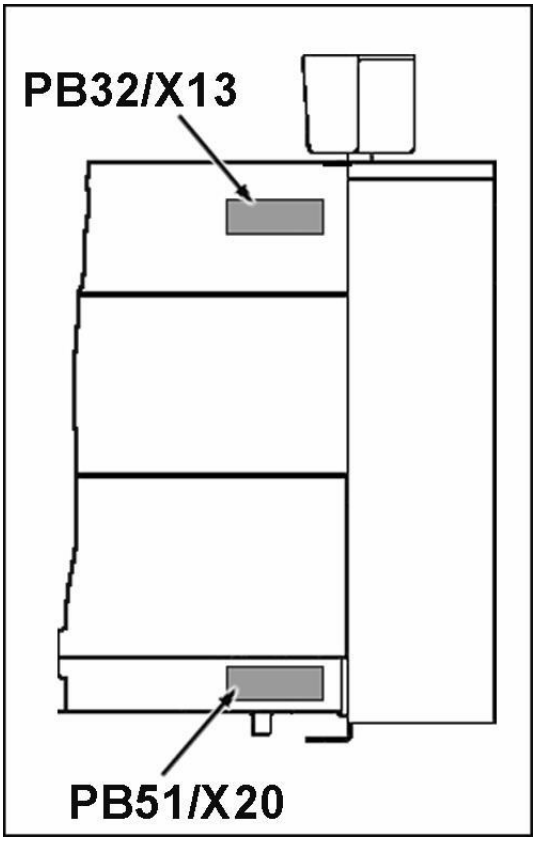



Fig. 2.1

## 2.2. Storage

To store the machine, keep in mind the following points:

- Do not stack machines, even though they are crated.
- Never store the machine where it will be exposed to the weather.
- Store the machine in moisture free location (oxidation could appear on the roll).
- Apply anti-corrosion protection if they are stored and exposed to maritime humidity.

## 2.3. Transport

**CAUTION!**

**IT IS BOUND THAT ALL MANOEUVRES ARE CARRIED OUT BY STAFF SPECIALISED IN TRANSPORT.**

**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!**

**TO NOT OVERLOAD THE SLINGS, THE ANGLE FORMED BETWEEN THEM MUST ALWAYS BE LESS THAN 45º. USE SLINGS OF SUFFICIENT LENGTH. (Fig. 2.2).**

**ALWAYS TRANSPORT MACHINE IN UPRIGHT POSITION.**

**DO NOT USE ROLLERS TO MOVE THE MACHINE.**

**TO MOVE THE MACHINE ACROSS THE FLOOR, USE ROLLER PLATFORMS.**

**UNDER NO CIRCUMSTANCES MUST THE MACHINE BE SUSPENDED BY THE UPPER PART OF THE BASE-FRAMES, THIS COULD SERIOUSLY DAMAGE THE MACHINE.**

**THE FRONT IS DISTINGUISHED BY THE LABEL INDICATING WEIGHTS AND CENTRE OF GRAVITY. (Fig. 2.2).**

The machine comes fully assembled in a single crate. To avoid damage during transportation, the machine is provided with some fittings to prevent the movement of certain parts. These fixtures should be removed when the machine is being set up. Refer to chapter 3.

### 2.3.1. Transport with packaging

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 centre of gravity indicated by the distance **d** in Figure 2.2 (see Section 2.4) should be taken into account at all times.

The **crated machine** can be moved using any of the solutions indicated below (Fig. 2.2).

- Hoist and two sturdy slings passed under the base of the crate.
- Fork-lift truck **(A**).
- Roller platforms placed under the base of the package (Figure 2.2). (Make sure the base of the crate does not slip on the roller platforms). Marked positioning points for the roller platforms **(B).**

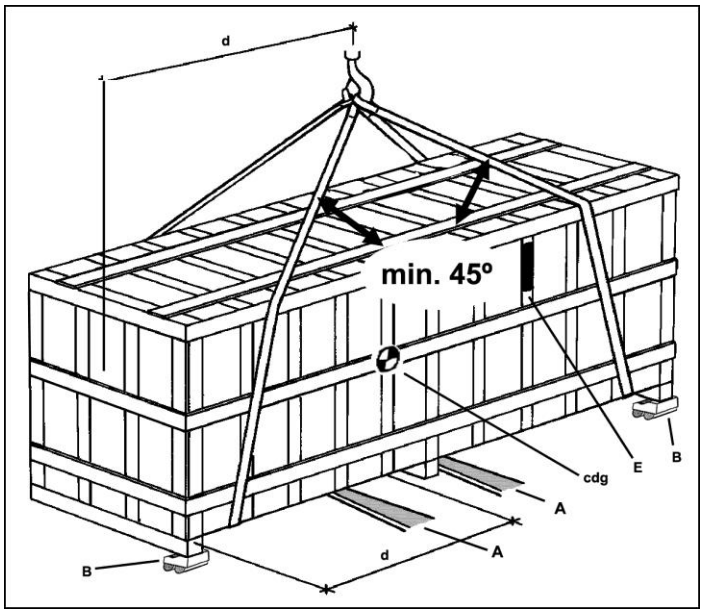



Fig. 2.2

### 2.3.2. Transport of machines without packaging

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 centre of gravity indicated by the distance **d** in Figure 2.3 (see Section 2.4) should be taken into account at all times.

To move the machine supplied **without a crate**, any of the solutions listed below can be used.

**Fork-lift truck.** Figure 2.3.

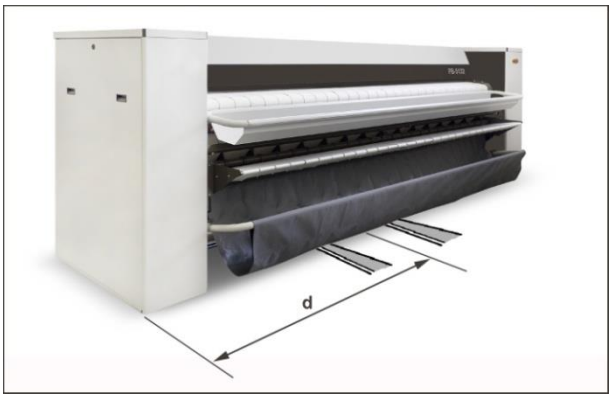



Fig. 2.3

**Roller platforms positioned under the base-plates**

**Caution!**
The roller platforms must be fitted under the strengthened area of the base-frame (Figure 2.4).
Never support machine at the ends of the sides (Figure 2.5).

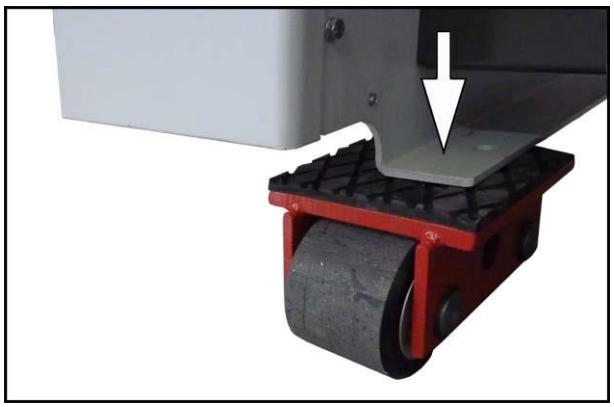


Fig. 2.4

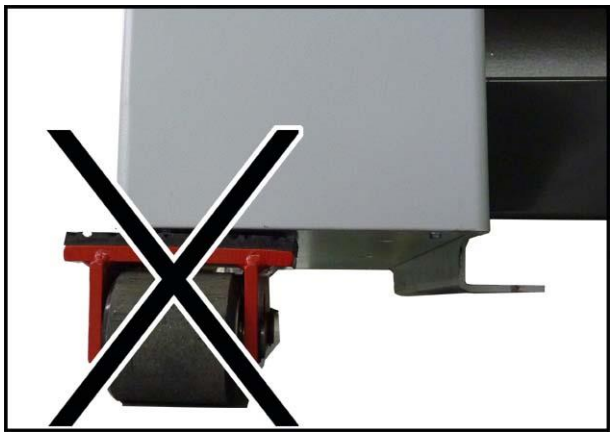


Fig. 2.5

**Hoist and slings** (Figure 2.6)

**Important warnings** if the machine is suspended using slings:

Pass the slings (**A**) exactly between (**B**) the base-frame and the stops welded to the crossbars (model PB/PBP51, X20).

The machine's control panel needs to be dismantled.
To do so:

- Remove the left-hand side cover.
- Remove the top cover of the left-hand base-frame.
- Remove the bolts securing the control panel to the machine.

**CAUTION!**
**Make sure the sling is placed in the proper position, otherwise it could damage the machine's manual gas inlet valve.**

It is essential to use a beam (Fig. 2.6) that prevents damage to the feeding trays, the folder output trays and rear covers.

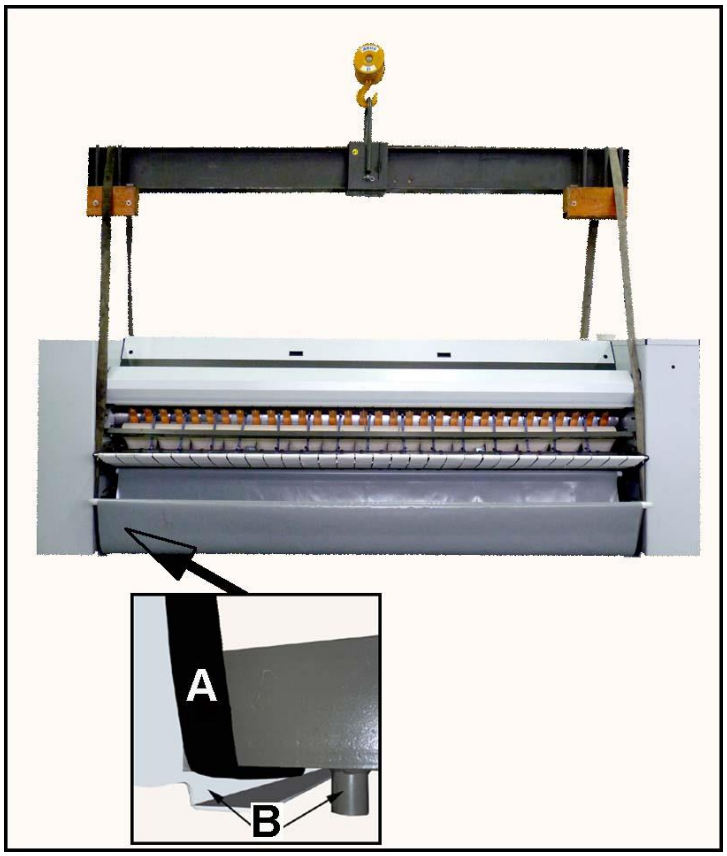


Fig. 2.6

- In models PB32, X13 the bolts securing the machine to the base of the crate need to be used to perform the function of the welded stops. (Fig. 2.7).

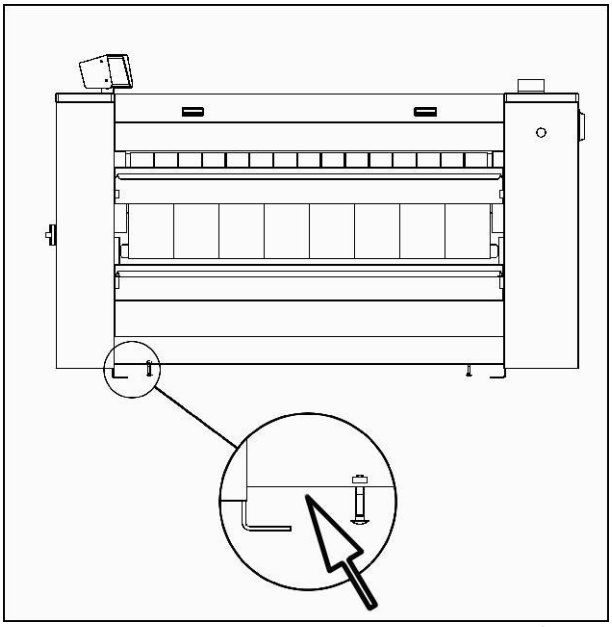


Fig. 2.7

## 2.4. Table of weight and dimensions

### 2.4.1. Model PB32, X13. Table of weight and dimensions

| | | units | PB3215 X13061 | PB3221 X13084 |
|---|---|---|---|---|
| Dimensions WITH crating | L | mm (in) | 2448 (96.4) | 3036 (119.5) |
| | P | mm (in) | 905 (35.6) | 905 (35.6) |
| | H | mm (in) | 1600 (63.0) | 1600 (63.0) |
| | d | mm (in) | 1049 (41.3) | 1340 (58.2) |
| Dimensions WITHOUT crating | L | mm (in) | 2313 (91.1) | 2895 (114.0) |
| | P | mm (in) | 872 (34.3) | 872 (34.3) |
| | H | mm (in) | 1416 (55.7) | 1416 (55.7) |
| | d | mm (in) | 765 (30.1) | 1050 (41.3) |
| Weight | without crating | kg (lb) | 459 (1012) | 561 (1237) |
| | cage packing | kg (lb) | 617 (1360) | 740 (1630) |
| | export crating | kg (lb) | 725 (1598) | 910 (2006) |

### 2.4.2. PB/PBP51, X20 model. Table of weight and dimensions

| | | units | PB/PBP5119 X20075 | PB/PBP5125 X20100 | PB/PBP5132 X20125 |
|---|---|---|---|---|---|
| Dimensions WITH crating<br>E / G / S models | L | mm (in) | 2986 (117.6) | 3610 (142.1) | 4250 (167.3) |
| | P (PB, X20*** W) | mm (in) | 1155 (45.5) | 1155 (45.5) | 1155 (45.5) |
| | P (PBP,X20*** F) | mm (in) | 1285 (50.6) | 1285 (50.6) | 1285 (50.6) |
| | H | mm (in) | 1825 (71.9) | 1825 (71.9) | 1825 (71.9) |
| | d | mm (in) | 1371 (54.0) | 1680 (66.1) | 1989 (78.3) |
| Dimensions WITHOUT crating<br>E / G / S models | L | mm (in) | 2837 (111.7) | 3470 (136.6) | 4103 (161.5) |
| | P | mm (in) | 1173 (46.2) | 1173 (46.2) | 1173 (46.2) |
| | H | mm (in) | 1630 (64.2) | 1630 (64.2) | 1630 (64.2) |
| | d | mm (in) | 927 (36.5) | 1236 (48.7) | 1545 (60.8) |

| Models WITHOUT folder | | units | PB5119 X20075W | PB5125 X20100W | PB5132 X20125W |
|---|---|---|---|---|---|
| Weight E / G models | without crating | kg (lb) | 1035 (2282) | 1265 (2788) | 1423 (3137) |
| | cage packing | kg (lb) | 1285 (2834) | 1560 (3439) | 1758 (3876) |
| | export crating | kg (lb) | 1610 (3550) | 2040 (4497) | 2383 (5253) |
| Weight S models | without crating | kg (lb) | 1145 (2525) | 1375 (3031) | 1533 (3379) |
| | cage packing | kg (lb) | 1395 (3076) | 1670 (3681) | 1868 (4118) |
| | export crating | kg (lb) | 1720 (3793) | 2150 (4739) | 2493 (5496) |

| Models WITH folder | | units | PBP5119 X20075F | PBP5125 X20100F | PBP5132 X20125F |
|---|---|---|---|---|---|
| Weight E / G models | without crating | kg (lb) | 1132 (2496) | 1392 (3069) | 1586 (3497) |
| | cage packing | kg (lb) | 1397 (3080) | 1712 (3775) | 1946 (4290) |
| | export crating | kg (lb) | 1732 (3819) | 2192 (4833) | 2571 (5668) |
| Weight S models | without crating | kg (lb) | 1242 (2739) | 1502 (3312) | 1696 (3739) |
| | cage packing | kg (lb) | 1507 (3323) | 1822 (4017) | 2056 (4533) |
| | export crating | kg (lb) | 1842 (4061) | 2302 (5076) | 2681 (5911) |

## 3. POSITIONING

**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 THESE CASES.**

**THE SPECIFICATIONS NAMEPLATE IS LOCATED ON THE LEFT-HAND SIDE OF THE REAR AREA (FRONT VIEW OF THE MACHINE).**

**CAUTION!**

**THE IRONER MUST BE INSTALLED ON A FLAT FLOOR SURFACE, 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. TYPE OF FIRE EXTINGUISHER AND LOCATION: MUST BE IN ACCORDANCE WITH THE REGULATIONS OF THE COUNTRY IN WHICH THE IRONER IS INSTALLED.**

**CAUTION!**

**BEFORE STARTING UP THE MACHINE, REMOVE ALL THE SECURING DEVICES FOR TRANSPORT. ADVISABLE TO KEEP THE FIXINGS IN CASE THEY ARE NEED FOR SUBSEQUENT USE.**

**CAUTION!**

**SPECIFIC WARNING FOR IRONERS WITH GAS HEATING.**

**BEFORE CARRYING OUT THE INSTALLATION OF THE MACHINE, CHECK 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.**

**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.**

## 3.1. General information and location

**To ensure that the ironer 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, steam.
Size and connection of the electricity supply conduits.
Size and connection of the exhaust duct.
Technical features on the ironer 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, perfectly even and capable of supporting the weight of the machine. A concrete floor with a **resistance equal to or greater than 250kg/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 Fig. 3.1.
If the ironers are installed on metal surfaces the aforementioned surfaces must be grounded by an electric wire independent to the ground ironer connection.

### 3.2. Area of usage

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.

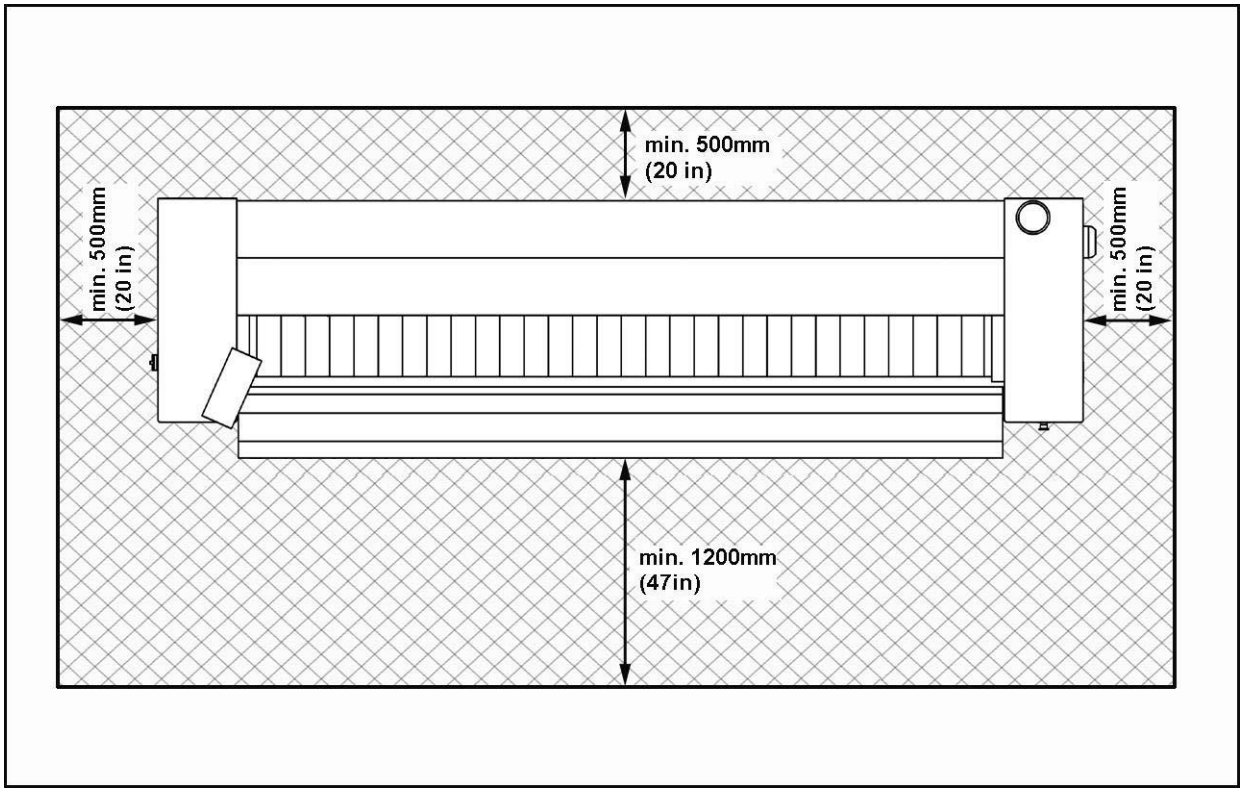



Fig. 3.1

**CAUTION!**

**The measurements in Figure 3.1 define the areas required for the use and basic maintenance of the ironer.**

**The length of some components, such as the electrical heating elements or the gas burner is almost equal to the total width of the machine. The operations for dismantling or replacing these components will require larger surface areas.**

### 3.3. 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<br>41°F | + 40°C<br>104°F | 80% without condensation | 3,000 m<br>10,000ft | in accordance with EN 55011 | free | 300 lux. |

## 3.4. Room ventilation conditions

**CAUTION!**

**THE VENTILATION ON 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 3.4.1 and 3.4.2 ARE RECOMMENDED.**

**THIS IRONER MUST NOT BE INSTALLED IN PREMISES WITHOUT ADEQUATE VENTILATION.**

**INADEQUATELY VENTILATED PREMISES CAN SERIOUSLY AFFECT THE PEOPLE'S HEALTH.**

**ALWAYS KEEP THE VENTILATION SYSTEM CLEAR.**

**NEVER PLACE OBJECTS IN PLACES WHERE THEY CAN OBSTRUCT THE VENTILATION OPENINGS ON THE PREMISES.**

In the case of there being various forced exhaust and/or convection equipment or boilers on the same premises, the complete section of the opening to the outside must amount to at least the sum of the ventilation 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.

**DANGER!**
**DRY CLEANING MACHINES**
**THE INSTALLATION OF DRY CLEANING MACHINES AND IRONERS 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.**

### 3.4.1. Ventilation openings. Models with steam or electric heating

To replace the air used by vapour extraction the premises must be sufficiently ventilated. (Fig. 3.2).
Refer to vapour extraction flow (value **EV**) in Chapter 4: **Technical and connection data for the machine**.
As a piece of guiding information, the premises should be ventilated with openings of 1,300 $cm^2$ (1.74 sq.ft.).
In openings protected with a deflector grille, the opening should be 1,800 $cm^2$ (1.94sq.ft).
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 ironer and near the floor.
The ventilation air openings must not come into contact with the possible air cavities in the walls.

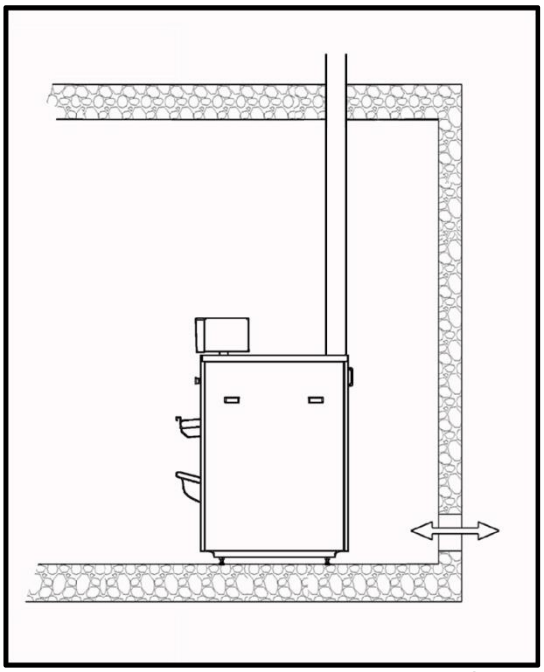


Fig. 3.2

### 3.4.2. Ventilation openings. Models 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: **Technical and connection data for the machine** (**EV** value).

Figure 3.3.
Two openings communicating with the outside are recommended: one located at the top of the premises **(A2)** and another 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 or flue.

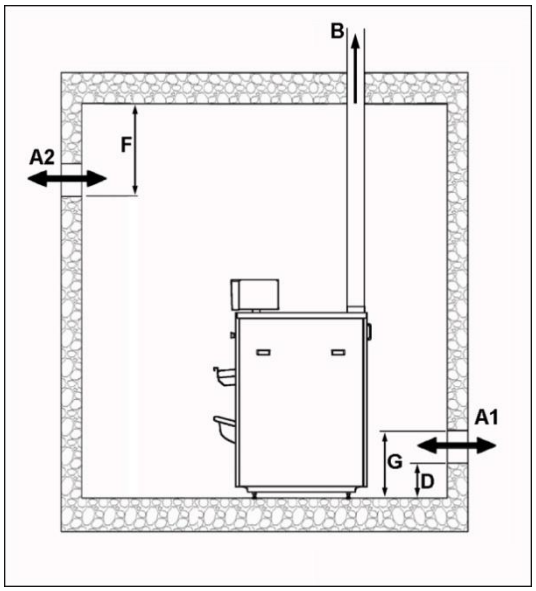


Fig. 3.3

**Size of the A1 and A2 openings**

- The minimum free surface area of the openings **(Si)** should be 5 cm2 (0.75 sq.in) per kW of nominal heat consumption (referred to as Hs) installed.
- The minimum area of each of the openings should never be less than 250 cm2 (37.5 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.

### 3.5. Positioning and levelling the ironer

Remove the bolts securing the ironer to the base of the crate.
Spread the machine from the crate and in its place insert the adjustment bolts as in the figure.
Level the machine properly as prescribed in Figure 3.4. Once the machine is level, lock the position of the levelling bolts using the nuts.

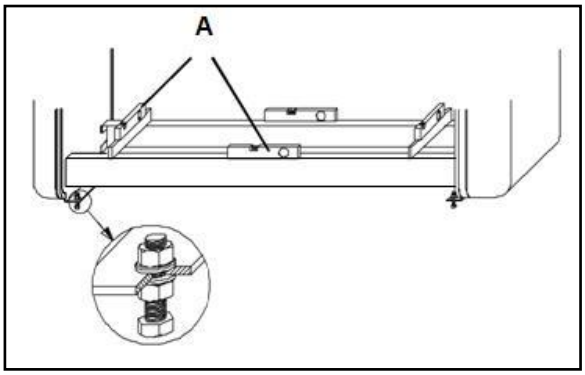



Fig. 3.4

### 3.6. Removal of shipping braces

**CAUTION!**

**REMOVE THE SECURING DEVICES AS INDICATED IN THIS SECTION.**
**ADVISABLE TO KEEP THE FIXINGS IN CASE THEY ARE NEED FOR SUBSEQUENT USE.**

**Remove the transportation fixings from the hand guard** (Fig. 3.5)

Remove the bolt **A** and extract the yellow coloured part **B**.
Check the correct functioning of the hand guard switches.

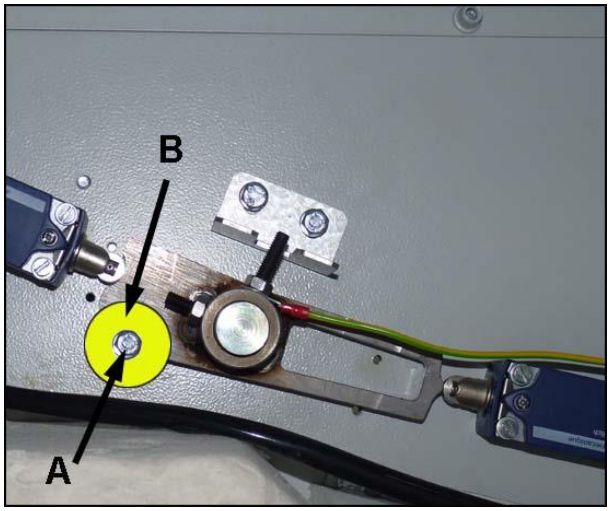



Fig. 3.5

**Removing the shipping brace from the burner** (Models with gas heating, atmospheric burner):

- PB32, X13 models. Remove the right-hand side cover.
- PB/PBP51, X2 models. Remove the left-hand side cover.
- Remove the securing bolt (**A**, Fig. 3.6).
- Reposition and fasten the side cover.

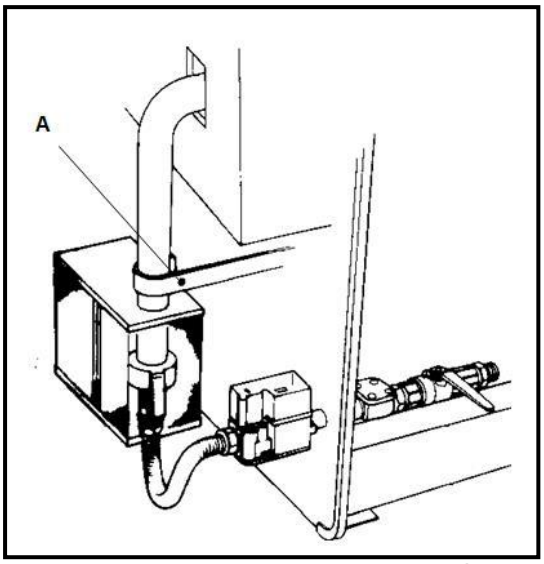



Fig. 3.6

**Removing the shipping braces from the tensioning roller**

Steps for removing the shipping braces from the tensioning roller (Fig. 3.7):

- Remove the rear covers from the ironer.
- Remove the two securing bolts (**B**).
- Remove the yellow shipping brace (**A**).
- Repeat the operation for the shipping brace at the opposite end of the roll.

Store away the shipping braces.

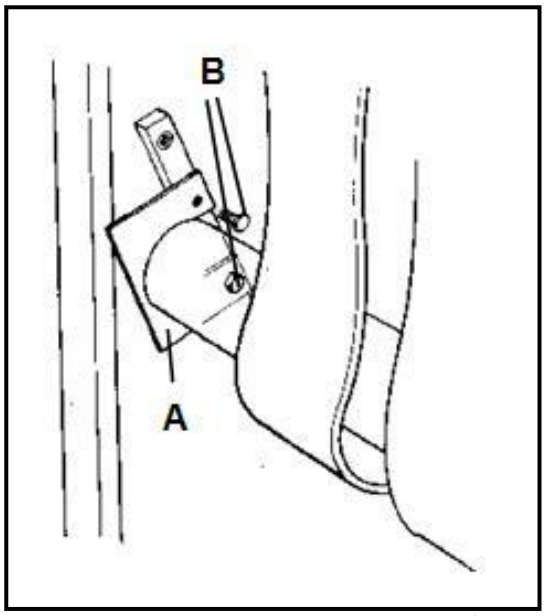



Fig. 3.7

**CAUTION!**

**Lubricating the areas of the roll in contact with the wheels**

Before starting up the ironer it is advisable to lubricate the roll ends resting on the support wheels.

- Turn the roll using the manually operated handle (see Section 10.1) and using a brush spread a layer of oil on the area at both ends of the roll in contact with the wheels (Fig. 3.8).
  Recommended oil: Interfon Lube HT/SF high-temperature oil or equivalent.
- Position and secure the rear covers.

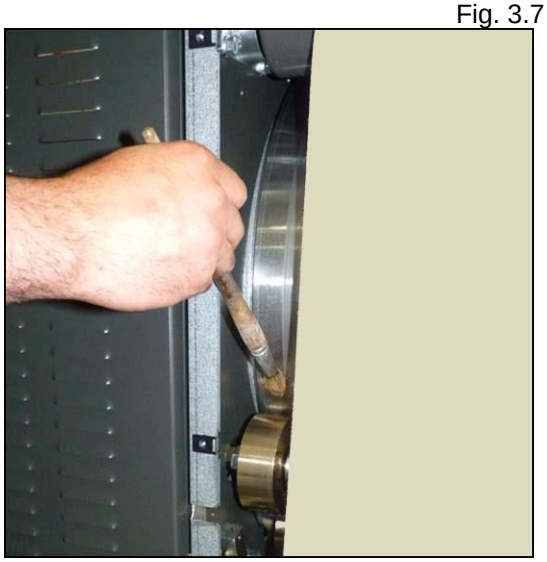


Fig. 3.8

# 4. TECHNICAL AND CONNECTION DATA FOR THE MACHINE

## 4.1. General technical details

| CONCEPT | | UNIT | MODELS | | | | |
|---|---|---|---|---|---|---|---|
| | | | PB3215 X13061 | PB3221 X13084 | PB/PBP5119 X200075 | PB/PBP5125 X20100 | PB/PBP5132 X20125 |
| Roll diameter | | mm (in) | 325 (12.8) | 325 (12.8) | 510 (20.1) | 510 (20.1) | 510 (20.1) |
| Usable length of roll | | mm (in) | 1540 (60.6) | 2120 (83.5) | 1900 (74.8) | 2530 (99.6) | 3165 (124.6) |
| Ironing surface | | $m^2$ (sq.ft) | 0.96 (10.3) | 1.32 (14.2) | 2.12 (22.8) | 2.82 (30.4) | 3.53 (38) |
| Heating | Gas | G | Yes | Yes | Yes | Yes | Yes |
| | Steam | V | No | No | Yes | Yes | Yes |
| | Electric | E | Yes | Yes | Yes | Yes | Yes |
| Evaporation capacity (nominal heating power) | G | l/h (cu.ft/h) | 15 (0.5) | 20 (0.7) | 30 (1.1) | 40 (1.4) | 60 (2.1) |
| | E | l/h (cu.ft/h) | 15 (0.5) | 20 (0.7) | 30 (1.1) | 40 (1.4) | 50 (1.8) |
| | V | l/h (cu.ft/h) | - - - - - | - - - - - | 42 (1.5) | 56 (2.0) | 70 (2.5) |
| Maximum speed. | Normal speed | m/min (ft/min) | 5 (16) | 5 (16) | 9 (30) | 9 (30) | 9 (30) |
| | High speed | m/min (ft/min) | 11 (36) | 11 (36) | 15 (49) | 15 (49) | 15 (49) |
| Roller motor power capacity (1) | 50Hz | kW | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| | 60 Hz | HP. | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| Extraction motor power capacity (1) | 50Hz | kW | 0.30 | 0.30 | 0.55 | 0.55 | 0.55 |
| | 60 Hz | HP. | 0.40 | 0.40 | 0.74 | 0.74 | 0.74 |
| Radiant burner power capacity | 120V; 60Hz | kW | - - - - - | - - - - - | 0.068 | 0.068 | 0.068 |
| | 230V; 50/60Hz | kW | - - - - - | - - - - - | 0.055 | 0.055 | 0.055 |
| Sound level | | dB | <70 | <70 | <70 | <70 | <70 |
| Protection index | | IP | 51 | 51 | 51 | 51 | 51 |
| Vibrations | | | none | none | none | none | none |
| Folder | | | NO | NO | PBP5119 X200075F | PBP5125 X20100F | PBP5132 X20125 |

Note 1. The voltage of the roller and extraction motors is 200…240, 1Ph+N / 2Ph regardless of the machine's supply voltage.

## 4.2. Electrical connection data. Electrical protection devices

**CAUTION!**

- Always use copper wiring.
- Neutral wire. On some models the neutral wire inside the ironer 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 ironer to the mains power supply based on the electrical values set out on the ironer'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 ironer and the characteristics of the mains power supply to which the machine is to be connected.

**It should be stressed that**:

- Machines with gas or steam heating incorporate a transformer in the machine's input circuit, enabling a two-phase connection (2ph) on lines with voltages equal to or greater than 380V if neutral.
- 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 table identified as **Q0**: indicates the machine's isolator switch.

**Explanation of the connection board boxes**

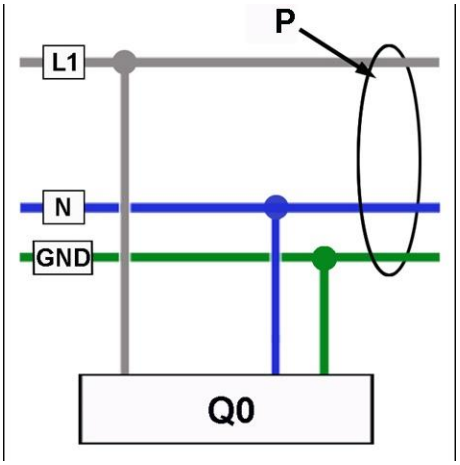
**A. Specification nameplate**: values on the machine's specification nameplate.
Allows the electrical characteristics of the machine to be identified.

**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:**<br>**Heating** .....G/V<br>**Voltage** .....200…240<br>**Phases**.....1Ph + N | | **A** | | |
| **Mains supply available (P):**<br>**Voltage** .....200…240<br>**Phases**.....1Ph + N | | **B** | | |
| **Number of wires** | | | 2+PE/GND | |
| **PB32 X13** | **Wire sec** | **C** | **mm²** | 1.5 |
| | | | **AWG** | 14 |
| | **Automati** | | **A** | 6 |
| **PB/PBP51 X20** | **Wire sec** | | **mm²** | 1.5 |
| | | | **AWG** | 14 |
| | **Automatic External Switch** | | **A** | 10 |

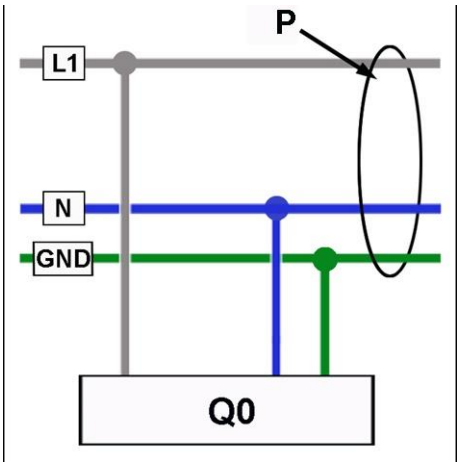
**CONNECTION DIAGRAM**



### 4.2.1. Models with gas or steam heating

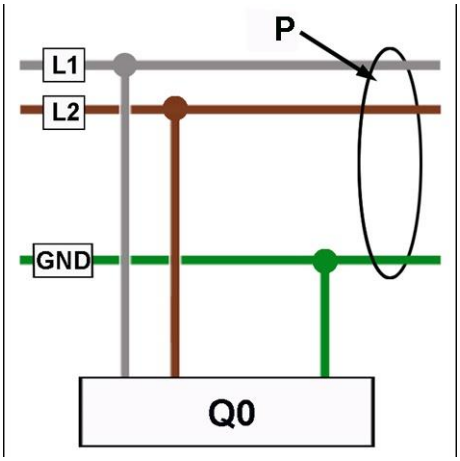
| | | | | |
|---|---|---|---|---|
| **Nameplate:** | | | | |
| **Heating** ..... G/V | | | | |
| **Voltage** ..... 200…240 | | | | |
| **Phases** ..... 1Ph + N | | | | |
| **Mains supply available (P):** | | | | |
| **Voltage** ..... 200…240 | | | | |
| **Phases** ..... 1Ph + N | | | | |
| **Number of wires** | | 2 + PE/GND | | |
| **PB32 X13** | **Wire section** | **mm²** | 1.5 | |
| | | **AWG** | 14 | |
| | **Automatic External Switch** | **A** | 6 | |
| **PB/PBP51 X20** | **Wire section** | **mm²** | 1.5 | |
| | | **AWG** | 14 | |
| | **Automatic External Switch** | **A** | 10 | |

**CONNECTION DIAGRAM**



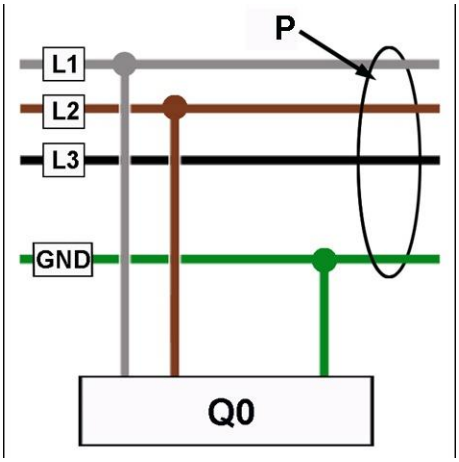

| | | | | |
|---|---|---|---|---|
| **Nameplate:** | | | | |
| **Heating** ..... G/V | | | | |
| **Voltage** ..... 200…240 | | | | |
| **Phases** ..... 1Ph + N | | | | |
| **Mains supply available (P):** | | | | |
| **Voltage** ..... 200…240 | | | | |
| **Phases** ..... 2Ph | | | | |
| **Connection (number of wires):** | | 2 + PE/GND | | |
| **PB32 X13** | **Wire section** | **mm²** | 1.5 | |
| | | **AWG** | 14 | |
| | **Automatic External Switch** | **A** | 6 | |
| **PB/PBP51 X20** | **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 | | | | |
| **Connection (number of wires):** | | 2 + PE/GND | | |
| **PB32 X13** | **Wire section** | **mm²** | 1.5 | |
| | | **AWG** | 14 | |
| | **Automatic External Switch** | **A** | 6 | |
| **PB/PBP51 X20** | **Wire section** | **mm²** | 1.5 | |
| | | **AWG** | 14 | |
| | **Automatic External Switch** | **A** | 10 | |

**CONNECTION DIAGRAM**

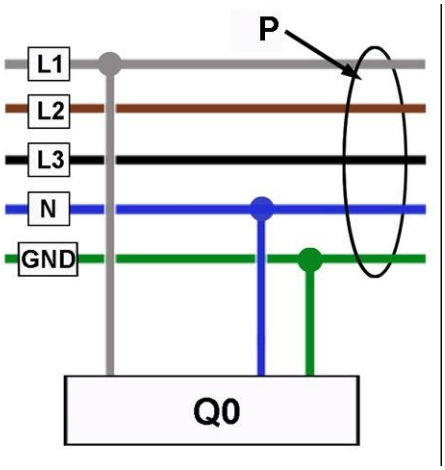


**Nameplate:**
**Heating** .....G/V
**Voltage** .....200…240
**Phases**.....1Ph + N

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

| | | | |
|---|---|---|---|
| **Connection (number of wires):** | | 2 + PE/GND | |
| **PB32 X13** | **Wire section** | **mm²** | 1.5 |
| | | **AWG** | 14 |
| | **Automatic External Switch** | **A** | 4 |
| **PB/PBP51 X20** | **Wire section** | **mm²** | 1.5 |
| | | **AWG** | 14 |
| | **Automatic External Switch** | **A** | 6 |

**CONNECTION DIAGRAM**

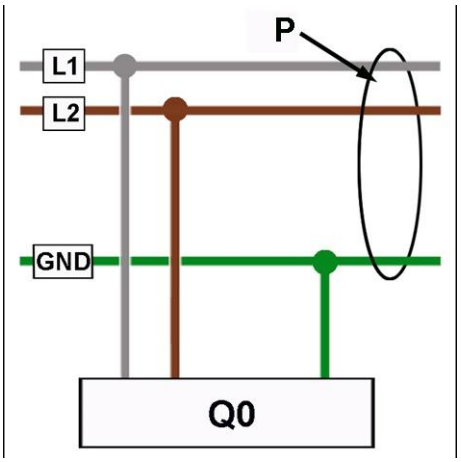



**Nameplate:**
**Heating** .....G/V
**Voltage** .....380…480
**Phases**.....2Ph

**Mains supply available (P):**
**Voltage** .....380…480
**Phases**.....2Ph

| | | | |
|---|---|---|---|
| **Connection (number of wires):** | | 2 + PE/GND | |
| **PB32 X13** | **Wire section** | **mm²** | 1.5 |
| | | **AWG** | 14 |
| | **Automatic External Switch** | **A** | 4 |
| **PB/PBP51 X20** | **Wire section** | **mm²** | 1.5 |
| | | **AWG** | 14 |
| | **Automatic External Switch** | **A** | 6 |

**CONNECTION DIAGRAM**

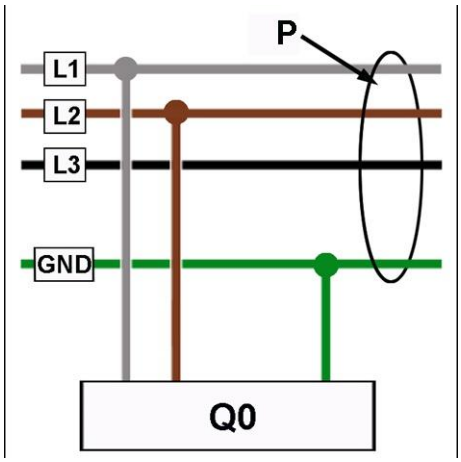



**Nameplate:**
**Heating** .....G/V
**Voltage** .....380…480
**Phases**.....2Ph

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

| | | | |
|---|---|---|---|
| **Connection (number of wires):** | | 2 + PE/GND | |
| **PB32 X13** | **Wire section** | **mm²** | 1.5 |
| | | **AWG** | 14 |
| | **Automatic External Switch** | **A** | 4 |
| **PB/PBP51 X20** | **Wire section** | **mm²** | 1.5 |
| | | **AWG** | 14 |
| | **Automatic External Switch** | **A** | 6 |

**CONNECTION DIAGRAM**

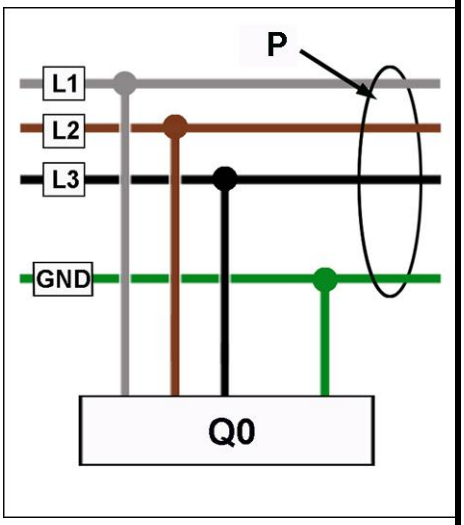


### 4.2.2. Machines with electric heating

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

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

**CONNECTION DIAGRAM**

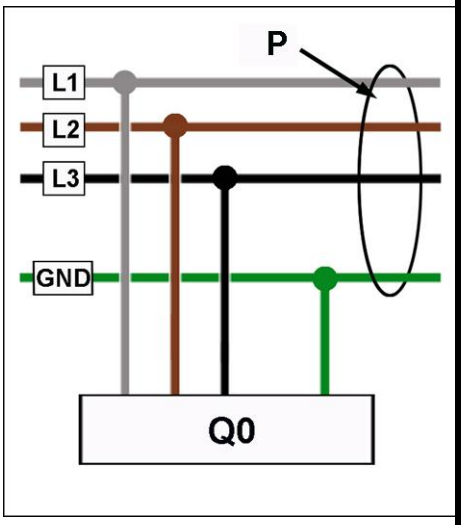



| Connection (number of wires): | | | 3 + PE/GND |
|---|---|---|---|
| PB3215 X13061 | Wire section | mm² | 16 |
| | | AWG | 4 |
| | Automatic External Switch | A | 63 |
| PB3221 X13084 | Wire section | mm² | 25 |
| | | AWG | 2 |
| | Automatic External Switch | A | 80 |
| PB/PBP5119 X20075 | Wire section | mm² | 50 |
| | | AWG | 0 |
| | Automatic External Switch | A | 125 |
| PB/PBP5125 X20100 | Wire section | mm² | 70 |
| | | AWG | 000 |
| | Automatic External Switch | A | 160 |
| PB/PBP5132 X20125 | Wire section | mm² | 95 |
| | | AWG | 0000 |
| | Automatic External Switch | A | 200 |

**Nameplate:**
**Heating** .....E
**Voltage** .....380…415
**Phases**.....3Ph

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

**CONNECTION DIAGRAM**



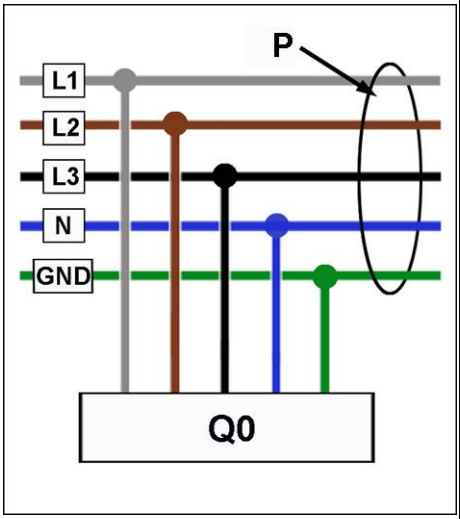

| Connection (number of wires): | | | 3 + PE/GND |
|---|---|---|---|
| PB3215 | Wire section | mm² | 6 |
| | | AWG | 8 |
| | Automatic External Switch | A | 40 |
| PB3221 | Wire section | mm² | 10 |
| | | AWG | 6 |
| | Automatic External Switch | A | 50 |
| PB/PBP5119 | Wire section | mm² | 16 |
| | | AWG | 4 |
| | Automatic External Switch | A | 80 |
| PB/PBP5125 | Wire section | mm² | 25 |
| | | AWG | 2 |
| | Automatic External Switch | A | 100 |
| PB/PBP5132 | Wire section | mm² | 50 |
| | | AWG | 0 |
| | Automatic External Switch | A | 125 |

**Nameplate:**
**Heating** .....E
**Voltage** .....380…415
**Phases**.....3Ph + N

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

| | | | |
|---|---|---|---|
| **Connection (number of wires):** | | 4 + PE/GND | |
| **PB3215** | **Wire section** | **mm²** | 6 |
| | | **AWG** | 8 |
| | **Automatic External Switch** | **A** | 50 |
| **PB3221** | **Wire section** | **mm²** | 10 |
| | | **AWG** | 6 |
| | **Automatic External Switch** | **A** | 50 |
| **PB/PBP5119** | **Wire section** | **mm²** | 16 |
| | | **AWG** | 4 |
| | **Automatic External Switch** | **A** | 80 |
| **PB/PBP5125** | **Wire section** | **mm²** | 25 |
| | | **AWG** | 2 |
| | **Automatic External Switch** | **A** | 100 |
| **PB/PBP5132** | **Wire section** | **mm²** | 50 |
| | | **AWG** | 0 |
| | **Automatic External Switch** | **A** | 100 |

**CONNECTION DIAGRAM**



## 4.3. CE certified models. Specific values for models with GAS heating

**Consult the description of the burner in Section 1.2.**

**VERY IMPORTANT**

**NOTES RELATING TO POWER AND GAS DETAILS**

**Volumetric consumptions and massic consumption**. Values calculated at 15ºC (59ºF); 1013 mbar (14.7 PSI).

### 4.3.1. Atmospheric burner. Heating data

| ATMOSPHERIC BURNER. CE models | | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|---|
| Combustible gases circuit: **type B14** in accordance with EN1020 (Append. B) | | **UNITS** | **PB3215** | **PB3221** | **PB/PBP5119** | **PB/PBP5125** | **PB/PBP5132** |
| Natural **G20** | Supply pressure | mbar (in.wc) | 20 (8.03) | 20 (8.03) | 20 (8.03) | 20 (8.03) | 20 (8.03) |
| | Volumetric consumption | $m^3/h$ (cu.ft/h) | 2.42 (85.5) | 3.23 (114.1) | 4.31 (152.2) | 5.60 (197.8) | 7.37 (260.3) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 22.3 (76091) | 30.5 (104070) | 39.9 (136144) | 51.5 (175725) | 69.6 (237485) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 24.8 (84501) | 33.9 (115573) | 44.3 (151192) | 57.2 (195147) | 77.3 (263733) |
| | Injector diameter | mm | 3.45 | 4.05 | 4.70 | 5.75 | 6.75 |
| Natural **G25** | Supply pressure | mbar (in.wc) | 25 (10.04) | 25 (10.04) | 25 (10.04) | 25 (10.04) | 25 (10.04) |
| | Volumetric consumption | $m^3/h$ (cu.ft/h) | 2.67 (94.3) | 3.85 (136.0) | 4.82 (170.2) | 6.16 (217.5) | 8.68 (306.5) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 22.3 (76091) | 30.5 (104070) | 39.9 (136144) | 51.5 (175725) | 69.6 (237485) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 24.8 (84501) | 33.9 (115573) | 44.3 (151192) | 57.2 (195147) | 77.3 (263733) |
| | Injector diameter | mm | 3.60 | 4.20 | 4.90 | 6.00 | 7.10 |
| Propane **G31** | Supply pressure | mbar (in.wc) | 37 (14.85) | 37 (14.85) | 37 (14.85) | 37 (14.85) | 37 (14.85) |
| | Massic consumption | kg/h (lb/h) | 1.66 (3.66) | 2.51 (5.54) | 3.11 (6.87) | 3.99 (8.80) | 5.43 (11.96) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 22.0 (75067) | 32.1 (109554) | 41.1 140239) | 52.6 (179479) | 69.4 (236803) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 23.9 (81593) | 34.9 (119077) | 44.7 (152430) | 57.2 (195081) | 75.4 (257388) |
| | Injector diameter | mm | 2.40 | 2.75 | 3.10 | 3.60 | 4.15 |
| Propane **G31** | Supply pressure | mbar (in.wc) | 50 (20.7) | 50 (20.7) | 50 (20.7) | 50 (20.7) | 50 (20.7) |
| | Massic consumption | kg/h (lb/h) | 1.66 (3.66) | 2.51 (5.54) | 3.11 (6.87) | 3.99 (8.80) | 5.43 (11.96) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 22.0 (75067) | 32.1 (109554) | 41.1 (140239) | 52.6 (179479) | 69.4 (236803) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 23.9 (81593) | 34.9 (119077) | 44.7 (152430) | 57.2 (195081) | 75.4 (257388) |
| | Injector diameter | mm | 2.10 | 2.70 | 2.90 | 3.30 | 3.95 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Propane Butane** | Supply pressure | mbar (in.wc) | - | - | - | - | 37 (14.85) |
| | Massic consumption | kg/h (lb/h) | - | - | - | - | 5.33 (11.75) |
| | Volumetric consumption | $m^3/h$ (cu.ft/h) | - | - | - | - | 2.40 (84.8) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | - | - | - | - | 69.4 (236803) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | - | - | - | - | 75.4 (257388) |
| | Injector diameter | mm | - | - | - | - | 4.05 |

### 4.3.2. Radiant burner. Heating data

| RADIANT BURNER 50Hz. CE models | | MACHINE MODEL | | |
|---|---|---|---|---|
| Combustible gases circuit: **type B13** in accordance with EN1020 (Append. B) | **UNITS** | **PB/PBP5119** | **PB/PBP5125** | **PB/PBP5132** |
| Natural **G20** | Supply pressure | mbar (in.wc) | 20 (8.03) | 20 (8.03) | 20 (8.03) |
| | Volumetric consumption | $m^3/h$ (cu.ft/h) | 5.06 (178.7) | 6.48 (228.8) | 8.56 (302.3) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 46.9 (160029) | 60.1 (205070) | 80.9 (276042) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 52.1 (177716) | 66.7 (227735) | 89.8 (306551) |
| | Injector diameter | mm | 27 | 32.5 | 42 |
| | Solenoid valve adjustm. (See Figure 5.13). | mm | 7 | 7 | 7 |
| Natural **G25** | Supply pressure | mbar (in.wc) | 25 (10.04) | 25 (10.04) | 25 (10.04) |
| | Volumetric consumption | $m^3/h$ (cu.ft/h) | 5.66 (199.9) | 7.24 (255.7) | 9.45 (333.7) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 46.9 (160029) | 60.1 (205070) | 80.9 (276042) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 52.1 (177716) | 66.7 (227735) | 89.8 (306551) |
| | Injector diameter | mm | 28 | 34 | -- |
| | Solenoid valve adjustm. (See Figure 5.13). | mm | 7 | 7 | 7 |
| Propane **G31** | Supply pressure | mbar (in.wc) | 37 (14.9) | 37 (14.9) | 37 (14.9) |
| | Massic consumption | kg/h (lb/h) | 3.54 (7.81) | 4.53 (9.99) | 6.15 (13.57) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 46.8 (159688) | 59.8 (204046) | 80.8 (275701) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 50.9 (173570) | 65.0 (221784) | 87.8 (299668) |
| | Injector diameter | mm | 26.5 | 31 | 43 |
| | Solenoid valve adjustm. (See Figure 5.13). | mm | 6 | 5 | 4.5 |

| | | | | | |
|---|---|---|---|---|---|
| Propane **G31** | Supply pressure | mbar (in.wc) | 50 (20.7) | 50 (20.7) | 50 (20.7) |
| | Massic consumption | kg/h (lb/h) | 3.54 (7.81) | 4.53 (9.99) | 6.15 (13.57) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 46.8 (159688) | 59.8 (204046) | 80.8 (275701) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 50.9 (173570) | 65.0 (221784) | 87.8 (299668) |
| | Injector diameter | mm | 27 | 31 | 42.8 |
| | Solenoid valve adjustm. (See Figure 5.13). | mm | 6 | 5 | 4.5 |

| **RADIANT BURNER 60Hz.** | | **MACHINE MODEL** | | |
|---|---|---|---|---|
| Combustible gases circuit: **type B13** in accordance with EN1020 (Append. B) | **UNITS** | **PB/PBP5119** | **PB/PBP5125** | **PB/PBP5132** |

| | | | | | |
|---|---|---|---|---|---|
| Natural **G20** | Supply pressure | mbar (in.wc) | 20 (8.03) | 20 (8.03) | 20 (8.03) |
| | Volumetric consumption | $m^3/h$ (cu.ft/h) | 5.06 (178.7) | 6.48 (228.8) | 8.6 (302.3) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 46.9 (160029) | 60.1 (205070) | 80.9 (276042) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 52.1 (177716) | 66.7 (227735) | 89.8 (306551) |
| | Injector diameter | mm | 27 | 31.5 | 42 |
| | Solenoid valve adjustm. (See Figure 5.13). | mm | 7 | 7 | 7 |

| | | | | | |
|---|---|---|---|---|---|
| Propane **G31** | Supply pressure | mbar (in.wc) | 37 (14.9) | 37 (14.9) | 37 (14.9) |
| | Massic consumption | kg/h (lb/h) | 3.54 (7.81) | 4.53 (9.99) | 6.15 (13.57) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 46.8 (159688) | 59.8 (204046) | 80.8 (275701) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 50.9 (173570) | 65.0 (221784) | 87.8 (299668) |
| | Injector diameter | mm | 26.5 | 31 | 43 |
| | Solenoid valve adjustm. (See Figure 5.13). | mm | 6 | 5 | 4.5 |

### 4.3.3. 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.

### 4.3.4. 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 ironer.

**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** | **ES** | 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 |

### 4.3.5. Details of gas connection

| INSTALLATION CHARACTERISTICS CE models | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|
| **Types of gas** | Male thread | **PB3215** | **PB3221** | **PB/PBP5119** | **PB/PBP5125** | **PB/PBP5132** |
| **G20, G25, G31** | **BSP** | 3/4 in | 3/4 in | 3/4 in | 3/4 in | 3/4 in |

### 4.3.6. Electrical data: power and consumption (models with gas heating)

| ELECTRICAL SPECIFICATIONS CE models | | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|---|
| | **VOLTAGE (50/60Hz)** | | **PB3215** | **PB3221** | **PB/PBP5119** | **PB/PBP5125** | **PB/PBP5132** |
| Maximum electrical power | 200…480 | kW | 0.7 | 0.7 | 1.01 | 1.01 | 1.01 |
| Total nominal consumpt. | 200…240 | A | 4.70 | 4.70 | 6.10 | 6.10 | 6.10 |
| | 380…480 | A | 2.50 | 2.50 | 3.10 | 3.10 | 3.10 |

**Note. This information should be supplemented with images and information from Section 4.8.**

## 4.4. AGA certified models. Specific values for models with GAS heating

**Consult the description of the burner in Section 1.2.**

**VERY IMPORTANT**

**NOTES RELATING TO POWER AND GAS DETAILS**
**Volumetric consumptions and massic consumption**. Values calculated at 15ºC (59ºF); 1013 mbar (14.7 PSI).

| ATMOSPHERIC BURNER. AGA models | | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|---|
| Combustible gases circuit: **type B14** in accordance with EN1020 (Append. B) | | **UNITS** | **PB3215** | **PB3221** | **PB/PBP5119** | **PB/PBP5125** | **PB/PBP5132** |
| Natural **G20** | Supply pressure AGA | mbar (in.wc) | 20 (8.03) | 20 (8.03) | 16 (6.4) | 16 (6.4) | 16 (6.4) |
| | Volumetric consumption | $m^3/h$ (cu.ft/h) | 2.42 (85.5) | 3.23 (114.1) | 4.31 (152.2) | 5.60 (197.8) | 7.37 (260.3) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 22.3 (76091) | 30.5 (104070) | 39.9 (136144) | 51.5 (175725) | 69.6 (237485) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 24.8 (84501) | 33.9 (115573) | 44.3 (151192) | 57.2 (195147) | 77.3 (263733) |
| | Injector diameter | mm | 3.45 | 4.05 | 4.70 | 5.75 | 6.75 |
| Propane **G31** | Supply pressure AGA | mbar (in.wc) | 37 (14.85) | 37 (14.85) | 35 (14.1) | 35 (14.1) | 35 (14.1) |
| | Massic consumption | kg/h (lb/h) | 1.66 (3.66) | 2.51 (5.54) | 3.11 (6.87) | 3.99 (8.80) | 5.43 (11.96) |
| | Nominal calorie cons. with regard to $H_i$ | kW (BTU/h) | 22.0 (75067) | 32.1 (109554) | 41.1 140239) | 52.6 (179479) | 69.4 (236803) |
| | Nominal calorie cons. with regard to $H_s$ | kW (BTU/h) | 23.9 (81593) | 34.9 (119077) | 44.7 (152430) | 57.2 (195081) | 75.4 (257388) |
| | Injector diameter | mm | 2.40 | 2.75 | 3.10 | 3.60 | 4.15 |

### 4.4.1. 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.

### 4.4.2. 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 ironer.

**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** | **ES** | 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 |

### 4.4.3. Details of gas connection

| INSTALLATION CHARACTERISTICS CE models | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|
| **Types of gas** | Male thread | **PB3215** | **PB3221** | **PB/PBP5119** | **PB/PBP5125** | **PB/PBP5132** |
| **G20, G25, G31** | **BSP** | 3/4 in | 3/4 in | 3/4 in | 3/4 in | 3/4 in |

### 4.4.4. Electrical data: power and consumption (models with gas heating)

| ELECTRICAL SPECIFICATIONS CE models | | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|---|
| | **VOLTAGE (50/60Hz)** | | **PB3215** | **PB3221** | **PB/PBP5119** | **PB/PBP5125** | **PB/PBP5132** |
| Maximum electrical power | 200…480 | kW | 0.7 | 0.7 | 1.01 | 1.01 | 1.01 |
| Total nominal consumpt. | 200…240 | A | 4.70 | 4.70 | 6.10 | 6.10 | 6.10 |
| | 380…480 | A | 2.50 | 2.50 | 3.10 | 3.10 | 3.10 |

**Note. This information should be supplemented with images and information from Section 4.8.**

## 4.5. ETL certified models. Specific values for models with GAS heating

**Consult the description of the burner in Section 1.2.**

**VERY IMPORTANT**

**NOTES RELATING TO POWER AND GAS DETAILS**

- **Volumetric consumptions and massic consumption**. Values calculated at 15ºC (59ºF); 1013.25 mbar (14.7 PSI).

### 4.5.1. Atmospheric burner. Heating data

| ATMOSPHERIC BURNER. ETL models | | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|---|
| | | UNITS | X13061 | X13084 | X20075 | X20100 | X20125 |
| Natural | Supply pressure | mbar<br>(in.wc) | 17.4<br>(7.0) | 17.4<br>(7.0) | 17.4<br>(7.0) | 17.4<br>(7.0) | 17.4<br>(7.0) |
| | Manifold pressure | mbar<br>(in.wc) | 12.4<br>(5.0) | 12.4<br>(5.0) | 12.4<br>(5.0) | 12.4<br>(5.0) | 12.4<br>(5.0) |
| | Volumetric consumption | $m^3/h$<br>(cu.ft/h) | 2.48<br>(87.6) | 3.06<br>(108.1) | 4.48<br>(158.2) | 5.88<br>(207.7) | 7.09<br>(250.4) |
| | Nominal calorie cons. with regard to $H_i$ (Net) | kW<br>(BTU/h) | 23.4<br>(79844) | 28.9<br>(98611) | 42.3<br>(144334) | 55.6<br>(189715) | 67<br>(228613) |
| | Nominal calorie cons. with regard to $H_s$ (Gross) | kW<br>(BTU/h) | 26<br>(88669) | 32.1<br>(109510) | 47<br>(160286) | 61.7<br>(210683) | 74.4<br>(253881) |
| | Injector diameter | mm | 3.7 | 4.6 | 5.05 | 5.9 | 6.9 |
| Propane | Supply pressure | mbar<br>(in.wc) | 27.4<br>(11.0) | 27.4<br>(11.0) | 27.4<br>(11.0) | 27.4<br>(11.0) | 27.4<br>(11.0) |
| | Massic consumption | kg/h<br>(lb/h) | 1.72<br>(3.78) | 2.29<br>(5.06) | 3.32<br>(7.32) | 4.2<br>(9.25) | 5.15<br>(11.35) |
| | Nominal calorie cons. with regard to $H_i$ (Net) | kW<br>(BTU/h) | 22.5<br>(76773) | 30.1<br>(102705) | 43.5<br>(148428) | 55<br>(187668) | 67.5<br>(230320) |
| | Nominal calorie cons. with regard to $H_s$ (Gross) | kW<br>(BTU/h) | 24.4<br>(83256) | 32.7<br>(111634) | 47.3<br>(161331) | 59.8<br>(203982) | 73.3<br>(250110) |
| | Injector diameter | mm | 2.6 | 3.0 | 3.55 | 4.0 | 4.45 |

### 4.5.2. Radiant burner. Heating data

| RADIANT BURNER. ETL models | | | MACHINE MODEL | | |
|---|---|---|---|---|---|
| | | UNITS | X20075 | X20100 | X20125 |
| Natural | Supply pressure | mbar<br>(in.wc) | 17.4<br>(7.0) | 17.4<br>(7.0) | 17.4<br>(7.0) |
| | Volumetric consumption | $m^3/h$<br>(cu.ft/h) | 5.06<br>(178.7) | 6.48<br>(228.8) | 7.96<br>(281.1) |
| | Nominal calorie cons. with regard to $H_i$ (Net) | kW<br>(BTU/h) | 47.8<br>(163100) | 61.2<br>(208823) | 75.2<br>(256593) |
| | Nominal calorie cons. with regard to $H_s$ (Gross) | kW<br>(BTU/h) | 53.1<br>(181185) | 68<br>(231903) | 83.5<br>(284914) |
| | Injector diameter | mm | 28.5 | 32 | 40,5 / 57* |
| | Solenoid valve adjustm. (See Figure 5.13). | mm | 7 | 7 | 7 |
| Propane | Supply pressure | mbar<br>(in.wc) | 27.4<br>(11.0) | 27.4<br>(11.0) | 27.4<br>(11.0) |
| | Massic consumption | kg/h<br>(lb/h) | 3.54<br>(7.81) | 4.51<br>(9.95) | 5.74<br>(12.66) |
| | Nominal calorie cons. with regard to $H_i$ (Net) | kW<br>(BTU/h) | 46.4<br>(158323) | 59.2<br>(201999) | 75.3<br>(256934) |
| | Nominal calorie cons. with regard to $H_s$ (Gross) | kW<br>(BTU/h) | 50.5<br>(172313) | 64.3<br>(219401) | 81.8<br>(279270) |
| | Injector diameter | mm | 27.5 | 29 | 37 / 52* |
| | Solenoid valve adjustm. (See Figure 5.13). | mm | 6 | 7 | 4.5 |

*Note: from machine No.2210031

### 4.5.3. Details of gas connection

| INSTALLATION CHARACTERISTICS ETL models | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|
| Types of gas | Male thread | X13061 | X13084 | X20075 | X20100 | X20125 |
| G20, G25, G31 | NPT | 3/4 in | 3/4 in | 3/4 in | 3/4 in | 3/4 in |

### 4.5.4. Electrical data: power and consumption (Models with gas heating)

| ELECTRICAL SPECIFICATIONS ETL models | | | MACHINE MODEL | | | | |
|---|---|---|---|---|---|---|---|
| | VOLTAGE (50/60Hz) | | X13061 | X13084 | X20075 | X20100 | X20125 |
| Maximum electrical power | 200…480 | kW | 0.7 | 0.7 | 1.01 | 1.01 | 1.01 |
| Total nominal consumpt. | 200…240 | A | 4.70 | 4.70 | 6.10 | 6.10 | 6.10 |
| | 380…480 | A | 2.1 | 2.1 | 3.00 | 3.00 | 3.00 |

**Note. This information should be supplemented with images and information from Section 4.8.**

## 4.6. Specific values for models with STEAM heating

### 4.6.1. Heating data

| CHARACTERISTICS: | | | MACHINE MODEL | | |
|---|---|---|---|---|---|
| | | UNITS | PB/PBP5119 X20075 | PB/PBP5125 X20100 | PB/PBP5132 X20125 |
| Heating power at 8 bars (116 PSI) | | kW (BTU/h) | 48.8 (166513) | 65.0 (221789) | 81.4 (277748) |
| Volume of pressurised vessel | | $dm^3$ (cu.ft) | 332 (11.7) | 444 (15.7) | 557 (19.7) |
| Pressure | Nominal | bar (PSI) | 8 (116) | 8 (116) | 8 (116) |
| | Min / Max. | bar (PSI) | 6.0/10.0 (87/145) | 6.0/10.0 (87/145) | 6.0/10.0 (87/145) |
| Massic consumption at 8 bars (116 PSI) | | kg/h (lbs/h) | 86 (190) | 115 (254) | 144 (317) |

### 4.6.2. Details of steam connection (common to all the PS/PSP, X20 models)

| | UNITS | PS/PSP models CE certified | | X20 models ETL certified | |
|---|---|---|---|---|---|
| **V** Steam input | mm (in) | 25.4 (1) | Flat flange DIN 2633 PN-16 | (1) | Flat flange DIN 2633 PN-16 |
| **C** Condensate outlet | mm (in) | 19 (3/4) | | (3/4) | |
| **VS** Safety valve | mm (in) | 12.7 (1/2) | Inside thread (B.S.P) | (1) | Inside thread N.P.T. |

### 4.6.3. Electrical data: power and consumption (models with steam heating)

| | VOLTAGE (50/60Hz) | UNITS | PB/PBP5119 X20075 | PB/PBP5125 X20100 | PB/PBP5132 X20125 |
|---|---|---|---|---|---|
| Maximum electrical power | 200…480 | kW | 1.01 | 1.01 | 1.01 |
| Total nominal consumpt. | 200…240 | A | 6.10 | 6.10 | 6.10 |
| | 380…480 | A | 3.10 | 3.10 | 3.10 |

**Note. This information should be supplemented with images and information from Section 4.8.**

## 4.7. Specific values for models with ELECTRIC heating

### 4.7.1. CE certified models

| | | | MODEL | | | | |
|---|---|---|---|---|---|---|---|
| | VOLTAGE 50/60Hz | UNIT | PB3215 | PB3221 | PB/PBP5119 | PB/PBP5125 | PB/PBP5132 |
| Heating power | 200V | kW | 15.26 | 21.47 | 31.18 | 45.62 | 52.07 |
| | 208V | kW | 16.50 | 23.22 | 33.72 | 49.34 | 56.31 |
| | 220V | kW | 15.10 | 21.24 | 34.52 | 45.15 | 57.64 |
| | 230V | kW | 15.10 | 21.24 | 37.73 | 49.34 | 63.00 |
| | 240V | kW | 16.50 | 23.22 | 37.73 | 49.34 | 63.00 |
| | 380V | kW | 15.01 | 21.13 | 34.33 | 44.90 | 57.32 |
| | 400V | kW | 16.64 | 23.41 | 38.04 | 49.75 | 63.52 |
| | 415V | kW | 16.45 | 23.14 | 37.60 | 49.18 | 62.79 |
| Total electrical power | 200V | kW | 15.96 | 22.17 | 32.19 | 46.33 | 53.08 |
| | 208V | kW | 17.20 | 23.92 | 34.73 | 50.35 | 57.32 |
| | 220V | kW | 15.80 | 21.94 | 35.53 | 46.16 | 58.65 |
| | 230V | kW | 15.80 | 21.94 | 38.74 | 50.35 | 64.01 |
| | 240V | kW | 17.20 | 23.92 | 38.74 | 50.35 | 64.01 |
| | 380V | kW | 15.71 | 21.83 | 35.34 | 45.91 | 58.33 |
| | 400V | kW | 17.34 | 24.11 | 39.05 | 50.76 | 64.53 |
| | 415V | kW | 17.15 | 23.84 | 38.61 | 50.19 | 63.80 |
| Total electrical consumption | 200V | A | 49 | 67 | 96 | 138 | 156 |
| | 208V | A | 50 | 68 | 100 | 143 | 162 |
| | 220V | A | 44 | 59 | 97 | 125 | 157 |
| | 230V | A | 43 | 56 | 101 | 130 | 164 |
| | 240V | A | 44 | 59 | 97 | 125 | 158 |
| | 380V | A | 28 | 35 | 58 | 74 | 93 |
| | 400V | A | 29 | 37 | 61 | 78 | 98 |
| | 415V | A | 28 | 35 | 58 | 75 | 93 |

### 4.7.2. ETL certified models

| | | | MODEL | | | | |
|---|---|---|---|---|---|---|---|
| | VOLTAGE 60Hz. | UNIT | X13061 | X13084 | X20075 | X20100 | X20125 |
| Heating power | 208V | kW | 12.39 | 17.44 | 28.34 | 37.06 | 47.32 |
| | 240V | kW | 16.50 | 23.22 | 37.73 | 49.34 | 63.00 |
| Total electrical power | 208V | kW | 13.09 | 18.14 | 29.35 | 38.07 | 48.33 |
| | 240V | kW | 17.20 | 23.92 | 38.74 | 50.35 | 64.01 |
| Total electrical consumption | 208V | A | 39 | 53 | 85 | 109 | 137 |
| | 240V | A | 44 | 61 | 97 | 125 | 158 |

## 4.8. Exhaust ducting. Technical and connection details

| HEATING | | UNITS | PB32 X13 | PB/PBP51 X20 |
|---|---|---|---|---|
| G | Maximum pressure | $mmH_2O$ (in.wc) | 8.4 (0.34) | 17.2 (0.69) |
| | Minimum flow | $m^3/h$ (cu.ft/min) | 658 (387) | 958 (564) |
| | Maximum flow | $m^3/h$ (cu.ft/min) | 1000 (558) | 1430 (841) |
| | Diameter | mm (in) | 114 (4.49) | 130 (5.1) |
| E | Maximum pressure | $mmH_2O$ (in.wc) | 8.3 (0.33) | 18.3 (0.73) |
| | Minimum flow | $m^3/h$ (cu.ft/min) | 600 (353) | 1077 (634) |
| | Maximum flow | $m^3/h$ (cu.ft/min) | 1000 (558) | 1430 (841) |
| | Diameter | mm (in) | 114 (4.49) | 130 (5.1) |
| V | Maximum pressure | $mmH_2O$ (in.wc) | - - - - - | 18.3 (0.73) |
| | Minimum flow | $m^3/h$ (cu.ft/min) | - - - - - | 1077 (634) |
| | Maximum flow | $m^3/h$ (cu.ft/min) | - - - - - | 1430 (841) |
| | Diameter | mm (in) | - - - - - | 130 (5.1) |

**Note. This information should be supplemented with images and information from Section 4.8.**

**Measurement of maximum pressure** (Figure 4.1)

Conditions:

- Maximum pressure measured in the extraction duct, once the machine is connected to this duct.
- Measuring point: indicated as **B** in the figure.
- **H** level value: 500mm (20 in).
- Measurement made at room temperature.

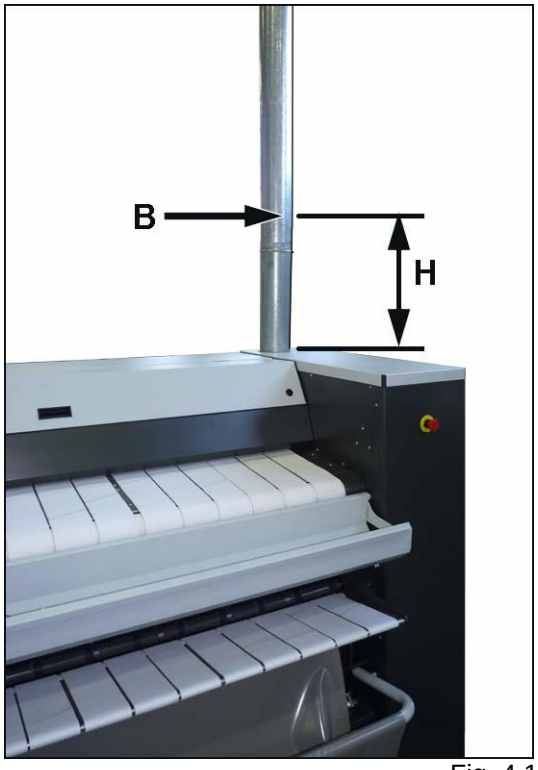



Fig. 4.1

## 4.9. Wiring diagram

See symbols and measurement values in Section 4.8.3.
See areas of use in Section 3.2.

### 4.9.1. PB32, X13 models

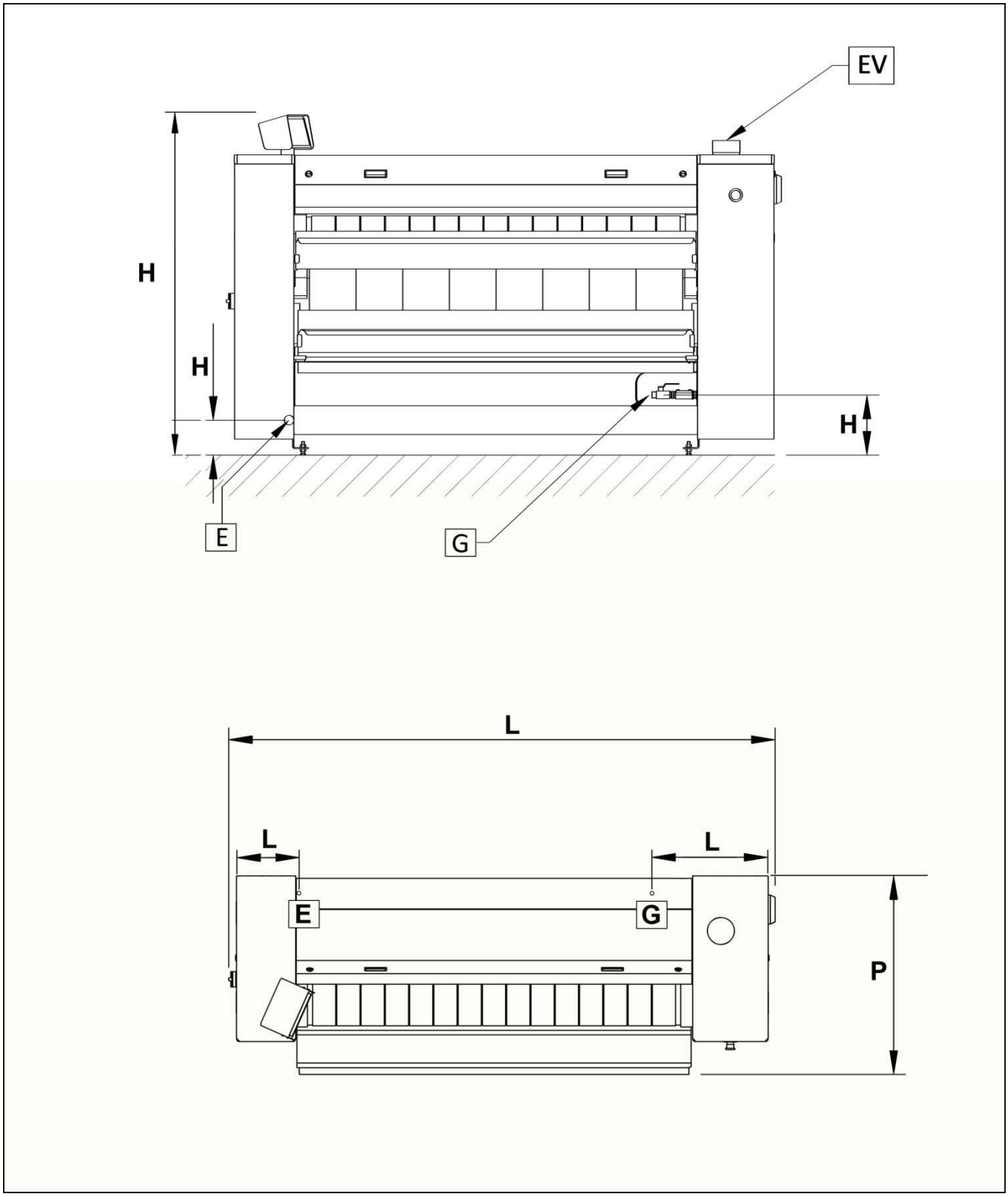



Fig. 4.2

### 4.9.2. PB/PBP51, X20 models

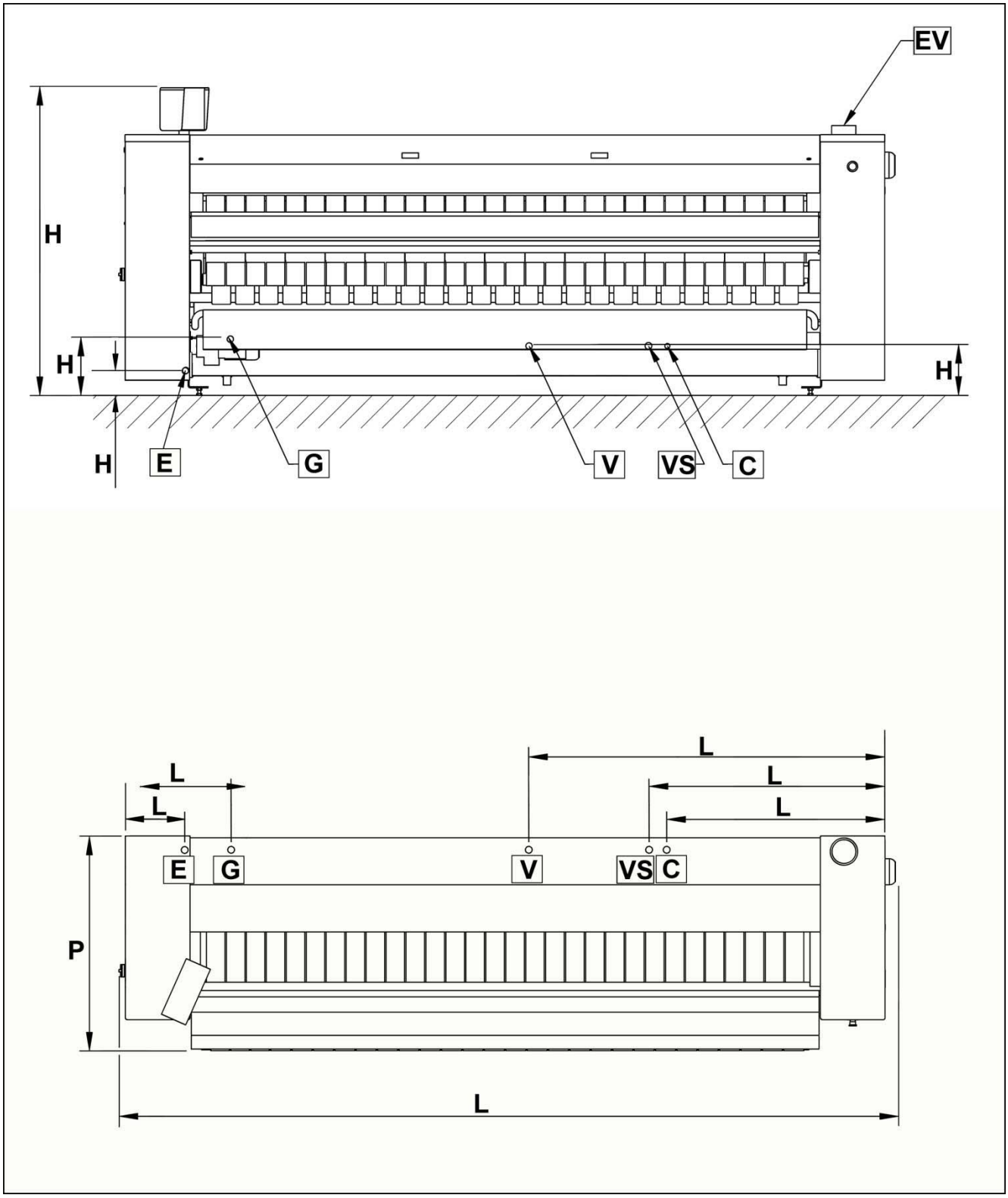



Fig. 4.3

### 4.9.3. Symbols and measurements for the installation, positioning and connection

(This information is supplemented with data from Sections 4.3, 4.4, 4.6)

| PB, X13 | | | | | |
|---|---|---|---|---|---|
| **DIMENSIONS OF THE MACHINE** | | **UNITS** | **L** | **H** | **P** |
| **PB3215 X13065** | | mm | 2313 | 1416 | 872 |
| | | (in) | 91.1 | 55.7 | 34.3 |
| **PB3221 X13081** | | mm | 2895 | 1416 | 872 |
| | | (in) | 114.0 | 55.7 | 34.3 |

| **CONNECTION MEASUREMENTS** | | **UNITS** | **L** | **H** | **Diameter of the connection** |
|---|---|---|---|---|---|
| **E** | Electricity connection | mm | 247 | 145 | - - - - |
| | | (in) | (9.7) | 5.7 | - - - - |
| **G** | Gas connection | mm | 508 | 250 | - - - - |
| | | (in) | (20.0) | 9.8 | (3/4) |
| **EV** | Exhaust ducting | mm | - - - - | 1309 | 114 |
| | | (in) | - - - - | 51.5 | (4.5) |

| PB/PBP51, X20 | | | | | |
|---|---|---|---|---|---|
| **DIMENSIONS OF THE MACHINE** | | **UNITS** | **L** | **H** | **P** |
| **PB/PBP5119 X20075** | | mm | 2837 | 1630 | 1170 |
| | | (in) | (111.7) | (64.2) | (46.1) |
| **PB/PBP5125 X20100** | | mm | 3470 | 1630 | 1170 |
| | | (in) | (136.6) | (64.2) | (46.1) |
| **PB/PBP5132 X20120** | | mm | 4103 | 1630 | 1170 |
| | | (in) | (161.5) | (64.2) | (46.1) |

| **CONNECTION MEASUREMENTS** | | **UNITS** | **L** | **H** | **Diameter of the connection** |
|---|---|---|---|---|---|
| **E** | Electrical Supply | mm | 360 | 132 | - - - - |
| | | (in) | (14.2) | (5.2) | - - - - |
| **G** | Gas input | mm | 490 | 308 | - - - - |
| | | (in) | (19.3) | (12.1) | (3/4) |
| **V** | Steam input | mm | 1770 | 270 | 25.4 |
| | | (in) | (69.7) | (10.6) | (1) |
| **VS** | Steam safety valve | mm | 1218 | 270 | see Section 4.5.2 |
| | | (in) | (48.0) | (10.6) | |
| **C** | Condensate outlet | mm | 1156 | 270 | 19.0 |
| | | (in) | (45.5) | (10.6) | (3/4) |
| **EV** | Exhaust ducting | mm | - - - - | 1430 | 130 |
| | | (in) | - - - - | (56.3) | (5.1) |

### 4.9.4. Height of the work stations

| PB32, X13 | | | |
|---|---|---|---|
| H1 | Linen collection tray (models with folder) | mm (in) | 524 (20.6) |
| H3 | Top tray | mm (in) | 904 (35.6) |
| H4 | Feeding belts | mm (in) | 996 (39.2) |
| H5 | Keyboard and display | mm (in) | 1345 (53.0) |

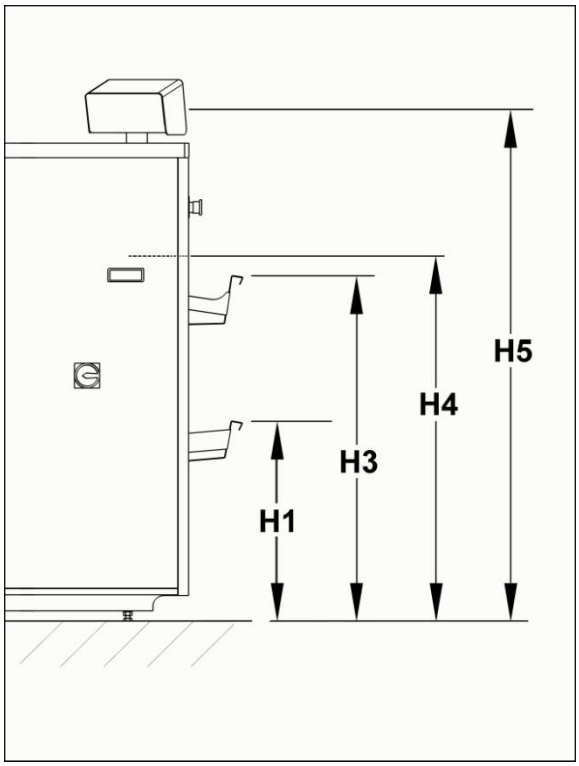



Fig. 4.4

| PB/PBP51, X20 | | | |
|---|---|---|---|
| H1 | Linen collection tray (models without folder) | mm (in) | 605 (23.8) |
| H1 | Linen collection tray (models with folder) | mm (in) | 450 (17.7) |
| H2 | Folder outlet (only on models with folder) | mm (in) | 705 (27.8) |
| H3 | Top tray | mm (in) | 969 (38.1) |
| H4 | Feeding belts | mm (in) | 1030 (40.6) |
| H5 | Keyboard and display | mm (in) | 1525 (60.0) |

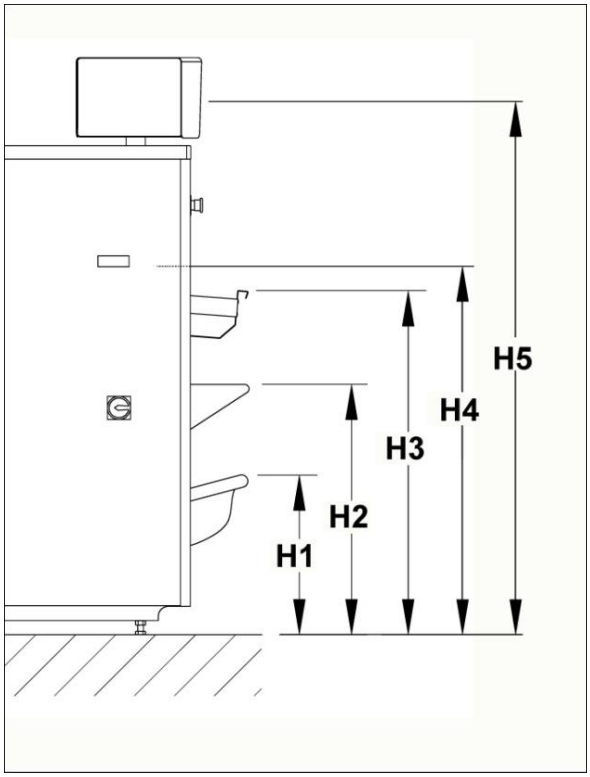



Fig. 4.5

# 5. INSTRUCTIONS FOR 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 ZONE IN WHICH THE MACHINE IS BEING USED.**

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

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, THE GROUND SHOULD BE CHECKED BY A QUALIFIED TECHNICIAN. INADEQUATELY GROUND INSTALLATION CAN CREATE A RISK OF ELECTRIC SHOCK.**

**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 MOTOR AND EXTRACTOR.**

**CAUTION!**

**SPECIFIC WARNING FOR CE CERTIFIED, ELECTRIC HEATED, PB/PBP51 MODELS.**

**THE SUPPLY NETWORK IMPEDANCE OF THIS MACHINE MUST BE LOWER THAN (0.225+j0.140) OHMS (Standard EN61000-3-11:2000).**

**CAUTION!**

**SPECIFIC CAUTION FOR USA/CANADA MACHINES**

**THIS APPLIANCE MUST BE CONNECTED TO A GROUNDED METAL, PERMANENT WIRING SYSTEM BY MEANS OF A GROUND CABLE CONNECTED TO THE EQUIPMENT GROUNDING TERMINAL OF THE APPLIANCE.**

### 5.1.1. Characteristics of the electrical wiring

See the **Technical and Connection Details** for the corresponding model (Chapter 4) for values regarding power consumption, electrical protection, wire section and number of wires.

**CAUTION!**

**Machines with ETL marking.**
**The components for the external installation of the machine listed below must be certified in accordance with Standard UL489:**

- **Electrical cable**
- **Overcurrent protection**
- **RCD**

**The overcurrent protection can also be achieved by using fuses.**

**Conductor:**
The data referring to conductors are based on those of a copper multi-wire conductor.
The length of the conductor from the safety switch to the ironer must not be longer than 33 ft (10 m).
If using single-wire conductors, these must be encased within a safety conduit.
The conductor must be affixed to the inlet opening of the machine using a secure connection appropriate for the type of conductor or safety conduit.
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.

**Circuit breaker.** A protection Circuit Breaker must be installed.
Characteristics:

- Installed in an easily accessible place
- Number of poles and intensity: consult ELECTRICAL CONNECTION data (section 4.2)
- **A** type
- The equipment is protected against pulse currents, harmonics and the presence of continuous components (refer to manufacturers' specifications).

**Overcurrent protection.** An Automatic ON/OFF Switch, outside the ironer, for the individual protection of each machine must be installed.
Characteristics:

- Number of poles and intensity: consult ELECTRICAL CONNECTION data (section 4.2)
- **C** type with top opening at 3 mm (0,12 in.)
- Must isolate electrical source phases and the neutral cable
- Mechanically lockable
- Installed in an easily accessible place

### 5.1.2. Connecting the machine to the mains power supply

The machine must be connected using the isolating switch located on the front left-hand base-frame.
**Steps for the connection** (Figures 5.1… 5.6):

- Place the isolator switch in the **OFF** position.
- Insert the cable into the inside of the right-hand base-frame as indicated by the accompanying figures.
- Remove the caps covering the isolator switch terminals.
- Connect the power supply cable to the terminals of the switch. Replace the covers protecting the terminals.
- Connect the earth cable.
- Fit the isolating switch side protection cover. To insert the switch rod into the lever fitted to the cover, the lever must be in the **0** position.
- Secure the side cover.

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

**PB32, X13**

Insert the power cable into the right-hand base-frame and secure it with the device **A** (Fig. 5.1).

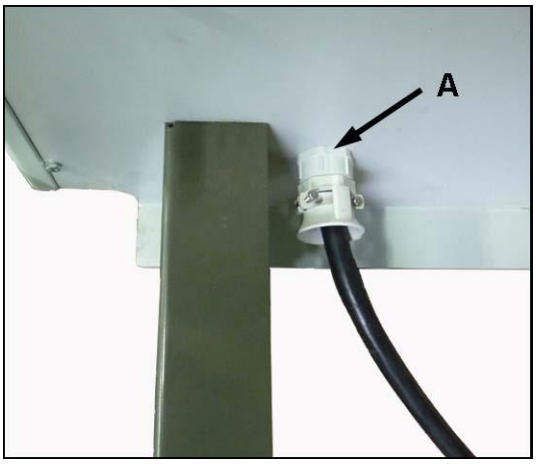



Fig. 5.1

**Model PB32, X13 with gas heating** (Fig. 5.2)

On these models, the connection is **ALWAYS SINGLE-PHASE or TWO-PHASE**. However, it can be connected to a three-phase installation. (See the wiring diagrams in section 4.2).

Connect the power supply wires to input terminals **L1** and **L3** of the isolator switch.

Connect the earth wire (**PE/GND**).

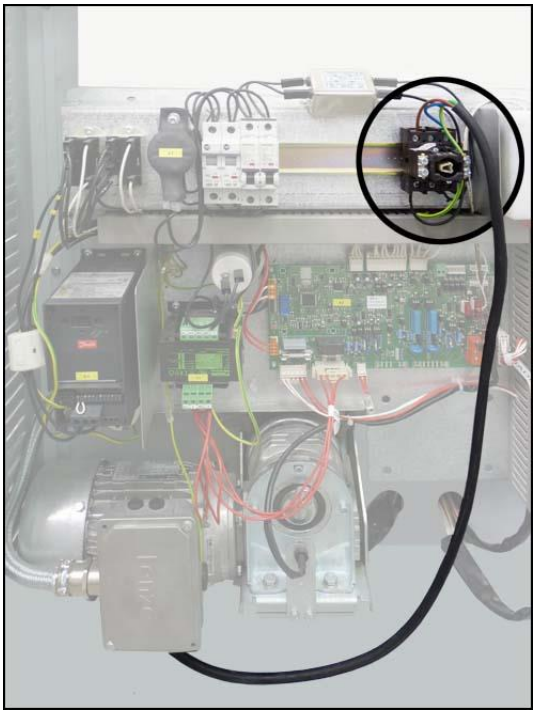


Fig. 5.2

**Model PB32, X13 with electric heating** (Fig. 5.3)

Connect to terminals **L1, L2 and L3** of the isolator switch. (See the wiring diagrams in section 4.2).

Connect the earth wire (**PE/GND**).


Fig. 5.3

**PB/PBP51, X20**

Insert the power cable through the hole into the right-hand base-frame (Fig. 5.4).

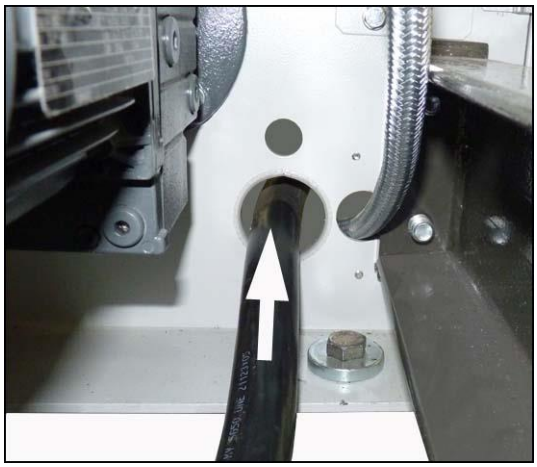


Fig. 5.4

**Models with gas or steam heating** (Fig. 5.5)

On these models, the connection is **ALWAYS SINGLE-PHASE or TWO-PHASE**. However, it can be connected to a three-phase installation. (See the wiring diagrams in section 4.2).

Connect the power supply wires to input terminals **L1** and **L3** of the isolator switch.

Connect the earth wire (**PE/GND**).

Pass the cable through the conduit and secure it with the clip **A**.

Fig. 5.5

**Model PB/PBP51, X20 with electrical heating**

Connect the power supply wires to input terminals **L1, L2** and **L3** of the isolator switch.

Connect the earth wire (**PE/GND**).

Pass the cable through the inside of the base-frame as shown in the figure.

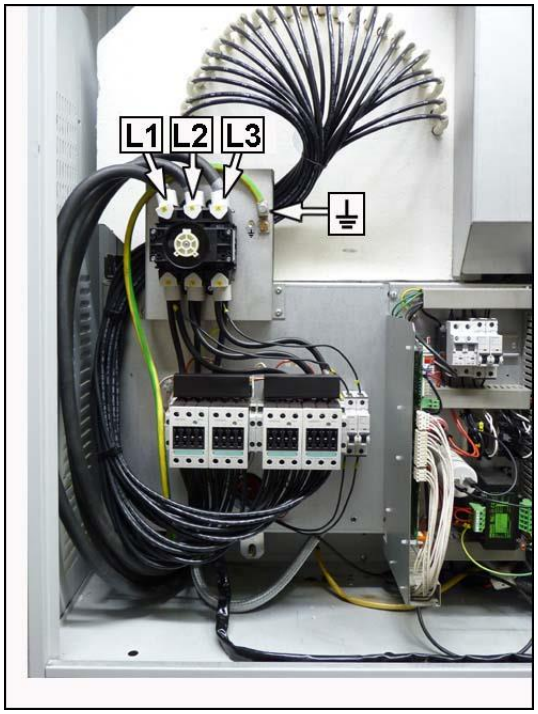



Fig. 5.6

### 5.1.3. Connection of the transformer. Configuring the voltage of the machine

- Place the isolator switch in the **OFF** position.
- Remove the side cover of the left-hand base-frame and locate the T1 transformer.
- Connect the voltage selector switch (Fig. 5.7/A) onto the T1 transformer connector (Fig. 5.7/B), as shown in **table 1**, in accordance with the mains supply.
- Secure the side cover.

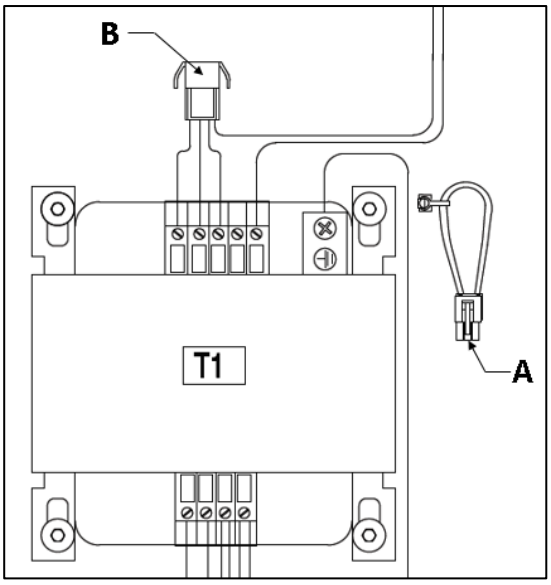



Fig. 5.7

**Caution!**
For the configurations outlined below, the connection of transformer T1 should be made according to **table 2**.

Heating..... **G/V**
Voltage..... **380…480**
Phases ..... **2Ph**

Heating..... **E**
Voltage..... **380…415**
Phases ..... **3Ph**

In PB/PBP51 – X20 models with the above mentioned configurations, the transformer T1 is located on the right base-frame.

**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 |
|---|---|
| **380V** | 380V-400V |
| **400V** | 380V-400V |
| **415V** | 415V-440V |
| **440V** | 415V-440V |
| **480V** | 480V |

## 5.2. Gas connection

(for machines with gas heating)

**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 AS WELL MUST COMPLY WITH THE LEGALLY APPROVED REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY OR ZONE 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 ZONE IN WHICH THE MACHINE IS TO BE USED.**

**THE VENTILATION ON 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 IRONER MUST NOT BE INSTALLED IN PREMISES WITHOUT ADEQUATE VENTILATION.**

**INADEQUATELY VENTILATED PREMISES CAN SERIOUSLY AFFECT THE PEOPLE'S HEALTH.**

**CAUTION!**

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

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

**INSTALL A MANUAL ESCAPE VALVE IN AN ACCESSIBLE PLACE WITH AN AUTOMATIC SHUT OFF.**

**THE PIPE BETWEEN THE MANUAL ESCAPE VALVE AND THE MACHINE MUST BE RIGID.**

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

**CHECK THE ENTIRE INSTALLATION TO BE WATERTIGHT BEFORE OPENING THE ESCAPE 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 TO THE MACHINE.**

### 5.2.1. Installation characteristics

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

**Installation requirements**

In order to ensure the supply pressure indicated, both at the input of the regulator and the input of the machine, 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.**
- **Ensuring that the gas conducting pipe is of a sufficient size.**
- **Avoiding, if possible, the use of flexible joints.**
- **As protection for the burner, it is recommended to install a device to protect against excess pressure.**

### 5.2.2. Connecting the machine to the supply network

The connection should be made at the input to the burner, located at the rear of the machine (Fig. 5.8 and 5.9).
The machine intake connection pipe is:

| | | |
|---|---|---|
| **CE** certified models. | **BSP** thread | 3/4 in |
| **ETL** certified models. | **NPT** thread | 3/4 in |

**PB32, X13. Gas connection**

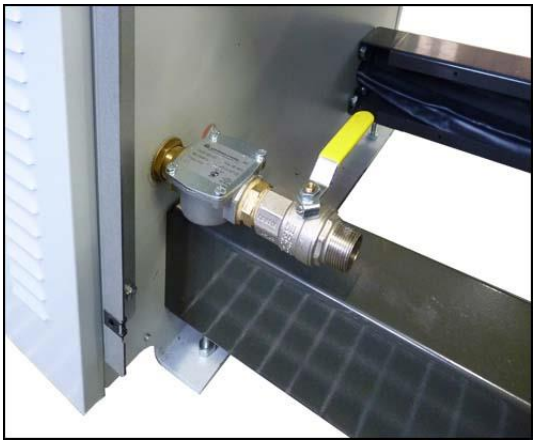


Fig. 5.8

**PB/PBP51, X20. Gas connection**

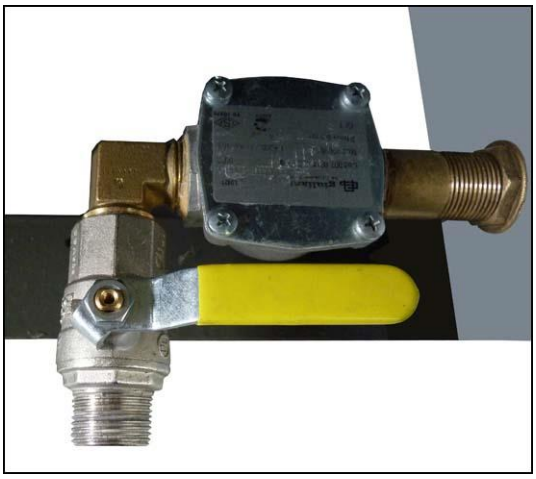


Fig. 5.9

**DANGER!**

**IN ANY OPERATING CONDITION, THE PRESSURE OF THE GAS SUPPLY ENTERING THE IRONER MUST CORRESPOND TO THE PRESSURE INDICATED IN SECTIONS 4.3, 4.4 AND 4.5 OF THIS MANUAL. PRESSURES OTHER THAN THOSE INDICATED MAY CAUSE THE IRONER TO MALFUNCTION AND PRESENT A RISK OF SERIOUS INJURY.**
**THE MANUFACTURER DECLINES ALL RESPONSIBILITY IN THESE CASES.**

### 5.3. 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 TECHNICAL SERVICE ACCEPTS FULL LIABILITY FOR THE WORK CARRIED OUT AND ANY POSSIBLE CONSEQUENCES ARISING FROM IT.**

**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.**

**THE PERSON FROM THE TECHNICAL SERVICE RESPONSIBLE FOR CHANGING THE TYPE OF GAS MUST COMPLETELY FILL IN THE MACHINE'S NAMEPLATE FOR CHANGES TO THE TYPE OF GAS SUPPLIED WITH THE KIT AND AFFIX IT NEXT TO 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 1.2. OF THIS MANUAL. IF IN DOUBT, CONSULT THE COMPANY SUPPLYING THE GAS**.

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

**IN ORDER TO ADAPT THE MACHINE TO A NEW TYPE OF GAS, THE CORRESPONDING CONVERSION KIT SHOULD BE REQUESTED FROM THE MANUFACTURER. CONSULT THE KITS AVAILABLE IN THE MACHINE'S SPARE PARTS LIST.**

Contents of the conversion kit:

- Injector
- Gas type change label
- 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.

- TORX T40 screwdriver (radiant burner)
- Vernier calliper
- Flue gas analyser
- Pressure gauge adjusted to the pressure range to be measured

**CAUTION!**

**AFTER CHANGING THE TYPE OF GAS:**

- **FILL IN AND AFFIX THE GAS TYPE CHANGE LABEL**
- **CHECK THE MACHINE AS DESCRIBED IN CHAPTER 6 - INITIAL START-UP. INITIAL START-UP.**
- **ASSEMBLE AND FIX ALL THE MACHINE'S COVERS BACK IN PLACE.**

### 5.3.1. CE certified models

**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 ironer is to be changed to
(3) Code 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 cons. with regard to $H_i$
(9) Injector diameter.

Refer to the machine's parts list for the codes of the various conversion kits.
See Section 4.3 for values of fields 5, 6, 7, 8 and 9.

### 5.3.2. ETL certified models

**Gas type change label**

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

***CETTE APPAREIL A ÉTÉ CONVERTI LE (ANNÉ-MOIS-JOUR)***……(1)…..…...
***POUR FONCTIONER AU GAZ***……..……(2)…….. ***À L'AIDE DE LA TROUSSE Nº***……(3)……..***PAR***……(4)……..

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

*(nom et adresse de l'organisme qui a effectué la conversion, qui accepte l'entière responsabilité de la qualité de la conversion)*

**SUPPLY PRESSURE…… (5) ..... inch.w.c**
***PRESSION D'ALIMENTATION***

**MANIFOLD PRESSURE…… (6) ..... inch.w.c**
***PRESSION A LA TUBULURE D'ALIMENTATION***

**INPUT RATE…… (7) ..... BTU/h**
***DÉBIT CALORIFIQUE***

**ORIFICE (DIAMETER)……(8) ..... mm**
***INJECTEUR (DIAMETRE)***

**Gas type change label fields**

(1) Date of the change
(2) Type of gas the ironer is to be changed to
(3) Code of the gas change kit.
(4) Organisation, company or ATS that has carried out the change.
(5) Gas supply pressure
(6) Solenoid valve output pressure (natural gas only)
(7) Nominal calorie consumption with regard to Hi (Net).
(8) Injector diameter.

Refer to the machine's parts list for the codes of the various conversion kits.
See Section 4.4 for values of fields 5, 6, 7, and 8.

### 5.3.3. Atmospheric burner. Changing the type of gas

Changing the type of fuel gas requires changing the combustion adjustment elements: the injector, Venturi and fume suction regulator.

- **PB32, X13** Remove the right-hand base-frame side cover.
- **PB/PBP51, X20** Remove the left-hand base-frame side cover.

Remove the air intake filter.

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).

Change the position of the Venturi (**B**) in accordance with Measurement **D** in the enclosed table.

Set the position of the Venturi using the screw **C**.

In PB/PBP51 models from serial number 2191065; in PB32 models from serial number 2176098; and in PB32/X13 USA models from serial number 2205136, to modify the position of the Venturi, turn the Venturi clockwise or anticlockwise depending on the adjustment required.

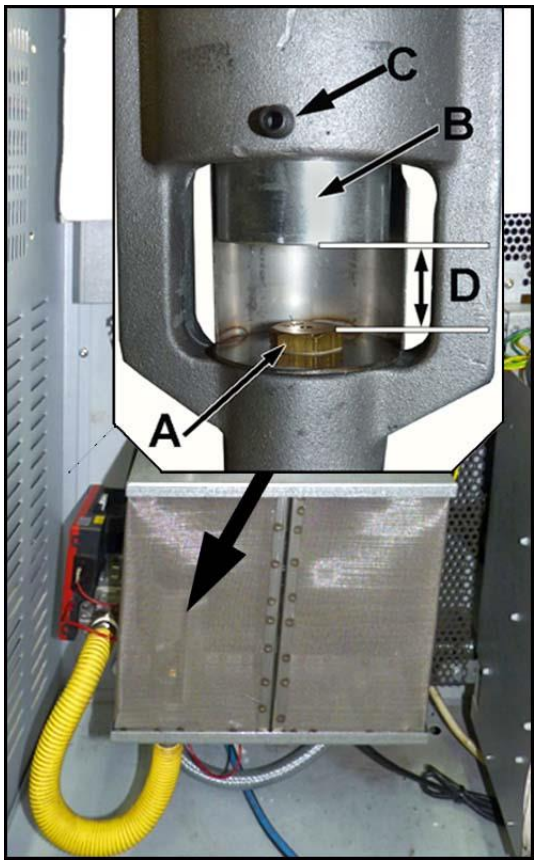


Fig. 5.10

**CAUTION!**
**THE GAS VALVE ADJUSTMENT MUST BE LEFT UNALTERED.**

Fit the air intake filter.

Replace and secure ALL the side guards.
Start up the machine and check functioning (see directions in Chapter 6).

Based on the result of the analysis of the combustion gases, adjust the position of the extraction air control clapper valve (see Fig. 5.11) until the correct amount of combustion is obtained.
Refer to section 6.3.

Affix the specification nameplate with values appropriate to the new type of fuel gas close to the machine's existing specification nameplate.

Assemble and fix all the machine's covers back in place.

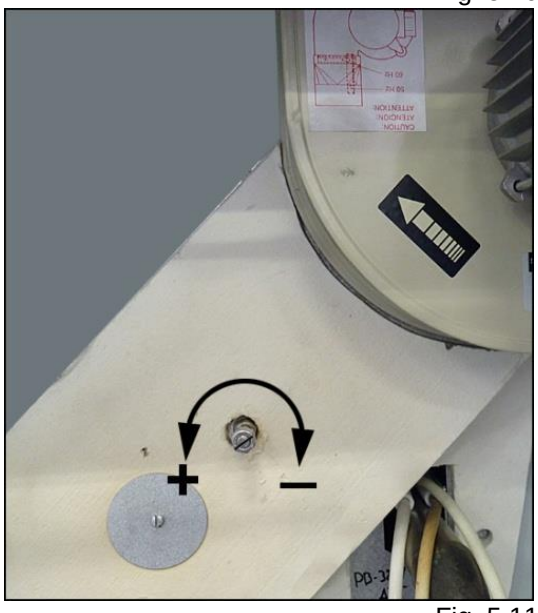


Fig. 5.11

**Adjusting the position of the Venturi (Figure 5.10, Measurement D)**

| TYPE OF GAS | PB3215 X13061 | | PB3221 X13084 | | PB/PBP5119 X20075 | | PB/PBP5125 X20100 | | PB/PBP5132 X20125 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | mm | (in) | mm | (in) | mm | (in) | mm | (in) | mm | (in) |
| NATURAL | 8 | (0.31) | 8 | (0.31) | 6 | (0.23) | 12 | (0.47) | 12 | (0.47) |
| PROPANE | 13 | (0.51) | 13 | (0.51) | 16 | (0.63) | 16 | (0.63) | 16 | (0.63) |
| PROPANE-BUTANE | - | - | - | - | - | - | - | - | 34 | (1.34) |

### 5.3.4. Radiant burner. Changing the type of gas

Changing the type of fuel gas requires changing the combustion adjustment elements: the injector, burner adjustment and fume suction adjustment.

Remove the covers from the corresponding base-frames.

Remove the junction (**A**) between the burner and the premixing fan and replace the existing injector (**B**) with and injector that is suitable for the new type of gas (Fig. 5.12).

Consult injector values in the table in Section 4.3.2 and 4.4.2.

Fit the junction between the burner and the fan.

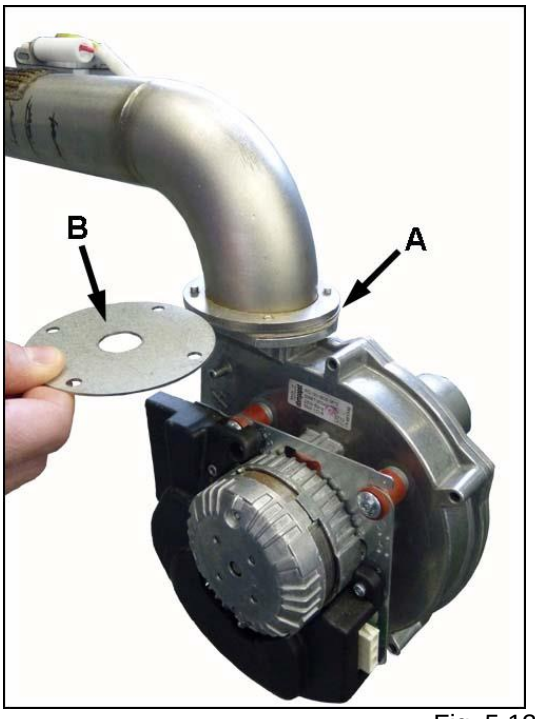



Fig. 5.12

Adjust the solenoid valve (Measurement **A** in Figure 5.13) in accordance with the data in the tables in Section 4.3.2 and 4.5.2.

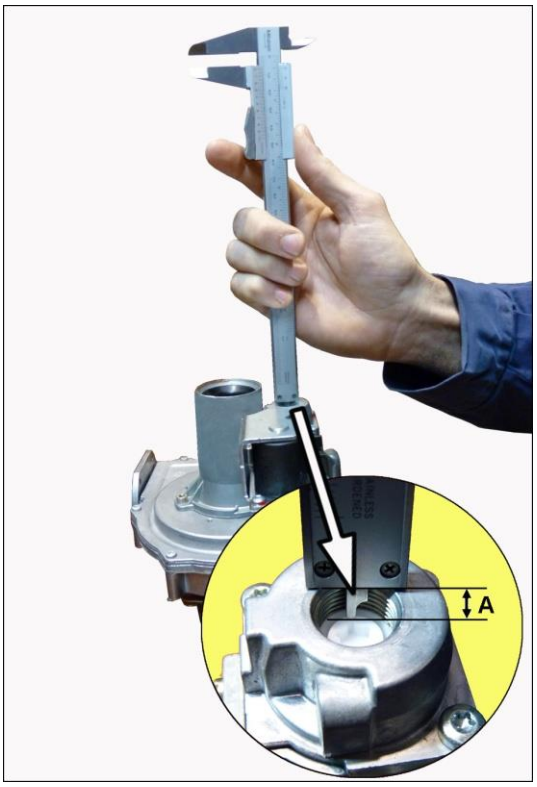



Fig. 5.13

Adjust the Venturi adjustment (Measurement **B** in Figure 5.14) in accordance with the following data:

NATURAL gas: 10.6 mm (0.42 in)
PROPANE gas: 17.6 mm (0.69 in)

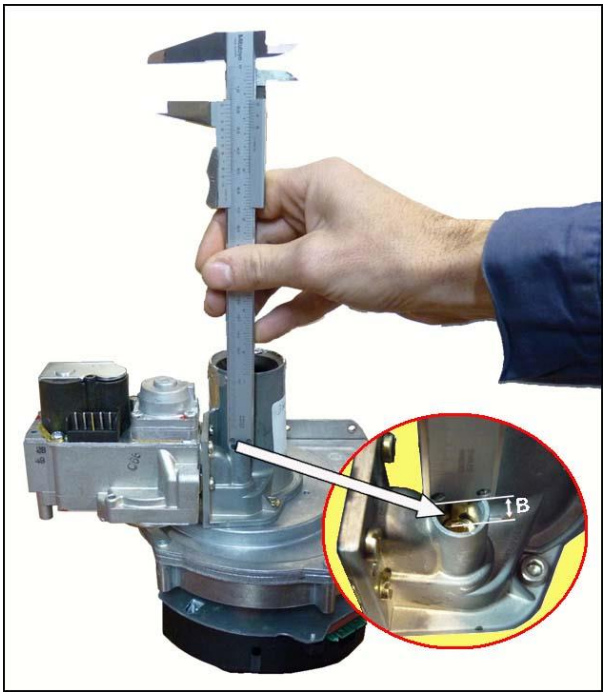



Fig. 5.14

Replace and secure ALL the side guards.
Start up the machine and check functioning (see directions in Chapter 6).

Based on the result of the analysis of the combustion gases, adjust the position of the extraction air control clapper valve (see Fig. 5.15) until the correct amount of combustion is obtained.
Refer to section 6.3.

Affix the specification nameplate with values appropriate to the new type of fuel gas close to the machine's existing specification nameplate.

Assemble and fix all the machine's covers back in place.

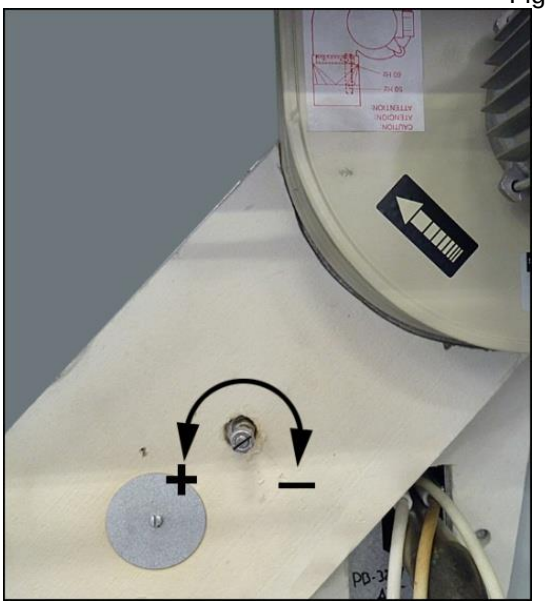



Fig. 5.15

## 5.4. Steam connection

**Models with steam heating**

**PRECAUTIONS AND ADVICE CONCERNING THE STEAM CONNECTION**

**CAUTION!**

**THE INSTALLATION OF THE STEAM SYSTEM 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 STEAM AND RETURN SYSTEM (PIPES, MANUAL ESCAPE VALVES, ETC.) MUST COMPLY WITH THE LEGALLY APPROVED REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY OR ZONE IN WHICH THE MACHINE IS BEING USED.**

**ALL THE INSPECTIONS AND TESTS CONCERNING STEAM DEVICES MUST BE CARRIED IN ACCORDANCE WITH THE REGULATIONS CURRENTLY IN FORCE IN THE COUNTRY OR ZONE IN WHICH THE MACHINE IS BEING USED.**

**BEFORE CONNECTING THE MACHINE TO THE STEAM PIPES, SCRAPE AND CLEAN THE PIPING FREE OF SOLID PARTICLES.**

**THERE MUST BE NO IMPURITIES IN THE STEAM OR CORROSIVE SUBSTANCES IN THE CONDENSATE.**

**CAUTION!**

**A MECHANICALLY LOCKABLE MANUAL SHUT-OFF VALVE MUST BE INSERTED IN AN ACCESSIBLE PLACE IN THE STEAM SUPPLY CIRCUIT AND CONDENSATE RETURN, TO AID CLEANING WORK, ALLOW GENERAL MAINTENANCE OR DURING PROLONGED PERIODS OF MACHINE STOPPAGE.**

**THE STEAM DUCT MUST BE PROTECTED AGAINST ACCIDENTAL CONTACT AND MUST BE THERMALLY INSULATED. THIS IS BOTH A SAFETY AND AN ENERGY-SAVING MEASURE.**

**CAREFULLY CLEAN AND MAINTAIN ALL THE FILTERS. BLOCKING THE FILTERS REDUCES THE FLOW AND CAUSES THE IMPURITIES TO BE DRAWN AWAY BY THE FLUIDS TO ACCESS THE INTERIOR OF THE MECHANISMS AND OBSTRUCT THEIR OPERATION.**

**Specific connection techniques**

**VERY IMPORTANT!!**

**Whatever the circumstances, the steam generator and the supply duct must be designed to ensure that, at the point of connection to the ironer, the steam pressure is that specified in chapter 4: Connection details.**

**DANGER!**

**IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ENSURE THAT THE STEAM PRESSURE SUPPLIED TO THE MACHINE MUST IN NO CASE EXCEED 10 bar (145 P.S.I.) OR 185 ºC (356 ºF).**

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

**HEATING CIRCUIT ASSEMBLING** (Fig. 5.16).

- Steam connection shown as **A**
- Condensate connection shown as **B**
- Safety valve connection **C**

Characteristics of the connection flange: Type: PN-16.
Before connecting the ironer install **A WATER SEPARATOR** with ball float drain on the main steam supply line.
In order to guarantee the supply of dry steam, the functioning of this separator must be checked regularly.
The fitting of a pressure gauge after the purge is highly recommended.
Insert a **CHECK VALVE** into the condensate return.
The manufacturer supplies a set of suitable seals for the connection flanges.
**The CO2 and the O2 dissolved in the steam can damage the roll and pipes. Carry out a suitable chemical treatment on both steam and condensate.**

**THE DISCHARGE FROM THE SAFETY VALVE SHOULD BE CARRIED OUT IN SUCH A MANNER WHICH EFFECTIVELY PREVENTS THE EVACUATED FLUID FROM CAUSING DAMAGE TO PERSONS OR GOODS. THIS DISCHARGE SHOULD BE DONE FOLLOWING THE CURRENT NORMATIVE OF THE COUNTRY WHERE MACHINE IS IN USE.**

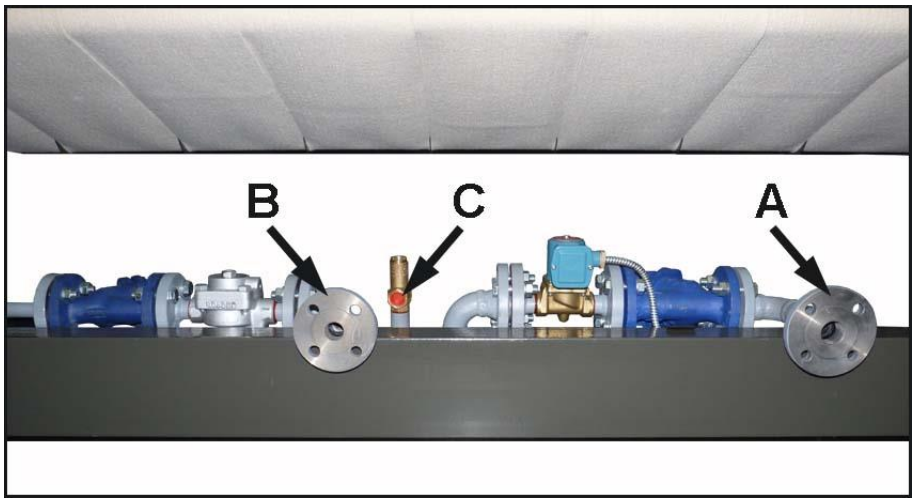


Fig. 5.16

## 5.5. Connecting the exhaust ducting

**CAUTION!**

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

**DANGER!**

**THE SOOT AND FLUFF MUST BE PERIODICALLY CLEANED FROM THE INSIDE OF THE EXHAUST DUCTING FROM THE MACHINE TO OUTSIDE. DO NOT FORGET THAT BOTH FLUFF 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.**

### Specifications for the ducting

See the **Connection details** (Chapter 4) for the corresponding model for flow, diameter and position of connection. Identified as **EV**.

It should be as short as possible, and the section specified in Details of Extraction Ducts must be maintained throughout the whole ducting. A lengthier ducting will require a bigger section.

Must be fire-resistant, rigid, anti-corrosive with a smooth inside surface and these properties must remain unaltered at a minimum of 150ºC (302ºF).

Watertight all around and thermally insulated up to a height from the floor of at least 2.7 metres (107 in).

If the extraction produces a significant noise, it is advisable to fit soundproofing.

Must have the minimum number of bends (to avoid losing contents the angle of the bends must not be more than 45º).

Must always be conducted in an upwards direction. An upwards gradient of at least 3% and the shortest length possible.

The outlet must be clear and separate (must 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.

Two measuring points should be envisaged that can be closed during normal operation (Figure 5.17):

**A.** Opening for inserting the flue gas analyser probe
Approximate diameter: 10/12mm (0,5 in).
Height (**H**) from the first run of ducting: 1m (40 in).

**B.** Pressure control opening:
Approximate diameter: 3.5 mm (0.14in).
Height (**H1**) from the first run of ducting: 0.5m (20 in).

In ducting above 10 m (400 in) or if there is a lot of water from condensation, install a 1/2” o 3/4” 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.

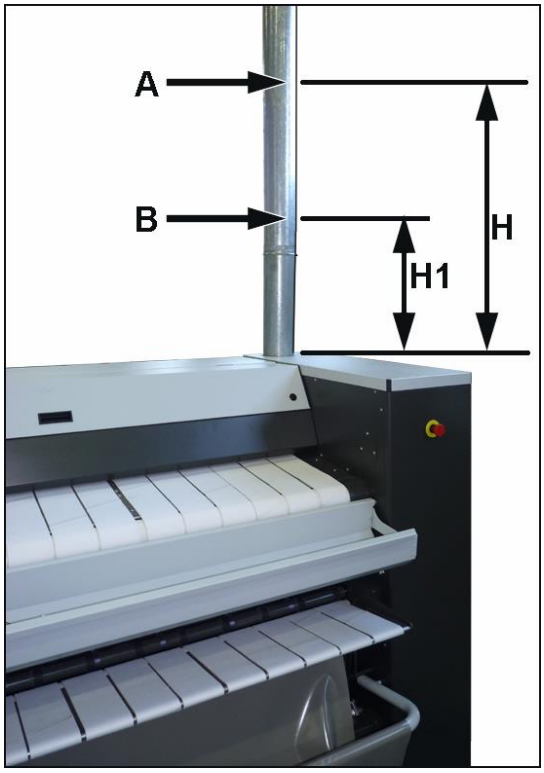



Fig. 5.17

**Assembling the exhaust ducting**

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

**DANGER!**
**To prevent accidental contact with the ironer 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**.

# 6. INITIAL START-UP OF THE MACHINE

**CAUTION!**
**THE OPERATIONS DESCRIBED IN THIS SECTION SHOULD BE PERFORMED BY THE AUTHORISED TECHNICAL SERVICE.**

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

**All models:**

**Multimeter. Reading range:** from 0 to 1,000v AC.
**Clamp ammeter**. Reading range: higher than 300A AC.
**Pressure gauge with flexible pipe outlet.** Capable of measuring pressure and suction. Approximate length of the pressure intake tube – 2 m (80in).

**Models with gas heating:**

**Flue gas analyser**. Suitable for the analysis required to comply with the legislation in the country where the ironer is installed.

## 6.1. Initial checks

- Check that all the transport fastenings have been removed and that the ironer is properly levelled in its final location.
- Check that the ends of the roll have been lubricated according to the instructions set out in Section 3.6.
- Check that all the machine's covers are fitted and secured correctly.
- Check that the installation details relating to the sources of energy (electric, gas or steam, depending on the model) 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.
- Using the handle to operate the roll manually, check that the roll rotates without problems (Chapter 10).
- Open the manual valve for the gas or steam supply circuit (depending on machine model).
- Connect the switch breaker.
- Start up the machine and select a program with a high temperature (approx. 100ºC / 200ºF) that will cause the heating system to turn on (see directions in Chapters 7 and 8).
- Check that the heating system is connected properly:
  - **Machines with gas heating**:
    Check through the viewer in the side cover that the burner lights up along its length, and that the flame is blue, stable and uniform. If this is not the case, stop the ironing program immediately.
    Check that the gas pressures correspond to the values indicated in the following sections.
  - **Machines with steam heating**:
    Check that the output from the safety valve is connected and that any possible leak can be evacuated without risk.
    Check that the steam supply pressure corresponds to the value indicated in the table in section 4.5.
    Check that the solenoid valve opens and that the steam flows through the circuit.
  - **All models**:
    Check that the power consumption is in agreement with the values set out in the tables in Chapter 4.
- If any anomaly is detected, stop the ironer immediately, disconnect the power supply and the gas or steam inputs and inspect the installation.
- Stop the machine from operating by pressing the STOP key or the O 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.

## 6.2. Machines with gas heating. Gas pressure control

**WARNING!**

**IN ANY OPERATING CONDITION, THE PRESSURE OF THE GAS SUPPLY ENTERING THE IRONER MUST CORRESPOND TO THE PRESSURE INDICATED IN SECTIONS 4.3 AND 4.4 OF THIS MANUAL. PRESSURES OTHER THAN THOSE INDICATED MAY CAUSE THE IRONER TO MALFUNCTION AND PRESENT A RISK OF SERIOUS INJURY.**
**THE MANUFACTURER DECLINES ALL RESPONSIBILITY IN THESE CASES.**

**WARNING!**

**TO AVOID THE RISK OF AN ACCIDENT, THE CONNECTION AND DISCONNECTION OF THE PRESSURE GAUGE PIPE TO THE SOLENOID VALVE SHOULD BE CARRIED OUT WITH GAS SHUTOFF VALVE CLOSED AND THE MACHINE DISCONNECTED FROM THE POWER SUPPLY.**
**DO NOT ACCESS THE INSIDE OF THE MACHINE IF THE TEMPERATURE OF THE SURFACES TO BE HANDLED IS HIGH.**

### 6.2.1. CE models with atmospheric burner. Heating by natural gas, propane gas and propane-butane mixture.
### ETL models with atmospheric burner. Propane gas heating

**Gas supply pressure control (Fig. 6.1)**
Before starting the ironing program, remove the cover from the gas valve protection base-frame.
Insert the pressure pipe through one of the holes drilled in the base of the base-frame.
Loosen the pressure outlet screw **A** (without removing it completely). At this point, connect the pressure gauge pressure outlet pipe.
The arrow **C** indicates the direction of the gas flow.
Refit and secure the base-frame cover.
Start up the machine as indicated in Section 6.1.
Approximately one minute after connecting the gas flow solenoid valve, check that the input pressure corresponds to the value indicated in the tables in Sections 4.3 and 4.4. The gas pressure must remain stable regardless of possible differences in consumption caused by the operation of other gas appliances connected to the same line.
If this is not the case, contact the installing company.
Note that the input pressure differs depending on the type of gas.
Once the gas pressure control is completed:

- Stop the ironer and turn off the power and gas supply.
- Open the cover, remove the pressure gauge pipe and tighten the screw **A**.
- Refit and properly secure the base-frame cover.

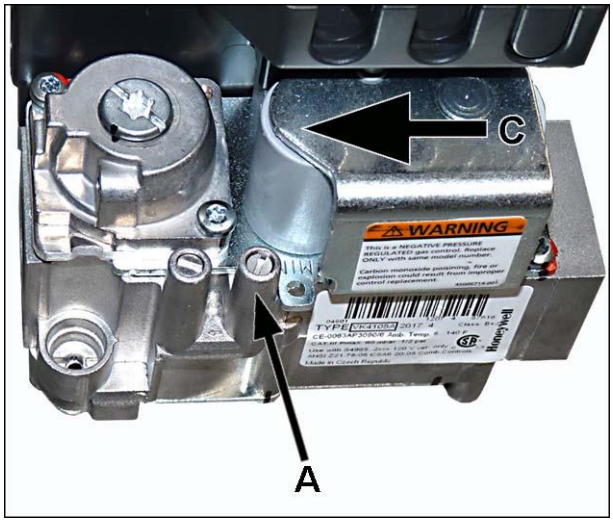


Fig. 6.1

**WARNING!**

**BE SURE TO TIGHTEN THE PRESSURE OUTLET SCREW (A/Fig. 6.1).**
**FAILURE TO DO SO WOULD RESULT IN A GAS LEAK THAT COULD CAUSE A SERIOUS ACCIDENT.**

### 6.2.3. ETL models with atmospheric burner. Natural gas heating

**Gas output pressure control (Fig. 6.2)**

Before starting the ironing program, remove the cover from the gas valve protection base-frame.
Insert the pressure pipe through one of the holes drilled in the base of the base-frame.
Loosen the pressure outlet screw **B** (without removing it completely). At this point, connect the pressure gauge pressure outlet pipe.
The arrow **C** indicates the direction of the gas flow.
Refit the base-plate cover and start up the machine as indicated in Section 6.1.
Approximately one minute after connecting the gas flow solenoid valve, check that the output pressure corresponds to the value indicated in the table in Section 4.4. The gas pressure must remain stable regardless of possible differences in consumption caused by the operation of other gas appliances connected to the same line.
If this is not the case, change the adjustment of the screw **D** until the pressure indicated in the table in Section 4.4 is obtained.
Once the gas pressure control is completed:

- Stop the ironer and turn off the power and gas supply.
- Open the cover, remove the pressure gauge pipe and tighten the screw **B**.
- Refit and properly secure the base-frame cover.

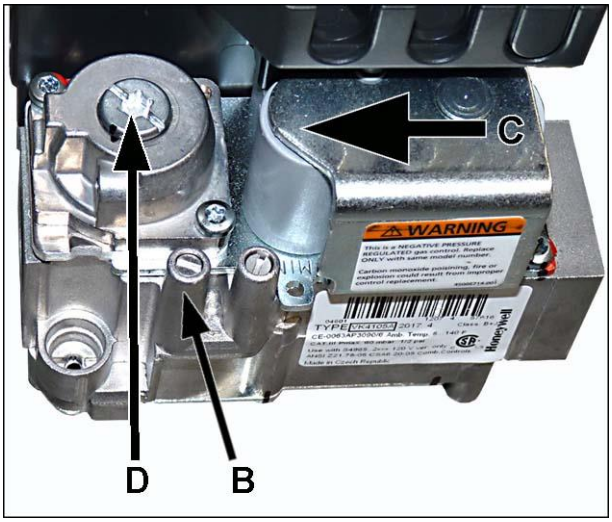



Fig. 6.2

**WARNING!**

**BE SURE TO TIGHTEN THE PRESSURE OUTLET SCREW (B/Fig. 6.2).**

**FAILURE TO DO SO WOULD RESULT IN A GAS LEAK THAT COULD CAUSE A SERIOUS ACCIDENT.**

### 6.2.4. AGA models with atmospheric burner

**Gas supply pressure control (Fig. 6.3)**

Before starting the ironing program, remove the cover from the gas valve protection base-frame.
Insert the pressure pipe through one of the holes drilled in the base of the base-frame.
Loosen the pressure outlet screw **A** (without removing it completely). At this point, connect the pressure gauge pressure outlet pipe.
The arrow **B** indicates the gas supply pressure.
The arrow **C** indicates the direction of the gas flow.
Refit and secure the base-frame cover.
Start up the machine as indicated in Section 6.1.
Approximately one minute after connecting the gas flow solenoid valve, check that the input pressure corresponds to the value indicated in the tables in Sections 4.3 and 4.4. The gas pressure must remain stable regardless of possible differences in consumption caused by the operation of other gas appliances connected to the same line.
If this is not the case, contact the installing company.
Note that the input pressure differs depending on the type of gas.
Once the gas pressure control is completed:

- Stop the ironer and turn off the power and gas supply.
- Open the cover, remove the pressure gauge pipe and tighten the screw **A**.
- Refit and properly secure the base-frame cover.

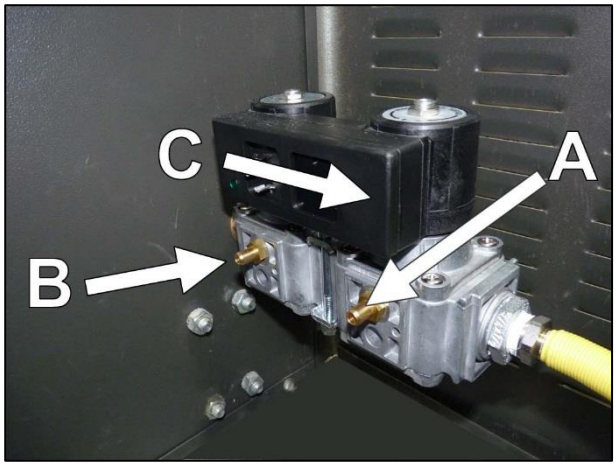


Fig. 6.3

**WARNING!**

**BE SURE TO TIGHTEN THE PRESSURE OUTLET SCREW (B/Fig. 6.3).**

**FAILURE TO DO SO WOULD RESULT IN A GAS LEAK THAT COULD CAUSE A SERIOUS ACCIDENT**

### 6.2.5. CE models with radiant burner. Natural gas and propane gas heating
### ETL models with radiant burner. Propane gas heating
### 60Hz models with a radiant burner. Natural gas and propane gas heating

**Gas supply pressure control (Fig. 6.4)**
Before starting the ironing program, remove the cover from the gas valve protection base-frame.
Insert the pressure pipe through one of the holes drilled in the base of the base-frame.
Loosen the pressure outlet screw **A** (without removing it completely). At this point, connect the pressure gauge pressure outlet pipe.
The arrow **C** indicates the direction of the gas flow.
Refit the base-plate cover and start up the machine as indicated in Section 6.1.
Approximately one minute after connecting the gas flow solenoid valve, check that the input pressure corresponds to the value indicated in the tables in Sections 4.3 and 4.4. The gas pressure must remain stable regardless of possible differences in consumption caused by the operation of other gas appliances connected to the same line.
If this is not the case, contact the installing company.
Note that the input pressure differs depending on the type of gas.
Once the gas pressure control is completed:

- Stop the ironer and turn off the power and gas supply.
- Open the cover, remove the pressure gauge pipe and tighten the screw **A**.
- Refit and properly secure the base-frame cover.

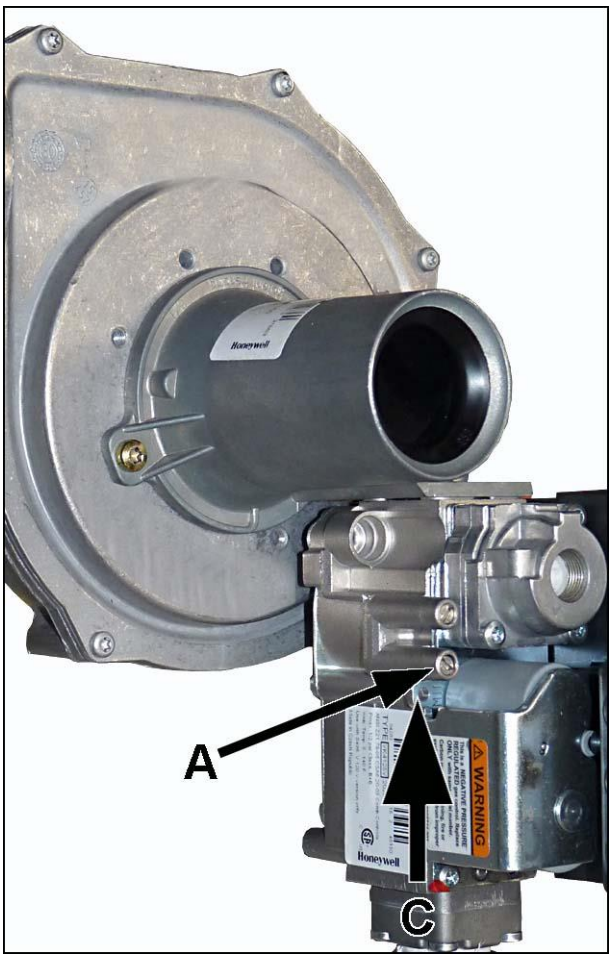


Fig. 6.4

**WARNING!**

**BE SURE TO TIGHTEN THE PRESSURE OUTLET SCREW (A/Fig. 6.4).**

**FAILURE TO DO SO WOULD RESULT IN A GAS LEAK THAT COULD CAUSE A SERIOUS ACCIDENT.**

## 6.3. Machines with gas heating. Analysis of the combustion gases

Fig. 6.5

Once the ironing program has begun:

- Wait a few minutes until the fume exit temperature exceeds 120 ºC (248 ºF).
- Analyse the combustion products (Fig. 6.5). **THE RESULT MUST COMPLY WITH THE REQUIREMENTS IN FORCE IN THE COUNTRY WHERE THE IRONER IS INSTALLED.**

  Measuring point: indicated as **A** in the figure 5.17.
- Some operating conditions may call for slight modification of the combustion control devices.
  See:
  - Changing the position of the air extraction adjustment clapper valve (Section 6.3.1).
  - Adjusting the position of the Venturi. (Only machines with atmospheric burner) (Section 6.3.2).

### 6.3.1. Changing the position of the air extraction adjustment clapper valve

- Stop the machine.
- Switch off or close and mechanically lock the power supply and the manual gas inlet valve.

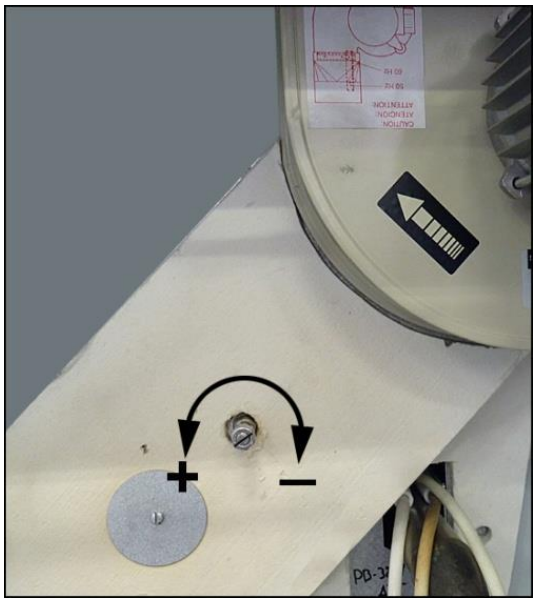



Fig. 6.6

- Wait a reasonable time to ensure that there are no high temperature surfaces inside the base-frame.
- Remove the right-hand side cover from the base-frame and check that the surface temperature of the air output is not at a dangerous level. Loosen the locknut and adjust the position of the air flow clapper valve (Fig. 6.5).
  - Turn the stem of the clapper valve in the **+** direction to open up the flow of fumes.
  - Turn the stem of the clapper valve in the **–** direction to close the flow of fumes.
- Tighten the locknut to lock the position of the clapper valve.
- Replace the cover of the base-frame and connect the electricity and gas supply.
- Repeat the initial test and analyse the combustion products (Section 6.3).
- 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 ironer is installed.

### 6.3.2. Adjusting the position of the Venturi

(Intervention only to be performed on machines with an atmospheric burner)

- 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 base-frame.
- Remove the necessary covers:
  - Models PB32 and X13: right-hand base-frame.
  - Models PB/PBP51 and X20: left-hand base-frame.
- Remove the protective filter.
- Loosen the Allen screw (**A**, Fig. 6.7) and adjust the position of the Venturi body (**B**).
  - Moving the Venturi upwards: increases the combustion air flow.
  - Moving the Venturi downwards: reduces the combustion air flow.
  - In PB/PBP51 models from serial number 2191065; in PB32 models from serial number 2176098; and in PB32/X13 USA models from serial number 2205136, to modify the position of the Venturi, turn the Venturi clockwise or anticlockwise depending on the adjustment required.
- 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.
- Fit the protective filter and the side of the base-frame housing the Venturi.
- Replace the cover of the base-frame and connect the electricity and gas supply.
- Repeat the initial test and analyse the combustion products (Section 6.3).
- 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 ironer is installed.

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

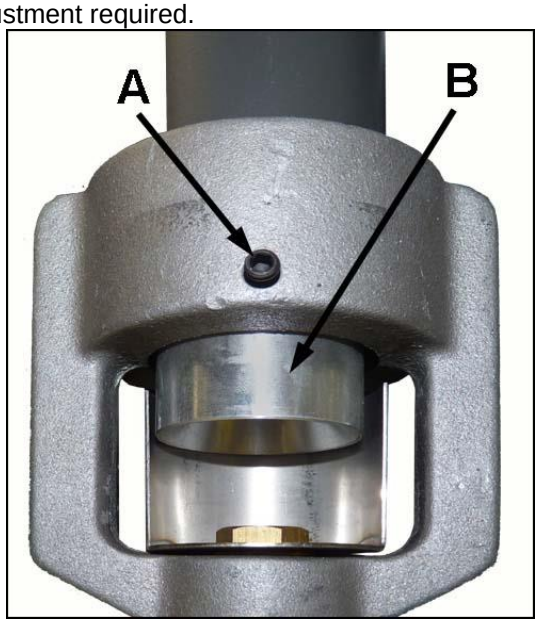



Fig. 6.7

## 6.4. Machines with steam heating

After connecting the heating circuit, check:

- Check that the pressure valve pressure corresponds to the value indicated in the table in Section 4.5.
- That there are no leakages of steam in the supply circuit and the return circuit.
- That there is no leakage through the safety valve.

## 6.5. Machines with electric heating

Check that the machine's power consumption is correct and consistent with the values set out in the table in Section 4.6.

## 7. OPERATING AND USE. INTELI CONTROL. PB/PBP51, X20***W/F

**CAUTION!**

**THE REGULATIONS FOR SAFETY AT WORK AND ACCIDENT PREVENTION MUST BE METICULOUSLY FOLLOWED.**

**DO NOT USE THE IRONER WITHOUT SUITABLE TRAINING AND EXTENSIVE OPERATING KNOWLEDGE.**

**NEVER START OR USE THE MACHINE IF ANY OF THE FOLLOWING ARE MISSING, INCORRECTLY POSITIONED OR MALFUNCTIONING:**

- **COVERS ( GUARDS) AND PROTECTIONS**
- **SAFETY DEVICES**
- **CONTROL ELEMENTS**

**IF THE IRONER IS TO BE USED BY MORE THAN ONE PERSON, IT IS ESSENTIAL THAT ONE OF THESE OPERATORS IS CLOSE TO THE CONTROL PANEL AND EMERGENCY STOP TO BE ABLE TO QUICKLY AND EFFECTIVELY TAKE MEASURES IN THE EVENT OF THERE BEING ANY DANGEROUS CIRCUMSTANCES.**

**NEVER TRY TO EXTRACT JAMMED OR BADLY INSERTED LAUNDRY IF THE IRONER IS RUNNING OR AT A HIGH TEMPERATURE, OR IF THE ROLL FIXING BRACKETS ARE NOT IN THE MAINTENANCE POSITION.**

**DANGER!**

**MECHANICAL RISKS**

- **To avoid the risk of being caught up in the machine's moving parts it is essential for the hair to be tied up and suitable fitted clothing to be worn.**
- **Scarves, ties, neckerchiefs, lose garments, open cardigans, hanging belts, wide sleeves, etc. must not be worn.**
- **Jewellery must not be worn.**
- **Do not use the machine without all the covers and safety guards correctly in place.**
- **Disconnect the power supply and close the gas supply valves and other sources of heating before removing any form of protection.**

**ELECTRICAL RISKS**

- **It is essential for the machine to be connected to external protection (grounded).**

**HIGH TEMPERATURE RISKS**

- **Do not remove any safety guards without first making sure the machine is cool (<35ºC / 90F).**
- **Do not put the hands anywhere near the exposed surface of the roll, particularly, the laundry output area or the heating circuit elements.**
- **Wear heat insulating gloves to protect the hands from the continuous contact with hot laundry.**

**FIRE RISKS**

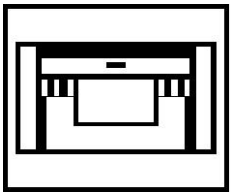
- **Fluff and soot are highly flammable substances.**

**It is essential to avoid these building up inside the machine and the exhaust ducting which goes from the machine to the outside.**

- **To achieve this, all the places likely to collect fluff and soot must be regularly cleaned (e.g.: roll, base-frames, covers, exhaust ducting, filter, fan, etc.).**
- **Also keep the area around the machine free from fluff and any other inflammable materials or substances.**

## 7.1. Main menu. Intervention modes

The **PB/PBP51, X20** ironer control is divided into **THREE MAJOR OPERATION AREAS** or user **INTERVENTION MODES**. Each of the three modes is accessed through the **MAIN MENU** made up of three icons identifying each of the modes.



**PROGRAM EXECUTION MODE**
Covers the functions or interventions aimed at:
- Selecting and executing the different ironing programs
- Accessing information about the different functions that the ironer is executing
- Specific modifications of the program being executed

All the information that appears on the screen during the execution of a program is in graphic mode.
Information regarding this intervention mode: section 7.5 on this manual.

**PROGRAMMING MODE**
Covers the functions or interventions aimed at:
- Knowing the content of the PRE-SET program in the ironer machine's memory
- Creating a new ironing program or modifying an existing program
- Copying an existing program and modify it
- Blocking the use of programs
- Eliminating programs from the ironer's memory

All the information that appears on the screen in the program management menu is in graphic mode.
Information regarding this intervention mode: section 7.6 on this manual.

**SYSTEM TOOLS MODE**
This area offers specific menus for CONFIGURING THE SYSTEM.
Among other features:
- Configuring operation parameters
- Setting the clock of the system
- Controlling security codes

It also provides a lot of information about the characteristics and life of the ironer.
The information in this area is in text mode.
Information regarding this intervention mode: section 7.7 on this manual.

### 7.2. Control panel

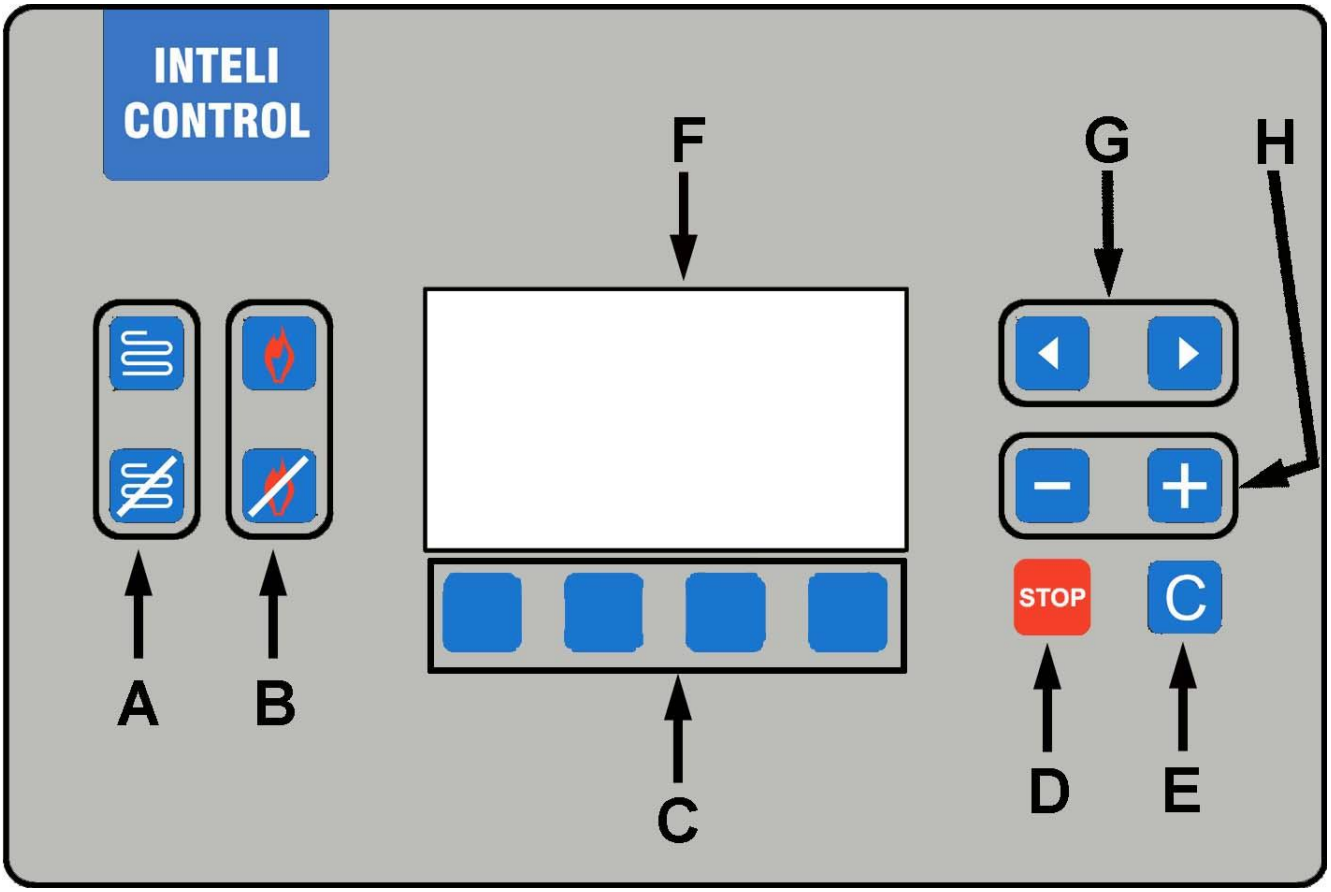



Fig. 7.1

**Description of the control panel** (Fig. 7.1)

**A ->** Folder START and PAUSE buttons
**B->** Buttons for lighting and turning off the burner (machines with gas heating only)
**C->** Multifunction keypad
**D->** STOP button. Normal machine stopping
**E->** Button for special functions
**F->** Display
**G->** Display movement buttons
**H->** Buttons for inserting text and selecting values

## 7.3. Stop modes

### 7.3.1. Normal machine stopping

**PRESS STOP KEY.** The heating system is turned off. The ironer enters a cooling situation: the rotation speed is reduced and the extractor fan is kept running while the roll temperature exceeds 100º C (212º F).
When the temperature falls below this value, the rotation of the roll is halted, the extractor halts and the main menu icons are displayed on the screen.

### 7.3.2. General Stop

Disconnecting the mechanically lockable isolator switch, located on the base-frame side cover. COMPLETELY disconnects the machine from the power supply. Its use is recommended for maintenance interventions and in situations of prolonged machine stoppage.

**Mechanically locking switch breaker**
Set the switch breaker at the **" 0"** position.
Fit a padlock on the opening to prevent the switch breaker being handled by others.

**CAUTION!**

**ONCE THE SWITCH BREAKER HAS BEEN MECHANICALLY LOCKED, OPENING THE SAFETY GUARD IS NO LONGER POSSIBLE**.

### 7.3.3. Emergency stop devices

**EMERGENCY STOP BUTTON.** The machine is fitted with an emergency stop identified by a red button on a yellow background located on the front right base-frame. The function of this device is to stop all machine functions immediately and to KEEP them stopped.

**To activate the emergency stop:**

Press in the emergency stop button from the front. An audible warning is produced and **ALM/EMER** appears on the display.
To deactivate the audible warning press the **STOP** key.

**To continue the operation:**

Release the emergency stop by making a quarter turn in the direction of the arrow shown on the button itself.
Press the **STOP** key of the multi-function keyboard or deactivate the audible warning and next the **START** key to restart the operation.
The **REV** key allows the roll to rotate in the opposite direction to the linen input direction. Use only under exceptional conditions.

**HAND GUARD.** The hand guard consists of a swinging motion guard on the front of the machine to prevent the hands reaching towards the roll.
Pushing or pulling the aforementioned moving guard immediately STOPS the rolls from rotating. The machine will remain in this state until being operated again.
The hand guard stop is also assigned to operate as a safety stop from any part of the introduction zone.

**To activate the hand guard stop:**

Press directly on the bottom part of the guard. An audible warning is produced and alarm message appears on the display.
To deactivate the audible warning press the key **STOP**.

**To continue the operation:**

Release the guard by taking the pressure off, checking it returns to its original upright position.
Press the **STOP** key to deactivate the audible warning and next the **START** key to renew the operation.

**CAUTION!**

**THE EMERGENCY STOP DEVICE AND THE HAND-GUARD SHOULD NOT BE USED AS A REGULAR STOPPING DEVICE FOR THE IRONER.**

**KEEP IN MIND THAT THESES DEVICES:**

- **DO NOT STOP THE INERTIAL MOVEMENT OF THE FANS.**
- **DO NOT CANCEL NOR REDUCE THE TEMPERATURE OF THE MACHINE.**
- **DO NOT DISCONNECT THE IRONER FROM THE ELECTRIC SYSTEM.**

### 7.4. Interpreting the main on-screen icons

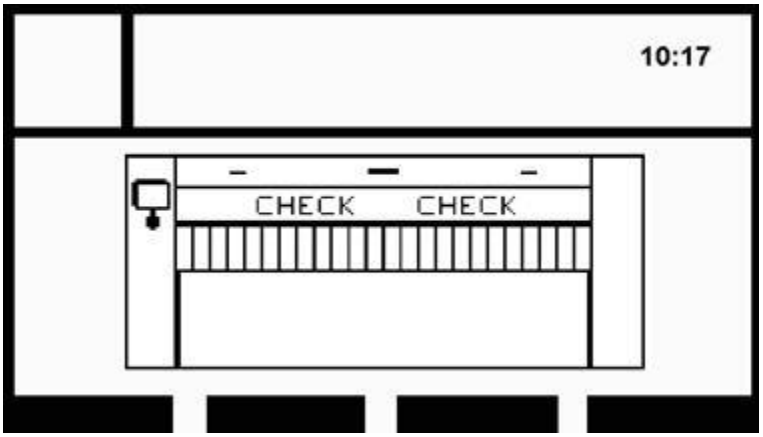
| ICON | INTERPRETATION |
|---|---|
|  | Access to the ironing programs |
|  | MANUAL SPEED operating mode |
|  | AUTOMATIC SPEED operating mode |
|  | Ironing roll temperature |
|  | Burner on |
|  | Burner off |
|  | Burner disconnected |
|  | Speed of the rolls (m/min) |
|  | Indication that the minimum ironing temperature has not been reached |
|  | Operation with linen folder |
|  | Programming menu |
|  | Creating a new program |
|  | Modifying an existing program |
|  | Deleting a program |
|  | Locking a program |
|  | System tools menu |

## 7.5. Executing an ironing program

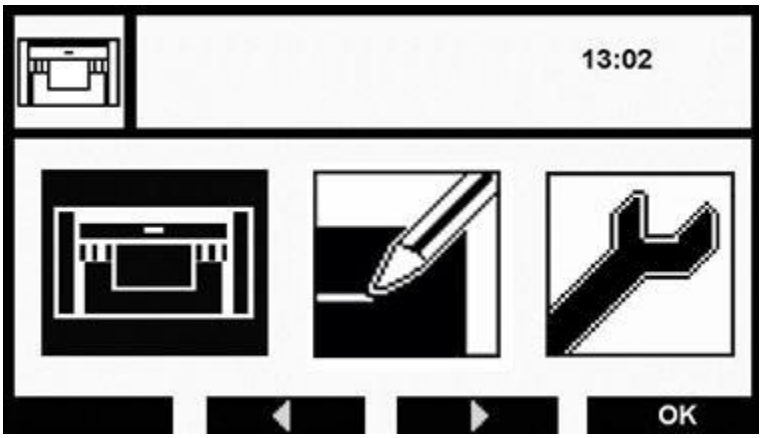
**IMPORTANT!**
**DETAILED INFORMATION ON THE DIFFERENT FUNCTIONS INVOLVED IN EXECUTING AN IRONING PROGRAM CAN BE FOUND IN THE SECTION CREATING A NEW PROGRAM.**

### 7.5.1. Initiating an ironing program

Group the fabrics together into homogeneous loads to be ironed and arrange them in a way that aids their insertion into the ironer.
Connect the energy supply system for the heating: steam or gas.
Switch on the power supply switch breaker.
The **CHECK** report is displayed on the screen. Activate the hand-guard. Press the **OK key.**
Remember that the correct functioning of the emergency stop buttons must be checked on a daily basis (refer to chapter 13. Maintenance).

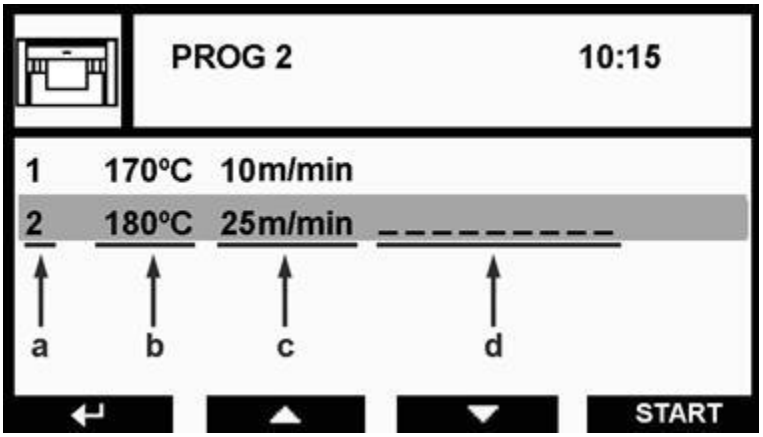



Select the icon of the program to be executed.




A list of the programs saved will appear on the display.

Details of the program title:
a -> program number
b -> ironing temperature
c -> roll speed
d -> text identifying the program



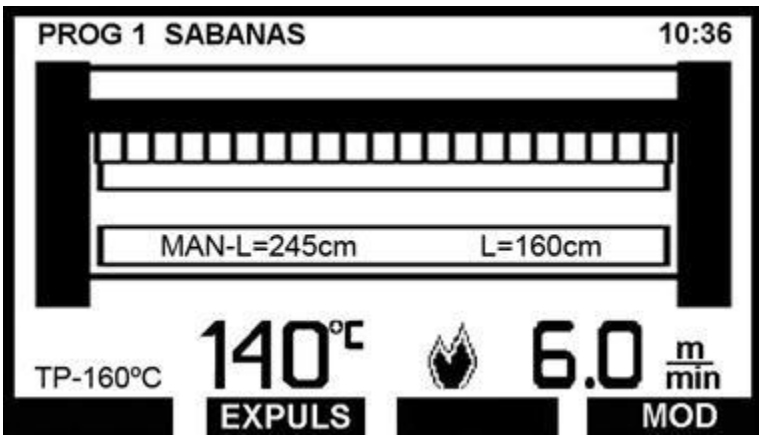

Select a program and press **START**.
Insert the linen into the ironer, making sure, where possible, to cover the entire surface of the roll. In the event of the linen width being less than the length of the roll, insert the linen alternately (right - left).
Follow the indications for the special ironing area (Section 7.5.5).

**DANGER!**
**ON EMERGING FROM THE IRONER, THE LINEN IS AT A HIGH TEMPERATURE. PROTECT HANDS WITH HEAT-INSULATED GLOVES.**

**Program execution screen**

**Machines with gas heating**

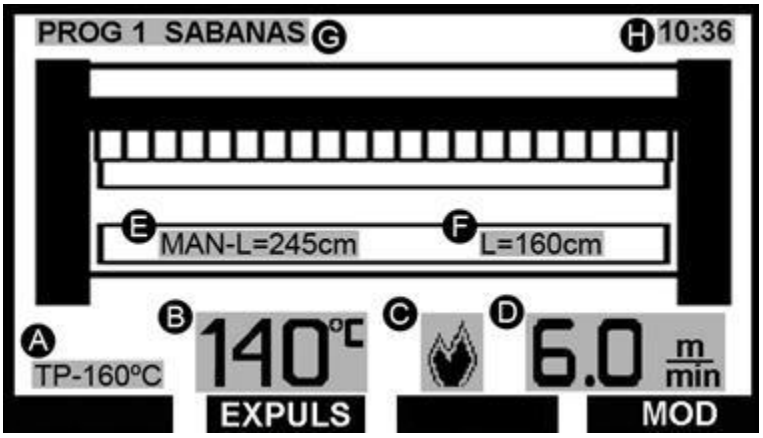
Giving the start order (pressing the **START** key) starts the roll rotation and the activation sequence of the heating system.
When the roll temperature is 10º C (18º F) below the programmed temperature (PT), an acoustic warning sounds indicating that the system is ready for linen to be inserted.




**CAUTION!**
Purge time.
The burner lights up after a safety period has passed.

During the execution of a program, the keys and on the control panel allow the burner to be turned on and off.

**Interpreting the program execution screen:**




**A- TP**. Programmed temperature
**B-** Ironing temperature
As long as the roll temperature is not 10ºC lower than the programmed temperature, it will be displayed flashing.
**C-** Indication of the heating status
**D-** Roll speed
**E-** Folder functioning mode and length of programmed item
**F-** Length of last article inserted
**G-** Program identification
**H-** System clock
**MOD** key: makes it possible to modify the parameters of the program running.
**EXPULS** key: activates the expulsion straps.

### 7.5.2. Stopping the program

Pressing once on the STOP button on the control panel halts the heating system.
The ironer enters a cooling situation: the rotation speed is reduced and the extractor fan is kept running while the roll temperature exceeds 100º C (202º F).
When the temperature falls below this value, the rotation of the roll is halted, the extractor halts and the main menu icons are displayed on the screen.

### 7.5.3. SHUT DOWN mode

This is an option available on machines with a folder or a photoelectric cell beam fitted and properly programmed in the SETUP menu.

**Operation**

If 20 minutes go by without the ironer detecting linen being fed in, it enters a cooling cycle.
Once the cooling is complete (a temperature below 100º C/212º F) the machine stops.
Select a new ironing program to exit SHUT DOWN mode.

### 7.5.4. Using the folder

The folder allows the linen items ironed by the machine to be folded lengthwise.

**Three folding modes**

**Manual mode**

The user must enter the length of the part to be folded using the control panel keyboard.
Alternatively, the ironer control can measure and memorise the length of the part to be folded.
The ironer control automatically determines the number and length of the folds.
This is recommended where the articles to be folded are of equal length, and the width of the fold is not a critical measurement.

**Advanced manual mode**

The user must enter the length of the part to be folded using the control panel keyboard.
Alternatively, the ironer control can measure and memorise the length of the part to be folded.
The ironer control offers the possibility of defining the number of folds.
Recommended where the items to be folded are of the same length and the user wishes to define the type of fold.

**Automatic mode**

The ironer control automatically determines the number and length of the folds.
Recommended when the folded items are of different lengths and do not require very accurate folding.

**Measuring and memorising the dimensions of an item of linen**

Once an ironing program is running, wait until there are no articles of linen inside the ironer.
Access the position **Changing the folding mode** (section 7.5.7.). The display shows the programmed length of the items to be folded.
Insert an item of linen. The ironer measures the inserted item. The item's measurements appear on the display.
Press the **MOD** key once the measuring has finished. The measured value will become the new programmed length value.

During the ironing process, the length of each item entered will be displayed on the ironer display (position **F** in the above image). If the measurement for the items to be ironed differs constantly from the programmed length, modify the value.

**CAUTION!**
**Cleaning the linen feed detectors**
To ensure the ironer operates properly, it is very important to clean the feed detection photocells located on the ironer's linen feeding tray.
Clean off lint and dust residues with a dry cloth. If necessary, use a slightly damp cloth.
**Never use any abrasive element or anything that might damage the surface of the photocells.**

**Expelling an item of linen from the input tray**

Pressing the **EXPULS** key on the multifunction keyboard activates the linen expulsion straps.

**DANGER!**

**NEVER ATTEMPT TO REMOVE A PIECE OF LINEN STUCK IN THE FOLDER WITHOUT FIRST TURNING OFF THE POWER TO THE IRONER COMPLETELY.**

**ALWAYS PROTECT YOUR HANDS WITH HEAT-INSULATED GLOVES.**

### 7.5.5. Indicating preferable ironing area — “OPTIFEED”

The ironer’s control detects the differences in temperature between the areas of the cylinder, and indicates, by illuminating the linen feeding table, which is the area or areas (Area 1, 2 or 3), on which it is preferable to iron (Figure 7.2).

Following all the combinations of these three ironing areas prevents the cylinder from overheating, increases performance and optimises the machine’s consumption.

For further information on the OPTIFEED system, see the following video:

https://www.youtube.com/watch?v=oyhcq0YZutI

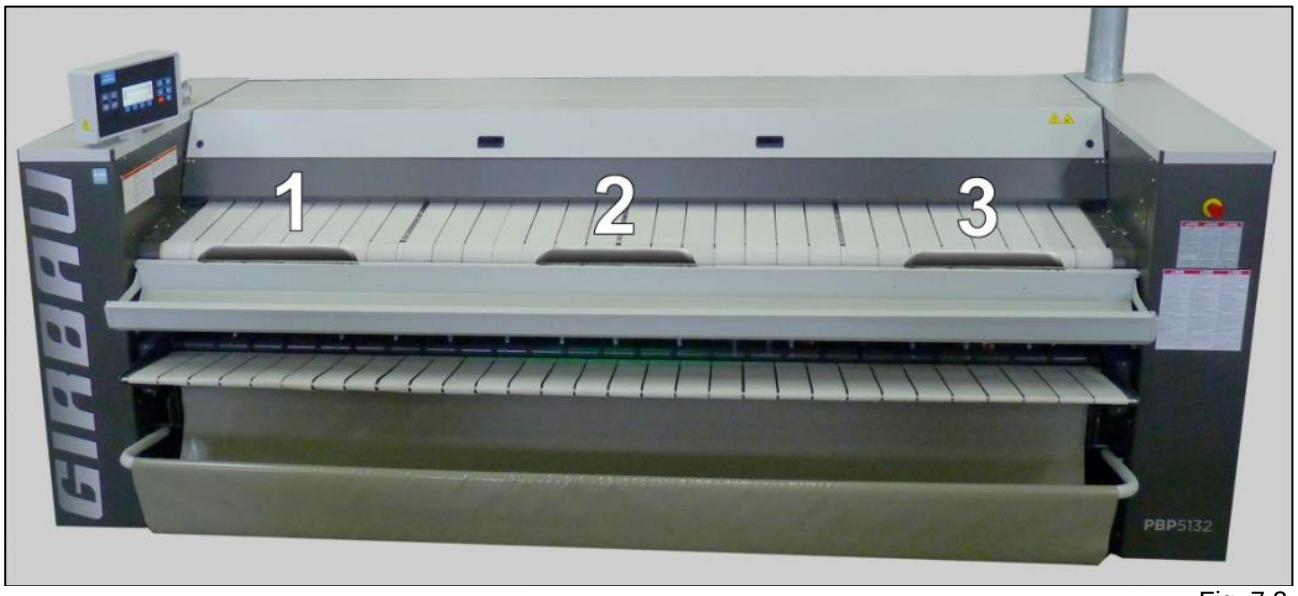



Fig. 7.2

**CAUTION!**

Using the ironer **WITHOUT using the "OPTIFEED" system** generates a lower yield and at the same time may shorten the life of some of the machine’s parts.

**CAUTION!**

For mode OPTIFEED to be active, the **program execution screen** needs to be displayed (Section 7.5.1).

The intensity of the feeding table light is **configurable** (Section 7.7.1).

**Example of the illumination of the linen feeding table with the OPTIFEED system:**

Ironing on the left-hand area (Area 1).


Ironing on the central area (Area 2).

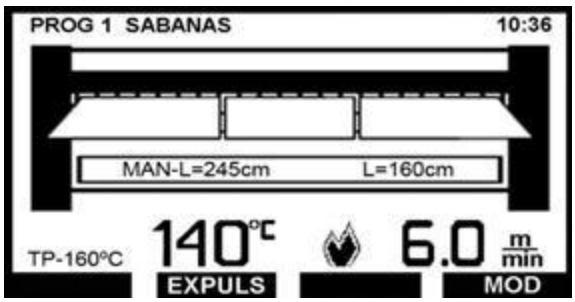

Ironing on the right-hand area (Area 3).


Ironing alternately on the central area and the left-hand area (Areas 1 and 2).


Ironing alternately on the central area and the right-hand area (Areas 2 and 3).

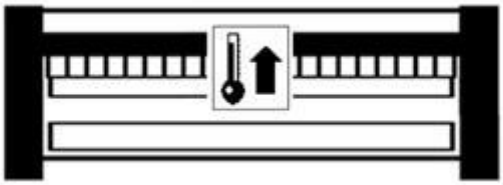

Ironing alternately on the right-hand area and the left-hand area (Areas 1 and 3).

**Example of animation of the OPTIFEED system on the display:**

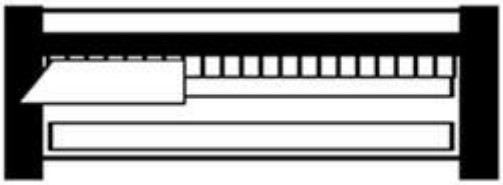



In addition to the luminous indications for the linen feeding table, the areas for feeding in the linen are also displayed.

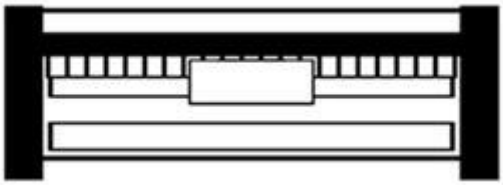
The minimum ironing temperature has not been reached



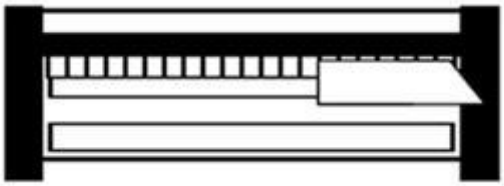
Ironing on the left-hand area (Area 1).



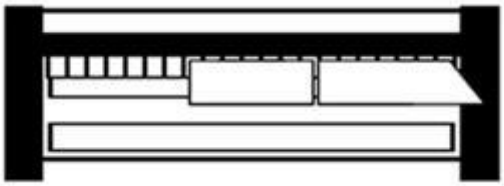
Ironing on the central area (Area 2).



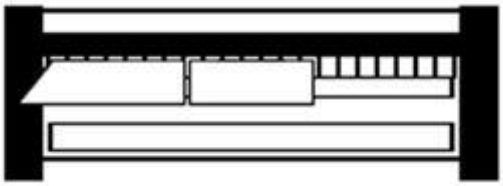
Ironing on the right-hand area (Area 3).



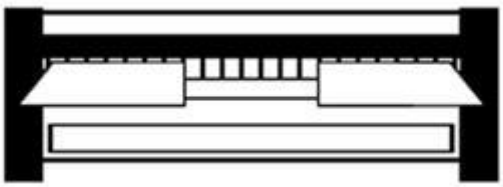
Ironing alternately on the central area and the right-hand area (Areas 2 and 3).



Ironing alternately on the central area and the left-hand area (Areas 1 and 2).



Ironing alternately on the right-hand area and the left-hand area (Areas 1 and 3).



Ironing alternately on the three areas (Areas 1, 2 and 3).

### 7.5.6. Modifying a program in execution

During the execution of a program, it is possible to modify the following operating parameters:

- Roll speed
- Speed control
- Ironing temperature
- Folding modes

Press **MOD** key to access the successive modification screens.

Advancing to another screen saves the modification. The new value is saved in memory until a new modification is made or until the program stops.

### 7.5.7. Program modification screens

**Manual control of roll speed**

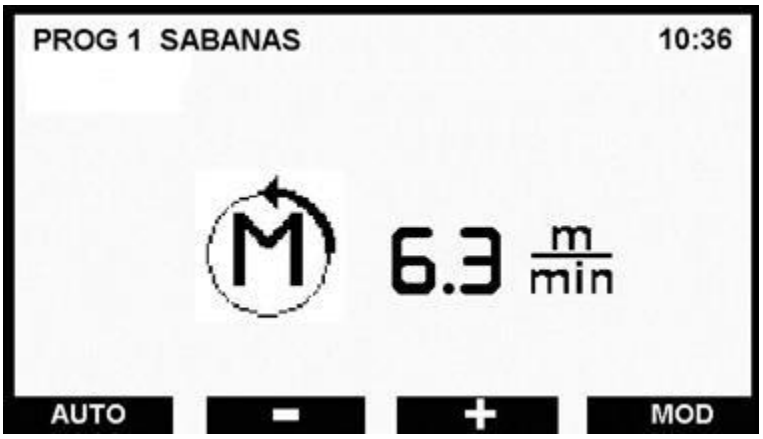
The roll will rotate at the programmed speed regardless of variations in the ironing temperature.

| Model | Programmable values |
|---|---|
| **LS** | m/min. 1 – 9.0 (min-max)<br>Ft/min 4 – 29 (min-max) |
| **HS** | m/min. 1 – 15.0 (min-max)<br>Ft/min 4 – 49 (min-max) |

Press the + / - keys to modify the speed of the rolls.

Press the **MOD** key to access the ironing temperature control screen.

Press the **AUTO** key to change to **AUTOMATIC** speed control.



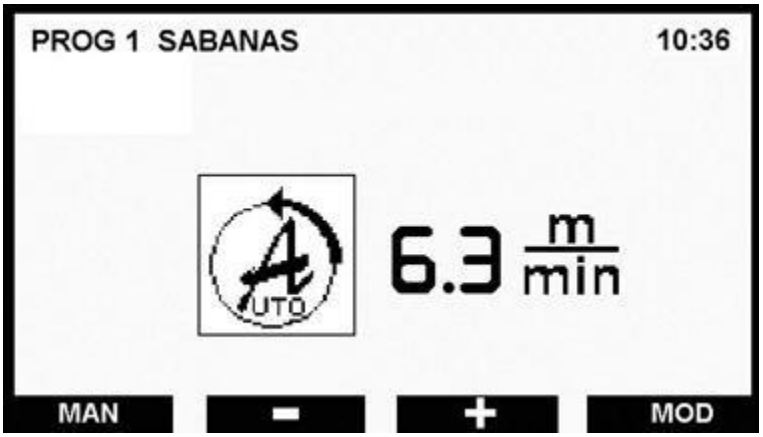

**Automatic roll speed control**

If the microprocessor detects a significant decrease in the ironing temperature, the rotation speed of the roll is reduced automatically.

Press the + / - keys to change the programmed roll speed.

Press the **MAN** key to change to **MANUAL** speed control.

Press the **MOD** key to access the ironing temperature control screen.



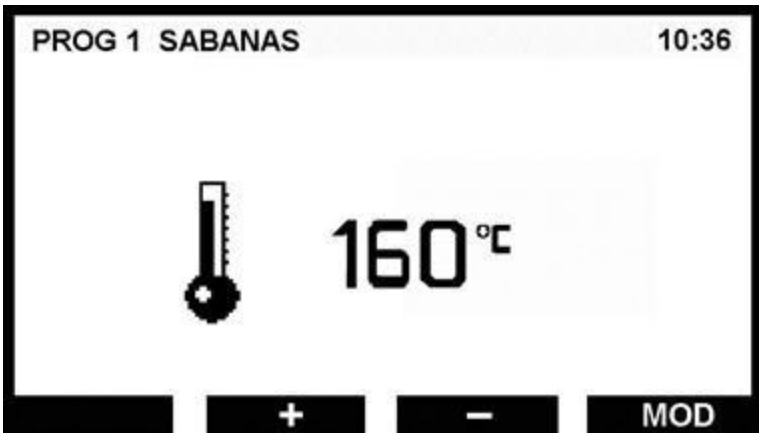

**Ironing temperature**

Programmable range:
Machine with electric/steam heating:
ºC: 70 – 160 (min-max)
ºF: 160 – 320 (min-max)

Machine with gas heating:
ºC 70 – 170 (min-max.)
ºF 160 – 340 (min-max.)

Press the + / - keys to modify the ironing temperature.

Press **MOD** key to access the folder control screen.

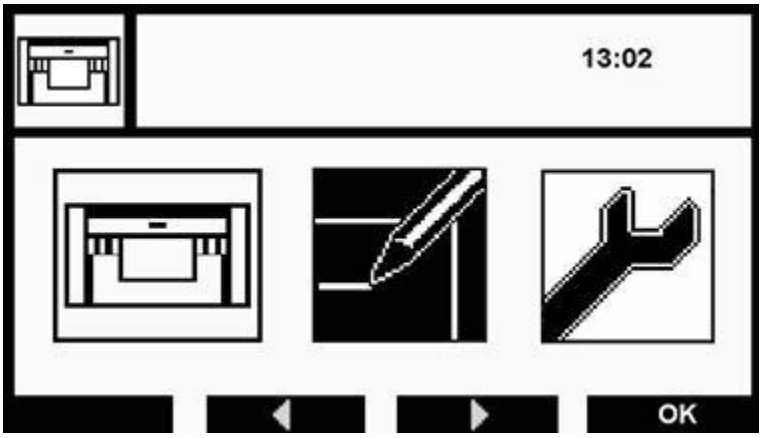


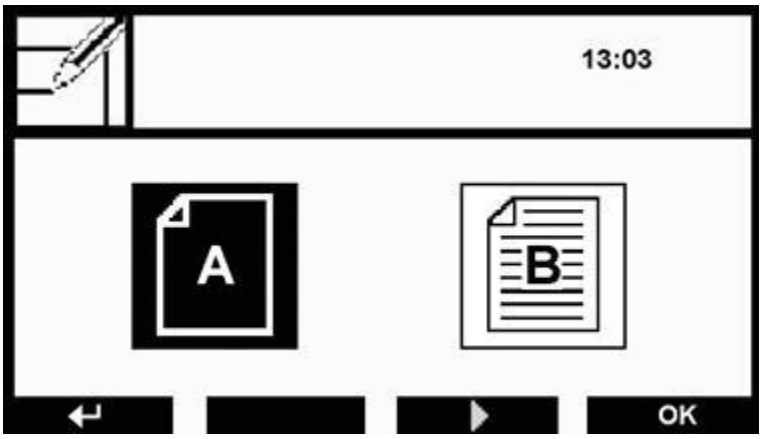
## 7.6. Programming mode

The ironer control is capable of storing up to a maximum of 50 programs.
Program number 1 is pre-set at source and cannot be changed.
The remaining programs are empty of content.

### 7.6.1. Access to programming mode

On the main menu screen, select the PROGRAMMING MODE icon.
Press the **OK** key. The following screen appears.




**PROGRAMMING MODE options:**

**A.** Programming a new program (Section 7.6.2.).
Specific information of folding modes (Section 7.6.3).

**B.** Modification tools (Section 7.6.4.).

### 7.6.2. Programming a new program

Select option **A**. The positions of empty programs are displayed. Using the ▲/▼ keys select the position where the new program is to be created. Press the **SEL** key.

**Program identification text**

Allows the user to write a name or a text identifying the program.

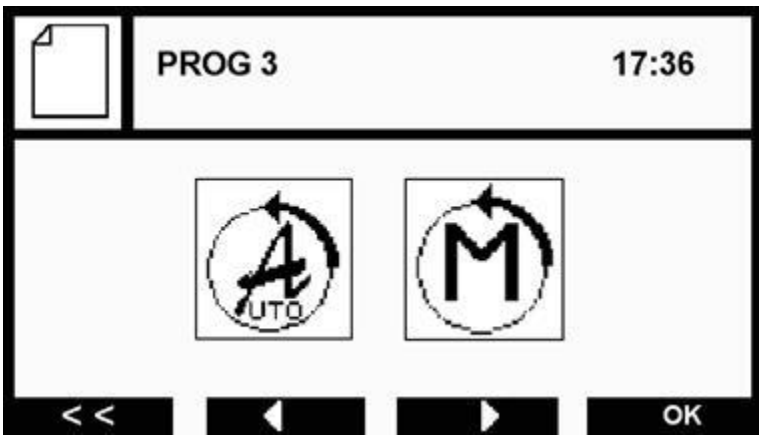
**Insertion of characters**

- The **+** / **-** keys on the control panel keyboard allow alphanumerical characters to be written. The characters are displayed sequentially. The first press on the **-** key inserts a space.
- The ◄ ► keys on the multifunction keyboard accept the selected character and move the cursor one position to the right to be able to write a new character. Maximum number of characters: 12.
- The **C** key deletes the character to the left of the cursor.
- The **OK** key confirms the selection and accesses the next screen.


**Speed control**

**MANUAL speed control**. The rolls turn at the speed programmed on the following screen, regardless of the ironing temperature.

**AUTOMATIC speed control**. The speed of the rolls is automatically regulated to prevent significant drops in the ironing temperature.
Select the desired speed control mode using the ◄ ► keys.
Press the **OK** key to confirm the selection and access the next screen.
During the programming process, the **<<** key allows the previous screens to be accessed.



**Roll speed**

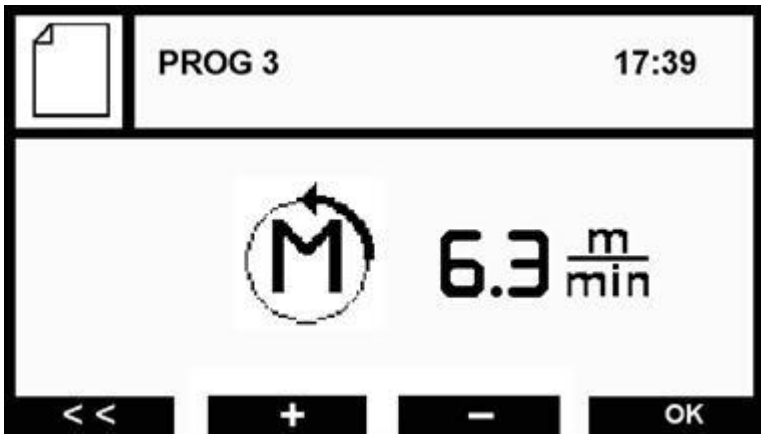
**Speed control** programmed on the previous screen.

**Unit of speed** selected in the configuration menu.

**Programmable range:**

| Model | Programmable values |
|---|---|
| **LS** | m/min. 1 – 9.0 (min-max)<br>Ft/min 4 – 29 (min-max) |
| **HS** | m/min. 1 – 15.0 (min-max)<br>Ft/min 4 – 49 (min-max) |

Select the desired speed with the **+ / - keys**.
Press the **OK** key to confirm the selection and access the next screen.



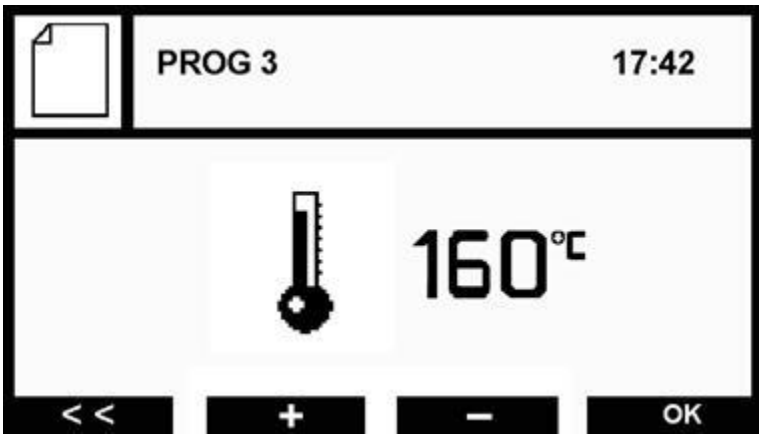

**Caution!**
If AUTOMATIC speed control has been programmed on the speed control screen, the value programmed **B** indicates the maximum speed of the rolls.
The speed of the rolls may decrease depending on the difference between the real ironing temperature and the programmed temperature.

**Ironing temperature**

Select the ironing temperature using the **+ / -** keys.

**Programmable range**:
Machine with electric/steam heating:
ºC: 70 – 160 (min-max)
ºF: 160 – 320 (min-max)

Machine with gas heating:
ºC 70 – 170 (min-max.)
ºF 160 – 340 (min-max.)



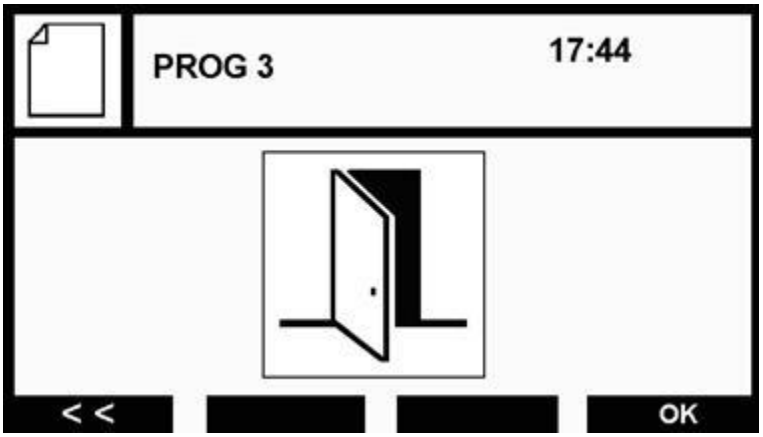

**Machines with folder option**

The folding mode should be programmed before completing the setting of the program.
See the information regarding the folder in the following section.

**End of the programming**

Press the **OK** key to save the content of the program and end the programming.
The **Modification Tools** screen is accessed directly.

Remember that by pressing the **<<,** key the user can access previous screens and modify the program.



### 7.6.3. Folder

The length of the items is controlled by one or three proximity sensors: located at the linen feeding tray and at the input to the folder.
Optionally, in models with two feeding lanes, there are triple the number of linen sensors (three at the feed tray and three at the input to the folder).

See the graphs below for the distribution and length of the folds depending on the folding mode selected and the length of the item to be folded. The graphs included in this section indicate the definition.

**Explanation of the graphs**

**Horizontal axis** : Length of the item to be folded (double scale in centimetres and inches).
**Vertical axis** : Length of the folds (double scale in centimetres and inches).
**Sloping lines** : Depending on the folding mode selected, they indicate the resulting length of each fold (double scale in millimetres and inches).

: The figure accompanying this icon indicates the number of folds.

**Graphs**

**Advanced manual** mode
The user must enter the length of the part to be folded using the control panel keyboard.
Alternatively, the ironer control can measure and memorise the length of the part to be folded.
Once the length of the item has been determined, the user can set the number of folds.

In the example in **Advanced Manual** mode, the user can select different numbers of folds for the same total length of the item.
This allows different folding lengths to be obtained.

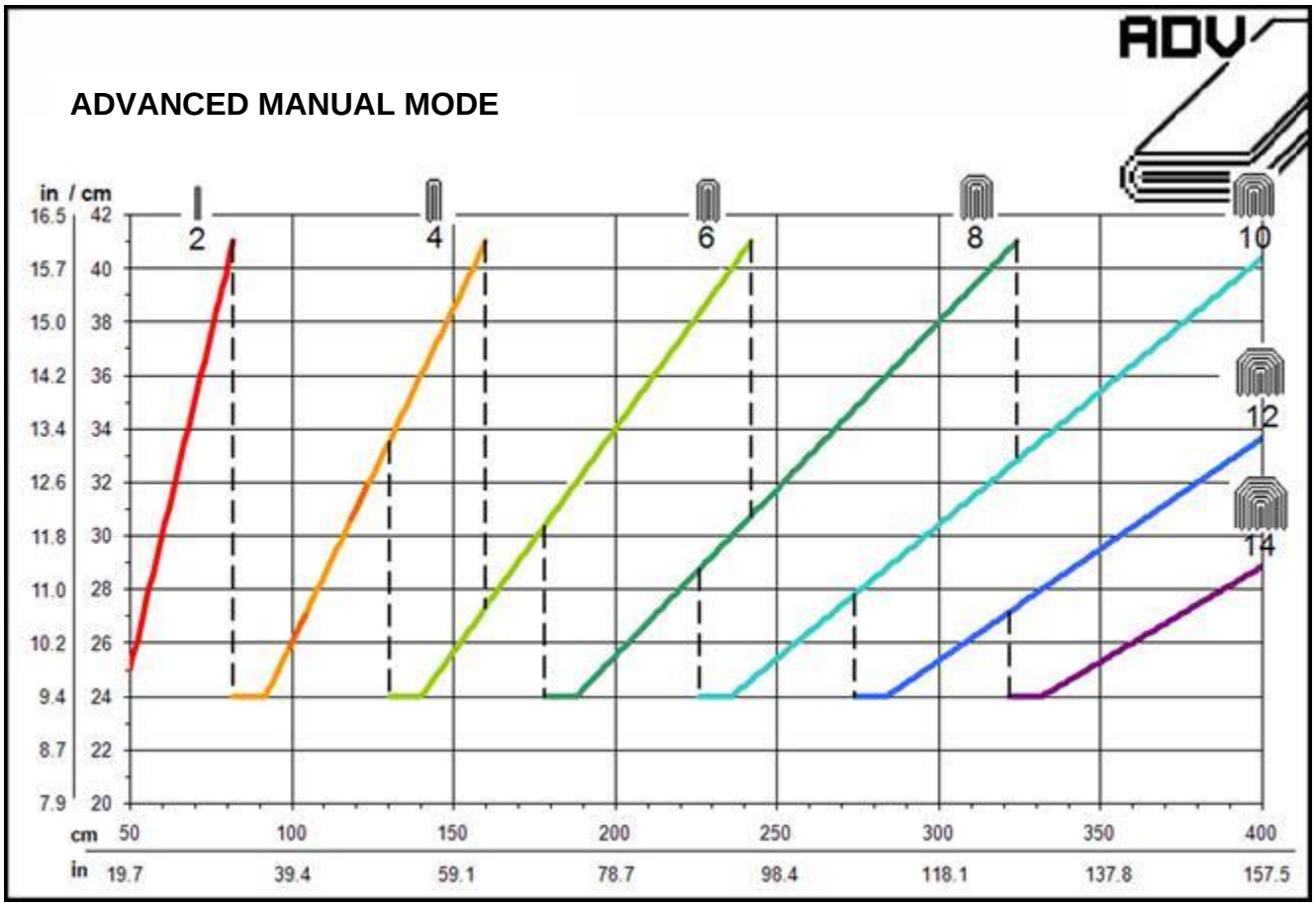
**Example of the distribution of folds in Advanced Manual mode.**
Distribution and length of the folds for an item with a total length of 310 cm (122.0 in.).

| Number of folds | Length of the folds | |
|---|---|---|
| | cm | in. |
| 12 | 26 / 27 | 10.2 / 10.6 |
| 10 | 31 / 32 | 12.2 / 12.6 |
| 8 | 39 / 40 | 15.4 / 15.7 |

**Manual** mode
The user must enter the length of the part to be folded using the control panel keyboard.
Alternatively, the ironer control can measure and memorise the length of the part to be folded.
The number and length of the folds is determined by the total length of the item.

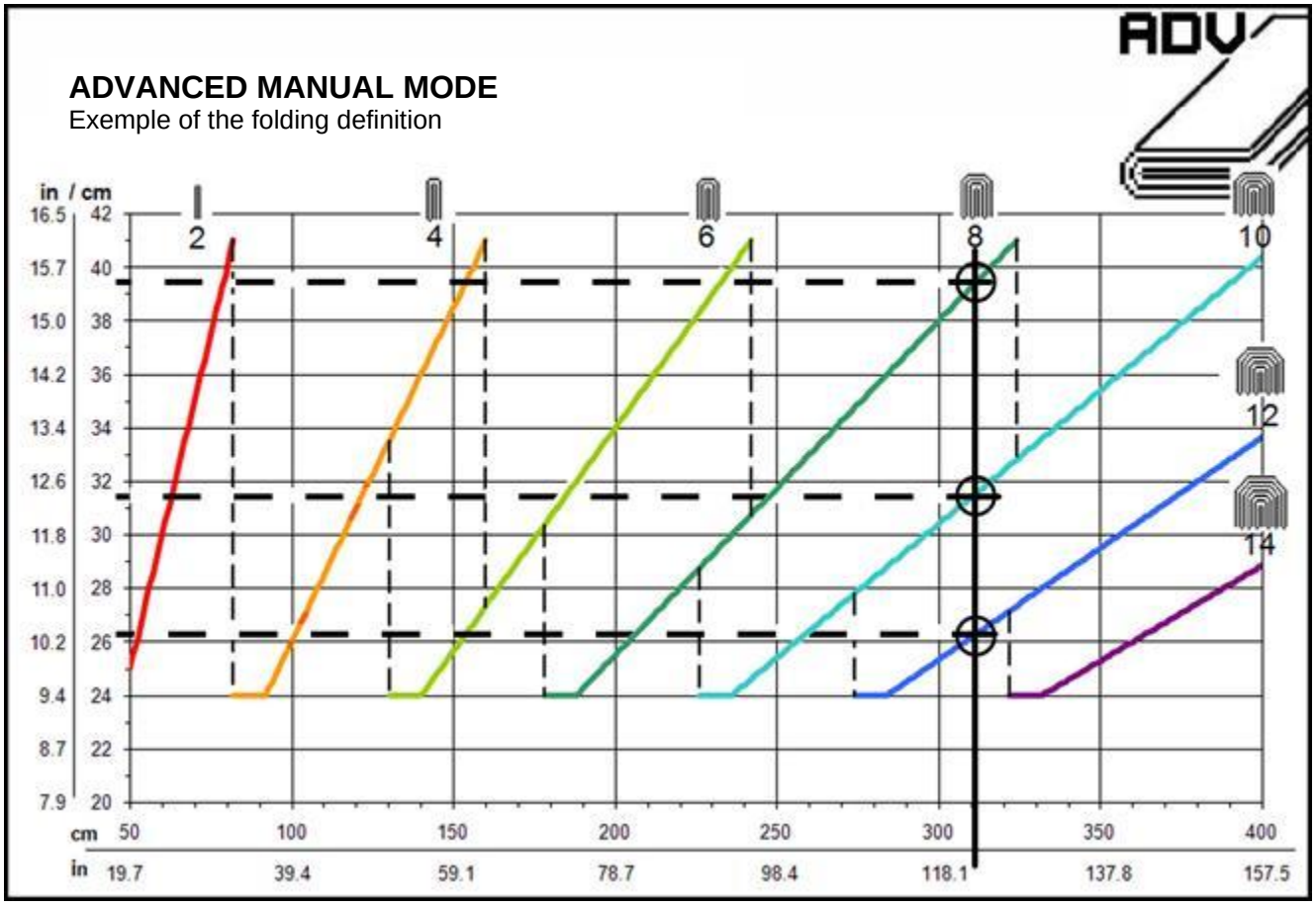
**Automatic** mode
The machine measures the length of the article to be folded and automatically determines the number of possible folds. The length of each fold is determined by the total length of the item.

**ADVANCED MANUAL MODE**

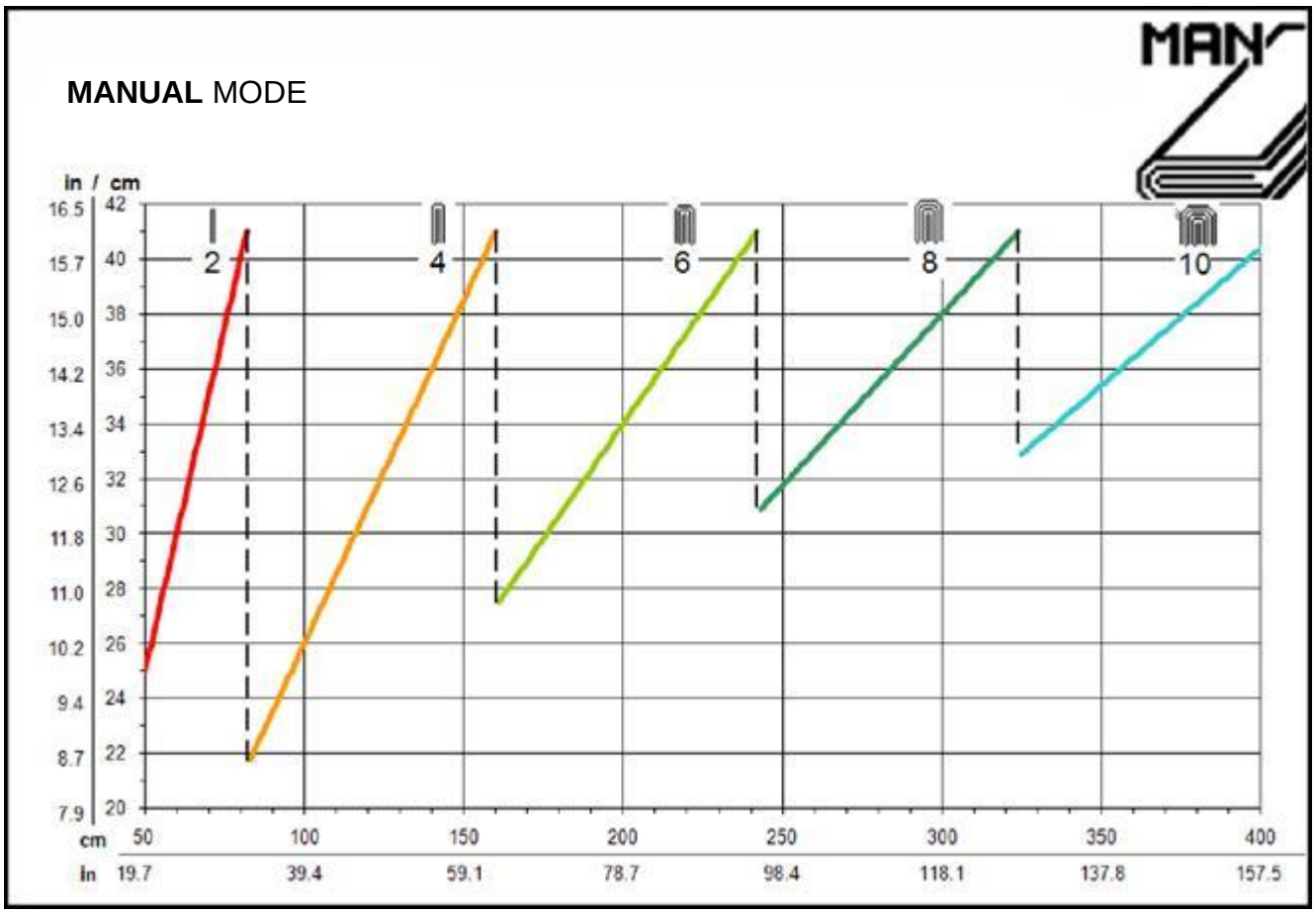



**ADVANCED MANUAL MODE**

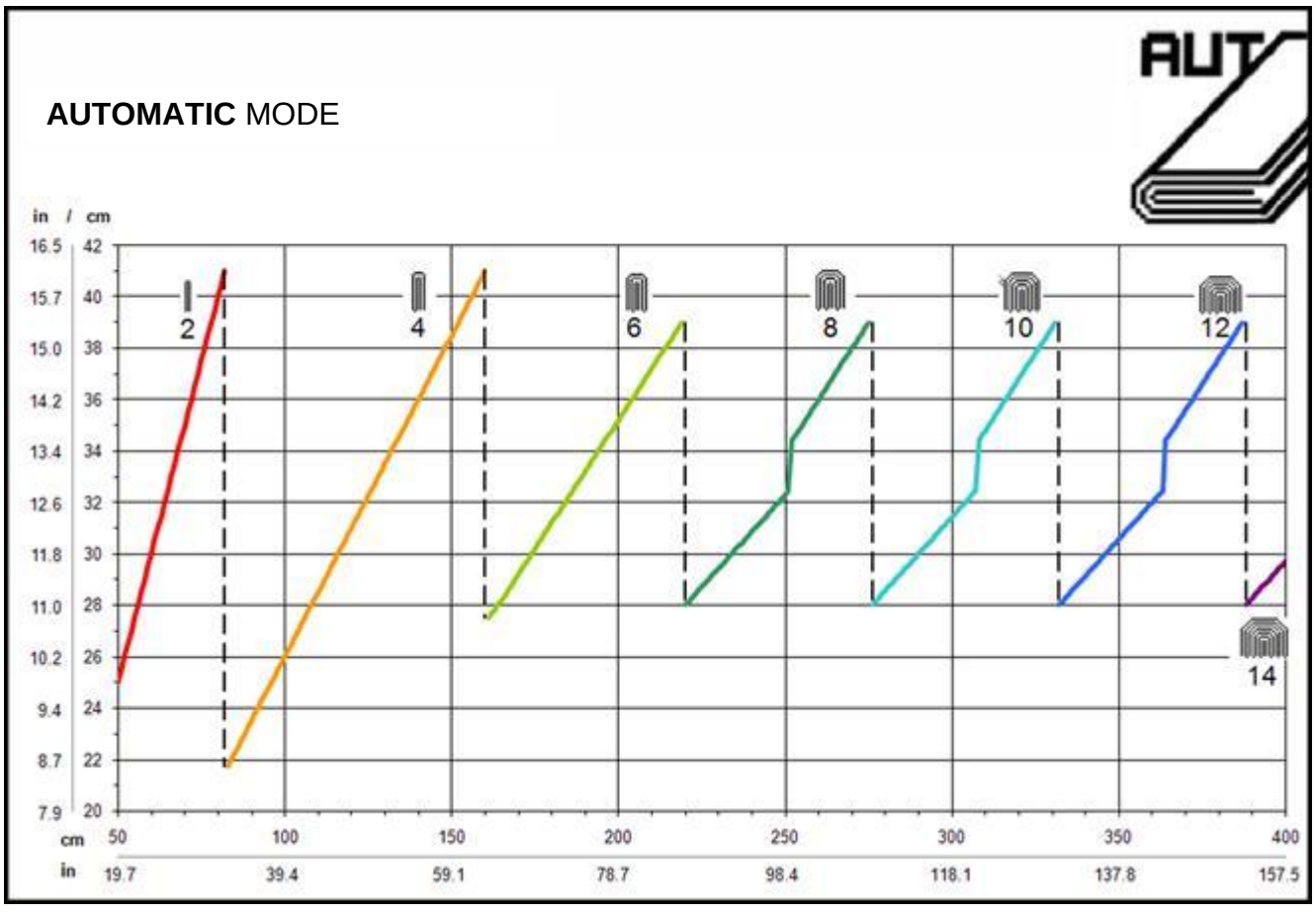
Exemple of the folding definition



**MANUAL** MODE

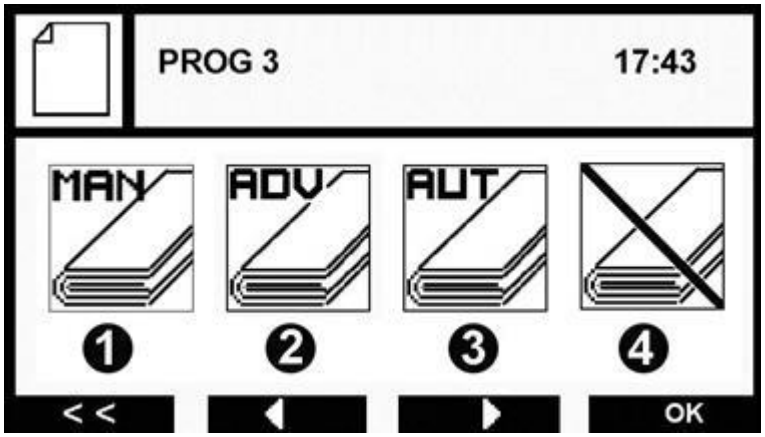



**AUTOMATIC** MODE



## Programming the folding

This programming only appears on machines with a folder incorporated.




### Folding modes

1. Operation in manual mode
2. Operation in advanced manual mode
3. Operation in automatic mode
4. Folder halted

Press the ◄/► keys to select the desired option.

See details below.


**Operation in manual mode**
The programmed length can be altered by pressing the + / - keys.
The ironer control automatically determines the number and length of the folds.


**Programmable range**:
cm. 60 – 400 (min-max)
in. 24 – 157 (min-max)


**Operation in advanced manual mode**
The programmed length can be altered by pressing the + / - keys.


**Programmable range**:
cm. 60 – 400 (min-max)
in. 24 – 157 (min-max)

The ironer displays the number of possible folds depending on the length of the article to be folded.
Users must select the most appropriate option for their requirements.


**Number of folds possible:**
2, 4, 6, 8, 10, 12, 14.


**Operation in automatic mode**
The ironer control measures the length of each item and automatically determines the number and length of the folds.

**Folder halted**
To restart the folder, select one of the above options or press the corresponding button on the control panel.

See Section 7.5.4 for further information on using the folder.

**Folding strategies and settings**

Due to differences between fabrics, the measurements of the length of the folds may not correspond exactly with the values set out in this section.

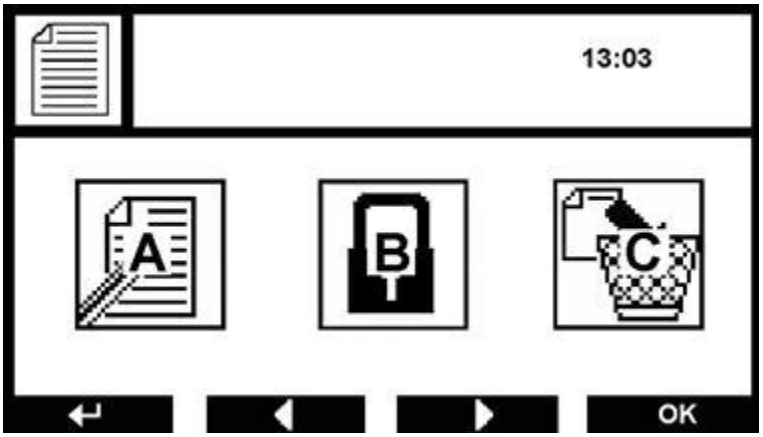
The table below provides a number of suggestions for setting the desired folding measurements more precisely.

| PROBLEM | ACTION |
|---|---|
| The first fold is too short | Use Advanced Manual mode and select a lower number of folds. |
| The final fold is too short | Use Advanced Manual mode and select a greater number of folds. |
| The first fold protrudes more than the rest<br>The first fold is too long | Decrease the overall length of the programmed item slightly (1 or 2 cm, ½ or 1 in.).<br>If this mismatch appears constantly, request a decrease in the "FIRST FOLD SET BACK" value. (One of the settings in SETUP. This action is reserved for the **ATS** or the **CTS**.) |
| The final fold protrudes more than the rest<br>The final fold is too long<br>The final fold is getting caught in the folder when being extracted | Increase the overall length of the programmed item slightly (1 or 2 cm, ½ or 1 inch).<br>If this mismatch appears constantly, request an increase in the "FIRST FOLD SET BACK" value. (One of the settings in SETUP. This action is reserved for the **ATS** or the **CTS**.) |
| All the folds are getting caught in the folder when being extracted. | Use Advanced Manual mode and select a greater number of folds. |
| The folder fails to fold certain items, especially in items with a length not exceeding 60 cm (23 in.). | Increase the empty spaces when items are inserted.<br>There should never be two items between the photocell at the input to the roll and the one at the input to the folder. |
| Models with three feeding lanes:<br>Different folding between the two lanes | Alignment difference between the three photocells at the folder input.<br>Ask the **ATS** or the **CTS** to check the alignment of the photocells. |

**CAUTION!**

Note that it is essential to clean the photocell and the reflector to ensure that the folding system works properly.

### 7.6.4. Modifying existing programs




**A.** Modifying saved programs

**B.** Blocking the use of a program

**C.** Erasing a program

Access each tool by selecting it using the ◄ ► keys and confirming the selection with the **SEL** key.

Press the ↵ key to access the higher function.

**Modifying saved programs**

A tool that enables the parameters of the programs saved by the user to be modified.

**Steps to modify a program**

Accessing this tool displays the list of saved programs.

Select the program to be modified using the ▲ / ▼ keys and press the **SEL** key.

From here on, to modify the program, follow the same steps as in the **Programming a new program menu** (Section 7.6.2.).

**Blocking the execution of a program**

A tool that gives the user the option of blocking one or more ironing programs.

**Steps to block a program**

Accessing this tool displays the list of programs.

Select the program to be blocked using the ▲ / ▼ keys and press the **SEL** key. The icon indicating that the program has been blocked is displayed in the program text.

**Erasing a program**

A tool that enables the programs saved by the user to be deleted.

**Steps to erase a program**

Accessing this tool displays the list of programs saved by the user.

Select the program to be deleted using the ▲ / ▼ keys and press the **SEL** key.

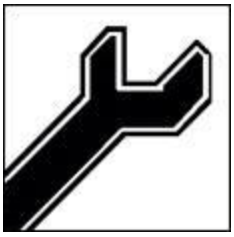
A screen is displayed requesting confirmation of the deletion. Press the **OK** key to confirm the deletion.

## 7.7. System tools mode

Group of tools destined to preparing, personalizing, informing and controlling the global operation of the ironer.
Within this group of tools, there are two large groups or intervention areas:

- System **CONFIGURATION**.
- **CONSULTING** the ironer characteristics, executed programs and operations and alarms detected by the ironer control.
- **TEXT MESSAGES.** The user can programme a text message that will appear after a certain operation time, also programmable.
  Managing and using these areas appear on the screen in written text.

**Accessing the TOOLS mode menus**



The system TOOLS mode menus are accessed from the main menu.

Do not start any ironing program.
Select the icon TOOLS mode and confirm the selection with the **OK** key.
The distinct menus of the TOOLS mode appear.

Select the desired menu using the ▲ / ▼ keys and press the **SEL** key.

### 7.7.1. Configuration menu. Introduction and access

This intervention menu offers the possibility to activate or modify a group of parameters and values, distributed among different submenus, which condition the ironer's operation.
The submenus are:

- **Configuring the parameters** for usage and programming
- **Setting the clock**
- Managing the **security codes**

**Configuring operation and programming parameters**
Below, the distinct parameters found in the CONFIGURATION menu are listed.
Shown at each parameter:

- Identification of the parameter: description that appears on the screen.
- Explanation of the parameter.
- Configurable values or range.
- Factory settings: the configuration at works of the ironer will depend on the purchase specifications.
- Configuration by default: is the option programmed by default at the ironer control. The values configured by default will always appear when a GENERAL INITIALIZATION is executed or when a new control board is installed onto the ironer.

When the factory settings value and the default configuration value coincide, it is only indicated as the factory value.

The ▲ / ▼ keys allow the access to different parameters. The **MOD** key modifies the value of the selected parameter.

Accessing a new parameter or pressing the ↵key saves the selection made.

**Operation parameters**

**LANGUAGE**

Permits selecting the language of all the written messages.

Programmable values ..... ESP (Spanish) | ENG (English) | FRA (French) | DEU (German) | POR (Portuguese)
Factory settings..... depending on specification
Value by default ..... Spanish

**SCREEN CONTRAST**

Permits modifying the contrast on the ironer screen.

Programmable values ..... 0 (less contrast) ... 9 (more contrast)
Factory settings..... 5

**FIELD OF USAGE**

Adapts ironing programs and operating parameters to certain fields of use.

Programmable areas ..... General | USA
Factory settings..... depending on specification
Value by default ..... General

**TEMPERATURE UNIT**

Permits selecting the unit that the temperature values are displayed.

Programmable values ..... **C** (Celsius degrees)| **F** (Fahrenheit degrees)
Factory settings..... depending on specification
Value by default ..... degrees Celsius

**SPEED UNIT**

Allows the user to select the unit in which the speed of the rolls will be shown.

Programmable values ..... **m/min** (metres per minute) | **ft/min** (feet per minute)
Factory settings..... depending on specification
Value by default ..... metres per minute

**BEEP WHEN PRESSING THE KEY**

When pressing a key, the microprocessor emits an acoustic beep. This beep can be annulled.

Programmable values ..... YES / NO
Factory settings..... YES

**SHUT DOWN**

An option available only on machines with folder options or SHUT DOWN active in the SETUP menu.
Reduces the speed and switches off the heating system on detecting that a certain time has elapsed without linen being inserted.

Programmable values ..... YES / NO
Factory settings..... NO

**NETWORK IDENTIFIER**

This parameter assigns a network identifier to the ironer. This identifier enables the communication of the ironer with the environment through a protocol based on RS-485.

Programmable values ..... 0 (disabled communication) / 1..99 (enabled communication)
Factory settings..... 0

(For further information, see the Communication Protocol Instruction Manual)

**OPTIFEED LIGHT INTENSITY**

Allows the user to select the intensity of the lights for the linen feeding table.
Option available by activating **Board A4** in the SETUP menu.

Programmable values ..... OFF / 10-20-30……100%
Factory settings..... YES

## Setting the clock

This menu permits setting the clock.
Access the set clock menu. The following parameters appear:

| | |
|---|---|
| MINUTE | nn |
| HOUR | nn |
| DAY WEEK | _ _ _ _ _ |
| DAY MONTH | nn |
| MONTH | nn |
| YEAR | nn |

Modify the value of each parameter using the **MOD** key.
Access to the next parameter or going to the previous menu confirms the selection.
The numerical values must be formed with two digits. Example:

- third day of the month ..... 03
- month of November ..... 11
- year 2010: ..... 10

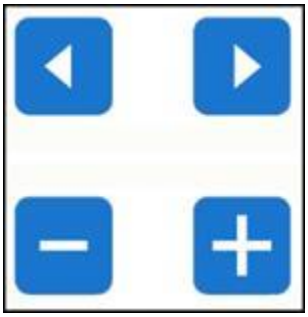
## Managing access codes

Access to the **PROGRAMMING** and **CONFIGURATION** menus can be protected using an eight digit security code.

To access protected menus, the user must enter the code by pressing the keys on the ironer control panel that correspond to the adjoining images.

The initial code is 1 2 3 4 1 2 3 4.

The user can change it and introduce a new code.

| KEYBOARD SYMBOLS | NUMERICAL EQUIVALENCE |
|---|---|
|  |  |



### Menu access protection

Access the **MANAGING ACCESS CODES** menu.
Distinct option appear:
**PROGRAMMING** Menu. The **MOD** key activates or deactivates the menu access protection.
**CONFIGURATION** Menu. The **MOD** key activates or deactivates the menu access protection.
The √ symbol indicates that access to the menu is protected by a code.

### Change the ACCESS CODE

Select the option and access to the option using the **MOD** key.
The message ENTER NEW CODE will appear. Insert a new eight-digit code using the keys on the ironer's control panel.
The **MOD** key memorizes the new code.
The ↵ key allows quitting the option without modifying the code.
The initial value of the access code can be restored by means of the specific order in the SETUP menu. Consult the Authorised Technical Services.

## PID control for the temperature

**This menu is reserved exclusively for the Authorised Technical Service. Do not modify the parameters of this menu.**

### 7.7.2. Information menu. Introduction and access

The information menu allows access to information concerning the configuration and to the life of the ironer:

- **General information**. About the ironer model and the control characteristics.
- **Operation counters**. These register the hours of operation and the linear distance covered by the rolls.
- **Alarm counters**. There is a counter associated with each one of the main system alarms that is increased with the appearance of each alarm.

To move among counters and within each counter use the **multi-function keyboard**.

There is an option on the **SETUP** menu that allows setting the value of the different counters at zero. This operation is reserved for the Authorised Technical Services.

Below, the distinct parameters that make up the INFO menu are listed.

**General information. Contents**

- Machine model. Identifies the ironer model
- Program version
- A2 board version
- A4 board version
- Free programs
- Updated information

Only machines with gas heating.

- Oil probe calibration. Calibration value of the oil temperature control probe.
- Fumes probe calibration. Calibration value of the fumes exhaust temperature control probe.

**Operation counters**

- Operating time
- Linear Km/miles of operation

**Alarm counters**

List of controlled alarms

| | |
|---|---|
| A2 BOARD COMMUNIC. ALM | HEATING CONFIGURATION ALM |
| HAND GUARD ACTIVATION | ROLL OVERHEATING ALM |
| A2 BOARD RESET | TEMPERATURE PROBE 1 ALM |
| INVERTER COMMUNICATION ALM | TEMPERATURE PROBE 2 ALM |
| GENERAL INVERTER ALM | TEMPERATURE PROBE 3 ALM |
| INVERTER CONFIGURATION ALM | TEMPERATURE FAILURE ALM |
| NOT RESETTABLE BURNER ALM | ENCODER ALM |
| SAFETY THERMOSTAT ALM | EXHAUST PRESSURE ALM |
| GENERAL BURNER ALM | EXHAUST OVERTEMP. MOTOR ALM |
| HEATING CONTROL ALM | FOLDER CONTROL ALM |

### 7.7.3. Text messages

This menu allows writing three text messages and determining when they appear after a number of hours programmed.

**Programming messages and moment of display**

Access to the TEXT MESSAGES menu following the steps indicated in section 7.7.
The three text messages available appear on the screen.
An asterisk next to some of the messages indicates that the message is programmed.
Select one of the three messages and confirm the selection by the **SEL** key on the multi-function keyboard. The following screen appears.
In the position **PROGRAMMED TIME**, programme time the message has to appear using the numeric keyboard.
In the position **ACCUMULATED TIME** will appear the time elapsed since the message was programmed.
Press the ▼ key and access to the text line. Enter the text of the message. Follow the indications for text writing in section 7.6.2.
Register in the memory the programming and start the time counting by pressing the key.

**Other actions:**

- The **RESET** key on the multi-function keyboard re-initialises ACCUMULATED time counting.
- If you don't want the message to appear, erase the programming of the message duration by programming 00000 in the position PROGRAMMED TIME.
- Erase the programmed message by key **C** on the numeric keyboard.

## 8. OPERATING AND USE. LOGI CONTROL. PB32, X13

**CAUTION!**

**THE REGULATIONS FOR SAFETY AT WORK AND ACCIDENT PREVENTION MUST BE METICULOUSLY FOLLOWED.**

**DO NOT USE THE IRONER WITHOUT SUITABLE TRAINING AND EXTENSIVE OPERATING KNOWLEDGE.**

**NEVER START OR USE THE MACHINE IF ANY OF THE FOLLOWING ARE MISSING, INCORRECTLY POSITIONED OR MALFUNCTIONING:**

- **COVERS ( GUARDS) AND PROTECTIONS**
- **SAFETY DEVICES**
- **CONTROL ELEMENTS**

**IF THE IRONER IS TO BE USED BY MORE THAN ONE PERSON, IT IS ESSENTIAL THAT ONE OF THESE OPERATORS IS CLOSE TO THE CONTROL PANEL AND EMERGENCY STOP TO BE ABLE TO QUICKLY AND EFFECTIVELY TAKE MEASURES IN THE EVENT OF THERE BEING ANY DANGEROUS CIRCUMSTANCES.**

**NEVER TRY TO EXTRACT JAMMED OR BADLY INSERTED LAUNDRY IF THE IRONER IS RUNNING OR AT A HIGH TEMPERATURE, OR IF THE ROLL FIXING BRACKETS ARE NOT IN THE MAINTENANCE POSITION.**

**DANGER!**

**MECHANICAL RISKS**

- **To avoid the risk of being caught up in the machine's moving parts it is essential for the hair to be tied up and suitable fitted clothing to be worn.**
- **Scarves, ties, neckerchiefs, lose garments, open cardigans, hanging belts, wide sleeves, etc. must not be worn.**
- **Jewellery must not be worn.**
- **Do not use the machine without all the cover and safety guards correctly in place.**
- **Disconnect the power supply and close the gas supply valves and other sources of heating before removing any form of protection.**

**ELECTRICAL RISKS**

- **It is essential for the machine to be connected to external protection (grounded).**

**HIGH TEMPERATURE RISKS**

- **Do not remove any safety guards without first making sure the machine is cool (<35ºC / 90F).**
- **Do not put the hands anywhere near the exposed surface of the roll, particularly, the laundry output area or the heating circuit elements.**
- **Wear heat insulating gloves to protect the hands from the continuous contact with hot laundry.**

**FIRE RISKS**

- **Fluff and soot are highly flammable substances.**
- **It is essential to avoid these building up inside the machine and the exhaust ducting which goes from the machine to the outside.**
- **To achieve this, all the places likely to collect fluff and soot must be regularly cleaned (e.g.: roll, base-frames, covers, exhaust ducting, filter, fan, etc.).**
- **Also keep the area around the machine free from fluff and any other inflammable materials or substances.**

## 8.1. Control panel

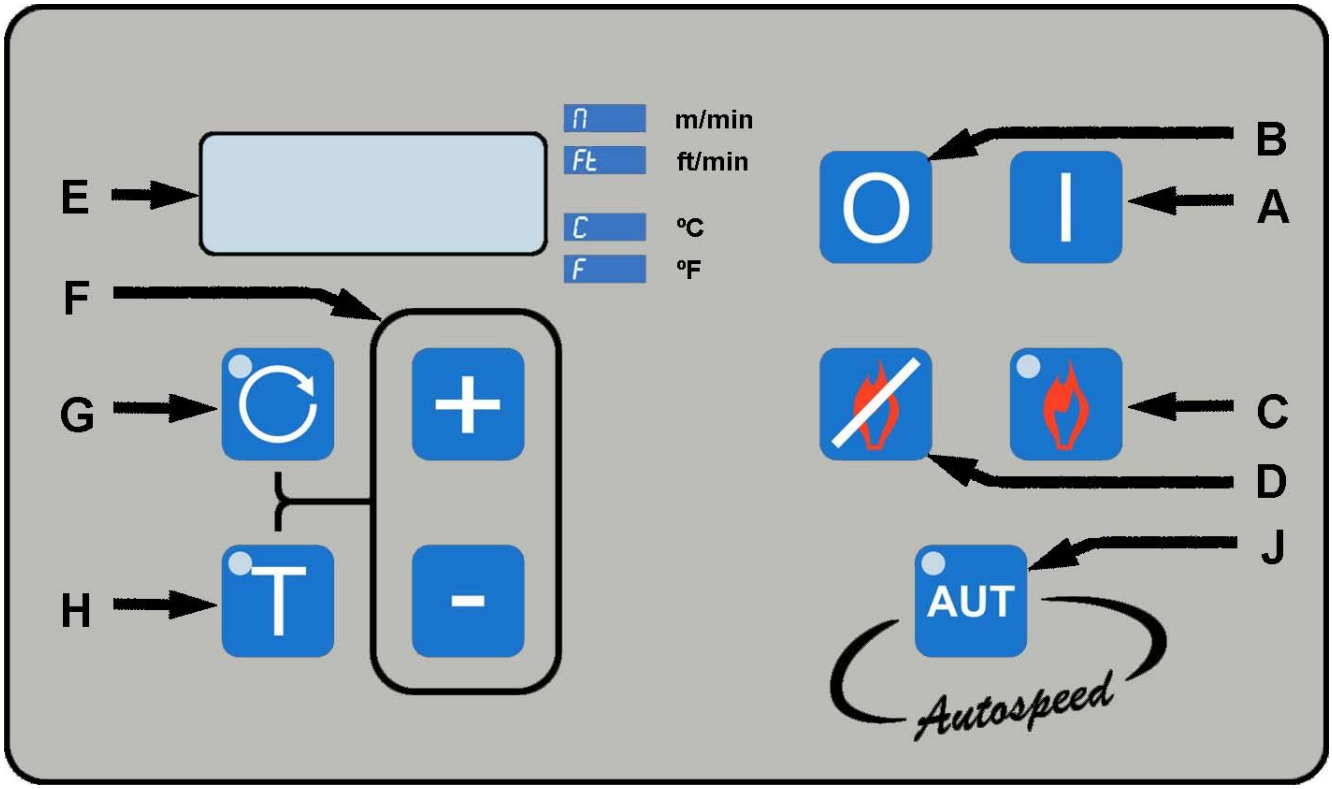



Fig. 8.1

**Description of the control panel** (Fig. 8.1)

**A ->** START button
**B->** STOP button
**C->** Burner ignition button (models with gas heating)
**D->** Burner off button (models with gas heating)
**E->** Display
**F->** Value selection buttons
**G->** Speed selection button
**H->** Temperature selection button

## 8.2. Modes of use

The **PB32, X13** ironer control allows two user **INTERVENTION MODES**.

**PROGRAM EXECUTION MODE**

Covers the functions or interventions aimed at:

- Selecting and executing the various ironing programs.
- Accessing information about the different functions that the ironer is executing.
- Making specific modifications to the program being executed.

Information regarding this intervention mode: section 8.4 on this manual.

**ADVANCED USE MODE**

Covers the functions or interventions aimed at:

- Modifying or displaying the content of the ironing programs.
- Consult the software version for the ironer and the contents of the different program meters.
- Modifying the general operating parameters.
- Modifying the access code for Advanced use mode.
- Setting the time of the system clock.

Information regarding this intervention mode: section 8.5 on this manual.

## 8.3. Stop modes

### 8.3.1. Normal machine stopping

**PRESS** O **KEY**. The heating system is turned off. The ironer enters a cooling situation: the rotation speed is reduced and the extractor fan is kept running while the roll temperature exceeds 100º C (202º F).
When the temperature falls below this value, the rotation of the roll is halted, the extractor halts and the main menu icons are displayed on the screen.

### 8.3.2. General Stop

Disconnecting the mechanically lockable isolator switch, located on the base-frame side cover. COMPLETELY disconnects the machine from the power supply. Its use is recommended for maintenance interventions and in situations of prolonged machine stoppage.

**Mechanically locking switch breaker**
Set the switch breaker at the **" 0"** position.
Fit a padlock on the opening to prevent the switch breaker being handled by others.

**CAUTION!**

**ONCE THE SWITCH BREAKER HAS BEEN MECHANICALLY LOCKED, OPENING THE BASE-FRAME SIDE COVER IS NO LONGER POSSIBLE**.

### 8.3.3. Emergency stop devices

**EMERGENCY STOP BUTTON.** The machine is fitted with an emergency stop identified by a red button on a yellow background located on the front right base-frame. The function of this device is to stop all machine functions immediately and to KEEP them stopped.

**To activate the emergency stop:**
Press in the emergency stop button from the front. An audible warning is produced and **ALM/EMER** appears on the display.

**To continue the operation:**
Release the emergency stop by making a quarter turn in the direction of the arrow shown on the button itself.
Press the O key on the multifunction keyboard to deactivate the sound alarm and then press I to resume operation.

**HAND GUARD.** The hand guard consists of a swinging motion guard on the front of the machine to prevent the hands reaching towards the roll.
Pushing or pulling the aforementioned moving guard immediately STOPS the rolls from rotating. The machine will remain in this state until being operated again.
The hand guard stop is also assigned to operate as a safety stop from any part of the introduction zone.

**To activate the hand guard stop:**
Press directly on the bottom part of the guard. An audible warning is produced and alarm message appears on the display.

To deactivate the audible warning press the key O.

**To continue the operation:**
Release the guard by taking the pressure off, checking it returns to its original upright position.

Press the O key to deactivate the audible warning and next the I key to renew the operation.

**CAUTION!**

**THE EMERGENCY STOP DEVICE AND THE HAND-GUARD SHOULD NOT BE USED AS A REGULAR STOPPING DEVICE FOR THE IRONER.**

**KEEP IN MIND THAT THESES DEVICES:**

- **DO NOT STOP THE INERTIAL MOVEMENT OF THE FANS.**
- **DO NOT CANCEL NOR REDUCE THE TEMPERATURE OF THE MACHINE.**
- **DO NOT DISCONNECT THE IRONER FROM THE ELECTRIC SYSTEM.**

## 8.4. Executing an ironing program

### 8.4.1. Initiating an ironing program

Group the fabrics together into homogeneous loads to be ironed and arrange them in a way that aids their insertion into the ironer.
Connect the energy supply system for the heating: steam or gas.
Switch on the power supply switch breaker.
The **CHECK** report is displayed on the screen. Activate the hand-guard. Remember that the correct functioning of the emergency stop buttons must be checked on a daily basis (refer to chapter 13. Maintenance).
The **Pr-1** report is displayed on the screen.

Use the + - keys to select another program.

Press the I key to start the selected program.

This starts the rotation of the roll and turns on the heating system, provided that the programmed temperature is higher than the temperature of the roll.
Until the roll temperature value first reaches the programmed temperature, the **CooL** message is displayed alternately with the number of the program running.

While the program is running, the user can view and modify the values for the program running (see Section 8.4.2).

### 8.4.2. Making specific operating changes as a program is running

By pressing the keys on the control panel, the user can modify the values of the program parameters. The new settings will remain in memory until the program ends.

**Parameters that can be selected:**

- Roll speed
- Programmed ironing temperature
- Automatic roll speed control
- Stopping and reversing the heating system

Press the buttons indicated to view and/or modify operating options.
The LED associated with the key indicates the selected parameter.

**Roll speed**

View the programmed roll speed.

**M** : Roll speed in metres/minute
**Ft** : Roll speed in feet/minute

When viewing the speed, the + - keys can be used to **make particular changes** to the speed of the roll.

**Programmable ranges:**

| LS models | HS models |
|---|---|
| **M:** 1.0 – 5.0 m/min<br>**Ft:** 4 – 41ft/min | **M:** 1.0 – 11.0 m/min<br>**Ft:** 4 – 52 ft/min |

When operating with automatic speed control (**AUT** selection), this option displays the REAL operating speed but does not allow it to be changed.

**Programmed ironing temperature**

**C** : temperature in degrees Celsius
**F** : temperature in degrees Fahrenheit

When viewing the temperature, the + - keys can be used to **make particular changes** to the programmed temperature of the roll.

**Programmable ranges:**

**C** : 70 – 170 ºC.
**F** : 160 – 340 ºF.


**Automatic roll speed control**

When automatic roll speed control is activated, the system automatically adjusts for optimum drying of the linen.

Press the AUT key to activate or deactivate this function.
When the LED is lit, the automatic control is activated.

**Stopping the heating system**

Pressing this key deactivates the heating system.
The LED corresponding to the **Start Heating System** key remains unlit.

**Starting the heating system**

Pressing this key activates the heating system.
The heating system will then turn on according to the programmed temperature.

**Start key LED indication**

LED on .....: heating system activated and operating.
LED flashing.....: the heating system is activated but temporarily stopped because the programmed temperature has yet to be reached.
LED off .....: heating system deactivated.

## 8.5. Advanced use mode

The ADVANCED USE MODE offers some menus, which allow the modification of programs contents, the modification of operating parameters, the modification of the access code, etc.

The ADVANCED USE MODE is made up of the menus defined in the following chart.

| MENU | PURPOSE | SECTION |
|---|---|---|
| **Pro** | Modification of the program contents | 8.5.2 |
| **InFO** | Information menu | 8.5.3 |
| **Mod** | Modification of the operation parameters | 8.5.4 |
| **NCod** | Modifying of the access code | 8.5.5 |

### 8.5.1. Access to the advanced mode

Switch on the power supply switch breaker.
The **CHECK** report is displayed on the screen. Activate the hand-guard.
The **Pr-1** report is displayed on the screen.

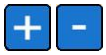
Press and hold down the  key until the **Cod** report appears on the display.
Enter the access code into the menus by pressing the sequence of eight keys of the code without interruption.
In basic configuration (when the machine is delivered) the access code to ADVANCED MODE is: **12341234**.

**Numerical equivalence of the key symbols:**

To enter the numerical code, apply the equivalence set out in the following table:

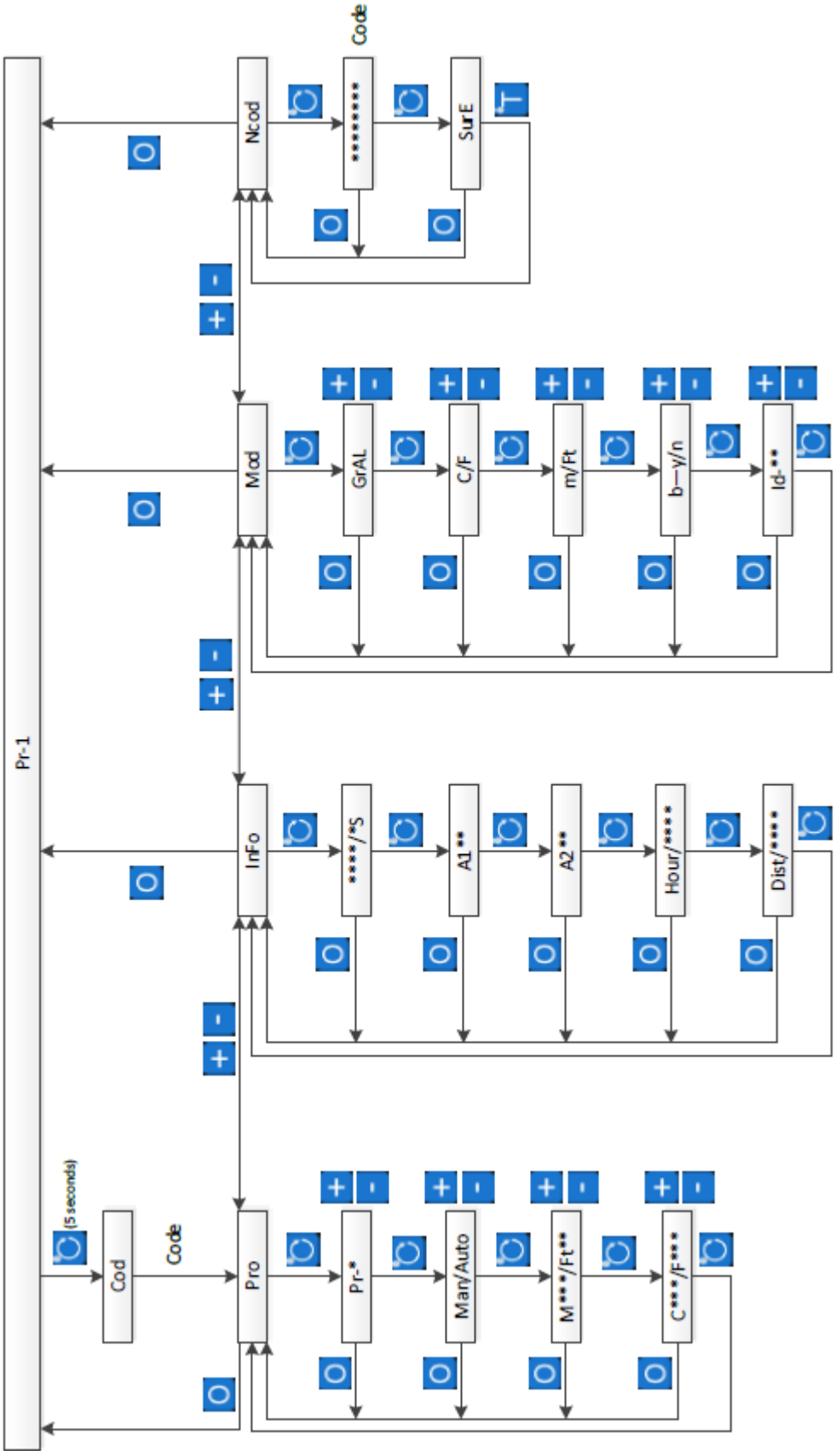
| KEY | NUMERICAL EQUIVALENCE |
|---|---|
|  | **1** |
|  | **2** |
|  | **3** |
|  | **4** |

If the sequence entered is correct, the display will show **Pro**, corresponding to the first menu. ADVANCED MODE.

The  keys allow the user to select the precedent table menus. The menu selected is shown on the display following its keyword. To enter in it, press the  key when displaying it.

If wished to skip the ADVANCED MODE, press  repeatedly to return to program execution mode.

### 8.5.2. Advanced mode flowchart



### 8.5.3. Modifying the contents of programs. Menu Pro

The ironer allows for ten ironing programs with pre-recorded content.
The content of all programs is initially the same.

**Initial program content**

| PARAMETER | GENERAL CONFIGURATION | USA CONFIGURATION |
|---|---|---|
| SPEED CONTROL | MANUAL | MANUAL |
| ROLL SPEED | 5.0 m/min | 16 Ft/min |
| IRONING TEMPERATURE | 160ºC | 320ºF |

However, the content of each program can be modified to adapt it to the different ironing applications.

**Program modification sequence**

Access the ADVANCED MODE of use (Section 8.5.1). The display shows **Pro**.

Press the key to access the program modification menu.

The display shows **Pr-1**. Ready to modify Program 1. The + - keys allow the user to select an other program. Press the key to access the modification of the displayed program.

**Roll speed control**
This allows the user to select the speed control mode.

| OPTIONS | MEANING |
|---|---|
| **MAn** | This keeps the programmed speed unchanged |
| **AuTo** | The roll speed is automatically adjusted to ensure optimum ironing |

The + - keys allow the desired option to be selected.

The key validates the displayed selection and allows the user to access to the following programmable function.

**Roll rotation time in seconds**
This allows the user to select the roll rotation speed.

| OPTIONS | MEANING |
|---|---|
| **M 1.0 – 5.0**<br>**Ft 4 – 41** | Programmable speed range in HS models |
| **M 1.0 – 11.0**<br>**Ft 4 – 36** | Programmable speed range in MS models |

The + - keys allow the desired speed to be selected.

The key validates the displayed selection and allows the user to access to the following programmable function.

**Ironing temperature**
This allows the user to select the ironing temperature.

| OPTIONS | MEANING |
|---|---|
| **C 70 – 170** | Programmable temperature range in degrees Celsius |
| **F 160 – 340** | Programmable temperature range in degrees Fahrenheit |

The + - keys allow the desired temperature to be selected.

The key validates the displayed selection and allows the user to access to the following programmable function.

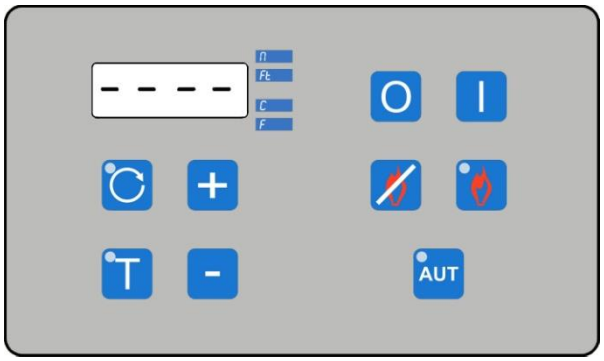
Once the modification of a program has been finalised, the screen will display the **Pro** report.
Pressing once on the key allows the user to exit the ADVANCED MODE.

### 8.5.4. Indicating preferable ironing area — "OPTIFEED"

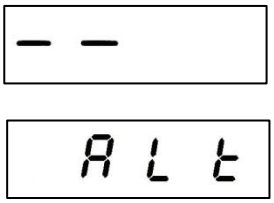
When the ironer control unit detects temperature differences between areas of the roll, a symbol is displayed on screen indicating the areas where ironing is preferable.

Following these instructions prevents the roll from overheating and improves the machine's output.

When the temperature of the roll evens out, the ironing area indication symbol is no longer displayed.

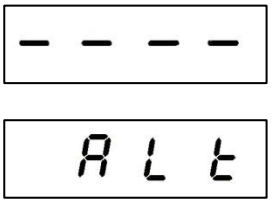



**Indicates:** Ironing is preferable in the left-hand area.
They are displayed alternately.




**Indicates:** Ironing is preferable in the right-hand area.
They are displayed alternately.


**Indicates**: Ironing is preferable on both sides.
They are displayed alternately.



### 8.5.5. Information menu. Info menu

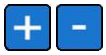
| PARAMETERS | MEANING |
|---|---|
| **** | Ironer model according to attached code |
| EP** | Software version |
| A2** | A2 board software version |
| Hour **** | Operating hours |
| diSt | Linear distance travelled by the roll<br>Units in accordance with the **Area of use** parameter in Mod mode:<br>- Area of use **GrAL** -> unit: **km**<br>- Area of use **USA** -> unit: **ML** |

Access the ADVANCED USE MODE. Section 8.5.1. The display shows **Pro**.

Press key  . The display shows **INFO**.

Press the  key to sequentially access the listing of the different parameters and the values of the corresponding counters.

Once the last option is listed, press the  key. The display shows **INFO**.

The  keys allow the user to access to other menus.

To exit the ADVANCED MODE press the  key.

**Ironer models**

| MODELS | | REPORT ON DISPLAY |
|---|---|---|
| CE | PB3215 - LS | 3215 / LS |
| | PB3221 - LS | 3221 / LS |
| | PB3215 - HS | 3215 / HS |
| | PB3221 - HS | 3221 / HS |
| USA | X13061W | 1361 / HS |
| | X13084W | 1385 / HS |

**Resetting the counters**

On displaying the number of operating hours or the distance travelled, the counter can be reset.

When the value is displayed, press the  key. The **SURE** message is displayed, requesting confirmation of the reset order.

To confirm, press the  key.

### 8.5.6. Modifying the operating parameters. Mod menu

The **Mod** menu allows the user to modify the operation parameters of all the programs.
The modifications carried out from **Mod** menu affects all programs.

**Summary table of the changeable parameters**

| MODIFICATION OF | PARAMETER | OPTIONS | CE | USA |
|---|---|---|---|---|
| Field of usage | **GrAL** | General area of use | ← | |
| | **USA** | USA/CANADA area of use | | ← |
| Temperature unit | **C** | Temperature unit in degrees Celsius | ← | |
| | **F** | Temperature unit in degrees Fahrenheit | | ← |
| Speed unit linear | **M** | Metres per minute | ← | |
| | **Ft** | Feet per minute | | ← |
| Buzzer | **b- - 0** | No buzzer | | |
| | **b- - 1** | Yes, buzzer | ← | ← |
| Network identifier | **Id-0** | Disabled communication | ← | ← |
| | **Id-1..99** | Enabled communication | | |

← Indicates default option following configuration.

**Parameter modification sequence**

Access to ADVANCED USE MODE. Section 8.5.1. The display shows **Pro.**

Press the + key twice. The display shows **INFO, Mod** successively.

Press ↻ key to display the first parameter.

**Field of use of the ironer**
Adapts the operating parameters to the specific area of use.

| OPTIONS | MEANING |
|---|---|
| **GrAL** | General area of use |
| **USA** | USA/CANADA area of use |

The + key allows the user to modify the option displayed.

The ↻ key validates the selection on the display and allows the user to access the following programmable function.

**Temperature unit**
The ironing temperature can be displayed in degrees Celsius or Fahrenheit.

| OPTIONS | MEANING |
|---|---|
| **C** | Temperature unit in degrees Celsius |
| **F** | Temperature unit in degrees Fahrenheit |

The + key allows the user to modify the option displayed.

The ↻ key validates the selection on the display and allows the user to access the following programmable function.

**Unit of linear speed**
This allows the user to select the unit in which the linear speed of the roll is displayed.

| OPTIONS | MEANING |
|---|---|
| **M** | Linear speed in metres per minute |
| **Ft** | Linear speed in feet per minute |

The  key allows the user to modify the option displayed.
The  key validates the selection on the display and allows the user to access the following programmable function.

**Buzzer**
This allows the user to activate or deactivate the buzzer.

| OPTIONS | MEANING |
|---|---|
| **b- - 0** | No buzzer |
| **b- - Y** | Yes, buzzer |

The  key allows the user to modify the option displayed.
The  key validates the selection on the display and allows the user to access the following programmable function.

**Network identifier**
This parameter assigns a network identifier to the ironer. This identifier enables the communication of the ironer with the environment through a protocol based on RS-485.
Selected option by default: **Id-0.**

| OPTIONS | MEANING |
|---|---|
| **Id-0** | Disabled communication |
| **Id-1..99** | Enabled communication |

For further information, see the Communication Protocol Instruction Manual.

The  key allows the user to modify the option displayed.
The  key validates the displayed selection and allows the user to access to the **Mod** menu.

### 8.5.7. Code for accessing the ADVANCED MODE. Ncod menu

As described in Section 8.5.1 the access to ADVANCED MODE is restricted by an access code.
This code can be modified by the user if so desired.
The code must always contain a combination of EIGHT numbers.

**Modifying of the access code**
Access to ADVANCED USE MODE. Section 8.5.1. The display shows **Pro**.

Press the + key three times. The display shows **INFO, Mod, NCod successively.**

Press the ↻ key to set a new code. All the information on the display will disappear.
Enter a combination of eight-digits according to the following numerical equivalence:

| KEY | NUMERICAL EQUIVALENCE |
|---|---|
| ↻ | 1 |
| + | 2 |
| T | 3 |
| - | 4 |

At the end of the sequence the **SURE** report will be shown.

Confirm the new code with the key T.

If you don't want to validate the code, press the O key.
In both cases, the display will show **Ncod**.

The + - keys allow the user to access to other menus.

To exit the ADVANCED MODE press the O key.

**NOTE**
If you forget the modified code, call the Service Department to restore the original code.

## 9. PERSONAL PROTECTION WEAR

**DANGER!**

**TO AVOID THE RISK OF BEING CAUGHT UP IN THE MACHINE'S MOVING PARTS IT IS ESSENTIAL:**

- **FOLLOW THE LEGISLATION AND REGULATIONS FOR HEALTH AND SAFETY IN THE WORKPLACE IN FORCE IN THE COUNTRY WHERE THE MACHINE HAS BEEN INSTALLED.**
- **SUITABLE FITTED CLOTHING TO BE WORN.**
- **SCARVES, TIES, NECKERCHIEFS, LOSE GARMENTS, OPEN CARDIGANS, HANGING BELTS, WIDE SLEEVES, ETC. MUST NOT BE WORN.**
- **WEAR SOME TYPE OF HAIR CLIP.**
- **AVOID WEARING JEWELLERY OR ACCESSORIES ON THE HANDS, ARMS, NECK, ETC.**
- **DO NOT USE THE MACHINE WITHOUT ALL THE COVER AND SAFETY GUARDS CORRECTLY IN PLACE.**
- **DISCONNECT THE POWER SUPPLY AND CLOSE OFF THE SOURCES OF HEATING VALVES BEFORE REMOVING ANY FORM OF PROTECTION.**

**DANGER!**
**ON EMERGING FROM THE IRONER, THE LINEN IS AT A HIGH TEMPERATURE.**
**PROTECT HANDS WITH HEAT-INSULATED GLOVES.**

## 10. UNEXPECTED INTERRUPTION OF THE POWER SUPPLY AND PROLONGED HALT

In the case of a sudden loss of the power supply the machine stops.
Once the power supply has been reconnected, the **CHECK** report is displayed. (To resume work, follow the directions set out in the respective **OPERATION AND USE** chapters.)

### 10.1. Protection against burnt linen and ironing straps

In the event of an unexpected shutdown of the machine, and in order to prevent deterioration of the linen at that time in contact with the roll or ironing straps, the ironer is equipped with a crank handle that allows the roll to be rotated manually.

Once the items of linen in contact with the roll have been extracted, if the roll temperature is very high, a wet sheet should be passed through the whole roll by operating the handle, in order to protect the ironing straps.

The handle is located at the rear of the ironer (Fig. 10.1).

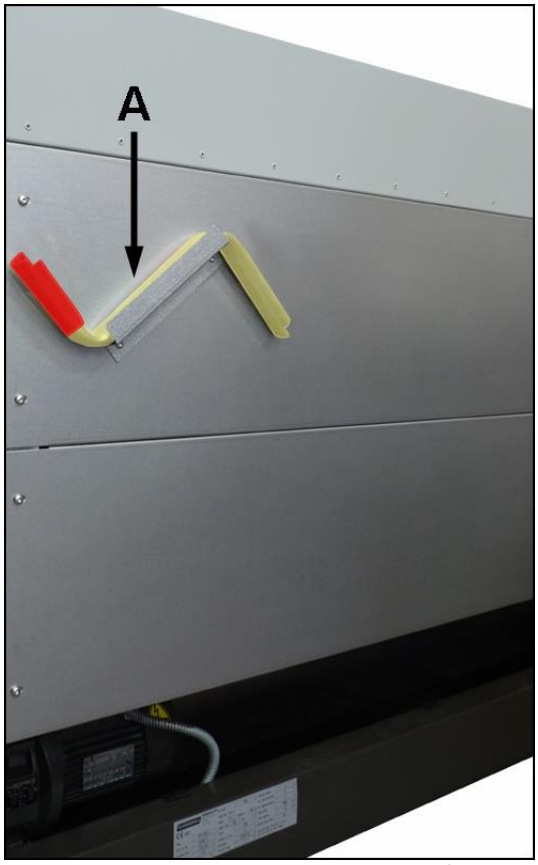


Fig. 10.1

**PB32, X13 models**

1. Turn off the automatic external switch.

2. Insert the helical end of the crank handle through the opening in the top left-hand side cover of the machine and insert it into the end of the internal shaft (Fig. 10.2).

3. Turn the handle in the direction of the arrow. The roll will rotate in the ironing direction, and the ironing straps and the linen input straps will move towards the inside of the ironer.

4. **VERY IMPORTANT!!! Before resuming operation of the machine, remove the handle and store it in its support at the rear of the machine (Fig. 10.1).**


Fig. 10.2

**PB51, X20 models**

1. Turn off the automatic external switch.

2. Insert the red end of the crank handle through the opening in the top left-hand side cover of the machine and insert it into the end of the internal shaft (Fig. 10.3).

3. Turn the handle in the direction of the arrow. The roll will rotate in the ironing direction, the ironing straps and the linen input straps will move towards the inside of the ironer.

   NOTE: For PB/PBP51 models prior to machine number 2,190,306 and X20***W/F models prior to machine number 2,210,033, turn the handle in the direction of the arrow. (Fig 10.3). The roll will rotate in the ironing direction, the ironing straps and the linen input straps will move towards the inside of the ironer.

4. **VERY IMPORTANT!!! Before resuming operation of the machine, remove the handle and store it in its support at the rear of the machine (Fig. 10.1).**

Fig. 10.3

**Handle decoupling**

The roll rotation crank handle is equipped with a helical end, causing it to decouple from the shaft should the machine start up unexpectedly, thereby avoiding possible accidents.

## 10.2. Prolonged stoppages

In the case of the machine being out of use for a prolonged length of time and to avoid corrosion of the roll surface, we recommend to place a piece, folded in half and impregnated with paraffin, inside the machine numerous times. This operation must be carried out when the ironer is at a suitable temperature (minimum of 130°C, 260ºF) to allow for the paraffin to liquefy.

## 11. FREEING A TRAPPED PERSON

**The ironer's linen feeder is designed to prevent access to the ironing rollers.**
**FOR SAFE USE OF THE IRONER IT IS ESSENTIAL TO MAKE SURE THE SAFETY GUARDS ARE WORKING PROPERLY.**
**For this reason:**

- **NEVER START THE MACHINE UP OR USE IT UNTIL ALL THE COVERS HAVE BEEN REPLACED AND PROPERLY LOCKED.**
- **CHECK THE HAND PROTECTION DEVICE ON A DAILY BASIS.**
- **USE THE PERSONAL PROTECTION EQUIPMENT DESCRIBED IN CHAPTER 9.**

**PROCEDURE IN THE EVENT OF ENTRAPMENT OF A PERSON OR AN ANIMAL BY THE IRONER**

### 11.1. PB32, X13 model

1. Press the **EMERGENCY STOP** button.
2. Disconnect the switch breaker from the machine's power supply.
3. Remove the two screws (**A**, Fig. 11.1) securing the ironer's front cover (one at each end of the cover).

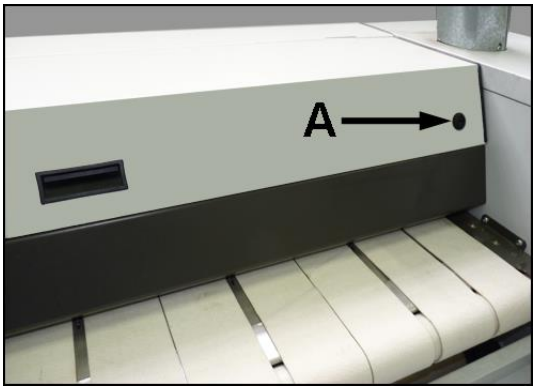



Fig. 11.1

4. Move the bar activating the release mechanism in the direction of the arrow (Fig. 11.2). The pressure roller will move and reduce the tension of the ironing straps.

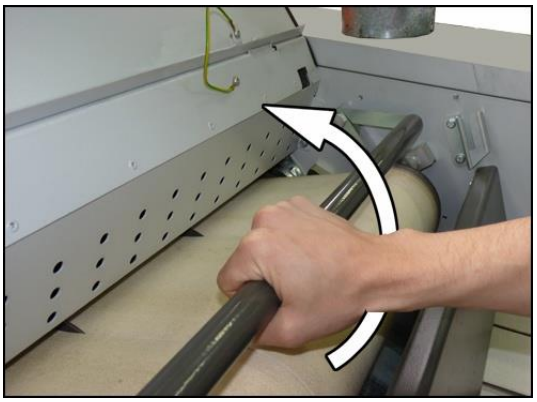


Fig. 11.2

## 11.2. PB/PBP51, X20 model

**The quickest way to free a trapped item is by rotating the pressure roller in the opposite direction to the entry of the linen, using the handle provided with the ironer. Only in cases where this system does not solve the problem will it be necessary to slacken the pressure roller.**

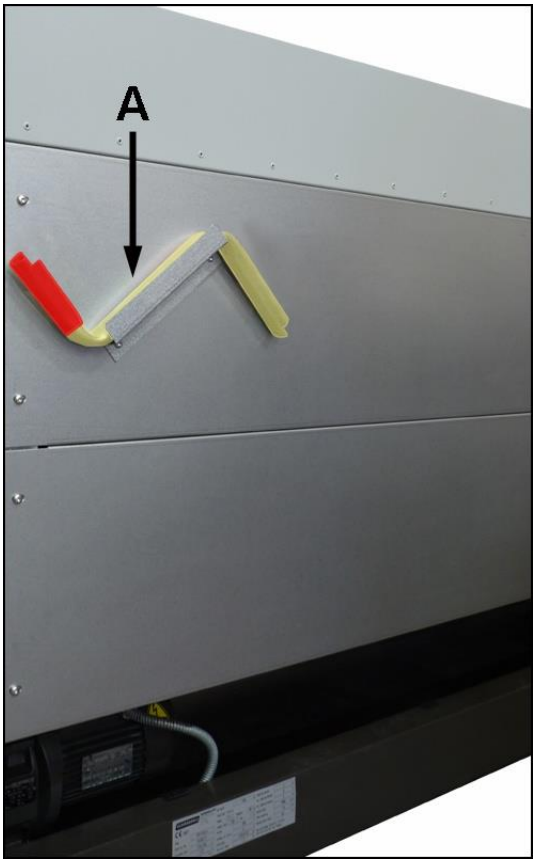


Fig. 11.3

### 11.2.1. Turning the pressure roller using the crank handle

- Press the **EMERGENCY STOP** button.
- Disconnect the **SWITCH BREAKER** from the machine's power supply.
- Locate the crank handle at the rear of the ironer (**A**. Fig. 11.3).
- Hold the manual crank handle by the red area and insert the opposite end through the opening in the top left-hand side cover of the machine and insert it into the end of the internal shaft (Fig. 11.4).
- Turn the handle in the direction of the arrow. The roll will rotate in the reverse direction to the ironing direction, and the ironing straps and the linen input straps will move towards the outside of the ironer.

NOTE: For PB/PBP51 models prior to machine number 2,190,306 and X20***W/F models prior to machine number 2,210,033, turn the handle in the direction of the arrow. (Fig 11.4). The roll will rotate in the reverse direction to the ironing direction, and the ironing straps and the linen input straps will move towards the outside of the ironer.


Fig. 11.4

**VERY IMPORTANT!!! Before resuming operation of the machine, remove the handle and store it in its support at the rear of the machine** (Fig. 11.3).

### 11.2.2. Releasing the pressure roller

If the pressure roller needs to be released, follow the steps described below:

Remove the ironer's rear covers by removing the securing screws: four screws on the right side (**A**, Figure 11.5) and four on the left side.

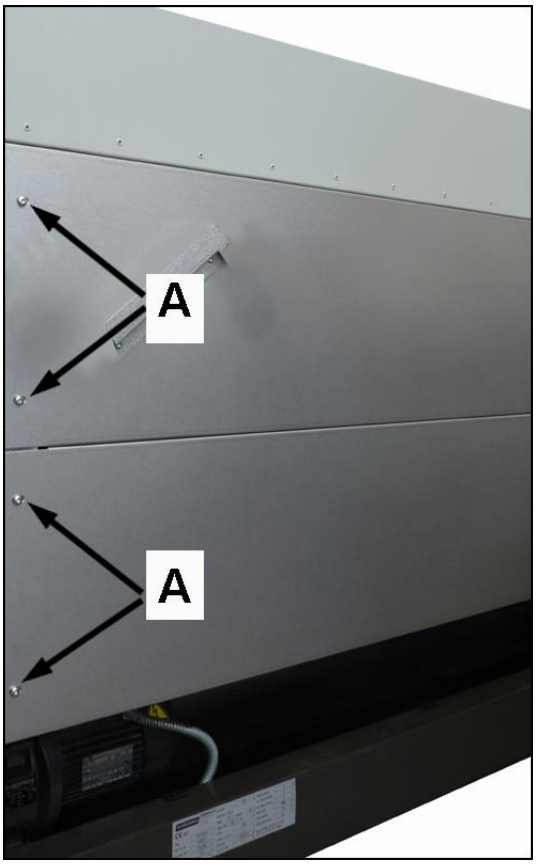



Fig. 11.5

Support the tensioner roller to reduce the tension of the ironing straps (Fig. 11.6)

Another option is to remove it from the machine by sliding it to one side.

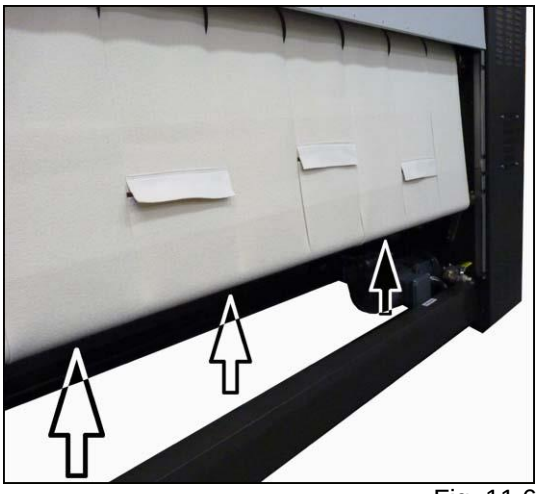


Fig. 11.6

Remove the top cover securing screws **A** and lift the cover upwards (Fig. 11.7)

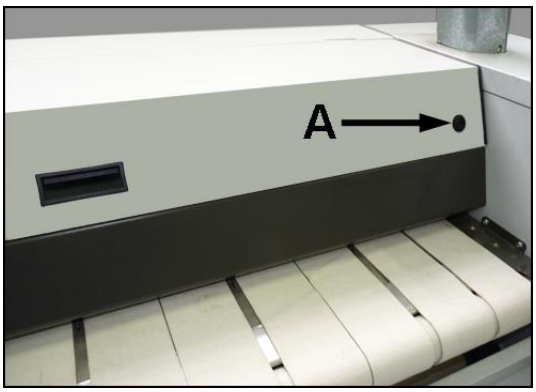



Fig. 11.7

Remove the hand guard securing screws. The screws are located at the ends of this component. (Fig. 11.8)

Separate the machine's hand guard by pushing it upwards.

Fig. 11.8

Pull the pressing roll towards the front of the machine to reduce the pressure on the ironing roller. (Fig. 11.9)

Fig. 11.9

## 12. ALARMS

To increase safety levels in operating the flatwork ironer and to protect the main elements in the process, the microprocessor has the capacity to detect the presence of the most significant malfunctions if they should by any chance occur. An audible warning is automatically activated once the alarm is triggered.

Once an alarm is detected, press the key ?. The display will show the report corresponding to the alarm.
Press the STOP key to cancel the alarm.

**For AGA machines only:**

Once an alarm is detected, press the key ?. The display will show the report corresponding to the alarm.
Press the STOP key to cancel the alarm.
In the case of an alarm associated with the burner, the burner control LED will remain red. To cancel the alarm, press the burner control button for two seconds and then press the STOP button on the display to cancel the alarm.

Whilst the malfunction persists the alarm cannot possibly be cancelled.

**CAUTION!**
**Procedure in the event of an alarm**
Any procedure aimed at rectifying the fault provoking an alarm that involves removing the protection covers has to be performed by the Customer's Technical Assistance Service or by the Authorised Technical Assistance Service, and never by the user of the machine.
Never carry out an intervention that is not described in this section.

**WARNING!**

**BEFORE COMMENCING ANY PROCEDURE WHICH INVOLVES REMOVING THE PROTECTION COVERS:**

- **DISCONNECT AND MECHANICALLY LOCK THE MACHINE'S SWITCH BREAKER.**
- **CLOSE AND MECHANICALLY LOCK THE MANUAL VALVES FOR THE SOURCES OF HEATING.**
- **WAIT A MINIMUM OF FIVE MINUTES TO ELIMINATE THE RISK OF ANY RESIDUAL VOLTAGE AND TO ENSURE THERE ARE NO MOVING PARTS.**
- **CHECK THAT WITH TEMPERATURE OF THE MACHINE THERE RUNS NO RISK TO CARRYING OUT THE PROCEDURES.**

### 12.1. List of main alarms:

| **PB/PBP51, X20** | **1.- EMERGENCY STOP** |
|---|---|
| **PB32, X13** | **ALM / EMER** |
| Emergency Stop button activated | |
| **Probable cause:**<br>Emergency Stop activated | |
| **Procedure:**<br>Release the Emergency Stop button.<br>Press: the STOP key and next the START key to start the machine.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 2.- A2 BOARD COMMUNICATION FAILURE |
|---|---|
| PB32, X13 | ALM / A2CO |
| Communication fault between the microprocessor and the A2 input-output board. | |
| **Probable cause:**<br>Wiring fault<br>Fault on the corresponding boards | |
| **Procedure:**<br>Disconnect the machine from the power supply and reconnect it.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 3.- HAND-GUARD ACTIVATION |
|---|---|
| PB32, X13 | ALM / HG |
| Hand protection guard activated | |
| **Probable cause:**<br>Hand protection guard activated | |
| **Procedure:**<br>Check the position of the hand guards and press: the STOP key and next the START key to start the machine.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 4.- A2 BOARD RESET |
|---|---|
| PB32, X13 | ALM / A2rS |
| Faulty operation of the A2 input-output board | |
| **Probable cause:**<br>Wiring fault<br>Communication fault<br>Fault on the corresponding boards | |
| **Procedure:**<br>Disconnect the machine from the power supply and reconnect it.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 5.- INVERTER COMMUNICATION FAILURE |
|---|---|
| PB32, X13 | ALM / U-00 |
| Communication fault between the ironer control microprocessor and the inverter of the ironing roll motor | |
| **Probable cause:**<br>Faulty communication between the inverter and connector X10 on board A1<br>Fault in the communication circuits | |
| **Procedure:**<br>Disconnect the machine from the power supply and reconnect it.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 6.- GENERAL INVERTER FAILURE (**) |
|---|---|
| PB32, X13 | ALM / U-** |
| Alarm triggered by the inverter | |
| **Probable cause:**<br>See expanded description of possible causes in additional information in Section 12.2. In brackets, identification of the possible cause of the alarm according to the above table. | |
| **Procedure:**<br>Disconnect the power supply from the machine and reconnect after five minutes.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 7.- INVERTER CONFIGURATION FAILURE |
|---|---|
| PB32, X13 | ALM / U-9 |
| Lack of concordance between the inverter operating parameters and the microprocessor memory parameters | |
| **Probable cause:**<br>Inverter not initialised<br>Accidental modification or loss of the inverter configuration parameters | |
| **Procedure:**<br>Disconnect the power supply from the machine and reconnect after five minutes.<br><br>**Operations reserved for Customer's Technical Assistance Service**<br>Repeat the inverter parameters programming.<br>If fault persists or is frequently repeated, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 8.- NOT RESETTABLE BURNER ALARM |
|---|---|
| PB32, X13 | ALM / BloC/noRS |
| Alarms triggered by the burner, which due to their importance remain in memory and cannot be cancelled. | |
| **Probable cause:**<br>Alarm overlaps | |
| **Procedure:**<br>The ironer will begin an automatic cooling process.<br>Once this has completed, disconnect the power supply from the machine and reconnect after five minutes.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve.<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 9 .- SAFETY THERMOSTAT ALARM |
|---|---|
| PB32, X13 | ALM / tS |
| (This alarm only occurs on machines with steam or electric heating)<br>Overheating detected by the safety thermostat (S5) | |
| **Probable cause:**<br>Fault in the ironing temperature control probes.<br>Fault in the safety thermostat | |
| **Procedure:**<br>Close the manual gas inlet valve (machines heated with gas).<br>The ironer will begin an automatic cooling process.<br>Once it has finished, disconnect the power supply.<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 10.- GAS BURNER GENERAL FAILURE |
|---|---|
| PB32, X13 | ALM / bLoC |
| (This alarm only occurs on machines with gas heating)<br>Persistent detection of a faulty flame | |
| **Probable cause:**<br>Fault in the gas supply<br>Fault in the burner, in the ignition or ionisation electrodes, or in the connection wiring<br>Poorly adjusted burner or primary air supply<br>Excessive suction<br>Fault in the electrode<br>Air pressure switch pipe clogged (AGA)<br>Disconnection of the safety thermostat **S5** | |
| **Procedure:**<br>Check that the gas inlet valve is open.<br>Do not disconnect the machine's power supply.<br>Clean the motor's exhaust ducts or components (AGA).<br>After a period of not less than 90 seconds, press the STOP button to turn off the alarm and repeat the program startup.<br>If the problem persists: Close the manual gas inlet valve. The ironer will begin an automatic cooling process.<br>Once it has finished, disconnect the power supply.<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 11 .- HEATING CONTROL ALARM |
|---|---|
| PB32, X13 | ALM / FirE |
| (This alarm only occurs on machines with electric heating)<br>Faulty disconnection of the heating system | |
| **Probable cause:**<br>Fault in the contactor(s) controlling the heaters<br>Permanent power supply to the contactors | |
| **Procedure:**<br>The ironer will begin an automatic cooling process.<br>Once it has finished, disconnect the power supply.<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 12 .- HEATING CONFIGURATION ERROR |
|---|---|
| PB32, X13 | ALM / HEAT |
| Inconsistency between the configuration of the machine and the signals received in the microprocessor | |
| **Probable cause:**<br>Error in the configuration<br>Fault in the A2 control boards | |
| **Procedure:**<br>Disconnect the power supply from the machine and reconnect after five minutes.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 13.- OVERHEATING ROLL |
|---|---|
| PB32, X13 | ALM / Hot |
| Ironing temperature higher than the programmed temperature | |
| **Probable cause:**<br>Fault in the roll temperature sensors<br>Fault in the gas valve (machines with gas heating)<br>Permanent power supply to the gas valve (machines with gas heating). | |
| **Procedure:**<br>Close the manual gas inlet valve (machines with gas heating).<br>The ironer will begin an automatic cooling process.<br>Once it has finished, disconnect the power supply.<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 14, 15, 16.- TEMPERATURE PROBE * ALARM |
|---|---|
| PB32, X13 | ALM / Pro* |
| Roll temperature control probe open circuit<br>In models with three temperature probes, the order of the probes is from left to right (front view). | |
| **Probable cause:**<br>One of the sensors has an open circuit | |
| **Procedure:**<br>Close the manual gas inlet valve (machines heated with gas).<br>The ironer will begin an automatic cooling process.<br>Once it has finished, disconnect the power supply.<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 17 .- TEMPERATURE FAILURE ALARM |
|---|---|
| PB32, X13 | ALM / C |
| After the heating system has been on for a period of time, it fails to reach the ironing temperature. | |
| **Probable cause:**<br>Fault in the gas pressure (machines with gas heating). If a pressure gauge has been fitted at the ironer input, check the supply pressure.<br>Insufficient heating power due to a faulty circuit or electrical resistor (ironers with electric heating)<br>**AGA machines only:**<br>Malfunction of relay KA1.<br>Malfunction of relay KA2.<br>Fault in the safety thermostat (S10). | |
| **Procedure:**<br>Close the manual gas inlet valve (machines heated with gas).<br>The ironer begins an automatic cooling process.<br>Once it has finished, disconnect the machine from the power supply.<br>Contact the Authorised Technical Service or the Authorised Installation Company depending on the ironer model (depending on type of heating). | |

| PB/PBP51, X20 | 18.- ENCODER FAILURE |
|---|---|
| PB32, X13 | ALM / Cod |

Inadequate encoder information or lack of information

**Probable cause:**
Fault on the encoder
Fault on the connection wiring
Fault in the A2 board

**Procedure:**
The ironer begins an automatic cooling process.
Once it has finished, disconnect the machine from the power supply and reconnect it.
If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).
Contact Authorised Technical Services.

| PB/PBP51, X20 | 19.- EXHAUST MOTOR OVERHEATING ALARM |
|---|---|
| PB32, X13 | ALM / E_TA |

Disconnection of the exhaust fan motor thermal protector (F1)

**Probable cause:**
Over-consumption of the motor due to electrical fault, faulty refrigeration, mechanical seizing

**Procedure:**
The ironer begins an automatic cooling process.
Once it has finished, disconnect the machine from the power supply.

**Operations reserved for Customer's Technical Assistance Service**
Check that the power supply to the machine is disconnected.
Clean the motor's extraction ducts or components and reconnect the power supply to the machine.
If the anomaly persists, the ironer begins an automatic cooling process.
Once this has completed, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).
Contact Authorised Technical Services.

| PB/PBP51, X20 | 20 .- EXHAUST PRESSURE ALARM |
|---|---|
| PB32, X13 | ALM / E_Pr |

Lack of pressure in the extraction duct

**Probable cause:**
Disconnection of the exhaust motor's automatic switch (Q2)
Fault in the exhaust motor
Blockage in the exhaust fan or duct
Air pressure switch pipe clogged (AGA machines only)

**Procedure:**
The ironer begins an automatic cooling process.
Once it has finished, disconnect the machine from the power supply.

**Operations reserved for Customer's Technical Assistance Service**
Check that the power supply to the machine is disconnected.
Clean the motor's exhaust ducts or components.
If necessary reset the automatic circuit breaker and reconnect the power supply to the machine.
If the anomaly persists, the ironer begins an automatic cooling process.
Once this has completed, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).
Contact Authorised Technical Services.

| PB/PBP51, X20 | 21 .- FOLDER CONTROL ALARM |
|---|---|
| PB32, X13 | Does not exist |
| (This alarm only occurs on machines with a folder)<br>Faulty folder operation | |
| **Probable cause:**<br>Disconnection of the folder motor's thermal protection<br>Fault in the folder motor or in the wiring connection<br>Mechanical obstruction of the folder operation | |
| **Procedure:**<br>The ironer will begin an automatic cooling process.<br>Once it has finished, disconnect the machine from the power supply.<br><br>**Operations reserved for Customer's Technical Assistance Service**<br>Check that the power supply to the machine is disconnected.<br>Check that there is no item of linen preventing the proper movement of the folder swinging arm and reconnect the power supply to the machine.<br>If the anomaly persists, the ironer begins an automatic cooling process.<br>Once this has completed, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 23.- ROLL MOTOR OVERHEATING ALARM |
|---|---|
| PB32, X13 | ALM / terM |
| Disconnection of the roll motor's (F6) thermal protection (M2) | |
| **Probable cause:**<br>Over-consumption of the motor due to electrical fault, faulty refrigeration, mechanical seizing, etc. | |
| **Procedure:**<br>Disconnect electricity supply.<br>Clean the motor's ventilation ducts or elements.<br>If fault persists, contact Authorised Technical Service. | |

| PB/PBP51, X20 | 24.- KM1 RELAY ALARM |
|---|---|
| PB32, X13 | ALM / rEL |
| Malfunction of relay KM1 | |
| **Probable cause:**<br>Permanently closed relay contacts due to permanent power supply from the relay coil or a mechanical fault. | |
| **Procedure:**<br>Disconnect the machine's power supply and close the manual gas inlet valve (machines with gas heating).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | 25.- A4 BOARD COMMUNICATION ALARM |
|---|---|
| A4 board communication fault | |
| **Probable cause:**<br>Wiring fault<br>Fault on the corresponding boards | |
| **Procedure:**<br>Unplug the power supply, reset the automatic trip switch and reconnect the machine to the power.<br>If fault persists, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

| PB/PBP51, X20 | MODEL ERROR |
|---|---|
| PB32, X13 | ALM / Err0 |
| Unidentified machine model | |
| **Probable cause:**<br>Reading error in model identification bridges.<br>Lack of coherence between identification bridges and machine model<br>Fault in the machine's microprocessor | |
| **Procedure:**<br>Disconnect the power supply from the machine and reconnect after five minutes.<br>If fault persists or is frequently repeated, disconnect the power supply and close the manual gas inlet valve (machines heated with gas).<br>Contact Authorised Technical Services. | |

## 12.2. Expanded information on alarms related to the inverter

On PB/PBP51, X20 ironers, the alarm code is preceded by the description. **GENERAL INVERTER FAILURE**

| ALARM CODE | | FAULT DESCRIPTION |
|---|---|---|
| **PB/PBP51, X20** | Fault 41, 42, 43 | Inverter output missing phase |
| **PB32, X13** | U-41, 42, 43 | |
| **PB/PBP51, X20** | Fault 47 | Inverter overloaded |
| **PB32, X13** | U-47 | |
| **PB/PBP51, X20** | Fault 48 | Low voltage in inverter D.C. bus |
| **PB32, X13** | U-48 | |
| **PB/PBP51, X20** | Fault 49 | Over voltage in inverter D.C. bus |
| **PB32, X13** | U-49 | |
| **PB/PBP51, X20** | Fault 50 | Short-circuit in motor or on motor connection |
| **PB32, X13** | U-50 | |
| **PB/PBP51, X20** | Fault 52 | Missing phase on inverter supply or too high voltage imbalance |
| **PB32, X13** | U-52 | |
| **PB/PBP51, X20** | Fault 55 | Inverter overheated |
| **PB32, X13** | U-55 | |
| **PB/PBP51, X20** | Fault 56 | Discharge from inverter output phase to ground |
| **PB32, X13** | U-56 | |
| **PB/PBP51, X20** | Fault 59 | Overcurrent inverter |
| **PB32, X13** | U-59 | |
| **PB/PBP51, X20** | Fault ** | Unidentified inverter failure |
| **PB32, X13** | U-** | |

## 13. MAINTENANCE

**DANGER!**

**CARRY OUT ALL THE INSPECTIONS AND TESTS REQUIRED BY THE EXISTING LEGISLATION CONCERNING GAS AND STEAM DEVICES IN FORCE IN THE COUNTRY OR AREA IN WHICH THE MACHINE IS TO BE USED, AT THE FREQUENCY DETERMINED BY THE AFOREMENTIONED LEGISLATION.**
**BEFORE MANIPULATING ANY OF THE MECHANISMS OF THE MACHINE, ENSURE THAT:**

- **THE AUTOMATIC EXTERNAL SWITCH IS DISCONNECTED.**
- **THE MACHINE'S ISOLATOR SWITCH IS MECHANICALLY LOCKED (IF NECESSARY, REMOVE THE RIGHT-HAND SIDE COVER ON MACHINES WITH ELECTRICAL HEATING. THE SWITCH MUST BE IN THE "0" POSITION).**
- **THE MANUAL GAS SUPPLY VALVE IS CLOSED AND LOCKED (machines with gas heating).**
- **THE MANUAL STEAM SUPPLY VALVE IS CLOSED AND LOCKED (machines with steam heating).**
- **THERE ARE NO PARTS IN MOVEMENT DUE TO INERTIA.**
- **THE MACHINE IS COLD THROUGHOUT.**

**ONCE ANY MAINTENANCE OPERATION HAS ENDED:**

- **FIT ALL THE COVERS ON THE MACHINE.**
- **CONNECT THE ENERGY SOURCES.**

**START AN IRONING PROGRAM AND CHECK THAT THE MACHINE IS FUNCTIONING PROPERLY.**

**CAUTION!**
**FOLLOW THE INSTRUCTIONS PROVIDED. DOING SO WILL ENSURE AN EXCELLENT SERVICE, REDUCE THE LIKELIHOOD OF FAULTS AND EXTEND THE LIFE OF THE IRONER.**
**USERS SHOULD REFRAIN FROM MAKING ANY MANIPULATIONS NOT DESCRIBED IN THE PERIODIC MAINTENANCE PROGRAMME OR WHICH ARE THE RESPONSIBILITY OF THE AUTHORISED TECHNICAL SERVICE OR CUSTOMER TECHNICAL SERVICE (CTS).**
**THERE IS A MANUAL FOR MAINTENANCE OPERATIONS TO BE CARRIED OUT BY THE AUTHORISED TECHNICAL SERVICE.**

**DANGER!**
**FLUFF AND SOOT ARE HIGHLY FLAMMABLE SUBSTANCES.**
**IT IS ESSENTIAL TO AVOID THESE BUILDING UP INSIDE THE MACHINE AND THE EXHAUST DUCTING WHICH GOES FROM THE MACHINE TO THE OUTSIDE.**
**TO ACHIEVE THIS, ALL THE PLACES LIKELY TO COLLECT FLUFF AND SOOT MUST BE REGULARLY CLEANED (E.G.: ROLL, BASE FRAMES, COVERS, EXHAUST DUCTING, FILTER, FAN, ETC.). REGULARLY APPLYING THE MAINTENANCE AND CLEANING PLAN SET OUT IN THE NEXT CHAPTER. IN THE CASE OF MACHINERY OPERATING IN ESPECIALLY DIRTY CONDITIONS, IT IS ESSENTIAL TO CLEAN MORE FREQUENTLY.**

**ALSO KEEP THE AREA AROUND THE MACHINE FREE OF FLUFF.**

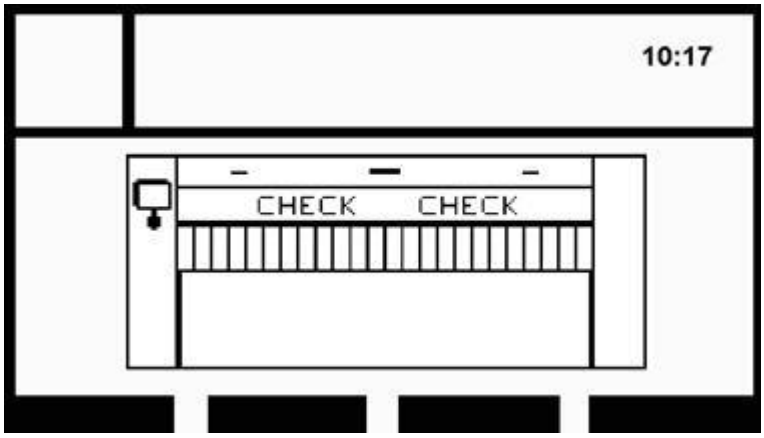
## 13.1. Checking safety mechanisms

**CAUTION!** Operation to be performed by the user or by the customer's technical service

### 13.1.1. Checking the HAND PROTECTION device

**Check the HAND PROTECTION device on a DAILY BASIS.**

**Checking procedure:**
Switch off the power supply input switch breaker.
Wait for at least five seconds and then turn the isolator switch on again.
The ironer icon is displayed with the **CHECK** message, and the buzzer sounds.
Press the hand protection device.
The ironer icon disappears, the buzzer stops, and the **MAIN MENU** icons are displayed on the screen.




**CAUTION**
If anything other than that was described is detected during the operation, disconnect the machine, do not use it, and contact the Authorised Technical Service **URGENTLY**.

### 13.1.2. Checking the EMERGENCY STOP

**CAUTION!** Operation to be performed by the user or by the customer's technical service

**Check the Emergency Stop on a WEEKLY basis.**

**Checking procedure:**

Connect the ironer and start an ironing program.
Press the emergency stop button.
The roll will stop rotating and the heating system will turn off.
The buzzer will sound and a warning message will be displayed stating that the Emergency Stop is activated.
Unlock the Emergency Stop button.
Press the **STOP** key on the multi-function keyboard. The Emergency Stop icon disappears, the buzzer stops, and the **MAIN MENU** icons are displayed on the screen.
The **REV** key allows the roll to rotate in the opposite direction to the linen input direction. Use only under exceptional conditions.

**CAUTION**
If anything other than that was described is detected during the operation, disconnect the machine, do not use it, and contact the Authorised Technical Service **URGENTLY**.

## 13.2. Cleaning the extraction filter

**CAUTION!** Operation to be performed by the user or by the customer's technical service

**Clean the exhaust ducting filter on a WEEKLY basis.**

**CAUTION**
Never perform this operation without having disconnected the power supply.
Before performing this procedure, make sure the temperature of the machine does not present any risk for handling.

**CAUTION!**

**A dirty extraction duct filter makes it difficult for the air to be extracted and reduces the performance of the ironer.**

**Steps for cleaning the filter** (Fig. 13.1).

- Turn off the isolator switch controlling the power supply to the machine.
- Remove the screw (**A**) securing the filter to the back cover.
- Pull on the filter handle.
- Remove the lint and grime with a brush or by blowing with compressed air.
- Refit the filter into the guide and push in right up to the stop.
- Secure to the back cover with the screw.
- Connect the power supply for the washing machine.

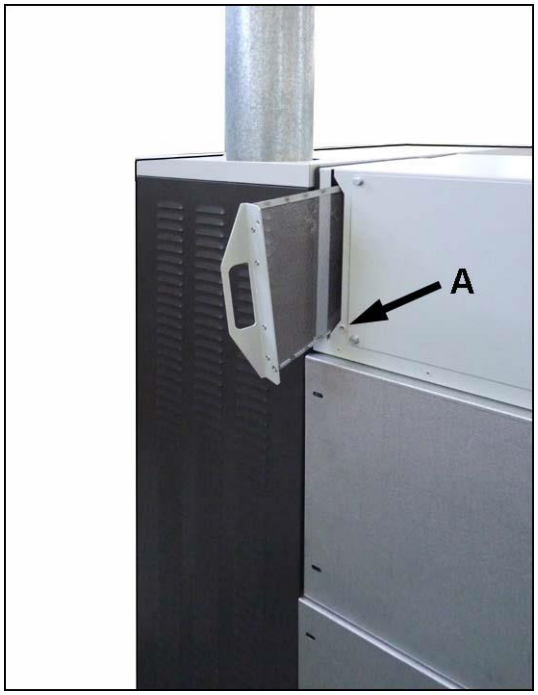


Fig. 13.1

## 13.3. Cleaning the photocells for the folder and for the SHUT DOWN disconnection
**Operation exclusively for Models PB, PBP51 and X20**

**CAUTION!** Operation to be performed by the user or by the customer's technical service

**Clean the photocells and reflectors on a DAILY basis.**

**CAUTION**
Never perform this operation without having disconnected the power supply.
Before performing this procedure, make sure the temperature of the machine does not present any risk for handling.

**CAUTION!**

**Dirt on folder and SHUT DOWN disconnection control photocells and reflectors may cause these devices to malfunction.**

Clean off lint and dust residues with a dry cloth. If necessary, use a slightly damp cloth.

**Never use any abrasive element or anything that might damage the surface of the photocells or reflectors.**

**Steps for cleaning the output reflectors and photocells** (fig.13.2).

The number of linen flow control devices will vary depending on the model of ironer.

- Turn off the isolator switch controlling the power supply to the machine.
- Turn the feeder tray upwards until it rests on the feeder straps.
- Clean the roll linen output photocell signal reflectors **A**.
- Clean the transmitters **B** signalling the output of linen from the roll.
- Place the linen output tray in the work position.

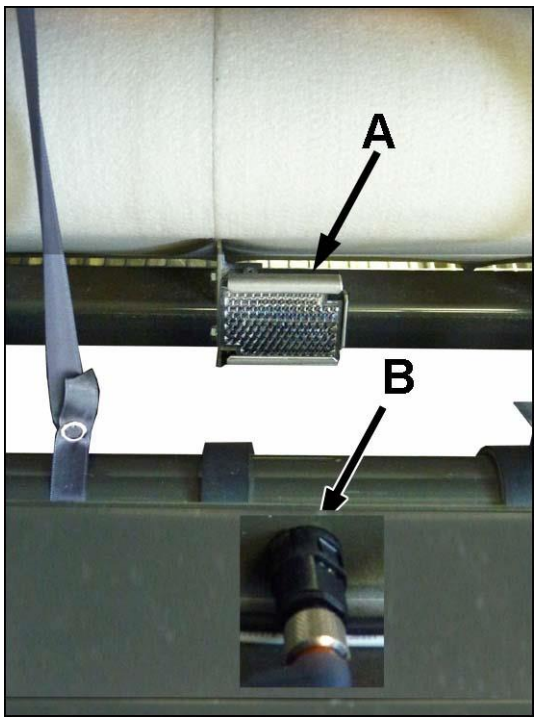



Fig. 13.2

**Steps for cleaning the input photocells** (fig.13.3).

The number of linen flow control devices will vary depending on the model of ironer.

- Clean the linen input tray photocells.
- Turn off the isolator switch controlling the power supply to the machine.

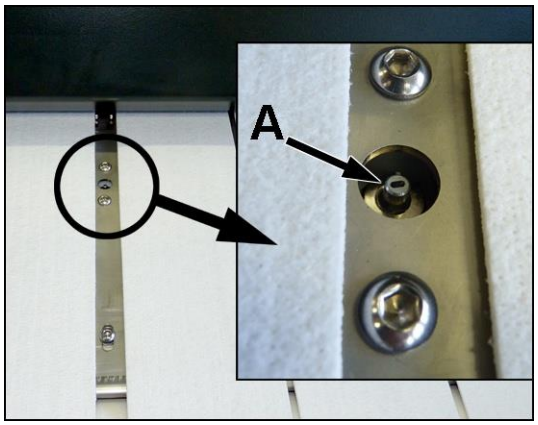



Fig. 13.3

## 13.4. Steps for cleaning the air pressure switch circuit pipe

**CAUTION**
Never perform this operation without having disconnected the power supply.
Before performing this procedure, make sure the temperature of the machine does not present any risk for handling.

- Turn off the isolator switch controlling the power supply to the machine.
- Disconnect the pipes A and B from the air pressure switch circuit (Fig.13.4).
- Disconnect the pipes A, B and C from the air pressure switch circuit (Fig.13.4).

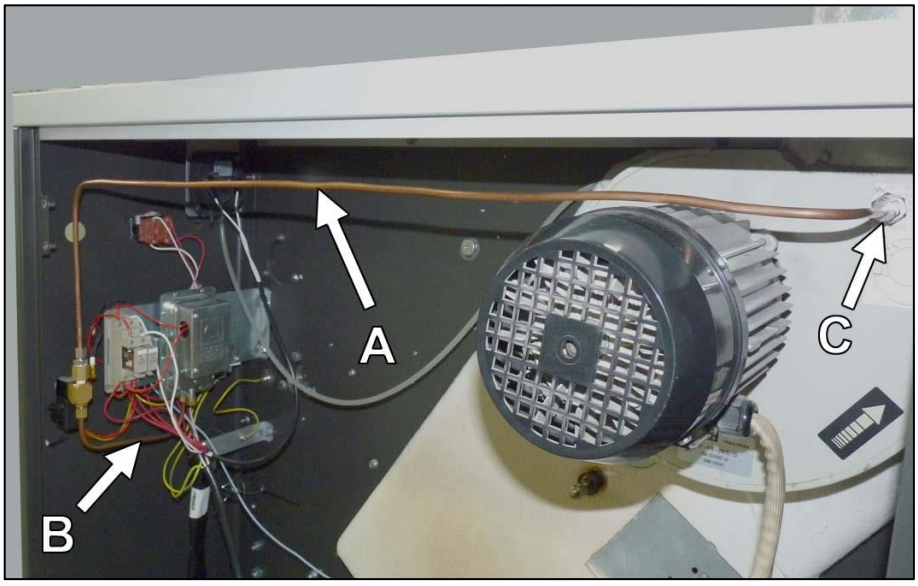



Fig. 13.4

### 13.5. Removal of the protective guards

In accordance with safety directives, all electrical devices, mechanisms subjected to high temperatures (except in the collection of laundry), are to be protected by safety guards (covers) to prevent accidental contact with the same.

**DANGER!**

**REMOVING ANY SAFETY GUARD FROM THE IRONER IS AN ACTION EXCLUSIVELY RESERVED FOR THE CUSTOMER'S TECHNICAL SERVICES (CTS) OR AUTHORISED TECHNICAL SERVICES (ATS). THIS MUST NEVER BE ONE BY THE MACHINE OPERATOR.**

**BEFORE PROCEEDING WITH THE REMOVAL OF ANY SAFETY GUARD THE PRECAUTIONS INDICATED AT THE BEGINNING OF THIS MANUAL AND IN THE PRESENT CHAPTER MUST BE OBSERVED.**

**ONCE THE OPERATION THAT HAS LED TO THE REMOVAL OF THE PROTECTIVE COVERS HAS FINISHED, DO NOT RESTART THE MACHINE WITHOUT REFITTING AND SECURING ALL THE COVERS PROPERLY.**

**NEVER START OR USE THE MACHINE IF ANY OF THE FOLLOWING ARE MISSING, INCORRECTLY POSITIONED OR MALFUNCTIONING:**

- **COVERS**
- **SAFETY DEVICES**
- **CONTROL ELEMENTS.**

### 13.6. Preventative maintenance program

| 7DAY 50 h | QUAR 600 h | ANNUAL 2400h | PROCEDURES RESERVED EXCLUSIVELY FOR CUSTOMER'S TECHNICAL SERVICES OR AUTHORISED TECHNICAL SERVICES |
|---|---|---|---|
| x | | | • Check the contact of the temperature probe and thermostat with the roll |
| x | | | • Check and clean the linen detachment tabs |
| x | | | • Clean the primary air filters (gas heating) |
| x | | | • Check the heating system ignition and combustion (gas heating) |
| x | | | • Clean and check the exhaust filter |
| x | | | • Clean the holes in the vapour suction pipe |
| x | | | • Clean the photocell reflectors and the linen feed sensors. The number of photocells and sensors varies depending on the models .(PBP51, X20***F models) |
| x | | | • Clean the protective vents of the roll motor and extraction motor fans |
| | x | | • Lubricate the transmission chains and the rolls' support wheels |
| | x | | • Check the condition of the ironing straps and the pressure roller padding |
| | x | | • Clean the extraction turbine blades and the exhaust ducts |
| | x | | • Clean the inside of the base-frames |
| | x | | • Check the condition of the extractor roller tapes and rubber rollers (PBP51, X20***F models) |
| | x | | • Clean the steam inlet and condensate return filters (steam heating) |
| | x | | • Check the static pressure at the fan output. |
| | x | | • Clean the pressure switch circuit (PB/PBP51 models, AGA machines only) |
| | | | **REQUEST AN ANNUAL SERVICE FROM AUTHORISED TECHNICAL SERVICES** |
| | | x | Check all the functions of the ironer (TEST program) |
| | | x | Check the heating system |
| | | x | Check the power consumption of the roll motor and the extraction motor |
| | | x | Check the power consumption of the electric heaters (electric heating) |
| | | x | Check and clean the burner (gas heating) |
| | | x | Check and clean the premixing fan (radiant burner) |
| | | x | Check the wear and contact of the detachment tabs |
| | | x | Check the ironing straps |
| | | x | Check the feeding straps |
| | | x | Check the output straps (PBP51 model with folder) |
| | | x | Check the pressure roller padding |
| | | x | Check and lubricate chains, sprockets, crown wheel race and roller supports |
| | | x | Check the coupling of the encoder or motion detector |
| | | x | Check linen detachment tapes |
| | | x | Check the condition of the extractor roller tapes and rubbers (model PBP51 with folder) |
| | | x | Check external protections and electrical grounding |
| | | x | Check the condition of the roll |
| | | x | Checking the wear and contact of the thermostat probe runners |
| | | x | Check the gas tightness of the gas circuit (gas version) |
| | | x | Check the condition of the nuts and bolts |
| | | x | Check that the steam circuit is airtight (steam version), and check for possible deterioration due to wear |
| | | x | Check the roll motor and extraction motor |
| | | x | Clean all soot and fluff from the inside of the roll and areas of the machine involved in the extraction of fumes and vapours |

**CAUTION!**

Lubricate only the points described in the section entitled Preventive maintenance program. For any questions about maintenance please contact the manufacturer.

### 13.7. Possible operational anomalies

| ANOMALY | PROBABLE CAUSE | ACTION |
|---|---|---|
| **ROLL ENCRUSTATIONS** | Laundry excessively mineralised | Adjust the washing process. |
| | Incorrect use of washing products | |
| | Delicate laundry pieces ironed at too high a temperature or insufficient speed | Adjust temperature and speed to the fabric type. |
| **IRONED LINEN MOISTURE TOO HIGH** | Excessive residual damp in the fabrics being ironed | Modify the extract process. |
| | Excessive ironing speed | Reduce speed. |
| | Temperature defect | Raise temperature. |
| **LINEN ROLLING UP ON THE ROLL** | Dirt in the detachment springs | Clean springs. |
| | Low pressure in the detachment springs | Call the ATS. |
| | Laundry insufficiently rinsed | Adjust the washing process. |
| | Static electricity | Add anti-static products to wash process. |
| | | Check the machine's earth connection. |
| **INCORRECT SPEED ON THE ROLL MOTOR** | Inverter breakdown | Call the ATS. |
| | Fault on the encoder | Call the ATS. |
| **TOO RED FLAME (GAS VERSION)** | Deficient gas supply | Correct supply. |
| | Faulty air intake filter | Clean filter. |
| **THE BURNER CAN NOT BE IGNITED (GAS VERSION)** | Manual gas flow valve closed | Open manual gas flow valve. |
| | Deficient gas supply | Correct supply. |
| | Gas ignition system defective or ignition electrodes misplaced | Call the ATS. |
| **POOR FLAME SPREAD (GAS VERSION)** | Deficient gas supply | Correct supply. |
| | Blocked burner holes | Call the ATS. |
| **LINES ON THE LINEN** | Ironed linen moisture too high | Adjust speed or temperature. |
| | Laundry introduced incorrectly | Stretch laundry pieces as they are being introduced. |
| **FAULTY LINEN FOLDING** | Faulty length selection | Check the selection |
| | Static electricity | Add anti-static products to wash process. |
| | | Check the machine's earth connection. |

### 13.8. Most common spare parts listing

**CAUTION!**
To replace components with spare parts, please contact the manufacturer.

| NAME | PB32 X13 | PB/PBP51 X20 |
|---|---|---|
| 600GR.1,220x1,630 NOMEX FELT | x | |
| 600GR.1,220x1,630 NOMEX FELT | x | |
| 600GR.2,010x2,040 NOMEX FELT | | x |
| 600GR.2,010x2,670 NOMEX FELT | | x |
| 600GR.2,010x3,300 NOMEX FELT | | x |
| IRONING STRAP | x | x |
| LINEN FEEDING STRAP | x | x |
| BEARING ASSY | x | x |
| 5463-22 6X9X4 TESA DRAUGHT EXCLUDER | x | x |
| HAND-GUARD SPRING | x | x |
| SPECIAL BEARING | x | x |
| B11B20-28-25/35-4 SELFOIL SLEEVE | x | |
| B11A20-15-20 SELFOIL SLEEVE | x | |
| ISO-083 12.7X4.88 CHAIN LINK | x | |
| 3X6MM SILIGLASS SILICONE PIPE | x | x |
| D18,5XD11X2 TEFLON GASKET | x | |
| IRONING STRAP | x | x |
| LINEN FEEDING STRAP | x | x |
| BEARING ASSY | x | x |
| 5463-22 6X9X4 TESA DRAUGHT EXCLUDER | x | x |
| HAND-GUARD SPRING | x | x |
| SPECIAL BEARING | x | x |
| B11B20-28-25/35-4 SELFOIL SLEEVE | x | |
| 60 P/TURN ENCODER | | x |
| ROTATION DETECTOR | x | x |
| O-RING | | x |
| MINISWITCH ASSY | | x |
| INPUT PHOTOCELL WIRING | | x |
| D23 XD18X2 TEFLON GASKET | | x |
| 1" * INORGANIC FIBRE GASKET | | x |
| ¾" * INORGANIC FIBRE GASKET | | x |
| 1" X25 L.1.20 PIPE COVERS | | x |
| ½" X25 L.1.20 PIPE COVERS | | x |
| 9100-008-113 1"* SWIVEL JOINT | | x |
| J3X 3/4" MODEL TLV PURGER | | x |
| VYC 695 AS 1/2* SAFETY VALVE | | x |
| TEMPERATURE PROBE | x | x |
| 2455RC 200ºC THERMOSTAT | x | x |
| FST 0034.5244 8 A FUSE CARTRIDGE | x | x |
| KEYBOARD | | |

**Specifically for machines with gas heating**

| NAME | PB32 / X13 | PB/PBP51 / X20 | |
|---|---|---|---|
| | ATM | RDNT | ATM |
| GAS BURNER ELECTRODES | x | | |
| SE/CSA GAS VALVE | x | | x |
| BURNER ELECTR.CONTROL | x | | x |
| IGNITION WIRING | | | x |
| BURNER ELECTRODES | | | x |
| UL GAS VALVE | | x | |
| 230V CE GAS VALVE | | x | |
| 115V UL BURNER ELECTRONIC CONTROL | | x | |
| 230V CE BURNER ELECTRONIC CONTROL | | x | |
| GR_1 IGNITION WIRING | | | |
| GR_2 IGNITION WIRING | | | |
| ELECTRODE RV 14210220 | | x | |
| GR IGNITION WIRING | | x | |

## 14. REMOVAL FROM SERVICE / DISASSEMBLING

**Management of waste from electronic devices**

This machine is an item of Electrical and Electronic Equipment (EEE) in accordance with WEEE **Directive 2012/19/EU**.

At the end of their life, EEEs become waste (WEEE) that needs to be collected and treated separately from general waste.

The customer is responsible for notifying the dealer or manufacturer so that these can proceed with the collection and treatment of the WEEE.

In the event of the machine being replaced, the dealer or the manufacturer of the new machine is responsible for removing the machines it replaces free of charge.

**CAUTION!**

**Taking the ironer out of service must be done by a specialised service or contractor.**
**Dealing with the residues must be done by an authorised waste contractor.**
**Not under any circumstances must the ironer be left unchecked.**
**When it comes to handling and transporting the ironer, the same precautions and regulations must be taken into account as for the installation process.**

**On taking the ironer out of service:**
Disconnect and mechanically lock the external switch. Remove the supply cables.
Close and mechanically lock the manual shut-off valves for the steam or gas. Dismantle the connections for the various fluids.
Empty and collect the water or thermal oil contained inside the roll and deal with them appropriately.
Assemble the hand-guard shipping restraints.
To avoid accidents when removing machine from service, eliminate the handle and dismantle the assembly comprising ironing straps, pressing roller and tension roller.

**RECYCLING MATERIALS**

The majority of the machine's parts are made with recyclable materials, the most significant being the following:

| CARBON STEEL | STAINLESS STEEL | ALUZINC | BRONZE | POLYESTER | ETHYLENE PROPYLENE | ELECTRICAL COMPONENTS |
|---|---|---|---|---|---|---|
| Central roll<br>Roll crown<br>Sprockets<br>Rollers<br>Shafts<br>Roller guides<br>Roller brackets<br>Outlet spring bar<br>Cell bracket duct<br>Folder frame<br>Control box<br>Heaters bracket<br>Base-frames | Linen inlet table<br>Linen outlet table<br>Folder blades<br>Burner | Rear guards<br>Top guard<br>Hand-guard<br>Roll side guards<br>Chain guards<br>Gas exhaust duct<br>Fumes duct<br>Side covers | Roll bracket wheels<br>Output springs | Feeding belts<br>Padding | Base-frame profile | Wirings<br>Motors<br>Inverter and electronic circuits |