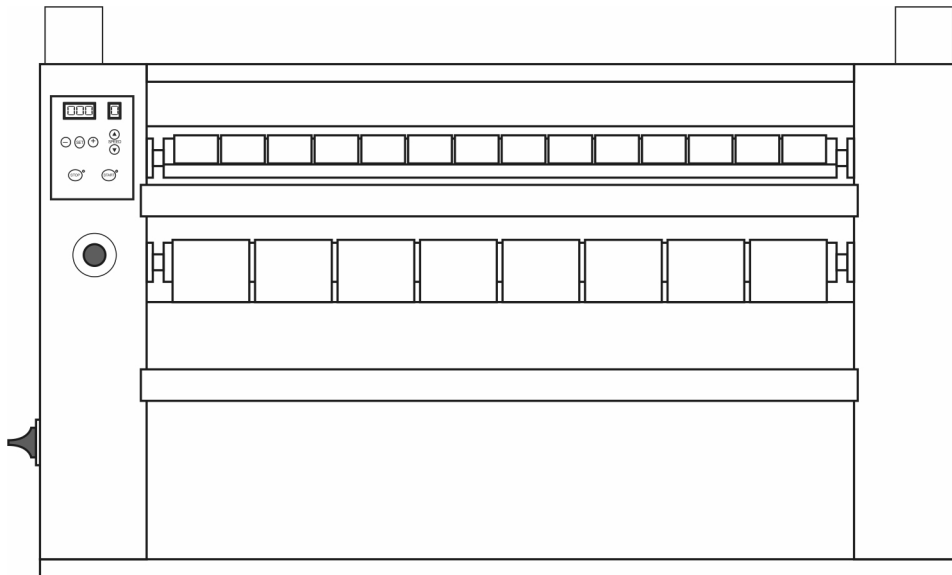


# Ironer

IC-13 Series Installation and Operation Manual

July 25, 2017

Revision 1.0



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# Chapter 1

## Important Safety Information

### 1.1 FOR YOUR SAFETY - CAUTION!

**WARNING:** For your safety the information in this manual must be followed to minimize the risk of fire or explosion or to prevent property damage, personal injury, or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- WHAT TO DO IF YOU SMELL GAS:
  - Do not try to light any appliance
  - Do not touch any electrical switch; do not use any phone in your building.
  - Clear the room, building or area of all occupants.
  - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

**Contact your local gas supplier to obtain particular instructions in the event that a user smells gas. Place this sheet and any other instructions obtained from your gas supplier in a prominent location.**

# Chapter 2

## Important Instructions

### 2.1 Before Attempting Repairs



**Moving parts can cause serious injury or death. Before attempting repairs, follow proper shut-down procedures, remove power, and allow the machine to fully cool before commencement of service.**

Safety is of primary concern with any maintenance or repair operation. If you are in any way unsure of how to proceed with a repair or adjustment, consult this manual, a qualified maintenance technician, your local distributor, or the B&C Technologies Technical Service Department at 850-249-2222.

Only trained and experienced personnel should attempt maintenance or repair work on this equipment. Follow all safety procedures including lock-out/tag-out procedures carefully. Ensure that any loose fitting clothing or jewelry is tucked in or not worn to avoid being pulled into the machine. Remember, the machine has no brain - you must use your own.

Before attempting repairs, follow proper shutdown procedures, remove power, and allow the machine to fully cool before beginning service.

Never attempt to clean or service any area of the machine without removing power at the main disconnect and allowing time for the machine to cool completely.

Read, follow, and obey these safety rules! The B&C Technologies Technical Service Department is available to answer any questions you may have about the operation and servicing of your machine. Please call with any questions or concerns about the operation of your machine.

## 2.2 Parts Ordering Information

If you require literature or spare parts, please contact your local distributor. If a local distributor is unavailable, you may contact B&C Technologies directly at (850) 249-2222 for the name of your nearest parts dealer.

For technical assistance in the United States, contact B&C Technologies:

(850) 249-2222 Phone

(850) 249-2226 FAX

[parts@bandctech.com](mailto:parts@bandctech.com)

[www.bandctech.com](http://www.bandctech.com)

### 2.2.1 Nameplate Location

When contacting B&C Technologies about your equipment, please make note of the model and serial number, located on the nameplate on the rear of the machine.

## 2.3 Key Symbols

Anyone operating or servicing this machine must follow the safety rules in this manual. Particular attention must be paid to the DANGER, WARNING, and CAUTION blocks which appear throughout the manual and shown in figures 2.1 on page 4 and 2.2 on page 4.

## 2.4 Safety Information

**Installation Notice:** For personal safety and for proper operation, the machine must be grounded in accordance with state and local codes and in the USA in accordance with the National Electric Code, article 250-96. Elsewhere, the equipment should be grounded in accordance with ANSI/NFPA 70, or the Canadian Electrical Code, CSA C22.1. The ground connection must be to a proven earth ground, not to conduit or water pipes.

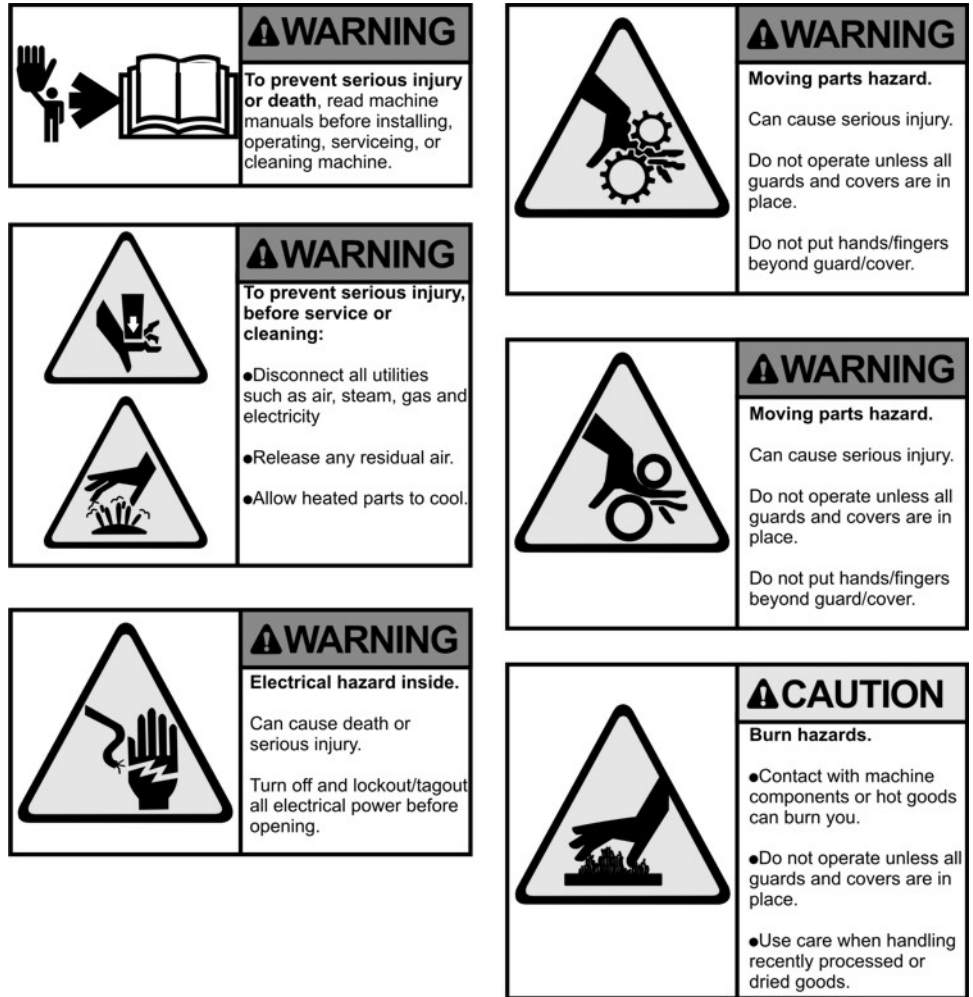


Figure 2.1: Key Symbols



Figure 2.2: Key Symbols



Natural Gas or Liquid Propane Gas (LP Gas) heated equipment installation must comply with state and local codes, and in the USA, in accordance with the National Fuel Gas Code. Elsewhere, the equipment should comply with ANSI Z22.1 or CSA B149.

Provisions must be made for adequate make-up air and ventilation, and access for equipment service and installation.

## **2.5 Installation and Operational Safety Instructions**

1. Read all instructions prior to operating this equipment.
2. Ensure that the equipment is properly grounded before applying power and operation begins.
3. Do not process goods that have been previously cleaned in, soaked in, or exposed to gasoline, dry cleaning chemicals, or any other flammable or explosive materials, as they could catch fire or explode without warning, even after being washed.
4. Do not allow children to play in or around or operate this equipment.
5. Check the operation of all safety interlocks at the start of every shift. If the interlocks do not stop the equipment immediately, the machine must be removed from service. Notify your immediate supervisor, and do not operate the machine.
6. Never attempt to service the machine while it is running. Never reach over, under, around, or behind any safety device, or into any area near moving parts or hot surfaces without shutting off power and allowing the machine to adequately cool.
7. Read, understand, and follow all safety instructions. Do not come close to moving parts and hot surfaces. Do not wear loose clothing, jewelry, neckties, or any other garment that could become caught in the machine while operating or near the machine.
8. Only a qualified technician should attempt to service or repair the ironer.
9. Do not install the machine in an area where it could be exposed to water or weather.
10. Do not alter or tamper with the control system.
11. To reduce the risk of fire, do not process plastics or articles containing foam rubber or similarly textured rubber-like materials.
12. Keep the area near the exhaust ducting clean and free of lint, dust, dirt or debris.
13. Keep the interior and exterior of the machine clean of lint, dirt, dust and debris. The interior of the machine, along with the exhaust ductwork should be periodically inspected and cleaned to avoid potential fires (lint is highly flammable).
14. Improper installation, operation and maintenance of this machine can cause exposure to substances in the fuel or from combustion that can cause serious illness or death. The machine must be exhausted to the outside.

15. Always disconnect the electrical service from the machine and allow it to cool before performing service.
16. This machine must be installed according to the installation instructions. All exhaust, electrical connections, and gas or steam connections must comply with state and local codes and must be made by a licensed installer where required.

# Chapter 3

## Installation

### 3.1 Installation Note

**Caution:** this machine may only be installed, adjusted, updated, and started up by authorized technicians or resellers.

The machine must be installed in accordance with current standards and regulations, in a room with sufficient make-up air and exhaust.

### 3.2 Receiving Inspection

Upon receipt of the equipment visually inspect for shipping damage and note any damage with the carrier before signing the shipping receipt, or advise the carrier of the damage as soon as it is noted.

If damage is discovered, a written claim must be filed **with the carrier** as soon as possible.

Note: Warranty is **void** if the equipment is not installed according to instructions. The installation must comply with the minimum requirements listed in this manual. All national, state, and local codes must be followed including but not limited to gas, electrical, plumbing, and HVAC. Due to various requirements, statutory codes should be well understood before installation.

**Important:** The ironer should be transported and handled in an upright position.

Table 3.1: IC-13 General Specifications

Model	Metric	US	IC-1355		IC-1363		IC-1379	
Number of Rolls	#		1		1		1	
Roll Diameter	mm	inch	325	13	325	13	325	13
Working Width	mm	inch	1400	55	1600	63	2000	79
Speed Range	m/min	ft/min	1-6.5	3.3-21.5	1-6.5	3.3-21.5	1-6.5	3.3-21.5
Sound Level	dB		60		60		63	
<b>Dimensions</b>								
A - Width	mm	inch	1960	77.2	2210	87.0	2630	103.5
B - Depth	mm	inch	644	25.4	644	25.4	644	25.4
C - Height	mm	inch	1107	43.6	1107	43.6	1107	43.6
<b>Exhaust System</b>								
Air Flow, Primary	cmm	cfm	2 x 8	2 x 295	2 x 8	2 x 295	2 x 8	2 x 295
Exhaust Duct	mm	inch	2 x 98	2 x 3.85	2 x 98	2 x 3.85	2 x 98	2 x 3.85
<b>Electric Heat</b>								
Consumption	kW		12		16		21	
Roll Motor	kW	HP	1/4	1/3	1/4	1/3	1/4	1/3
Fan Motor	kW	HP	1/8	1/6	1/8	1/6	1/8 x2	1/6 x2
208-240VAC, 50/60Hz, 3PH	Amps	Breaker	32	40	49	50	63	80
380-480VAC, 50/60Hz, 3PH	Amps	Breaker	16	20	25	30	32	40
<b>Gas Heat</b>								
Heat Input	BTU		48,000		77,000		102,000	
Roll Motor	kW	HP	1/4	1/3	1/4	1/3	1/4	1/3
Fan Motor	kW	HP	1/8 x2	1/6 x2	1/8 x2	1/6 x2	1/8 x2	1/6 x2
120VAC, 50/60Hz, 1PH	Amps	Breaker	8	15	8	15	8	15
208-240VAC, 50/60Hz, 1PH	Amps	Breaker	4	15	4	15	4	15
208-240VAC, 50/60Hz, 3PH	Amps	Breaker	2	15	2	15	2	15
380-480VAC, 50/60Hz, 3PH	Amps	Breaker	2	15	2	15	2	15
<b>Weight &amp; Shipping</b>								
Net Weight	kg	lbs	300	660	355	781	405	891
Shipping Weight	kg	lbs	335	737	375	825	428	942

### 3.3 Electrical Installation

Refer to Table 3.2 on page 9 for full details on the electrical requirement for your specific model prior to installation.

Electrical connections should be made by a qualified electrician in accordance with all applicable codes or requirements. Use a separate branch circuit to power each machine. Do not share circuits with lighting or any other equipment.

Because this is a vibrating machine, use SO cable (or similar) with a twist-lock plug to connect the machine to main power. A shielded liquid tight or approved flexible conduit with proper conductor of correct size installed in accordance with National Electric Code (USA) or other applicable codes is required. The connection must be made by a qualified electrician using the wiring diagram provided with the machine.

For personal safety and for proper operation the machine must be grounded in accordance with state and local codes and in the USA in accordance with the National Electric Code, article 250-96. The ground connection must be to a proven earth ground, not to conduit or water pipes.

Do not connect the ground to the neutral (N) leg at the terminal strip (if so equipped).

If a DELTA supply system is used, the high leg should be connected to L3, since control voltage is derived from L1 and L2.

**Note:**

**Ensure that all power connections are tight. Loose connections will cause burned wires and contactors on electrically heated machines. Check the electrical connections at the incoming power terminal block, contactors, and heating elements at installation, after the first week of operation, and quarterly thereafter. Failure of switchgear due to negligence in this area is not covered under any warranty!**

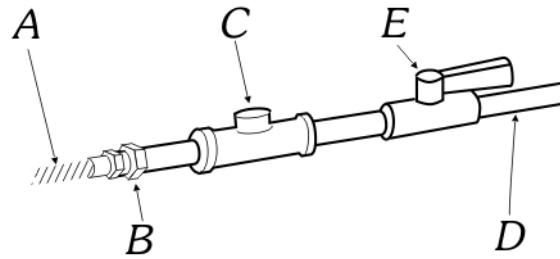
Table 3.2: Electrical Requirements

<b>Electrical Requirement - Electrical Heating</b>				
<b>Model</b>		<b>IC-1355</b>	<b>IC-1363</b>	<b>IC-1379</b>
Motor Power (kW / HP)		0.37 / 0.5	0.37 / 0.5	0.49 / 0.75
Heating Power (kW)		12	16	21
Max kVA		15.5	20.5	27
Breaker Size	380-460V	20	30	40
	208-230V	40	50	80
Cable Size (mm <sup>2</sup> / AWG)	380-460V	4 / 10	4 / 10	16 / 5
	208-230V	6 / 9	10 / 7	35 / 2
<b>Electrical Requirements - Gas Heating</b>				
<b>Model</b>		<b>IC-1355</b>	<b>IC-1363</b>	<b>IC-1379</b>
Motor Power (kW / HP)		0.37 / 0.5	0.37 / 0.5	0.49 / 0.75
Max kVA		1	1	1
Breaker Size	380-460V	10	10	10
	208-230V	10	10	10
	120V	15	15	15
Cable Size (mm <sup>2</sup> / AWG)	380-460V	2.5 / 14	2.5 / 14	2.5 / 14
	208-230V	2.5 / 14	2.5 / 14	2.5 / 14
	120V	2.5 / 14	2.5 / 14	2.5 / 14

### 3.4 Gas Connection

#### 3.4.1 Gas Supply Line

- 1" IPS pipe is recommended.



- A. 1" flexible gas connector
- B. 1" pipe to flare adapter fitting
- C. 1/8" NPT plugged tapping
- D. 1" NPT gas supply line
- E. Gas shutoff valve

Figure 3.1: Gas Plumbing Detail

- 1" approved tubing is acceptable for lengths under 25 ft (6.1 m) if local codes and gas supplier permit.
- Must include 1/8" NPT minimum plugged tapping accessible for test gauge connection, immediately upstream of the gas connection to the ironer (see figure 3.1 on page 10).
- Must include a shutoff valve:

An individual manual shutoff valve must be installed within 6 feet (1.8m) of the equipment in accordance with the National Fuel Gas Code, ANSI Z223.1. The location should be easy to reach for opening and closing.

### 3.4.2 Gas Supply Connection Requirements

There are many methods by which the IC series ironer can be connected to the gas supply. Following are some guidelines for methods of connection.

#### Option 1:

Flexible stainless steel gas connector:

If local codes permit use a new flexible stainless steel connector (design certified by the American Gas Association or CSA International) to connect between the ironer and the gas supply line. Use an elbow and a 1" flare x 1" NPT adapter fitting between the stainless steel gas connector and the gas inlet of the machine as needed to prevent kinking.

#### Option 2:

Other approved piping:

Lengths under 25 feet (6.1m) use 1" approved tubing.

Lengths over 25 feet (6.1m) should use larger piping.

Pipe joint compounds that resist the action of gas must be used. DO NOT USE TEFLON ®/PTFE TAPE.

**IMPORTANT:** Be certain the ironer is configured for the type of gas being used. The gas type is shown on the serial sticker on the electrical panel of the unit.

### **Inlet Pressure**

Use a manometer to verify that the inlet pressure meets the following requirements:

Natural Gas service must be supplied at 8-14 inches of water column pressure.

LP Gas service must be supplied at 11-14 inches of water column pressure.

If the incoming gas pressure exceeds the above, install a locally obtained gas regulator that has sufficient BTU capacity to supply the machine (Maxitrol 325-5AL for up to 300,000 BTU, 327-7L for up to 900,000 BTU or equivalent). A chattering gas valve indicates improper line pressure, not a faulty gas valve.

### **Manifold Pressure (Secondary)**

Be sure to check the manifold pressure. Use a manometer to verify that the manifold pressure matches the information on the serial sticker and the type of gas being used. A separate gas regulator (locally obtained) must be installed if the incoming line pressure is greater than 14 inches water column pressure.

1. Connect the manometer to the pressure connection on the gas valve (disconnect gas service).
2. Restore gas service and determine the pressure while the burner is ignited. The pressure must match the indicated manifold pressure on the serial sticker.

**Gas Conversion Notice:** Do not connect a machine configured for Natural Gas to LP Gas service or vice-versa without a qualified service technician doing a proper conversion. After the reconfiguration is complete, the manifold pressure must be verified. See Section A on page 44 for conversion details.

## **3.5 Exhaust Requirements**

For best results, install the machine near an outside wall in order to keep the exhaust duct length as short as possible, and to provide a source of make-up air. The rear of the ironer should not be blocked. Blocking the air inlets prevents proper combustion, and will yield poor results, and possibly harmful combustion byproducts. See recommended exhaust style in Figure 3.3 on page 13.

**Important: Do not interrupt the flow of make-up air or the exhaust!**

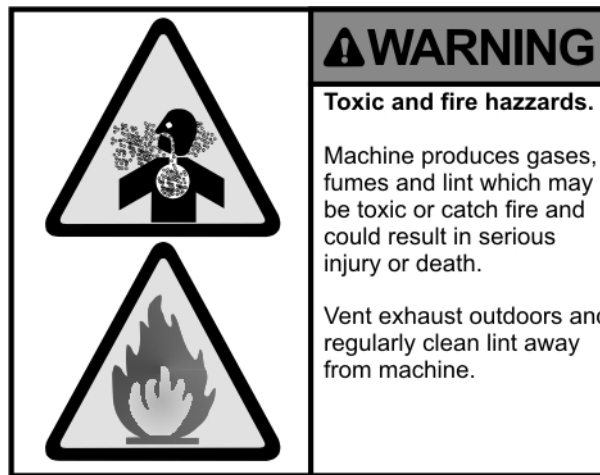


Figure 3.2: IC Series - Proper Exhaust is critical for safety!

For maximum efficiency and minimum lint accumulation the ironer must be exhausted to the outdoors by the shortest possible route. Properly sized exhaust ducts are essential for proper operation. Any 90-degree elbows used should be sweep type, however, 45-degree elbows are preferable as they don't create as much back pressure. Exhaust ducts must be assembled such that all interior surfaces are smooth so the joints do not permit the accumulation of lint. Do not use plastic or thin foil ducts — rigid metal ducts are recommended. Use exhaust ducts made of sheet metal or other noncombustible material. Do not use sheet metal screws or fasteners on exhaust pipe joints which extend into the duct and catch lint. Use duct tape or pop-rivets on all seams and joints. The maximum allowable back pressure is 0.3 inches water column. *Don't guess, measure!*

**Note: Check for proper exhaust fan rotation direction before placing the equipment into service. If the rotation is incorrect, remove power from the machine and exchange any two incoming power leads. (3 phase machines only)**

**Note: Avoid locating the exhaust next to the fresh air supply intake.**

**Note: Avoid the use of "booster fans".**

## 3.6 Fresh Air Requirements

When the ironer is operating, it draws in room air to carry heat and moisture from the ironed goods and exhausts it out of the building. Therefore, the room air must be continually replenished from outside the building.

If the make-up air is inadequate, efficiency will be adversely affected. Ignition problems and air flow alarms may result.

Air supply (make-up air) must be given careful consideration to assure proper performance of each ironer. An unrestricted source of air is necessary for each ironer. As a general rule, an unrestricted



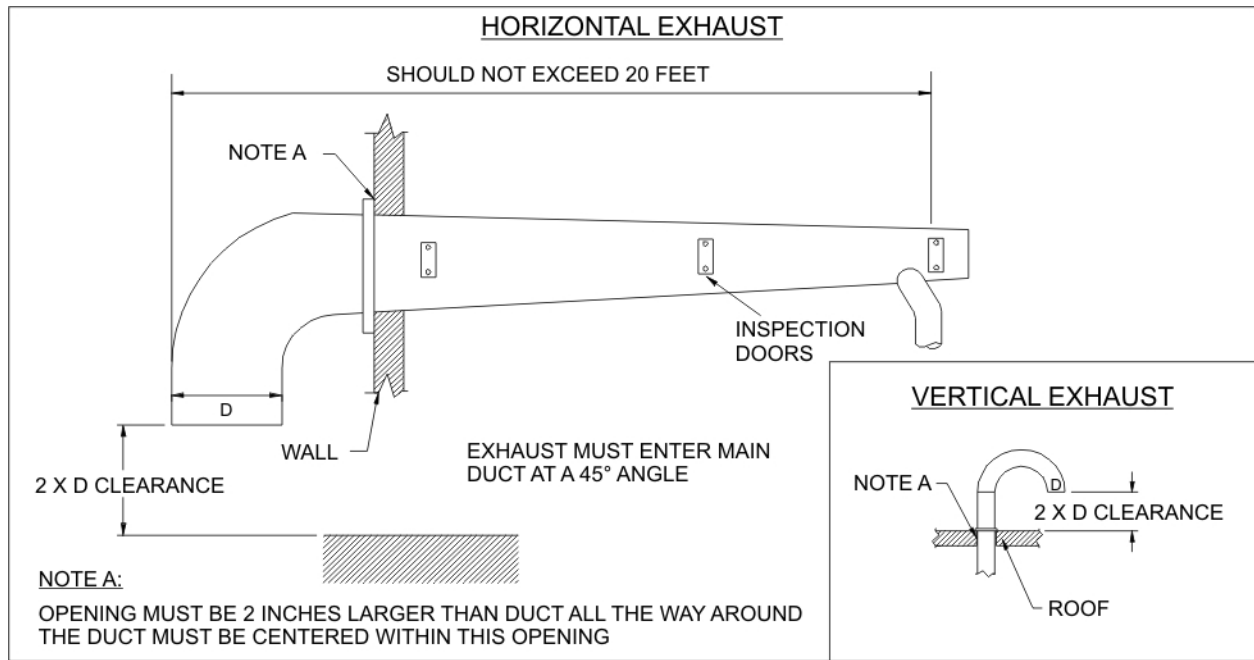


Figure 3.3: IC Series - Exhaust Detail

air entrance from the outdoors (atmosphere) of a minimum of 1 sq ft is required for each ironer. If registers or louvers are installed over the openings, then the area must be increased by at least one third.

Allowances must be made for remote or constricting passageways or where ironers are located at excessive altitudes or predominantly low-pressure areas.

**Note: Avoid locating the exhaust next to the fresh air supply intake.**

The flow of fresh air required make-up air is as follows:

Table 3.3: IC-13 Make-up Air Requirements

Model	Metric	US	IC-1355	IC-1363	IC-1379
Air Flow	cm/hr	cf/hr	28 1000	45 1600	60 2200

### 3.7 Handling and Unpacking

Upon delivery, the ironer must be in perfect condition and the packing material must not be incomplete or damaged. Pay attention to the markings on the packaging (e.g. FRAGILE, UP/DOWN, PROTECT FROM RAIN, etc).

Provide for adequate lifting and handling devices in order to proceed safely.

The ironer must be handled using a lift-truck of sufficient capacity and the truck forks must be opened as much as possible to avoid toppling the ironer.

The ironer must be lifted at its center (center of gravity on the axis).

Do not drop or turn the ironer over, e.g. when unloading.

**Note: lifting with slings or straps is not recommended, as there is a imminent risk of damaging the ironer.**

Table 3.4: IC-13 Packaged and Unpackaged Dimensions

Packaged Dimensions								
Model	Metric	US	IC-1355		IC-1363		IC-1379	
Width	mm	in	2340	92.1	2340	92.1	2780	109.4
Depth	mm	in	770	30.3	770	30.3	770	30.3
Height	mm	in	1400	55.1	1400	55.1	1400	43.6
Weight	kg	lbs	335	737	375	825	435	957
Volume	cu m	cu ft	2.52	89.0	2.52	89.0	3	105.9

Ironer Dimensions								
Model	Metric	US	IC-1355		IC-1363		IC-1379	
Width	mm	in	1960	77.2	2210	87.0	2630	103.5
Depth	mm	in	644	25.4	644	25.4	644	25.4
Height	mm	in	1107	43.6	1107	43.6	1107	55.1
Weight	kg	lbs	300	660	355	781	428	942
Volume	cu m	cu ft	1.4	49.4	1.58	55.8	1.83	64.6

### 3.8 Room Requirements

The ironer must be installed in a well-ventilated room (particularly when using gas heating) with correct lighting and an ambient temperature not exceeding +10° C to +40° C / 50° F to 105° F (temperature limits for the AC drive for the main motor). Below +10° C / 50° F, the temperature sensor will not work and the control panel will display an alarm (AL7).

Sufficient space must be provided around the ironer to allow for correct operation:

1. 5-10cm (10-12in) minimum at the back to allow for ventilation.
2. 60-80cm (24-32in) on each side to allow for servicing and maintenance.
3. Sufficient space must be provided at the front of the ironer to allow the operator to work correctly and safely.

Leveling should be carried out on a hard and stable floor that can support the significant weight of the ironer (400 to 500kg on 1.6 to 2 m<sup>2</sup> or 880-1100 lbs on 18-22 ft<sup>2</sup>).

The installation of this ironer requires a floor that can support a minimum of 500kg per m<sup>2</sup> or 50 lbs per ft<sup>2</sup>.

# Chapter 4

## Operation

The following items should be checked before attempting to operate the ironer:

1. Read and follow caution, warning and direction labels attached to the ironer.
2. Check incoming supply voltage to be sure that it is the same as indicated on the serial decal.
3. GAS MODELS – check to assure that the ironer is connected to the type of gas indicated on the serial decal.
4. GAS MODELS – be sure that ALL gas shut-off valves are in the open position.
5. Be sure ALL back panels (guards) and electric box covers have been replaced.
6. Check ALL service doors to assure that they are closed and secured in place.

ALL ironers are thoroughly tested and inspected before leaving the factory. However, a pre-operational test should be performed before the ironer is placed into service. It is possible that adjustments have changed in transit or due to marginal location (installation) conditions.

### 4.1 Heat Circuit Operation Test

1. Gas Models
  - (a) When the ironer is first started (during initial start-up), the burner has a tendency not to ignite on the first attempt. This is because the gas supply piping is filled with air, so it may take a few minutes for this air to be purged from the lines.
  - (b) If a gas system fault occurs, the gas supply to the machine is shut off and AL6 (gas alarm) appears on the display.
  - (c) After the beep ends, reset the gas system by pressing the + and - buttons simultaneously (see alarm chapter). If the fault persists, this could be due to one of the following problems:

- i. The gas supply may be shut off: check that the gas supply valve is open.
- ii. Faulty ignition spark plug: replace.
- iii. Exhaust tubes are blocked: check airflow.

**NOTE: During the purging period check to be sure that ALL gas shut-off valves are open.**

- (d) Once ignition is established, a gas pressure test should be taken at the gas valve pressure tap to assure that the water column pressure is correct and consistent.

NOTE: Water column pressure requirements (measured at the gas valve pressure tap):

Natural gas: 3.5 to 4.0" water column.

L.P. Gas: 10.5 to 11.0" water column.

## 2. Electric Models

- (a) Check the contactor(s) to insure that the electric heating is cycling properly.
- (b) Ensure all contactor(s) and input power terminals are TIGHT! Loose connections will cause premature failure of switchgear components. Check these connections regularly after the machine is placed in operation.

Make a complete operational check of ALL safety-related circuits (i.e., finger safety switch and emergency stop button).

**IMPORTANT:** The ironing cylinder is treated with a protective coating. Iron old materials prior to beginning production.

## 4.2 Initial Startup

Prior to initial startup, check:

- Ensure that the machine is stable and level.
- Check that all utility connections are made correctly.
- Check the machine is grounded properly.
- Check that the temperature sensor is in its normal position (curved face in contact with the ironing cylinder)
- Turn the main power switch to the ON position (labeled as 1 on the switch itself).
- Press the START button.
- Check that the fan motors rotate and are rotating in the correct direction (see arrow on the motor). The fan motors are located on the left and right sides of the machine enclosure (on the right side only for IC-1355 and IC-1363)

- Check that the infeed belts move in the correct direction (towards the ironing cylinder of the machine). **Caution: use extreme care around moving parts inside the machine.**
- Replace all machine panels.
- Check that the temperature increases.
- Adjust the temperature settings according to the laundry to be ironed.
- Proceed to test the ironing process - the laundry should be dry and nicely ironed after being processed. If this is not the case, increase the temperature or reduce the ironing speed. **Caution: the roller is coated in a protective coating when it leaves the factory. It is therefore recommended to test using worn or old laundry.**

### 4.3 User Safety

User safety is provided by a finger guard device located just behind the introduction tray that protects the user from inserting their hands too far into the machine. The slightest contact with this safety plate causes the machine to stop immediately. This plate is the ironer's main emergency-stop device (available over the full working width). A second emergency-stop device is located near the control panel.

### 4.4 Heating System Safety

The temperature sensor, connected to the control panel and placed inside a plated probe on the ironing cylinder, ensures that the temperature of the cylinder remains below the overheating limits of the belts (heating is automatically disabled if the temperature reaches a maximum of 180°C or 356°F).

A safety thermostat (190°C or 375° F), also placed inside a plated probe on the ironing cylinder, turns off the heating if the main temperature sensor fails.

### 4.5 Working Principle

The laundry can be laid flat on the work tray located at the machine front, then the goods are placed on the Nomex infeed belts, which feed the goods onto the drying-ironing cylinder. The goods then pass under the infeed wrapped pressure roll (providing automatically adjusted constant pressure) to the drying/ironing cylinder. The drying and ironing is carried out using Nomex belts and a heated ironing cylinder. Belt tension may be adjusted using the flexible spring mounted on a tension rack. When the laundry is dried and ironed, it is sent to the collection tray by teflon metal spring slats (low-friction and heat resistance to +250° C or 480° F). The goods are delivered dry and ironed and ready for use.

# Chapter 5

## User Instructions

### 5.1 Daily Use

Refer to Section 6 on page 20 for details on using the ironer's easy control.

- Turn the power switch to the ON position (labeled 1 on the switch).
- Press the START button.
- Check that the infeed belts rotate.
- Choose an ironing speed between 1 and 7 (0 to use the SMART SYSTEM option, if so equipped).
- Adjust the temperature settings according to the moisture level and type of laundry to be ironed.

**For best finish results:**

- The pH of the goods to be ironed must be between 5.5 and 6.5.
- Do not use fabric softener! Fabric softener will be deposited onto the feeding belts and ironing cylinder causing poor performance and maintenance problems.

**A Note about waxing:**

The ironing cylinder of the IC series ironer is made of standard high carbon steel and will rust if exposed to the elements. Therefore, a light waxing will prevent corrosion buildup and deposition of foreign materials onto the goods. If the machine is to be shutdown for an extended period of time, see Section 9.3 on page 42.

During normal operation, a small amount of spray on wax provides necessary lubrication and improves the finish quality of the goods. Do not over apply wax! Begin by applying a small amount at the beginning of each day and pay attention to the results. The finish quality is the best indicator of the need for wax.

**Important:** the working temperature varies according to the textiles to be ironed, but must never exceed 180°C or 356°F during continuous operation. A preset safety thermostat (of 190°C or 375°F) is located inside the machine.

- When starting, it is essential to wait for the machine roller to reach a temperature close to the temperature required (the heating light will remain on until the temperature has been reached).
- When ironing small pieces of laundry it is essential to use the entire working width of the ironer. Do not work in lanes or only in a single section of the machine. Failing to work the ironer properly will result in premature failure of the ironer belting and is not covered by any warranty.

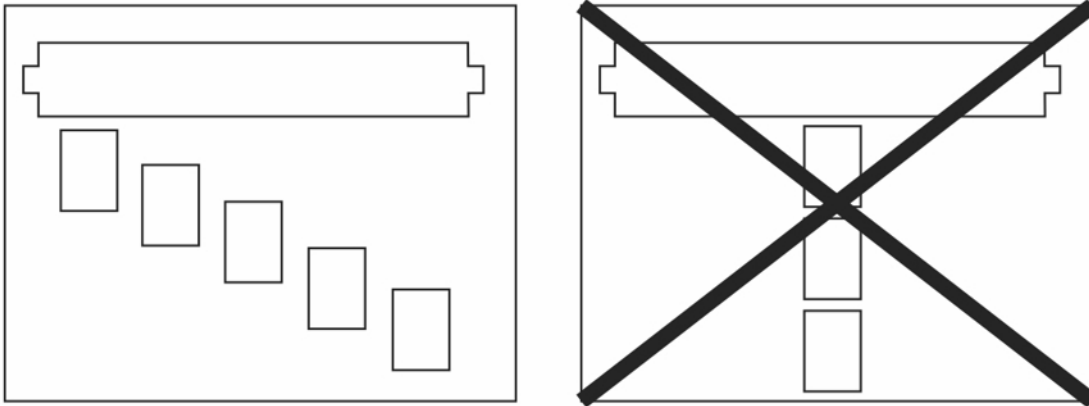


Figure 5.1: Correctly feeding small pieces (left) versus incorrect feeding of small pieces (right).

- In order to achieve dried and ironed laundry, the working speed must be adjusted according to the material type and moisture level of the laundry to be ironed. The residual moisture level must be between 40 and 50%.

**Important:** when finished, press the STOP button. The ironer will automatically stop when the roller naturally cools down to the programmed stop temperature (80° C or 175° F by default).

**Extremely important:** never stop the ironer if the temperature is higher than 80°C or 175°F as the ironing belts will be damaged.

**Never leave moist goods in the machine:** This can cause the ironing cylinder to corrode.

# Chapter 6

## Easy Control

### 6.1 Introduction

The Easy Control is a basic microprocessor that controls all aspects of the ironing operation. Refer to Figure 6.1 for details on the user interface.

### 6.2 User Interface

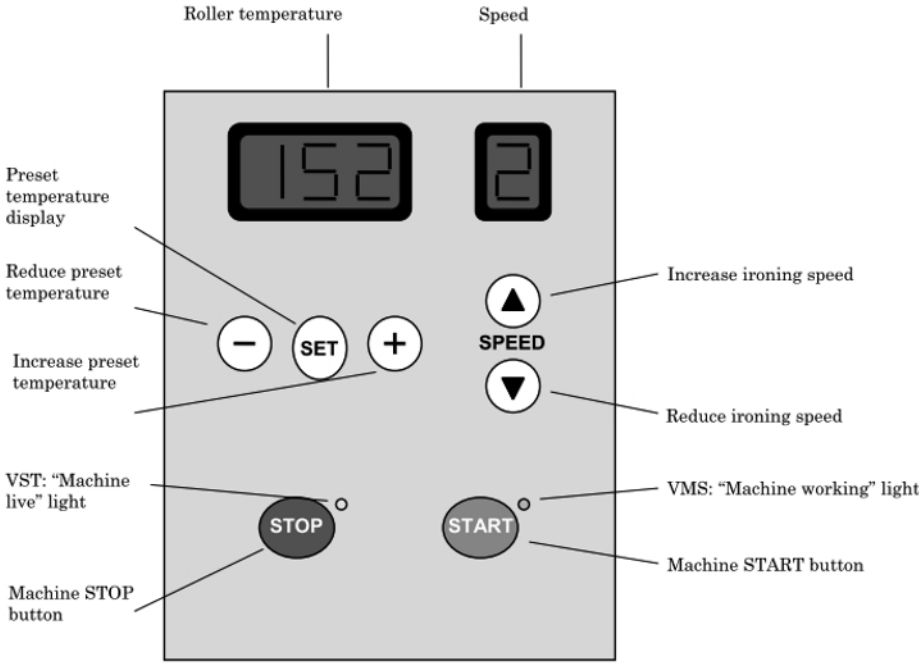


Figure 6.1: IC Series - Easy Control



## 6.3 Machine Use

### 6.3.1 Starting the Machine

To start the machine, press the START button:



- The display will light up and show the current temperature and preset speed
- The VMS (Machine Working) light will light up (VST, Machine Powered, is always lit when machine is powered on)
- The exhaust blower(s) will run
- The ironing cylinder will begin rotating
- After 15 seconds of purge time, heating is enabled

### 6.3.2 Shut Down Procedure

To stop the machine, press the STOP button:



The shutdown procedure depends on the temperature detected by the control

- If the temperature is less than or equal to TA, the automatic shutdown temperature, (80°C by default), the ironer will power down.
- If the temperature is greater than TA, only the heating is turned off. When the temperature drops below TA, the ironer will stop completely.

During the automatic shutdown procedure the temperature display and VMS indicator will flash. The TA value can be programmed during installation if needed. Refer to Section 6.7 on page 26 for further details.

## 6.4 Ironing Speed Control

The ironing cylinder motor is controlled by an inverter.

7 different factory preset speeds can be selected. Speed 0 is used for the optional SMART SYSTEM.

The speed can be adjusted when the machine is ON by pressing the UP and DOWN keys. The speed appears on the display.



In the event of a power failure the last selected value will be recalled.

When starting the ironer, if the set speed is not 0, the ironing cylinder will rotate at speed 1 while the detected temperature remains below TF, the operating temperature, (130°C or 266°F by default). Once this temperature is reached, the preset speed will be activated.

If the temperature drops below TF during operation, the speed will be adjusted.

When the selected speed is 0, the roller will rotate at speed 0 (speed set by the optional SMART SYSTEM), regardless of the temperature.

## 6.5 Heating

### 6.5.1 Electrical Heating Models

Depending on the model of machine, the electric resistor heating operates by modifying the current of one or two groups of resistors, controlled by the heating relay switches. The choice of 1 or 2 resistors is made by setting a parameter. Refer to Section 6.7 on page 26 for further details.

If the machine is configured to work with a single group of resistors, a special control method is activated (closing and opening of the heating relay) to reach and correctly maintain the selected temperature and to avoid thermal inertia due to this type of heating. It is therefore normal to hear the heating relay engaging frequently when this method is selected.

Call for heat is indicated by the decimal point on the temperature display. Refer to figure 6.5.1.



If the machine is configured to work with two resistor groups, the first group of resistors controls the temperature regulation and the second group of resistors continues operating when the temperature is below the preset temperature, and switches off when the preset temperature is attained. The second group of resistors is activated again when the temperature falls below the set point. Refer to Section 6.7 on page 26 for further details.

To show that the heating is activated when the two heating groups are operating, the decimal point on the temperature display is permanently lit. When a single group is operating, the decimal point flashes.



## 6.5.2 Gas Heating

For gas heated models, the machine is equipped with an electronic device that controls the ignition and functioning of the burner. The microprocessor turns on the gas burner when the ironing cylinder temperature is lower than the preset temperature.

Call for heat is indicated by the decimal point on the temperature display.



Section 6.6 on page 24 explains what to do in the event that there is no flame.

## 6.5.3 Programming the Working Temperature

The temperature setting can be programmed as follows:

- Press the SET button

The last programmed value will flash on the display:





Use the + and - buttons to modify the value. By holding the key down, the numbers will quickly increase or decrease.

3 seconds after releasing the + or - button the value is stored and the measured temperature is shown again on the display.

**Programmable range: 0...Tmax °C (32...Tmax °F) Resolution: 1°C**

The maximum value that the user can set (Tmax) is programmable. Refer to Section 6.7 on page 26 for further details.

Electrically heated ironers modulate the heating contactor when approaching the working temperature set point. It is normal to hear the heating relay switch engaging repeatedly during this period.

## 6.6 Alarm Messages

### 6.6.1 AL1 - Insufficient Airflow

The alarm is only used when the machine is configured for gas heating.

If the pressure switch on the exhaust opens for 2 seconds, the buzzer is activated for 1 minute and AL1 appears on the display.



### 6.6.2 AL4 - Fan Thermal Relay

When the fan thermal relay trips, the buzzer is activated for 1 minute and AL4 appears on the display:



Fan and heating are disabled but the machine remains on.

The alarm is automatically deactivated when all normal conditions are restored (closing the thermal relay contact) or by cycling power to the ironer.

This alarm is generally caused when the fan is clogged with lint or debris.

### 6.6.3 AL5 - Inverter Fault

When the inverter faults, the buzzer is activated for 1 minute and AL5 appears on the display:



The machine powers off automatically.

The alarm can be deactivated by restarting the machine or removing main power, waiting 1 minute and turning main power on again.

This fault may be due to roller motor overload caused by machine jamming or a blockage in the roller motor.

### 6.6.4 AL6 - Flame Failure

The alarm is only used when the machine is configured for gas heating.

When the heater is ignited, or is in process of igniting, and if the activated gas device does not generate a flame, the buzzer is activated for 1 minute and AL6 appears on the display.



The ignition control system remains active and the machine remains powered on.

To try and reignite the burner, press the + and - buttons simultaneously after the alarm stops.



When the gas control cancels the fault message, the alarm is also cancelled. If the reset fails, the alarm will activate again. This may be due to one of the following problems:

- No gas supply: check that the manual gas shutoff valve is open
- Insufficient gas pressure or incorrect gas type: Refer to Section 3.4 on page 9
- Faulty ignition spark plug: replace

To cancel the alarm without igniting the heater, switch off the machine by pressing the STOP button.

### 6.6.5 AL7 - Overheat / Temperature Probe Fault

If the temperature sensor is faulty, or is not connected, or if it detects a temperature above 210°C / 410°F continuously for 2 seconds, the buzzer is activated for 1 minute and AL7 appears on the display.



The machine will still operate and the alarm can be cancelled by switching off the machine.

## 6.7 Programming Parameters

Some parameters, which normally need not be modified by the user, can be programmed by a special procedure:

1. Temperature measurement unit (°C or °F)
2. Maximum preset temperature (Tmax)
3. Operating temperature (TF)
4. Temperature regulation hysteresis (H)
5. Temperature for automatic shut-down (TA)
6. Heating type (Electric, Gas, or Steam)
7. Number of resistor groups installed (1 or 2)

To enter the parameter setting mode, simultaneously press the STOP and START buttons and power the machine on.



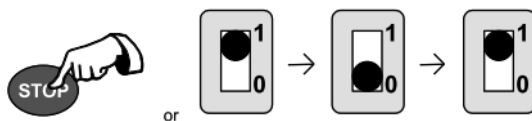
The temperature display shows the value of the first parameter to set, while the speed display shows a letter or a number that identifies the parameter.

The value blinks to indicate that it may be modified.

Use the keys + and - to modify the set value. Press SET to confirm the current value and proceed to the next parameter.



When pressing SET after setting the last parameter, the first parameter is shown again. To exit the parameter setting mode, press STOP or switch the machine off and on.



The setting of the last parameter is only stored if you have confirmed it by pressing SET before leaving the parameter setting mode.

### 6.7.1 Temperature Measurement Unit

The actual setting is shown on the TEMP display, while U is shown on the VIT display.



Available values: °C / °F

Default value: °C

### 6.7.2 Maximum Temperature

This setting is the maximum value the user may select, Tmax. Refer to Section 6.5.3 on page 23. The current value is shown on the TEMP display, while M is shown on the VIT display.



Default value: 180

Parameter range: 1-180 °C (34-356 °F)

Precision: 1°C

### 6.7.3 Operating Temperature

This setting establishes the operating temperature, TF. Refer to Section 6.4 on page 22. The current value is shown on the TEMP display, while r is shown on the VIT display.



Default value: 130

Parameter range: 1-180°C (34-356 °F)

Precision: 1°C

### 6.7.4 Temperature Regulation

This setting defines the temperature setpoint regulation range.

The current value is shown on the TEMP display, while H is shown on the VIT display.





Default value: 2

Parameter range: 1-5 °C (2-9 °F)

Precision: 1°C

With electrical heating with 2 resistor groups, the hysteresis only affects the second group, while the first is controlled in the usual manner.

### 6.7.5 Stop Temperature

This setting establishes the maximum stop temperature of the machine, TA. Refer to Section 5.1 on page 18.

The current value is shown on the TEMP display, while 0 is shown on the VIT display.



Default value: 80

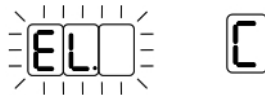
Parameter range: 1-180°C (34-356°F)

Precision: 1°C

### 6.7.6 Heating Type

This setting establishes whether the heating is electrical, steam or gas.

The current value is shown on the TEMP display, while C is shown on the VIT display.



Default value: EL

Available values: Electrical or Steam heating (EL.) / Gas heating (GAS)

### 6.7.7 Number of Resistor Groups

This setting establishes the number of heating resistor groups installed on the drying and ironing machine.

The current value is shown on the TEMP display, while n is shown on the VIT display.



Default value: 2

Available values: 1 / 2

**NOTE: This parameter is only shown when the electrical heating method is selected.**

# Chapter 7

## Maintenance

### 7.1 Warranty

For a copy of the commercial warranty covering your particular ironer(s), contact the distributor from whom you purchased the equipment and request ironer warranty form, or visit our website:

[www.bandctech.com](http://www.bandctech.com)

NOTE: Whenever contacting B&C Technologies for warranty information, be sure to have the ironer(s) model number and serial number available so that your inquiry can be handled in an expeditious manner.

#### RETURNING WARRANTY PART(S)

ALL ironer or parts warranty claims or inquiries should be addressed to your local dealer. To expedite processing, the following procedures must be followed:

1. No parts are to be returned to B&C Technologies without prior authorization (Return Material Authorization) from the factory.

NOTE: An RMA (Return Material Authorization) is valid for 60 days from date of issue.

- (a) The RMA issued by the factory as well as any other correspondence pertaining to the returned part(s) must be included inside the package with the failed part.
2. Each part must be tagged with the following information:
  - (a) Model number and serial number of the ironer from which part was removed.
  - (b) Nature of failure (be specific).
  - (c) Date of ironer installation.
  - (d) Date of part failure.
3. The company returning the part(s) must clearly note the complete company name and address on the outside of the package as well as the RMA number.

4. ALL returns must be properly packaged to insure that they are not damaged in transit. Damage claims are the responsibility of the shipper.  
IMPORTANT: No replacements, credits, or refunds will be issued for merchandise damaged in transit.
5. ALL returns should be shipped to B&C Technologies in such a manner that they are insured and a proof of delivery can be obtained by the sender.
6. Shipping charges are not the responsibility of B&C Technologies. ALL returns should be prepaid to the factory. Any C.O.D. or COLLECT returns will not be accepted.

IMPORTANT: NO replacements, credits, or refunds will be issued if the claim cannot be processed due to insufficient information.

## 7.2 Routine Maintenance

### 7.2.1 Cleaning

A program and/or schedule should be established for periodic inspection, cleaning and removal of lint from various areas of the ironer, as well as throughout the duct work system. The frequency of cleaning can best be determined from experience at each location. Maximum operating efficiency is dependent upon proper air circulation. The accumulation of lint can restrict this air flow. If the guidelines in this section are met, your ironer will provide many years of efficient, trouble-free, and most importantly, safe operation.

**WARNING: LINT FROM MOST FABRICS IS HIGHLY COMBUSTIBLE. THE ACCUMULATION OF LINT CAN CREATE A POTENTIAL FIRE HAZARD.**

**WARNING: KEEP IRONER AREA CLEAR AND FREE FROM COMBUSTIBLE MATERIALS, GASOLINE AND OTHER FLAMMABLE VAPORS AND LIQUIDS.**

NOTE: Suggested time intervals shown are for average usage which is considered 6 to 8 operational (running) hours per day.

NOTE: Frequency can best be determined at each location.

### 7.2.2 Maintenance Intervals

#### DAILY

At the beginning of each work shift, with the machine stopped and cold:

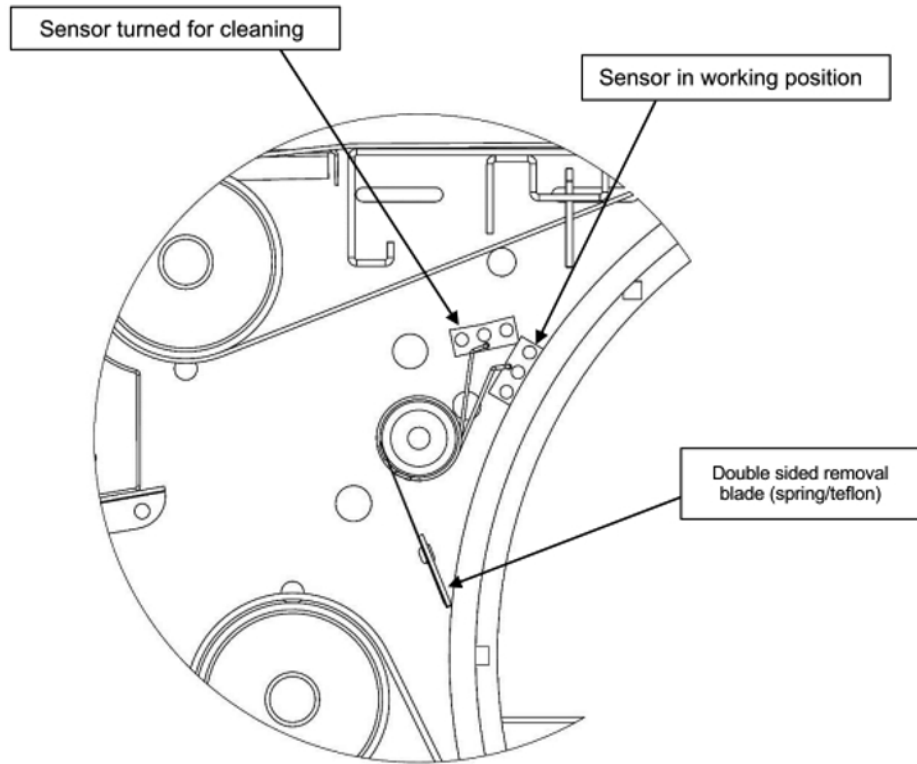
Check for contact between the thermostat probe and the ironing cylinder and visually check that there are no foreign objects or material between the two.

Press slightly onto the thermostat probe by hand to insure contact.

## WEEKLY

Before start-up for the week:

Clean the inside surface of the thermostat probe. For this purpose, rotate the probe by 90 degrees and remove any built up wax and lint from the probe by hand. Return the probe to its initial position.



Remove the top panel (held in place with 2 each 5mm socket-head screws). Check the condition of the guide tape/braid between the pressing roller and the tape/braid guides. If a guide tape/braid is missing, replace it immediately with a material of the same type (special high temperature polyester).

**WARNING: TO AVOID THE HAZARD OF ELECTRICAL SHOCK, DISCONNECT ELECTRICAL SUPPLY.**

## QUARTERLY

Cleaning:

- Check that the thermostat probe is clean by rotating it 90° then put back into place and check that it rests on the roller correctly.

- Clean the exhaust fan(s) as well as the fan housing and exhaust duct work (particularly the bends).
- Clean the fan motor and driving motor ventilation grids.
- Clean the roller as soon as a layer (generally white) of scale or detergent residue builds up.
- Clean the slats that remove the laundry from the roller and direct the pieces into the collection tray.

#### Greasing:

- Grease the chains and the drive gears as well as the driving chain of the pressing roller.

#### Adjustments:

- Check that the infeed belts have the correct tension. They must be lightly stretched and must turn over the driving roller without slipping. To loosen the belts, undo the screws at both ends of the introduction tray and slide the tray.
- Check the tension of the ironing belts. Particularly during the first few weeks of operation, the belts have a tendency to lengthen slightly. In order to tighten the belts again, the two tensioners at each end of the machine need to be used. Remove the side panels and then adjust the tensioners so that the ironing belts make sufficient contact with the ironing cylinder to drive it correctly without slipping. Test with goods.

**Caution: apply the same tension to each tensioner.**

**Do not stretch the belts too much as there is a risk of rapid deterioration.**

- Check the pressure of the pressing roller. It must not compress the roller too much but just enough to achieve good quality ironing; its role being to flatten the laundry.

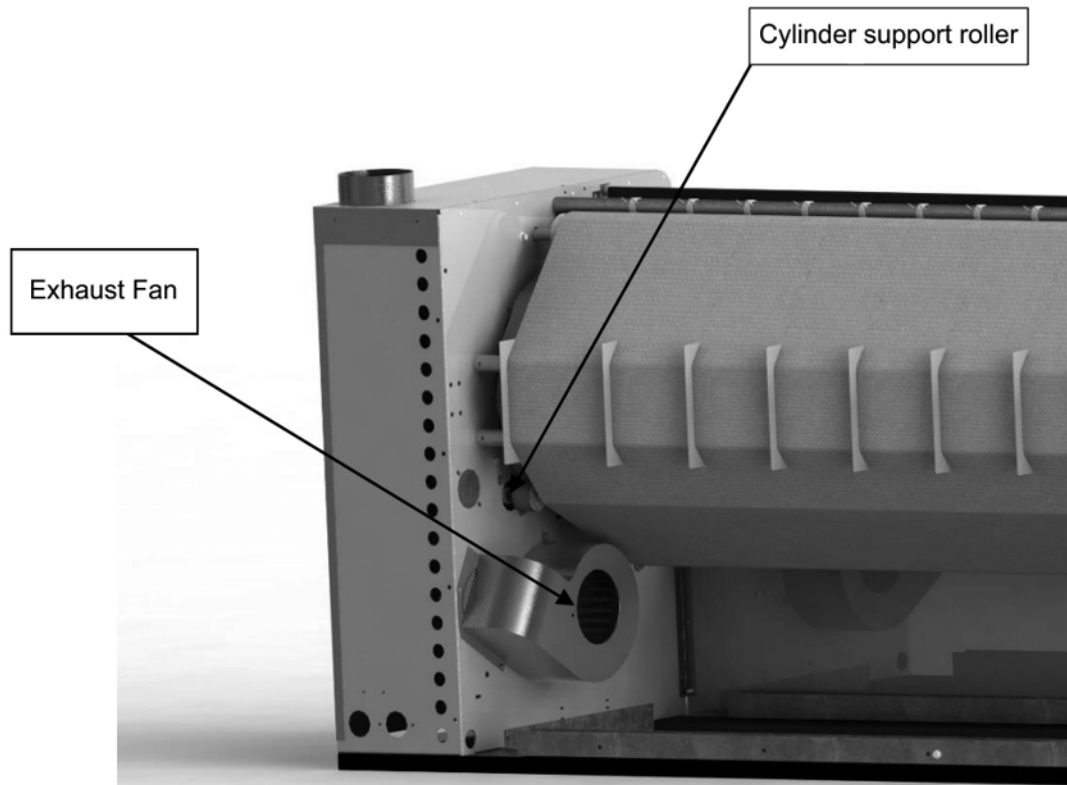
**Caution: apply the same tension to each tension spring.**

- Check the tension of the driving chain (right side of the machine), the chain must not “beat” as there is a risk that it may break. To tighten the chain, move the adjustable gear along its rail.

## 6 MONTHS

Inspect and remove lint accumulation in customer furnished exhaust duct work system and from ironers internal exhaust ducting.

Impeller (fan /blower) should be examined. Clean thoroughly.



**WARNING: THE ACCUMULATION OF LINT IN THE EXHAUST DUCT WORK CAN CREATE A POTENTIAL FIRE HAZARD.**

**WARNING: DO NOT OBSTRUCT THE FLOW OF COMBUSTION AND VENTILATION AIR. CHECK CUSTOMER FURNISHED BACK DRAFT DAMPERS IN EXHAUST DUCT WORK. INSPECT AND REMOVE ANY LINT ACCUMULATION WHICH CAN CAUSE DAMPER TO BIND OR STICK.**

NOTE: A back draft damper that is sticking partially closed can result in poor function and shut-down of the heat circuit safety switches or thermostats.

NOTE: When cleaning ironer cabinet(s), avoid using harsh abrasives. A product intended for the cleaning of appliances is recommended.

## **7.3 Service & Parts**

### **7.3.1 Service**

Service must be performed by a qualified trained technician, service agency, or gas supplier. If service is required, contact the distributor from whom the equipment was purchased. If the distributor cannot be contacted or is unknown, contact B&C Technologies for a distributor in your area.

For technical assistance in the United States, contact B&C Technologies:

(850) 249-2222 Phone

(850) 249-2226 FAX

parts@bandctech.com

www.bandctech.com

NOTE: When contacting B&C Technologies be sure to supply the correct model number and serial number so that your inquiry is handled in an expedient manner.

### **7.3.2 Parts**

Replacement parts should be purchased from the distributor from whom the equipment was purchased. If the distributor cannot be contacted or is unknown, contact B&C Technologies for a distributor in your area. Parts may also be purchased directly from the factory

NOTE: When ordering replacement parts from a dealer or B&C Technologies be sure to supply the correct model number and serial number so that your parts order can be processed in an expeditious manner.



# Chapter 8

## Maintenance Instructions

Before any maintenance is performed, the machine must be stopped, the ironing cylinder cold, and power removed from the machine. Follow all lock-out/tag-out procedures.

### 8.1 Replacing Infeed Belts

- Remove the 2 screws holding the introduction tray.
- Unlock the axis of the driving roller on the side of the left block (2 pointed screws).
- Unwind approximately half a turn of adhesive strip.
- Push away the pin while maintaining the axis in place (identify the direction in which the axis is mounted).
- Remove the axis by pushing on the left.
- Withdraw the introduction tray.
- Remove the used infeed belts and replace with new belts.
- To reassemble, reverse the instructions above.
- Glue the adhesive strip back on using neoprene glue.
- Check the distance between the end of the introduction tray and the roller. The distance must be a minimum of 5 to 6mm.

**Note: always change the full set of belts.**

## 8.2 Replacing Ironing Belts

- Remove the side panels.
- Loosen the tension blocks as much as possible.
- Move the clip of the ironing strip forward to the front roller.
- Connect the old strip to the new strip.  
Mind the position: the Nomex side (darker), the side with the flap, must be against the roller.  
Make the machine turn very slowly.
- Stop at the position of the clip.
- Remove the old belt.
- Clip the 2 ends of the new belt by moving the axis in between the clips.
- Repeat this operation for the other belts.
- Adjust the tension of the belts if necessary.

**Note:** always change the full set of belts.

## 8.3 Replacing the Support Rollers

- Remove the top panel.
- Remove the side panels.
- Lift the roller using an appropriate tool (jack, engine hoist, etc.).
- Loosen the blocking screws for the support rollers on the support roller bar (2 pointed screws).
- Remove the bar and the rollers.
- Reassemble the bar with new rollers.
- Fix the rollers into place on the bar (see required distance).
- Fix the bar onto the level blocks.
- Replace the panels.

## 8.4 Replacing the Side Rollers

- Remove the side panels.
- Remove the screw securing the roller in place.
- Remove the spacer from the used roller.
- Place the new roller onto the spacer.
- Put the new roller in place.

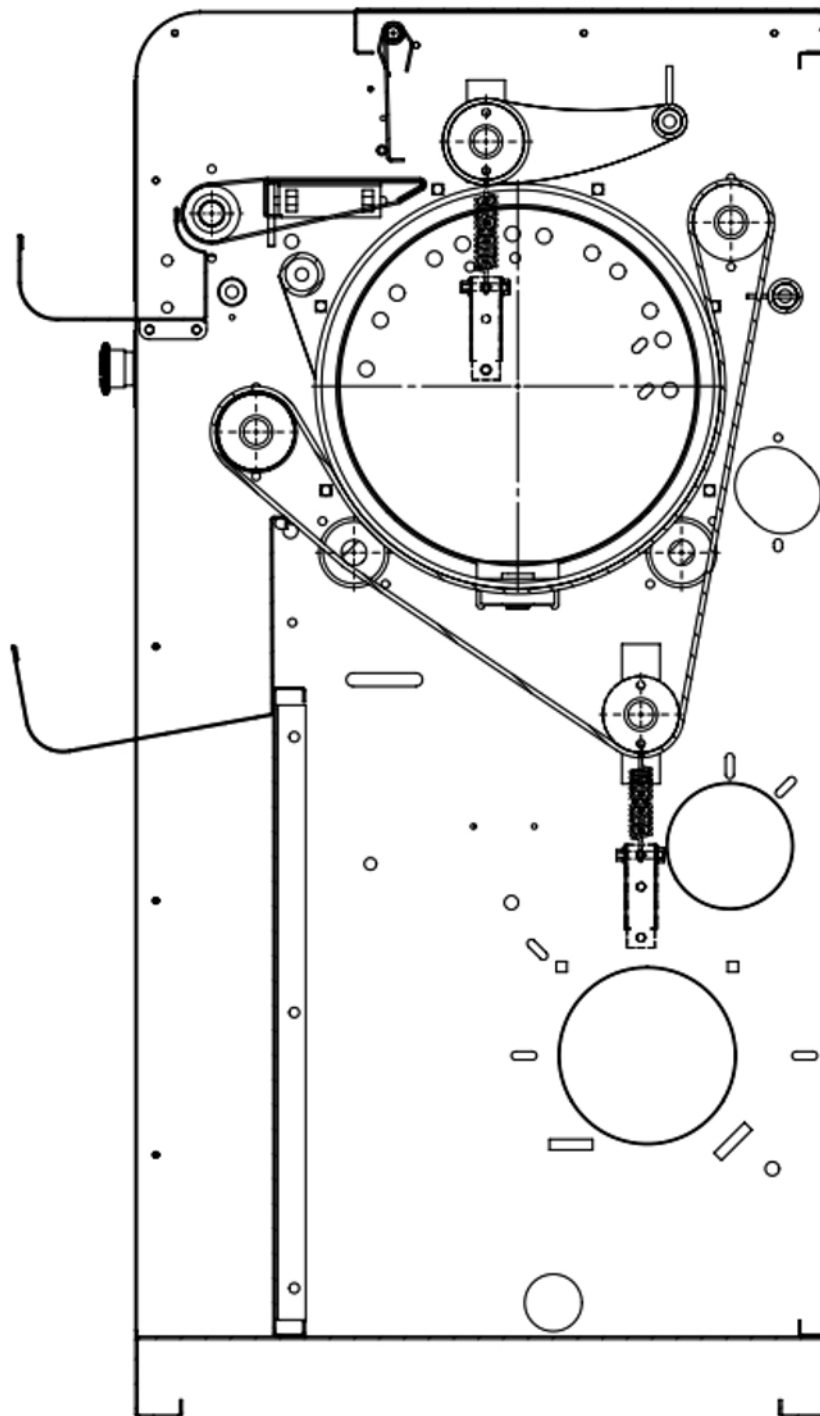


Figure 8.1: Side view, showing belt positions and tensioners

# Chapter 9

## Basic Troubleshooting

### 9.1 Power Failure During Operation

When the power fails (the machine stops while the ironing cylinder is at working temperature) it is essential to immediately isolate the ironing belts from the ironing cylinder.

This can be accomplished by feeding a thick and wet cloth into the machine while rotating it using the crank handle provided (the crank handle must be accessible at all times, its primary position is on the right hand side panel of the machine).

Having removed the wing nut to flip the red safety plate, insert the crank handle into the opening on the right side panel of the machine.

If necessary, feed a very wet piece of laundry into the machine several times in order to cool the roller down as quickly as possible.

At least two people are required to perform this operation in case of an emergency; one or two to feed the laundry while one turns the crank handle. Replace the wing nut on the right side panel of the machine after handling, as it closes a safety interlock switch which enables the control panel to receive power.

### 9.2 Other Faults

- If the machine does not start (the roller does not rotate) or if the machine suddenly stops, check the emergency stop devices (emergency stop button, finger-safety plate or wing nut on the right side panel). After deactivating the emergency stop devices, restart the machine by pressing the START button.
- If the safety plate (red plate covering the infeed belts) is triggered while the machine is operating, the machine will stop. Start the machine back up again immediately by pressing the START button (to avoid damaging the belts).
- If other faults or unusual noises occur (rubbing, banging, etc.) stop working and contact

your authorized distributor immediately, describing the problem in detail.

### **9.3 Lengthy Out of Service Period**

To prevent ironing cylinder corrosion, particularly in the case of out-of-service periods of more than 1 week, it is important to coat the roller with a layer of paraffin. Proceed as follows:

- Machine heat off, roller slightly warm (around 105°C or 220°F during the cooling phase)
- Remove the control panel.
- Set the roller to rotate slowly.
- Coat the surface of the roller with the paraffin in successive layers to coat the entire surface of the roller.
- Insert a dry piece of laundry around the roller.

# Chapter 10

## Decommissioning

In the event that the machine must be decommissioned, follow these steps:

1. Clean interior and exterior of machine.
2. Disconnect electrical power.
  - (a) Shut of main power supply at the breaker box or main control panel.
  - (b) Do not attempt to disconnect power supply wires from power supply. Have a qualified electrician disconnect power to machine at its source.
3. Disconnect gas/steam supply.
4. Disconnect exhaust system.
5. Remove the machine from its foundation.
  - (a) Keep all panels in place to provide stability when moving the machine.
  - (b) Place the machine on skid and bolt the frame to the skid. This will facilitate the removal of the machine onto a truck.
6. Recycle.

The manufacturer uses the highest quality material in their products so that those material may be recycled at the end of the product's service life.

# Appendix A

## Gas Conversion Technique

This operation requires the gas nozzle to be changed and the air ring to be adjusted.

- Remove side panel to access the gas nozzle (left side of the machine)
- Using a wrench, remove the nozzle and replace it with a nozzle that is appropriate for the type of gas to be used. Refer to Table A.1.
- Adjust the air ring according to the type of gas. Refer to Figure A.1.

Table A.1: Gas Nozzle Sizing

Gas Type	Natural Gas			LPG		
Supply Pressure (mbar — in water)	20 — 8			37 — 14		
Model	IC-1355	IC-1363	IC-1379	IC-1355	IC-1363	IC-1379
Nozzle Size (mm — inches)	2.5	3.5	4	1.9	2.4	2.7
Air Adjustment "d" (mm — inches)	4 — 1/64	4 — 1/64	4 — 1/64	18 — 11/16	18 — 11/16	18 — 11/16

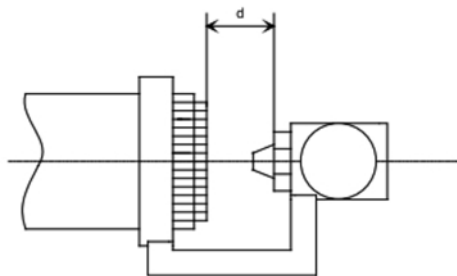


Figure A.1: Air Adjustment Detail