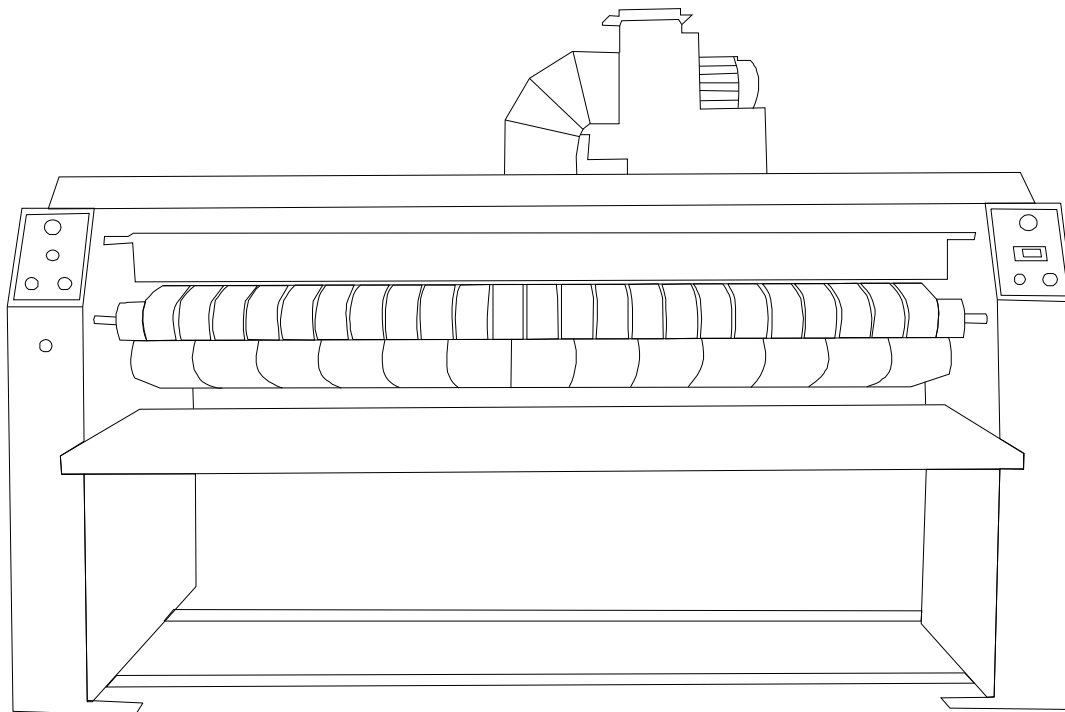


Ironer

IP Series Installation and Operation Manual



B&C Technologies

Panama City, FL

(850) 249-2222

(850) 249-2226 FAX

www.bandctech.com

Accurate Technologies

Samutprakarn, Thailand

+ 66 (0) 2740-5511

+ 66 (0) 2740-5522 FAX

www.accuratethai.com

Revision 1.1

09-June-2006

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.

C Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

C **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.

C 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.

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Ironer

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:

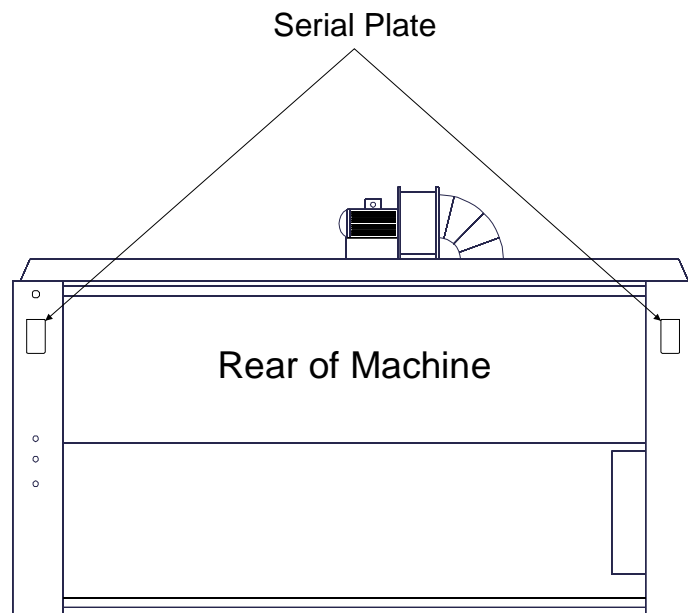
(850) 249-2222 Phone
(850) 249-2226 FAX
parts@bandctech.com
www.bandctech.com

In Thailand:

Phone: + 66 (0) 2740-5511
FAX: + 66 (0) 2740-5522
e-mail: sales@accuratethai.com
Web: www.accuratethai.com

Nameplate Location

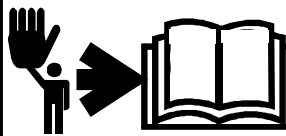
When contacting B&C Technologies about your equipment, please make note of the model and serial number, located on the nameplate as shown below.

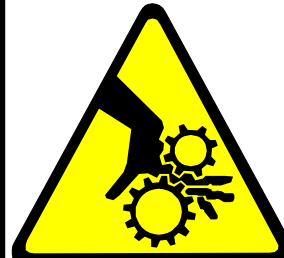


Key Symbols


Safety Information


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

	<p>⚠ WARNING</p> <p>To prevent serious injury or death, read machine manuals before installing, operating, servicing, or cleaning machine.</p>
---	---

	<p>⚠ WARNING</p> <p>Moving parts hazard.</p> <p>Can cause serious injury.</p> <p>Do not operate unless all guards and covers are in place.</p> <p>Do not put hands/fingers beyond guard/cover.</p>
--	--

	<p>⚠ WARNING</p> <p>To prevent serious injury, before service or cleaning:</p> <ul style="list-style-type: none"> ! Disconnect all utilities such as air, steam, gas and electricity ! Release any residual air. ! Allow heated parts to cool.
--	--


	<p>⚠ WARNING</p> <p>Moving parts hazard.</p> <p>Can cause serious injury.</p> <p>Do not operate unless all guards and covers are in place.</p> <p>Do not put hands/fingers beyond guard/cover.</p>
--	--


	<p>⚠ WARNING</p> <p>Electrical hazard inside.</p> <p>Can cause death or serious injury.</p> <p>Turn off and lockout/tagout all electrical power before opening.</p>
---	---

	<p>⚠ CAUTION</p> <p>Burn hazards.</p> <p>! Contact with machine components or hot goods can burn you.</p> <p>! Do not operate unless all guards and covers are in place.</p> <p>! Use care when handling recently processed or dried goods.</p>
--	---

Key Symbols

Safety Information

	⚠ WARNING
	<p>Burn and crush hazards.</p> <p>To avoid serious injury, keep hands/fingers, clothing, hair and jewelry away from all hot rolls and moving parts.</p> <p>Before attempting to free jammed flatwork:</p> <p>! Immediately shut off heat and power.</p> <p>! Follow lockout/tagout procedures.</p>

	⚠ WARNING
	<p>To prevent serious injury or death:</p> <p>Before removing jams, servicing, cleaning, or adjusting equipment, turn off all electrical power and other utilities.</p> <p>Follow lockout/tagout procedures.</p> <p>Do not operate equipment without all guards, belts, and tapes in place.</p>

	⚠ WARNING
	<p>Toxic and fire hazards.</p> <p>Machine produces gases, fumes and lint which may be toxic or catch fire and could result in serious injury or death.</p> <p>Vent exhaust outdoors and regularly clean lint away from machine.</p>

Important Instructions

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.

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.

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 commences.
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. Never attempt to remove jammed or misfed goods while the machine is in operation. Attempting to clear jammed goods while the machine is in operation can cause the user to be pulled into the machine, causing serious injury or death. Always stop the machine, remove power, and allow time for cooling before attempting to remove jammed goods.
8. 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 be come caught in the machine while operating or near the machine.
9. Only a qualified technician should attempt to service or repair the ironer.

Important Instructions

Safety Information

10. Do not install the machine in an area where it could be exposed to water or weather.
11. Do not alter or tamper with the control system.
12. To reduce the risk of fire, do not process plastics or articles containing foam rubber or similarly textured rubber-like materials.
13. Keep the area near the exhaust ducting clean and free of lint, dust, dirt or debris.
14. 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).
15. 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.
16. Always disconnect the electrical service from the machine and allow it to cool before performing service.
17. This machine must be installed according to the installation instructions. All electrical connections, and gas or steam connections must comply with state and local codes and must be made by a licensed installer where required.

Installation

Receiving Inspection

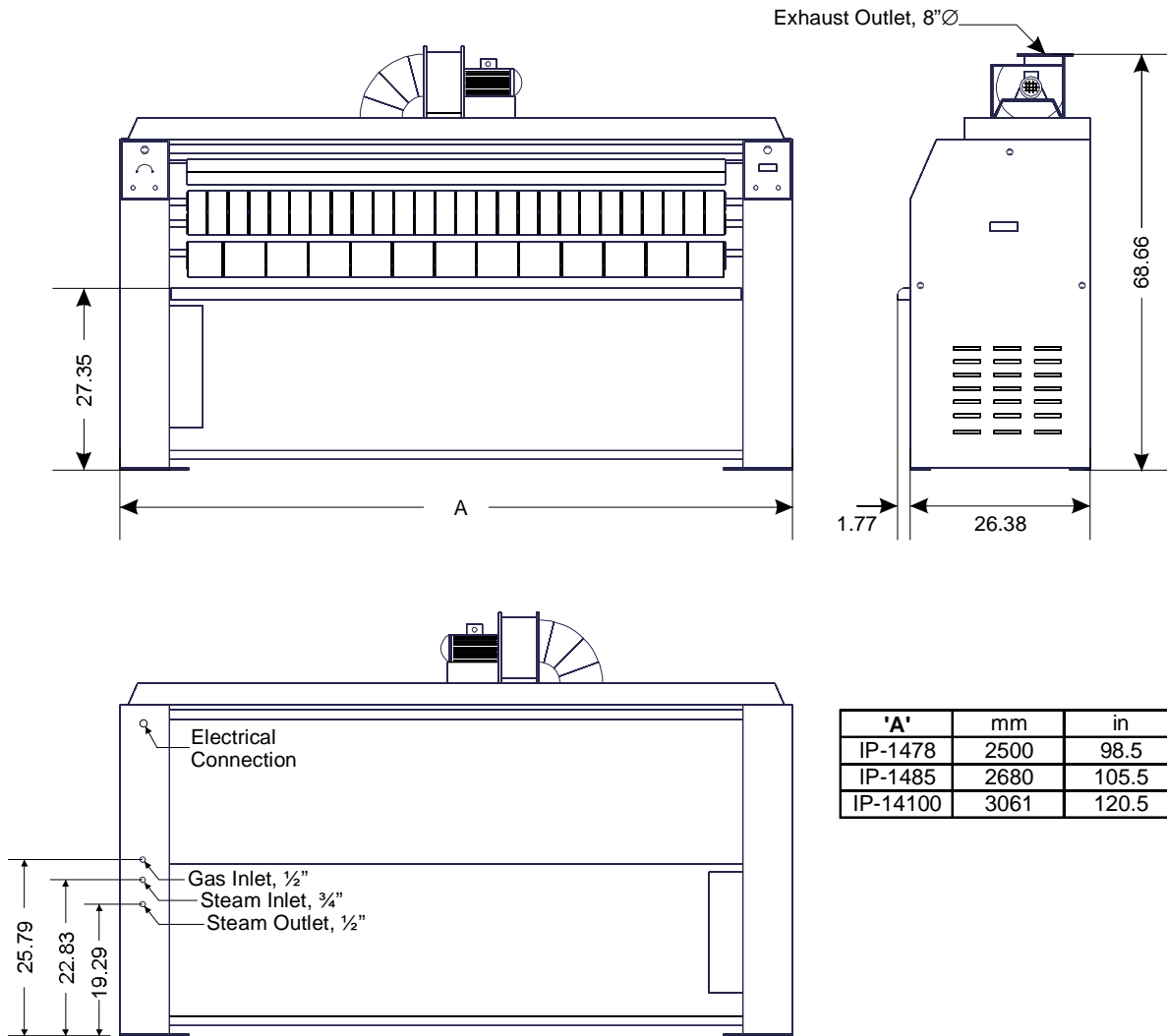
Upon receipt of the equipment, visually inspect for shipping damage and note any damage with the carrier before signing the shipping receipt, or advise the carrier of the damage as soon as it is noted.

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

Note: Warranty is VOID unless the equipment is 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 commences.

Installation

General Specifications and Utility Connection Points



Installation

General Specifications

Model			IP-1478		IP-1485		IP-14100	
	Metric	US						
Number of Rolls			1		1		1	
Roll Diameter	mm	inch	355.6	14	355.6	14	355.6	14
Working Width	mm	inch	2000	78	2159	85	2540	100
Speed Range	m/min	ft/min	1.8-11	6-36	1.8-11	6-36	1.8-11	6-36
Dimensions								
Width	mm	inch	2500	98.5	2500	105.5	2500	120.5
Depth	mm	inch	715	28.2	715	28.2	715	28.2
Height	mm	inch	1744	68.7	1744	68.7	1744	68.7
Canopy Height	mm	inch	434	17	434	17	434	17
Exhaust System								
Air Flow	cmm	cfm	30.6	1080	30.6	1080	30.6	1080
Exhaust Duct	mm	inch	203.2	8	203.2	8	203.2	8
Drive Information								
Drive Motor	kW	HP	0.37	0.5	0.37	0.5	0.37	0.5
Blower Motor	kW	HP	0.37	0.5	0.37	0.5	0.37	0.5
Steam								
Consumption	BHP		1.8		2		2.3	
Pressure	bar	psi	6.3-8.8	90-125	6.3-8.8	90-125	6.3-8.8	90-125
Inlet Size	mm	inch	19.1	0.75	19.1	0.75	19.1	0.75
Outlet Size	mm	inch	12.7	0.5	12.7	0.5	12.7	0.5
Gas								
Heat Input	BTU		150,000		160,000		190,000	
Gas Inlet Size	mm	inch	12.7	0.5	12.7	0.5	12.7	0.5
Electric Heat								
Heating Element	kW		36		40		46	
Weight & Shipping								
Net Weight	kg	lbs	477	1051	520	1144	600	1320
Shipping Weight	kg	lbs	527	1162	570	1254	650	1430

Specifications subject to change without notice

Installation

Electrical Connection

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.

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.

Insure that the control transformer taps are connected in accordance with the incoming line voltage. Verify connections as shown on the schematic with each machine.

Electric Heat Models

Rating	Model	Breaker Size	Full Load Amps
208-230V, 50/60Hz	IP-1478	100	87
	IP-1485	100	96
	IP-14100	125	111
380-480V, 50/60Hz	IP-1478	50	43
	IP-1485	50	48
	IP-14100	100	55

Gas/Steam Heat Models

Rating	Model	Breaker Size	Full Load Amps
208-230V, 50/60Hz	IP-1478	15	4
	IP-1485	15	5
	IP-14100	15	7
380-480V, 50/60Hz	IP-1478	15	2
	IP-1485	15	3
	IP-14100	15	4

Installation

Gas Connection

Gas Supply Line

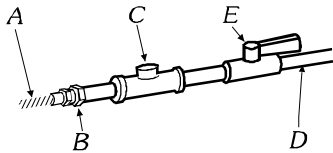
! $\frac{3}{4}$ " IPS pipe is recommended.

! $\frac{3}{4}$ " approved tubing is acceptable for lengths under 25 ft (6.1 m) if local codes and gas supplier permit.

! Must include $\frac{1}{8}$ " NPT minimum plugged tapping accessible for test gauge connection, immediately upstream of the gas connection to the dryer (see illustration).

! 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.



- A. $\frac{1}{2}$ " flexible gas connector
- B. $\frac{3}{4}$ " pipe to flare adapter fitting
- C. $\frac{1}{8}$ " NPT plugged tapping
- D. $\frac{3}{4}$ " NPT gas supply line
- E. Gas shutoff valve

Gas Supply Connection Requirements

There are many methods by which the IP 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 $\frac{1}{2}$ " flare x $\frac{3}{4}$ " 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 $\frac{3}{4}$ " 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 4-14 inches of water column pressure.

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

Installation

Gas Connection

Manifold Pressure

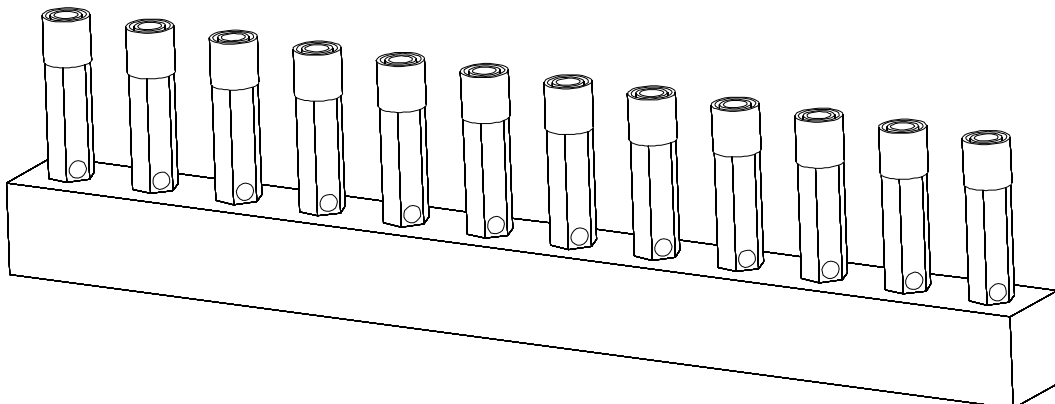
Be sure to check the manifold pressure. Use a manometer to verify that the manifold pressure matches the information on the serial sticker and the type of gas being used. A separate gas regulator (locally obtained) must be installed if the incoming line pressure is greater than 12 inches water column 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.

After the reconfiguration is complete, the manifold pressure must be verified for proper operation. All instructions supplied with the regulator kit must be followed to ensure proper operation.


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. The correct regulator kit must be installed in the gas valve and all gas nozzles internally must be changed. See figure below.



Installation

Exhaust Requirements

	⚠ WARNING
	Toxic and fire hazards. Machine produces gases, fumes and lint which may be toxic or catch fire and could result in serious injury or death. Vent exhaust outdoors and regularly clean lint away from machine.

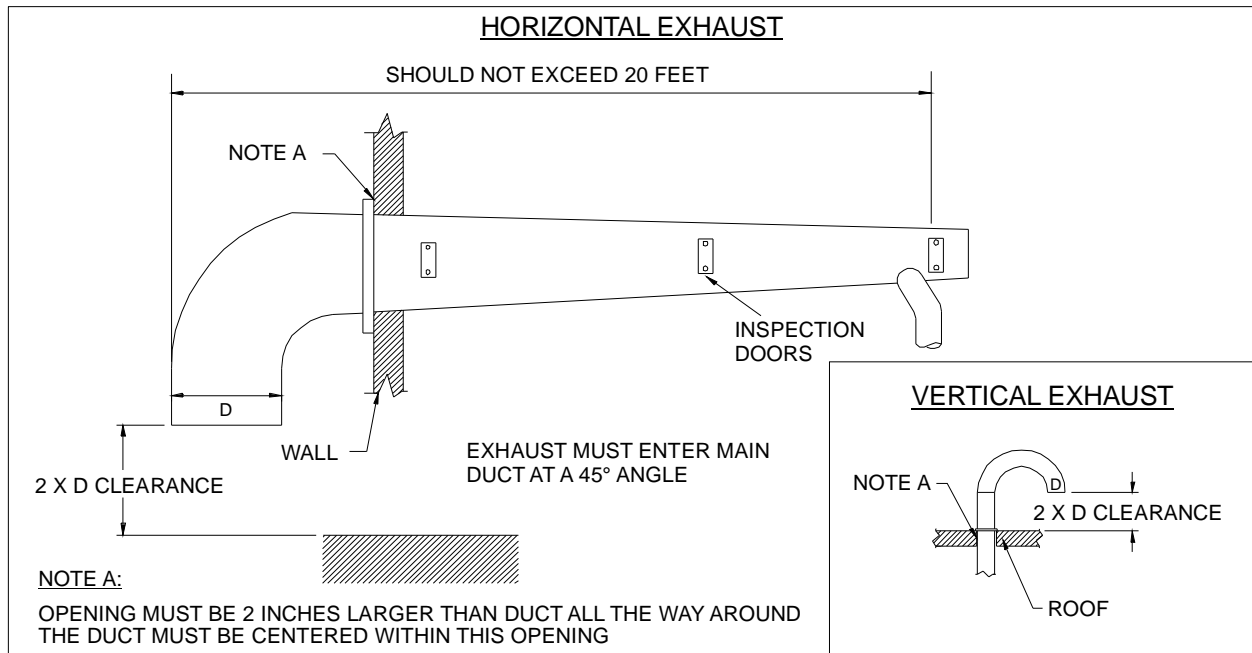
For best results, install the ironer near an outside wall in order to keep the exhaust duct length as short as possible, and to provide a source of make-up air. Neither the rear nor the sides of the ironer should be blocked. Blocking the air inlets prevents proper combustion, and will yield poor results, and possibly harmful combustion byproducts.

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

The exhaust outlet is 8 inches in diameter (203.2 mm). Use the shortest possible path with the fewest number of bends to connect to the outlet ductwork. Measured backpressure should not exceed 0.3 inches of water column pressure for reliable ignition and best results.

Important: Under no circumstance should this ductwork be shared with other equipment.

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.



Installation

Steam Connections

For best results, operate with a steam pressure of 90-125 psi (6.2-8.6 bar). The steam inlet and return are located on the right rear of the machine. The inlet is marked as such and is ¾" NPT (Female). The return is marked as such and is ½" NPT (Female).

Important: Insulate all steam and return lines for the safety of the operator and service technician.

Important: All steam components must be rated for a minimum of 200 psi (14 bar) working pressure. Shut off valves must be installed upstream of the steam inlet, and downstream of the steam trap so that the equipment can be isolated for maintenance or emergency.

Important: Support all steam lines and components to minimize the load on the steam connections to the ironer.

Obtain steam service piping from a steam system supplier or a qualified steam fitter.

Use a minimum of 12 inch (300mm) rise above the header to prevent condensate from draining into the ironer. Do not make a steam connection to the header with a horizontal/downward facing tee or elbow.

Wherever possible, horizontal runs of steam lines must gravity drain to the steam header. Water pockets or improperly drained headers will yield poor results due to wet steam.

Install a union and valve in the steam supply and return lines for ease of service.

Install an inverted bucket trap with strainer and a check valve. For best results, install the trap at least 18 inches (450mm) below the inlet and as close to the machine as possible. Install the trap according to the instructions with the unit, noting the steam flow direction. If the steam is gravity returned to the boiler, install a vacuum breaker and check valve in the return line near the machine. Note that all return plumbing must be below the return inlet.

To prevent eventual water hammer, route all return lines below steam outlets.

Installation

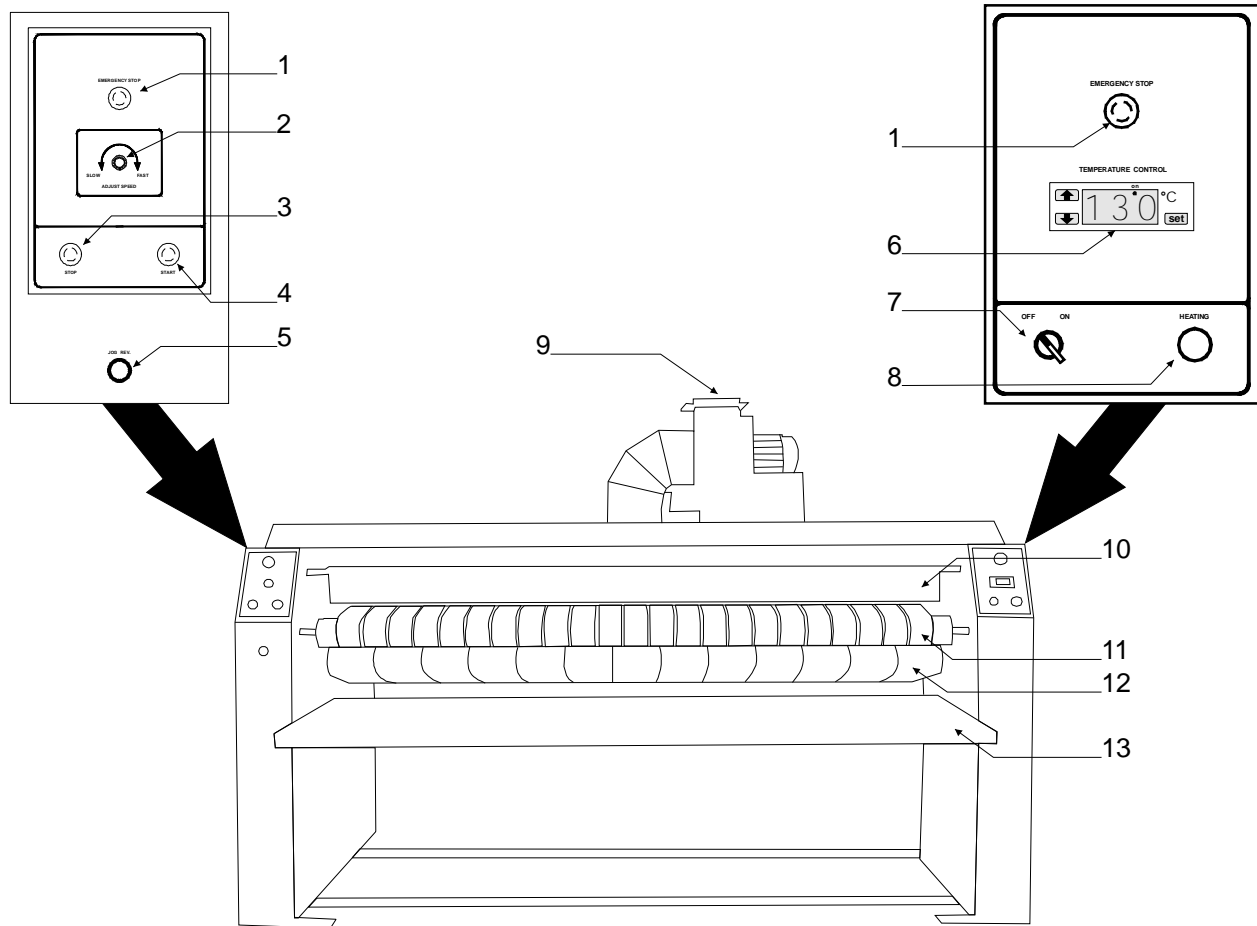
Initial Start Up

Before operating the ironer, check the following:

1. Check that the machine is level and in a stable position on the floor. The machine should not rock or move in any way.
2. Ensure that all electrical, gas/steam, and exhaust connections are made and leak free.
3. Check that the ironer is correctly grounded according to the earlier listed specifications (see page 8).
4. Remove all packaging and protective shipping materials. Discard these items - do not store them near the ironer.
5. Inspect the thermostat sled assembly and make sure it is in full contact with the ironing cylinder, and is free of lint and debris.
6. Turn the heating control to the OFF position, and the speed control to minimum (fully counter-clockwise).
7. Apply power to the machine. Before doing this, double check that the supply voltage matches the information on the serial sticker of the ironer.
8. Press the green START button.
9. Double check that the exhaust fan is rotating in the direction indicated on the blower housing. Additional information can be found on page 17.
10. Make sure the feeding belts are acting to pull linen into the machine (belts traveling towards the heated cylinder)
11. Replace all panels.
12. For gas units, move the heat switch to the ON position. The heat light turns on. There will be a delay of 30 seconds prior to ignition.
13. Check that the temperature increases. When the temperature reaches the set point, the heat light should turn off.
14. Use old or worn linen to perform the initial ironing test.
15. Lay the linen on the feeding belts and allow it to be pulled into the ironer.
16. Adjust the speed control so that the goods come out of the ironer dry and finely pressed.

Operation

Controls



- | | | | |
|---|------------------------|----|--------------------------------|
| 1 | Emergency Stop Button | 8 | Heat Indicator Lamp |
| 2 | Speed Control | 9 | Exhaust Outlet |
| 3 | Stop Button | 10 | Finger/Hand Guard Safety Panel |
| 4 | Start Button | 11 | Feed Belts |
| 5 | Reverse Jog Button | 12 | Return Belts |
| 6 | Temperature Controller | 13 | Output Table |
| 7 | Heat Control Switch | | |

Operation

Procedure

Notice: Do not perform maintenance on this machine while it is running, the cylinder is hot, or while the machine's circuit breaker is on.

Prior to starting the first shift of the day:

1. Inspect the area between the thermostat sled and the ironing cylinder. Gently lift the pick up sled away from the cylinder.
2. Clean any debris found away from the pick up sled and cylinder.
3. Ensure that the pick up sled remains in contact with the ironing cylinder.

To Operate Ironer:

1. Be familiar with the controls - see diagram on the previous page.
2. Turn the heat control to the OFF position, and rotate the speed control to the minimum (counter-clockwise) position.
3. Press the green start button for 1-2 seconds.
4. Ensure that the feed belts rotate towards the ironing cylinder.
5. Verify that the finger/hand guard safety panel immediately stops the

ironer when pressed. If the ironer does not stop, discontinue use and follow all lock out/tag out procedures and call a qualified service technician.

6. Restart the ironer by pressing the green start button for 1-2 seconds.

IMPORTANT: For steam heated machines, open the steam supply valve **VERY SLOWLY** to avoid damage to the rotating steam joint.

Steps 7 & 8 are for gas heated models only

7. Turn the heat switch to the ON position. After 30 seconds, heating will begin. The temperature indicator on the temperature control should indicate increasing temperature. The set temperature is factory programmed to 150 °C (302 °F).

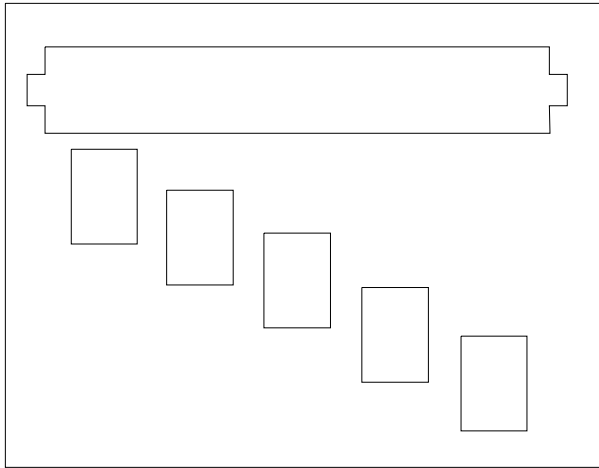
8. The heat indicator lamp will go out once the set temperature is reached.

9. Place linen on the feed table, allowing the feed belts to automatically pull the goods into the ironer.

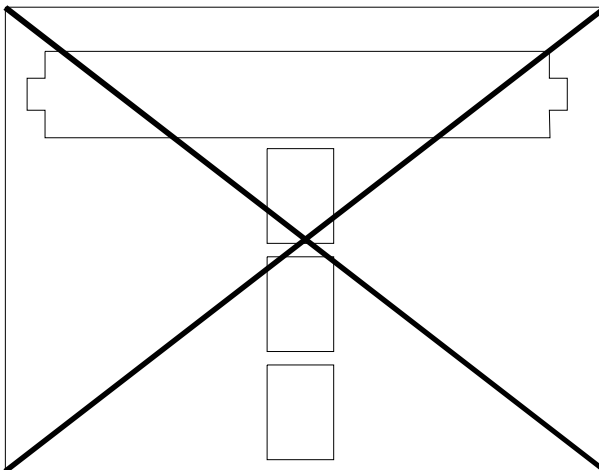
NOTE: When ironing small goods such as pillow cases, work from left to right along the length of the ironer. This will provide optimum results - running small goods in "lanes" will result in cool spots on the cylinder and poor ironing performance, and could damage the feeding and return belts. See the diagram on the next page.

Operation

Procedure



Proper feeding of small goods.



Improper feeding of small goods.

10. Turn the speed control clockwise to increase the speed, or counter-clockwise to decrease the speed. Slower speeds should be used if the goods are not exiting the ironer fully dry. Adjust the

speed according to the weight and residual moisture of the goods.

Obviously, thicker, wetter goods will require slower speeds than thinner, dryer goods.

11. Remove the finished goods from the output table, and fold or hang goods to prevent wrinkling.

12. To shut down the ironer at the end of the day, turn the heat switch to the OFF position, and allow the ironer to cool down to 70 °C (158 °F) before pressing the red stop button to power down the ironer.

For Best Finish Results:

CWaxing is not required for models equipped with chrome plated ironing cylinder.

CThe pH of the goods to be ironed must be between 5.5 and 6.5.

CDo not use fabric softener! Fabric softener will be deposited onto the feeding belts and ironing cylinder causing poor performance and maintenance problems.

Basic Troubleshooting

Procedure

Temperature Control shows O-E

Indicates an open circuit in the temperature probe wiring circuit - check cable connections at the temperature controller and the probe wiring for damage.

Temperature Control shows S-E

Indicates a short circuit in the temperature probe wiring circuit - check the probe cable for damage.

Temperature Control shows Err

Damaged sensor. Replace.

Ironer will not start or stops suddenly

-Make sure the Emergency Stop button isn't pressed.

-Check the hand/finger guard.

-Check that all panels are in place and attached.

Ironer makes unusual noises

If the ironer makes unusual noises (rubbing, grinding, banging, etc.) properly shutdown the machine and contact a qualified service technician.

Periodic Maintenance

Procedure

Daily

Inspect the temperature pick up sled and the cylinder. Remove debris if present.

Make sure the temperature pick up sled is in full contact with the ironing cylinder.

At shut down, wipe machine down with a mild cleaning agent and vacuum or sweep up any lint that has accumulated. Lint is highly flammable!

Weekly

Inspect safety labels and replace any that are damaged, worn, or illegible.

Inspect the guide ribbons (guide tape) for damaged or missing ribbons. Replace as necessary.

Monthly

Inspect feed belts for proper tension. There should be no slippage as the ironer runs. Do not over tighten the feed belts, as this will cause premature wear.

Inspect the return belts for proper tension. Return belts tend to elongate after initial startup and wear in.

Inspect the drive chain and gears.

Inspect the compression roll and ensure that the pressure is correct. The compression roll should only slightly touch the ironing cylinder and not exert too much pressure.

For steam models, inspect the rotary steam joint for leaks. If a leak is noted, a repair kit is available. Contact B&C Technologies for information.

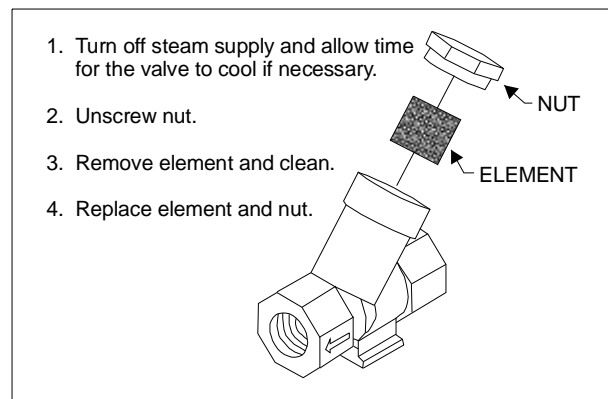
Caution: DO NOT touch or get too close to the steam piping. EXTREMELY HOT!

Clean the exhaust system, including blower and ductwork.

Clean the AC drive cooling fan and heat sink, located on the underside of the drive.

Clean the ironing cylinder, removing any residue.

Clean the steam trap filter (obviously, steam models only.). See diagram for typical trap.



Grease all bearings with high temperature grease. DO NOT mix different grease types.

Grease the motor chain and sprockets.

