

The All-Inclusive Self-Contained Gas and/or Oil Heated Thermal Fluid Deep Chest Ironer

# POWERHOUSE™

**CHICAGO**®



## **BETTER, STRONGER, CLEANER**

Chicago combines the latest high efficiency gas burner technology with its proven deep chest ironing system. The heating source is on board the ironer so no external steam or thermal fluid boiler is needed, creating less wasted energy for a strong, environmentally friendly system and allowing for direct control of the ironer for higher ironing temperatures, faster heating response and more economical operation. Available in one, two or three roll 52" (1300mm), 42" (1050mm) and 32" (800mm) diameter models.



**POWERHOUSE** is an all-inclusive, self-contained gas and/or oil heated thermal fluid deep chest ironer that combines Chicago's latest high efficiency gas/oil burner technology with its proven deep chest ironing system. Available in one to four roll models, the Powerhouse gas heating system allows thermal heat transfer fluid to be heated and controlled directly at the deep chest ironer. There is no need to supply and transfer heated fluid or steam from an external source – eliminating costly on-site welded piping and boiler installation, minimizing costs and heat transfer losses. This ironing method has more available drying power than any other heat source providing higher ironing temperatures, faster heat response and the most economical operation in the industry.

## **POWERHOUSE OFFERS MORE SIZE VERSATILITY**

### **THREE DIAMETER ROLL SIZES**

#### **52" (1300mm)**

The most powerful ironer in the U.S. – a two-roll unit offers more than 8% extra ironing surface under pressure than a three roll 32" (800mm) or a two roll 42" (1050mm) unit with 1/3 fewer moving parts for lower maintenance.

#### **42" (1050mm)**

This Chicago exclusive size fits the production and floorspace needs of users midway between the 3200 and 5200 models – offering 31% added ironing surface compared to the 3200 model.

#### **32" (800mm)**

The traditional standard size in deep chest ironers is often used for replacement of ironers with similar floorspace specifications.

### **EXTRA WIDE WIDTHS ALSO AVAILABLE**

POWERHOUSE standard width is 120" (3050 mm). It is also available in extra wide roll models of 136" (3500mm), 146" (3700mm), 157" (4000mm) and 161" (4100mm) of useable width ironing surface for use in special applications such as ironing over-sized king sheets, banquet cloths or multiple lanes of sheets or larger table linen simultaneously.

# STANDARD FEATURES

The Powerhouse gas and/or oil heating systems eliminate the cost and floor space required for a separate thermal

## Quality of Construction

- Premium brand electrical, mechanical and pneumatic components built to U.S. specifications ensure long-term reliability and parts availability
- Formed and welded steel end frames with laser cut openings for precise alignment of components
- All models are certified for operation up to 208 PSI (14 bar)
- Stationary heated chests provide excellent roll-to-chest ironing contact stability. No flexible or pressurized hoses are used, providing safe operation and reduced maintenance
- Standard rolls are a full 120" (3050 mm) long for multi-lane or king sheet processing
- Rolls can be raised and locked in extra-wide open position for easier maintenance and access to chest surfaces
- Premium spring steel padding of optimum tensile strength for high gloss linen finish and long padding life
- Double layer of premium high temperature Nomex® padding for optimum air permeability and moisture removal
- Excellent control over the operating environment of the thermal fluid lengthens the operating life and maintains efficient heat transfer of the thermal fluid
- Atmospheric expansion tank is properly positioned to provide suction head pressure to the pump

## Fast Heat Response – Maximum Drying and Ironing Capacity

- Hyper-Flow thermal fluid dispersion accelerates heat transfer within chests and gap pieces to maximize efficient moisture removal
- Heated surfaces provide additional ironing contact, smooth linen transfer and increased evaporation capacity
- Correct ironing pressure is pneumatically applied and balanced across the entire length of ironing surface for maximum production width and high quality linen finish without uneven pressure areas
- Interior double walled piping for better cooling
- Individually adjustable inverter controlled exhaust blowers for each roll ensure balanced moisture removal
- Heated chests are encased in steel heat shields with up to 5" (127 mm) of insulation. Inside of end frames are also lined with steel and additional insulation
- Consistently stable and even operating temperature eliminates excessive thermal stress at the heat exchanger
- More drying power for special items such as cotton duvet covers and pillowcases

## ChiDrive Electronic "All Roll Drive" System

- Assures consistent pinpoint speed accuracy from roll to roll without the need for mechanical adjustment of pulleys, belts or chains
- Heavy duty drive delivers smooth variable speed changes and extra torque at low speeds
- Each modular unit maintains a 100% stable speed differential with its own AC inverter, gearbox and high efficiency motor

## Convenience

- AC frequency inverter variable speed drive
- Air pressure sensor prevents operation if pressure does not meet minimum levels
- Multi-point temperature monitoring verifies proper heating performance
- Automatic tensioner for ironing guide tapes
- Ironing tape guides are also laterally adjustable by up to 4" (102 mm) to avoid uneven padding wear
- Pendant jog control simplifies padding maintenance
- Easy access to components for ease of maintenance

## Safety

- Complete protection with safety finger guards, 24 and 110 volt control circuits, stop buttons and bilingual/pictorial safety labels
- Rolls are stopped, lifted and locked in raised position when electrical power is interrupted or safety finger guard is pushed
- Interlocked end panels for convenient service access
- ASME certified and stamped chests for high pressure operation
- ASME approved heat exchanger and system
- Low emission ETL approved burner
- O<sub>2</sub> trim sensor allows automatic dynamic burner adjustment resulting in high efficiency from low emission burner. NO<sub>x</sub> levels as low as 20 ppm corrected at 3% O<sub>2</sub> depending on combustion chamber design, dimensions and media temperatures

## Factory Support

- Chicago's customer service department offers full technical and service support by telephone and on our website, [www.chidry.com](http://www.chidry.com). We also offer overnight service for quick parts availability
- On-site service available through Chicago's worldwide network of authorized local distributors and factory technical support staff

fluid boiler or steam boiler and water treatment system, making for more economical operation in less space.

## Features for the All-Inclusive Self-Contained Gas Heated Thermal System

### Expansion Tank

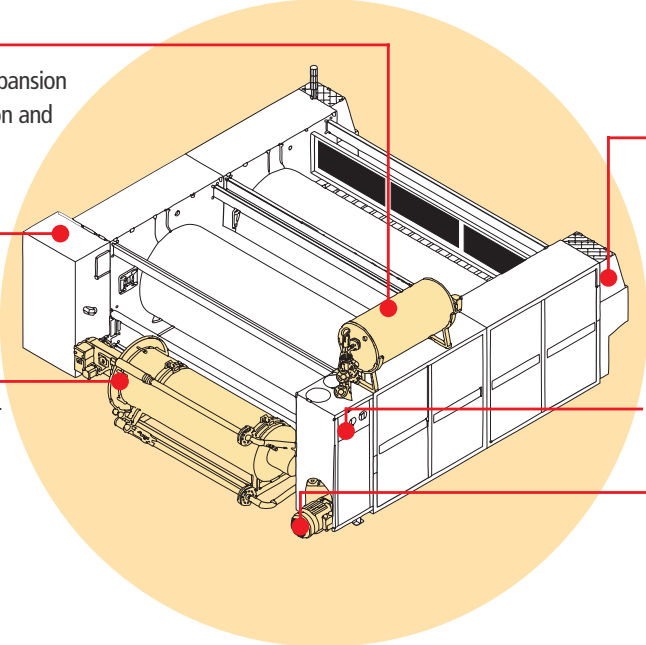
Serves the dual purpose of proper fluid expansion and suction head pressure during operation and scheduled maintenance procedures.

### ChiDrive

Electronically controlled direct drive.

### Heat Exchanger

Heat Exchanger is specifically designed for ironing applications. The high efficiency three-pass system offers more surface area contact in a compact unit. The system has an efficiency rating of greater than 90% and is also insulated externally.



### Digital Control System

A series of fluid system self-tests are continuously conducted by a specially designed control panel for clear identification of process status.

### Gauges

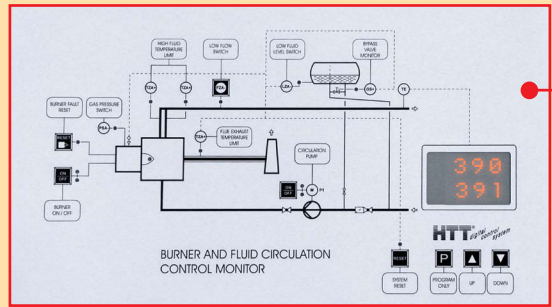
Pressure differential, suction and pressure gauges.

### Pump Motor

Includes built-in pump for proper thermal fluid circulation.

- Eliminates the cost and floor space required for a separate thermal fluid boiler or steam boiler and water treatment system, as well as personnel that may be required to staff it.
- Pinpoint temperature control because the highly efficient, fully insulated heat exchanger controls the ironing temperature directly and immediately at the chest ironer.
- Burner activity is synchronized with evaporation rates for highest efficiency and capacity.
- Highest burner efficiency in the laundry industry – efficiency greater than 90%, fast heat response and extremely high evaporative power result in higher ironing capacity, faster ironing speeds and reduced operating costs.
- Produces significantly more dried flatwork than a steam heated ironer and offers lower gas utility usage per pound of dried flatwork than other thermal fluid heated ironers.
- Digital self regulating burner control provides ideal air and gas mixture in combination with O<sub>2</sub> trim.
- System does not allow hot thermal fluid to come in contact with the oxygen in the expansion tank during normal operating conditions.
- Standard canopy retains heat in the ironing area to improve operator comfort and keep ironing surfaces and padding clean. Sturdy lift-off canopy has metal framework with acrylic side windows to allow full view of padding and rolls at all times. Each canopy section can be lifted away for direct access to rolls.

## POWERHOUSE Control Panels



Powerhouse's integrated control panel monitors all gas and heating functions for immediate identification of process status; independent burner control buttons automatically synchronize the burner system with the ironer's actual production rate for highest efficiency and capacity. The easy to read status indicators and fault monitors make servicing simpler.

All ironing functions are directed through the CHI Panel. This manages all components in a Chicago finishing network— including feeding, ironing and folding equipment so operators and maintenance staff only need to learn one system to control the entire finishing area.



# POWERHOUSE OPTIONS

- **Interconnected Stop Circuit** allows operators to push any stop button in the finishing system to stop the entire production line including feeder, ironer and folder.
- **Auto Speed Control** is a centralized one-touch speed control that adjusts feeder, ironer and folder at the same time to ensure proper speed synchronization of all equipment.
- **Electric Heated** provides the highest possible heating efficiency with no local emissions. Environmentally friendly and perfect in locations with very restrictive stack laws.
- **Single Point Electrical Connection** allows other units on ironing line to plug into single electrical connection.
- **Laminated Springs** with special padding increases processed finish quality of linen and increases evaporation capacity.
- **Alternative fuels** available when you need flexibility and more options in your facility.
- **Special fluid thermal types** for specific applications where standard HE (high efficiency) is not available.
- **Doffer Roll Set** improves quality of linen finish.
- **Knock-Down Shipping** for more options in container loading.
- **Ultrasonic Welding Gun** for welding guide-tapes.
- **Touchscreen Control for Powerhouse** heating system allows greater visualization of process and burner control for easier operation.
- **Connectable to CHILINC** production data accumulation and reporting system for archiving and analysis of production and efficiency information.



Powerhouse 5200 I Roll with Easi-Feed II Vacuum Feeding Aid

## Easi-Feed II Vacuum Feeding Aid

Improves the finished quality of large and small linen items for those desiring the highest possible quality finish without the inconsistencies caused by operators trying to manually feed and stretch high quality table and bed linen while feeding. Doffer roll on the feed conveyor holds down linen's leading edge while a high speed drive roller works with powerful blowers and an enclosed suction chamber to hold back and treat linen's trailing edge for maximum stretch and wrinkle removal as

linen enters the ironer. This increases production speed because it allows operators to release the fed item sooner so they can more quickly proceed to handle the next piece. Touch control variable blower speed is now 20% more powerful than before. Easi-Feed II replaces the standard "nose" section and adds only 5" (127mm) to the overall depth of the ironer.

# DIMENSIONS AND UTILITIES

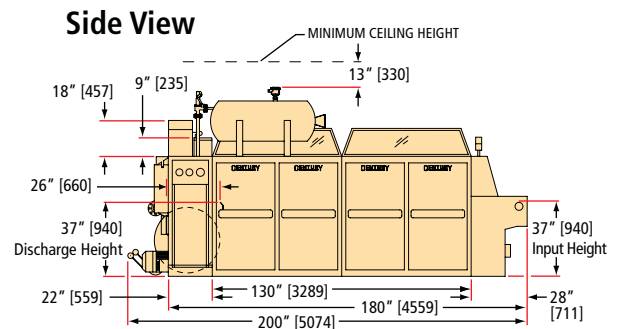
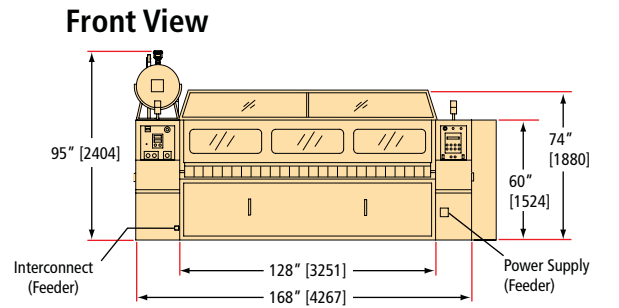
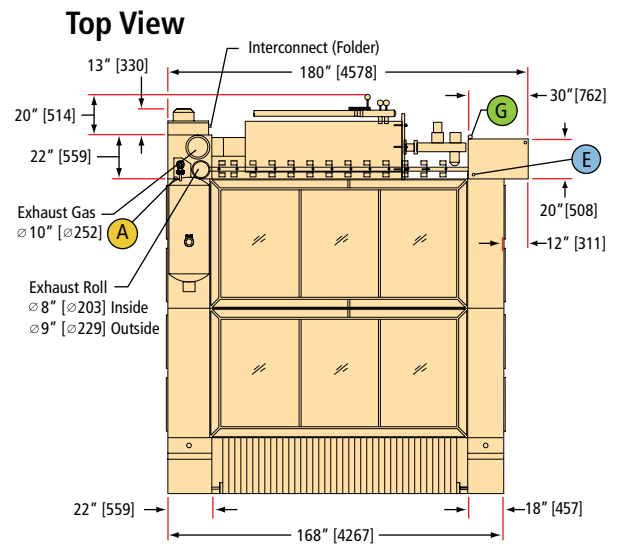
## NOTE:

- Specifications subject to change without notice. Consult factory for certified construction floor plan.
- Millimeter dimensions are in [ ].
- All dimensions are  $\pm 1/2$ ".
- Utility connections are located at rear.
- Wider models available, consult factory for floor plans and specs.

Specifications			
<b>Production – Variable Speed Drive Output</b>			
Feet per Minute [m/min]			
Minimum	30	[9]	
Maximum	150	[46]	
<b>Heating – Gas-Thermal Fluid</b>			
Maximum Heat Rate, BTU/h [kW/h]	1,360,000	[400]	Adjustable
Average Gas Consumption BTU/h [kW/h]	790,000	[231]	
Maximum Gas Inlet Pressure PSI [kPa]	10	[69]	
Operating Pressure Fluid, PSI [kPa]	72	[500]	
Fluid Flow, US Gallon/min [l/min]	132	[500]	Adjustable
Factory recommended settings. Adjust as necessary. Use caution when testing.			
<b>Motors</b>			
Total	34.5	[46.24]	
Feed Table Drive, HP [kW]	1.5	[1.12]	
Drive 1 HP [kW]	10.0	[7.5]	
Drive 2 HP [kW]	10.0	[7.5]	
Exhaust Blower 1, HP [kW]	1	[0.75]	
Exhaust Blower 2, HP [kW]	1	[0.75]	
Oil Circulation Pump, HP [kW]	10	[7.5]	
Blower for Burner	1.5	[1.12]	
<b>Electrical</b> Frequency: All Models 50/60 Hz*			
Total Amps	126	114	69 57
Three Phase Voltage	208	230	380 460
<b>Exhaust Main Rolls</b> Blower			
Air Discharge			
CFM, [m <sup>3</sup> /min] max. at 4" S.P	1120	[31.4]	Adjustable
Vent Diameter, inches [mm]	8 Inside	9 Outside	
		[203 Inside, 229 Outside]	
Factory recommended settings. Adjust as necessary. Use caution when testing.			
<b>Exhaust Heating System</b>			
Exhaust Heating System (Positive Pressure Stack) max. 650cfm at max. 720F at 2.5" S.P			
Vent Diameter, inches [mm]	10 Inside	[250]	
<b>Compressed Air</b>			
Maximum Air use, CFM [l/min]	10	[285]	
Operating Pressure, PSI [kPa]	85-120	[580-820]	
Roll Pressure, Left Side, PSI [kPa]	0	[0]	Adjustable
Roll Pressure, Right Side, PSI [kPa]	15	[103]	Adjustable
Factory recommended settings. Adjust as necessary. Use caution when testing.			
* Consult the factory for other size/number of roll combinations or for information on machines operating at 50 Hz. Specifications subject to change without notice.			

CONNECTION(S)	DIA.	HEIGHT
<b>A</b> Air Connection	1/2"	63" [1600]
<b>G</b> Gas Connection	2"	63" [1600]
<b>E</b> Electrical Connection	–	61" [1550]

SHIPPING WEIGHT	
Domestic, lb. [kg]	27,400 [12,428]



Spec information, floor plans and shipping weight are for a Powerhouse 5200 Two Roll, 120" width (3050mm) machine. Other models will vary. Consult factory for details.

## A Complete Range of Separating, Feeding, Ironing, Folding and Sorting Options

Powerhouse is just one of dozens of different ironer models offered by CHICAGO. Each is available in many combinations – in various lengths and heat sources (including steam, gas, electric and thermal fluid) which Chicago manufactures for laundries of all sizes. Chicago also offers a complete range of linen separating, feeding and folding equipment to complement the Powerhouse in a complete microprocessor-controlled automated finishing system. To reduce labor and improve the quality of finished linen, linen separation and feeding may be automated with a Pik-Quik linen separator and any one of the Edge series models – the world's first cornerless spreader/feeders. Powerhouse may be used with one of twenty-five different Chicago Skyline automatic folding and stacking systems for large and small size pieces.

Chicago's performance record is unmatched in thousands of installations in commercial, hospitality, health care, textile rental, institutional and on-premise laundries all over the world. An experienced Chicago professional will be pleased to make an objective equipment recommendation based on your production, space, utility and budget requirements. Contact your local Chicago distributor or factory sales assistance office for a no-obligation analysis of your needs.

Chicago's Customer Service department offers full technical and service support by telephone and on our website. We also offer overnight service for quick parts availability. Visit our website, [www.chidry.com](http://www.chidry.com), to learn more about our complete line of flatwork finishing systems, including video of Chicago® equipment in action.



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