WINCON™ is an advanced windows-based software system for controlling the operation of BTU thermal processing equipment. WINCON combines both the simplicity of a graphical user interface with powerful diagnostic and analytical tools. WINCON is used in conjunction with BTU’s proprietary INTELLIMAX™ control board on all BTU systems; including the Pyramax family of convection reflow ovens.

New WINCON 5.0

Besides Windows 7 compatibility, many new features are included in WINCON 5.0 including dual process capabilities, maintenance manager, and OPC functions. Dual process capabilities increases the functionality of Pyramax dual lane dual speed systems, allowing speed and rail set point changes on one lane while the other lane continues to process product maximizing throughput. Equipment maintenance reminders are provided through the maintenance manager function, providing customers a default maintenance plan or allowing them to use their own. The OPC function is an alternative to GEM Host and provides a way for customers to extract data from the system using OPC clients. WINCON profiler has been enhanced adding ability to set a target profile, a tolerance band with pass/fail result of subsequent profiles, to overlay and compare different profiles and numerous other improvements.

Click here to determine if your system can be upgraded to WINCON 5.0. For more information or for a quote please contact BTU’s parts department at partsales@btu.com.

Features of WINCON:

- One step recipe editing simplifies changing of data, and automatic recipe scheduling permits two or more recipes to be executed at a given time or after a designated event.
- Profiling of product temperatures can be automatically sampled at specified times or belt distances.
- Collection of data can be triggered by selected events to determine when system variables (temperature, pressure, belt speed, etc.) are to be sampled.
- For security purposes operators can be assigned particular access levels for specified user privileges; Enhanced diagnostics, troubleshooting messages, and remote monitoring capability help to expedite problem solving.
- On-line documentation permits easy viewing of operational and diagnostic data.

Built for Today. Ready for Tomorrow.

Pusher furnaces from BTU are engineered for better heat efficiency and system durability. Alumina bricking, sophisticated safety controls, and advanced operational software make BTU’s pusher furnaces ideal for high-performance applications, such as advanced electronics, nuclear fuel pellet sintering, capacitor manufacturing, metallizing, and calcining. Sophisticated CAD/CAE design capability gives BTU an advantage in responding to a wide range of customer requirements. The design of BTU’s pusher furnaces optimizes customer productivity while offering maximum flexibility.

- Solid Oxide Fuel Cells
- Calcining
- Battery
- Multilayer ceramics firing
- Sintering
- Membrane
- Nuclear fuel pellet production
- Brazing
- Capacitors
- Solid Oxide Fuel Cells
- Calcining
- Battery
- Multilayer ceramics firing
- Sintering
- Membrane
- Nuclear fuel pellet production
- Brazing
- Capacitors
Pusher Furnace

Pusher furnaces come in hearth sizes of 6”, 8”, 12”, and custom widths. Other customization includes heating and cooling zone configuration, thermal profiling, and atmosphere control system.

Drive
Robust ball screw drives with slip clutches provide exceptional accuracy and reliability.

Cooling Chamber
Aluminum heat sinks and copper coils provide the desired product cooling muffle. Alumina hearth plates line the cooling muffle to eliminate contamination caused by the pusher plate.

<table>
<thead>
<tr>
<th>Heater Type</th>
<th>Molybdenum Ribbon</th>
<th>Molydisylcide</th>
<th>Silicon Carbide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmosphere</td>
<td>Hydrogen</td>
<td>Air</td>
<td>Air</td>
</tr>
<tr>
<td>Maximum Operating Temperature (°C)</td>
<td>1800</td>
<td>1700</td>
<td>1550</td>
</tr>
<tr>
<td>Process Chamber Liner</td>
<td>AlO₃</td>
<td>AlO₃</td>
<td>AlO₃</td>
</tr>
<tr>
<td>Applications</td>
<td>Multi-Layer Ceramics, Nuclear Fuel</td>
<td>Fuel Cells, Membrane</td>
<td>Fuel Cells, Battery</td>
</tr>
<tr>
<td>Processes</td>
<td>High Temperature Reduction</td>
<td>Ultra-pure applications</td>
<td>General firing</td>
</tr>
</tbody>
</table>
Thermal Process Control
BTU’s Pusher Furnace is packed with state of the art features for superior thermal process control. Unlike lesser furnaces, our pusher furnaces employ hearth plate piers which greatly enhance product uniformity, allowing the heat to surround the hearth. In addition these plates, made of dense alumina, are keyed to piers and lift out for easy replacement. Shadow walls can be included in the furnace configuration allowing for precise profile shaping and control. BTU’s patented eductor technology is used for convection assisted heating and cooling in lower temperature zones, enhancing uniformity and profile control. Each BTU pusher features custom zone configurations, ensuring the best match for your process.

Control System
Advanced Windows™ based WinCon control system provides complete process management. Furnace parameters are stored as “recipes” that can be called up for customized for any job requirement. Collects data on temperature, atmosphere, gas pressure and other operating parameters. Permits interruption of the pusher drive operation at any phase of the process with-out the need for a cumbersome drive reset procedure. Key features include: integrated thermal profiler, closed-loop analyzer, data archive capability, and manual override control.

Atmosphere Control
Atmosphere control is an important option for BTU’s pusher furnace. It enhances process integrity while maintaining a safe working environment:

- Atmosphere saturator maintains proper dew point conditions through closed-loop temperature and water level controls.
- Hydrogen purge/mixer protects furnace from failure.
- Safety interlock prevents hydrogen from dropping below auto-ignition point.
- Atmosphere sampling ports are provided in all heated lines.
- Flame curtains or purge chambers at point of entrance and exit provide atmosphere integrity.

Heating Elements
BTU manufactures Molybdenum heating elements from strip material allowing for the highest element surface area possible, this practice continues with the other high temperature element materials where it reduces the element surface temperature as far as possible for better chamber temperature uniformity. Molybdenum must be operated in a highly reducing atmosphere and low oxygen partial pressure atmospheres to protect the metal from oxidation and is the highest temperature element we use. Molydisiled elements are manufactured by extruding a Molybdenum and Silica solution into rods which are manufactured into element components and then welded to make the element configuration. When heated in an oxidizing atmosphere the element forms a quartz skin on the heated sections which protects the molybdenum while offering the customer an element known for its cleanliness, it is most often used where chemical contamination must be minimized, such as in the manufacture of solid oxide fuel cells. Silicon carbide are the work horse of high temperature elements in oxidizing conditions, they are manufactured in many configurations and also use a silicon oxide coating to protect the element from oxidizing atmospheres.

Safety
Safely interlocks and automatic shutdown systems limit dependence of furnace control on an operator. Furnace control is automatically taken from the operator if any part of the process falls out of safe parameters. Overheat protection in each zone. All-steel case with silicon rubber seals and continuous clamps maintains furnace atmosphere. Exterior paneling serves as a heat radiation shield and prevents accidental tampering with the furnace’s systems.

Standard Features
- Custom zone configuration
- Al₂O₃ chamber lining
- Alumina hearth plates (heating)
- WinCon control system
- WinCon thermal profiler
- Over temperature protection
- Drive speed control
- Electronic shear pin
- Jam detection
- Ball-screw drive

Options
- Gas analyzers
- Hygrometer
- Gas sampling
- Gas saturators
- Flame curtains
- Purge chambers
- Debinder furnace
- Shadow walls
- Eductor convection heating
- Eductor convection cooling
- PLC control system
- Spare parts kit
- Mullite hearth plates for thermal shock resistance (cooling)
Global Strength
BTU provides world-class service and customer support in over 30 countries around the globe.

- 24/7 Worldwide Customer Support
- Manufacturing and Engineering in the US and China
- Process Applications Laboratories in the US and China
- Multiple Global training locations

To contact BTU please go to www.btu.com/support-contact-sales.htm