

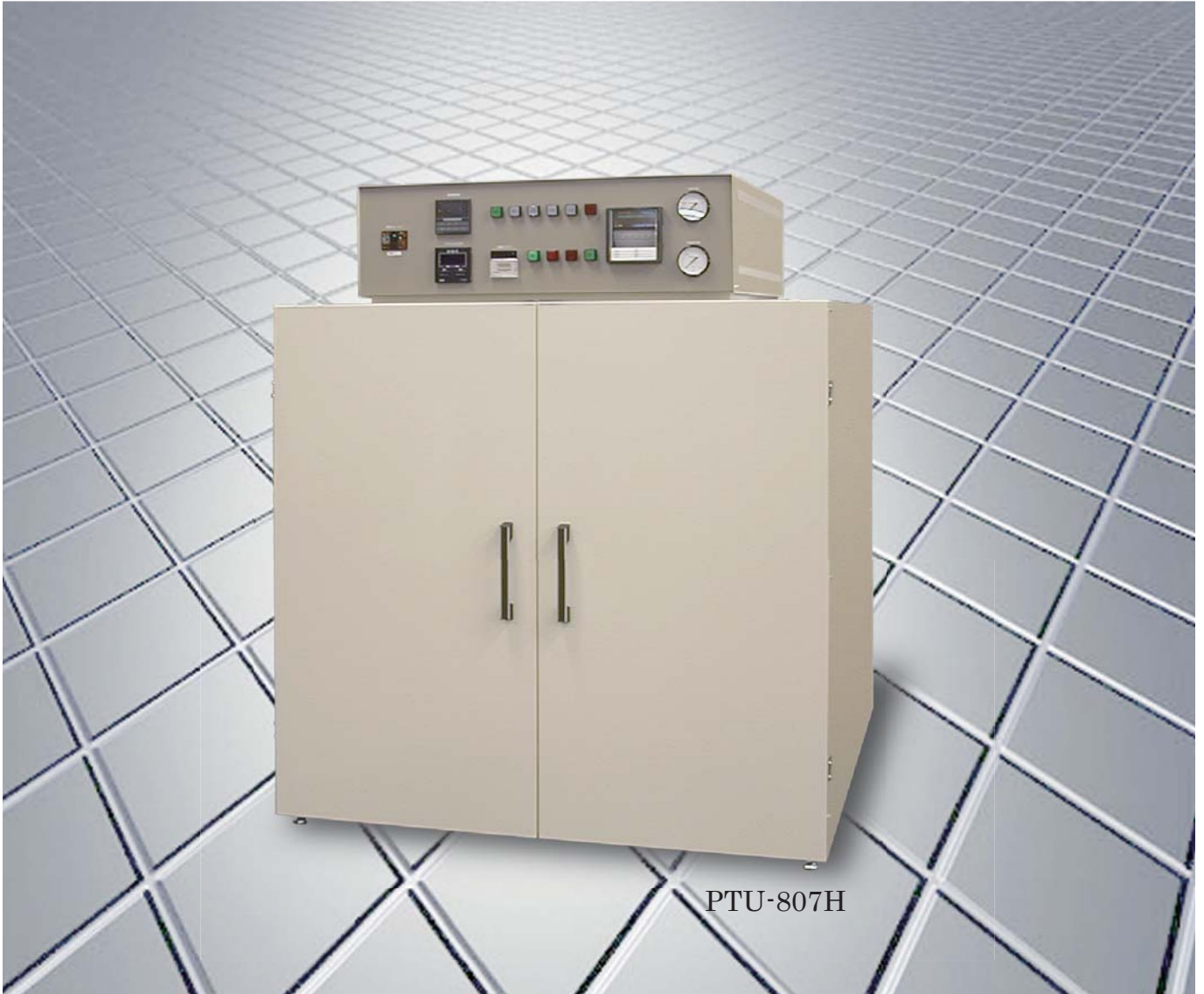
## *Autoclave for Defoaming LCD Panels*

A highly efficient LCD panel defoaming equipment. Air bubbles in a LCD panel are removed efficiently under the pressure and temperature appropriately controlled by a precision control system. It lowers the in-process defect rate and improves the product quality.

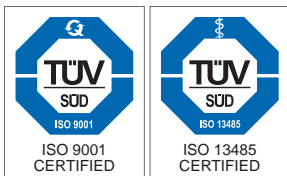
# PTU series

**PTU-305VⅢ/507H/807H/1207H/1507H**

Our PTU series offers a wide range of models from a model for small capacity or R&D to a large-capacity model to fit your needs.



PTU-807H



Products shown in this brochure are manufactured by the company, ISO 9001 / 13485 certified.

# PTU Series Autoclaves with New Technology for Removing Air Bubbles from LCD Panels

Our PTU series autoclaves with excellent reliability and much delivery track records include various models from a vertical type compact autoclave which is suitable for a small-sized LCD or for R&D to a horizontal type large capacity autoclave equipped with a chamber air circulation fan.

Air bubbles are often generated in the manufacturing process of liquid crystal displays that are used for electronic equipment indicators.

These air bubbles are removed under the appropriate temperature and pressure environment which is created by an electric heater and pressurized air.

We provide the latest PTU series autoclaves which are very effective to lower the in-process defect rate and improve the product quality.

## PTU series

PTU-305VⅢ / 507H / 807H / 1207H / 1507H



**PTU-305VⅢ**  
Vertical type autoclave  
for small-sized LCD



**PTU-507H**  
Space-saving type autoclave,  
equipped with an air circulation fan

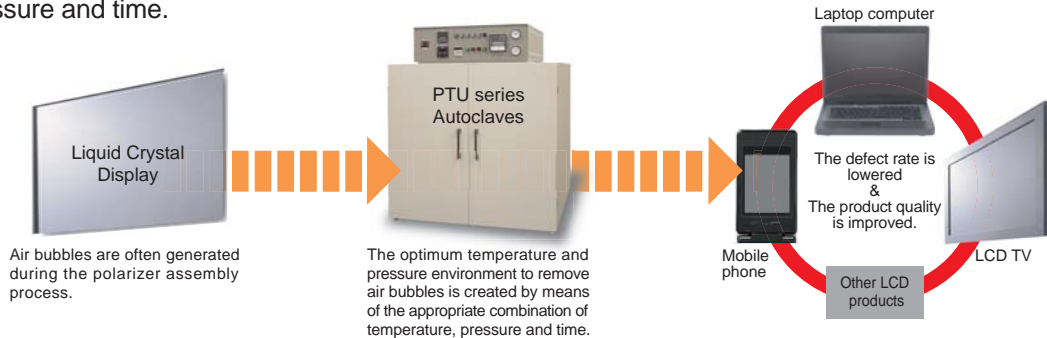


**PTU-807H**  
Large-capacity autoclave,  
equipped with an air circulation fan

## ■ Main Features

### The optimum condition can be created with simple setup steps.

The optimum condition to remove air bubbles which are often generated during the polarizer assembly process of the LCD production line is created by means of the appropriate combination of temperature, pressure and time.



### The adhesion strength of a polarizer to a substrate increases.

The adhesion strength of a polarizer to a substrate increases by applying heat and pressure after attaching a polarizer.

### Setup steps for temperature, pressure and time are very easy.

The temperature, pressure and time can be input with easy operation using a digital input system. (On model PTU-305VⅢ, only temperature and time are set.)

### A high precision control system

A PID controller and SSR drive method are used for temperature control. The on/off control method is applied to the pressure control system. Pressure is controlled accurately by on/off action of a solenoid valve or motor valve.

### The safety devices and reliable interlock system

The chamber is made of stainless steel. The clutch mechanism which is equipped with the safety and reliable interlock system and driven by gears is employed to clamp the door. In addition, the over-temperature and over-pressure prevention devices, pressure safety valve are installed.

### Various temperature and pressure conditions can be set.

Our PTU series autoclaves can be used for creating various temperature and pressure environments as well as for removing air bubbles from LCD panels.

### A cycle time is shortened.

As a temperature rise time is reduced due to a warm-up function, a cycle time is shortened.

## Design and manufacturing of the large-capacity autoclaves and customized autoclaves.

We offer the design, manufacturing, sale and after-sales service of the large-capacity autoclaves and customized autoclaves. Please contact us for more information.



***Large capacity autoclave for LCD panel equipped with an air circulation system.  
Effective chamber diameter is  $\Phi$  2000mm.***

## ■ Specifications

MODEL	PTU-305VⅢ	PTU-507H	PTU-807H	PTU-1207H	PTU-1507H
Outer dimensions (mm)	750Wx550Dx1050H	850Wx1240Dx1650H	1470Wx1515Dx1800H	Main body : 1800Wx3480Dx1850H Control box : 900Wx350Dx1650H	Main body : 2200Wx5200Dx2300H Control box : 1000Wx350Dx1750H
Effective chamber size (mm)	250Φx340D	450Φx600D	700Φx600D (Effective height : 400)	Shell : 1200Φx1600D Inside dimension : 1100Φx1500D	Shell : 1500Φx2500D Inside dimension : 1400Φx2400D
Weight (approx.)	105 kg	370 kg	800 kg	Main body : 2500kg Control box : 180kg	Main body : 5000kg Control box : 200kg
Power source	AC220/230/240V, Single phase, 50/60Hz (Select one from the above power supply voltages, when placing an order.)				
Working temperature range	50~100°C Normal temp : 80°C	50~80°C			
Temperature accuracy	—	±3°C No-load, 50°C, 0.5MPa	±2°C No-load, 50°C, 0.5MPa	±5°C No-load, 50°C, 0.5MPa	
Working pressure range	0.196~0.490MPa	0.05~0.69MPa			
Pressure accuracy	—	±0.01MPa			
Temperature control system	PID control, SSR drive method				
Pressure control system	ON/OFF control method. By on/off of a solenoid valve			ON/OFF control method. By on/off of a motor valve	
Instrumentation	Temp.	Setting and display : digital			
	Press.	Setting : digital, Display : digital and analog			
	Time	Setting and display : digital (Timer : 99hr59min.)			
Lid clamping system	6-eyebolt (manual)	Clutch door			
Pressure vessel standard	Small pressure vessel	Class 2 pressure vessel			
Material	Chamber and lid : SUS304, Top panel : SUS304, Piping : Cu, Cabinet : SPCC (baking finish)	Chamber, lid, inside chamber, shelf plate : SUS304 Clutch jaw: SS400 (epoxy resin paint) Control box : SECC (baking finish) Piping : Cu	Chamber, lid, shelf plate : SUS304 Clutch : SS400 (epoxy resin paint) Piping : SUS304 or Cu Frame : SS400angle (baking finish) Cabinet: SPCC or AL (baking finish)	Chamber, lid, inside chamber, : SUS304 Clutch, mounting frame : SS400 (epoxy resin paint) Piping : SUS304 or Nylon12 Control box : SPCC (baking finish)	Chamber, lid, inside chamber, cart : SUS304 Clutch, outside cart : SS400 (epoxy resin paint) Piping : SUS304 or Nylon12, Control box : SPCC or AL (baking finish)
Safety devices	Over-heat prevention device, Over-temperature prevention device (except PTU-305VⅢ), Over-pressure prevention device, Pressure safety valve, Pressure safety devices, Restart halt circuit when power resumes, Safety device for lid/door opening/closing, Lid/door lock device, Fan belt cover (for PTU507H), Earth Leakage breaker, (for PTU-1207H/1507H) Lid/door lock device for residual pressure, Breaker for heater and Breaker for motor				
Supplied accessories	Power cablex1, Pressure-proof hosex2, Clamping toolx1	Power cablex1, Shelf platex2			

## ■ Option



### ■ Recorder

- Temperature, humidity and pressure recorder
- Temperature and humidity recorder



### ■ Cabinet (PTU-507H)



### ■ Sliding tray (PTU-507H/807H)

### ■ Safety cover for lid (for PTU-305VⅢ)

### ■ Exhaust duct (for PTU-507H with cabinet and 807H)

### ■ Stackable rack

Specifications and appearance are subject to change without notice due to continuous product improvement.



Manufactured under  
ISO 9001 / 13485

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**HIRAYAMA** Manufacturing Corp.

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