

PROCESS INNOVATIONS, INC.

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Model 185

Belt Conveyor Oven for heat-shrinkable tubing, thermal processing and curing.

The Model 185 Belt Conveyor Oven is an enhanced version of our Model 175, suitable for heating a variety of products, including heat-shrinkable tubing, solder paste applications, and thermal curing of various products.

The Model 185 is available in two width configurations. The "S" configuration is offered with 3.75" wide heating elements for splices up to 4" long. The "W" configuration is offered with 6.00" wide heating elements for splices up to 6.50" long.

The Model 185 incorporates a PLC based control, with higher watt heaters, and extended heat and cooling zones, providing longer soak times for complex splice configurations and dual wall tubing applications.

The Model 185's diagnostic sensors control alarms to alert the operator to an over-temperature, heater fault or drive motor fault condition.

A product inhibit gate is provided that activates and prevent loading of parts during the warm-up period and any time a fault condition exists. Should a critical fault condition occur, the Model 185 will activate the inhibit gate and immediately turn off power to the unit and enter cool-down mode.

The Model 185 is designed as an integrated unit consisting of a rear pivoting upper heater chamber fixed lower heater chamber and base, with attached control enclosure.

The Model 185 incorporates a direct drive motor system for the pulleys and belts, eliminating the maintenance need of continually lubricating and replacing drive chains and sprockets.

Opposing double sided tractor belts grip the individual product assemblies and carry them through a closed loop IR heating zone, through a cooling zone, then deposit the completed assemblies in a collection area for removal.

The Model 185's upper pivoting heating chamber is provided with an adjustable stop bolt to permit front end belt gapping for processing large diameter harness bundles.

The Model 185 upper heating chamber and upper belts float on a spring loaded mechanism, to accommodate various wires and bundle diameters up to ½ inch.

The Model 185 oven chamber has two 1540 watt infrared heating elements, above and below the product pass line of the drive belts.

The heating chamber is shielded on both sides of the elements to prevent fan cooling air flow from affecting the processing of products and increasing production rates up to 30% as compared to similar units.

The temperature of the heating elements is precisely maintained by a closed loop temperature controller.

Assemblies are positioned on the entry alignment tray using centering markers, and pushed forward into the opposing tractor belts that transport the product through opposing 4" wide x 10" long infrared heating elements.

Aft of the heating chamber the assembly is cooled in an open air flow cooling section, and discharged from rear of the conveyor into a collection tray.

A floor stand accessory kit is available to permit completed assemblies to drop into a tray mounted below the unit.

The drive speed of the product transport belts the oven can be set between 0.2 and 5.0 feet per minute, ensuring every assembly being processed sees the same precise amount of heat.

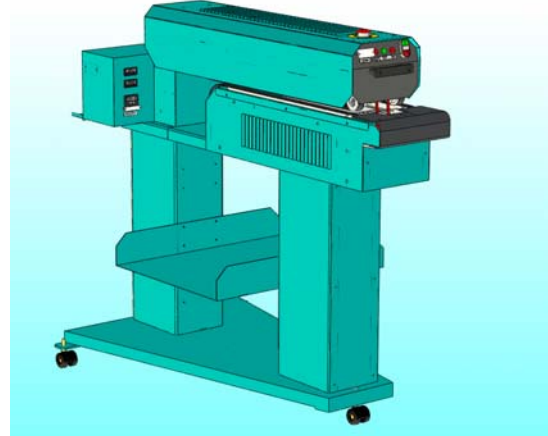
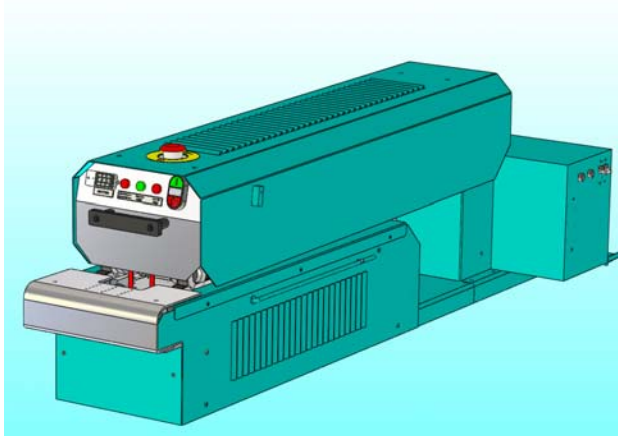
The processor has an automatic cool-down circuit to prevent heat damage to the components.

Sheet metal guards and fans protect the operator from exposure to the temperature in the heating chamber.

Guards are mounted with ¼ turn fasteners for quick removal for maintenance tasks.

The Model 185 processor operates on 230 VAC, single phase, 50/60 Hz.

The M185 is designed to meet the requirements of the Occupational Safety and Health Administration (OSHA) and the National Electrical Code (NEC).



Product features

Controlled heating zone

The Model 185 uses stamped foil heating elements, manufactured to a strict wattage specification. Consistent temperatures are obtained through a K-type thermocouple embedded into the upper heating element and a closed loop temperature controller.

Conveyor speed control

The conveyor speed is precisely set by a 3-digit potentiometer. The SCR drive controller and DC drive motor ensures constant conveyor speed at any potentiometer setting from 100 to 999 (0.2 to 5.0 feet per minute), for precise heating of assemblies.

Advanced diagnostics

Operational status of the Model 185 is controlled by a PLC. Alarm lights provide the operator with visual indicators of when the element temperature is within range and the unit is in a "Process Ready" condition and fault lights that indicate an "Over Temperature", "Heater Fault" or "Drive Fault" condition has occurred.

Product loading inhibit gate

The Model 185 product loading inhibit gate prevents loading of parts into the conveyor if the element temperature is not within range of the set point, or if a fault condition has occurred.

Minimal skill requirements

There are centering guides for aligning the assembly as well as the tubing device being processed. The operator only has to center the assembly and the tubing or device; the tractor drive belts carry the assembly through the heating and cooling zone and deposit them into the large unloading bin.

Versatility

The Model 185 is designed to process a broad range of heat-shrinkable products up to 3/4 inch in diameter and 4 inches long in the "S" version, or 6.50" long in the "W" version. The infrared energy source is ideally suited to efficient processing of either single-wall or dual wall adhesive-lined tubing. Temperature set-point and drive speed can be controlled to accommodate a wide variety of products and substrates.

Safety features

- Circuit breaker for current overload and mains power disconnect.
- Emergency Stop push-button for immediate shut down of the unit in a critical situation.
- Automatic cool-down circuit to prevent heat damage to integral components.
- Over temperature thermal switch to shut the unit down if an over temp condition is sensed.
- Indicator lights to advise operator of proper heater cycling and heater failure.

Optional accessories

- Steel floor stand assembly with casters and discharge tray for product drop through processing.
- Non-resettable hour meter for maintenance tracking.
- Part counter for batch processing.

Specifications and dimensions

Electrical

Power Requirements	208/240 VAC, 1Ø, 50/60 Hz, 20 A
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Processor Unit

Heating elements	(2) 1540 watt infrared foil with quartz glass face; one top & bottom
Operating Temperature	Ambient to 650° C
Drive System	DC motor with SCR Drive controller and 3 digit speed potentiometer
Conveyor Speed	0.20 to 5.0 Feet/Minute
Conveyor Belt	Double sided timing belts, opposed, driven bottom, tractor drive top
Heater Oven Gap	38.1 mm (1 ½")
Effective Heating Width "S"	101.6 mm (4") for "S" configuration
Effective Heating Width "W"	156.1 mm (6.50") for "W" configuration

Standard Unit Dimensions mm (in.)

Conveyor dimensions	254 mm (10") W x 1168 mm (46") L x 376 mm (14.8") H
Control enclosure dimensions	508 mm (20") W (center mounted to rear of conveyor)
Conveyor weight	95 Kg (210 lb.)
Shipping Weight	122 Kg (269 lb.)

Product sizes

Inside diameter	Up to 16 mm (.62")
Length	101 mm (4") or 165 mm (6.5") perpendicular to belt travel depending on "S" or "W" configuration