

## PSI Short Wave Infrared Halogen Convection – Process

Finishing trends in today's market demand flexibility to offer short runs just in time of custom finishes. Traditional solvent based lacquers, stains, sealers and topcoats, plural component resins and catalyst, are most commonly cured with convection type ovens. A combination of ambient and heated air flow is used to flash solvents and cure the finish material based on finishing schedules as provided by the material supplier and proven by testing. Environmental regulations and

consumer trends call for water based finish materials, paints and enamels. While convection curing works on water based finish materials, infrared curing technology, combined with air flow, improves quality of cured finish and hardness in less time. PSI's short wave infrared halogen / convection – process / batch type oven allows the flexibility to cure various type finish materials in either a process or batch type oven operation.

### Process Mode

During the process mode, either IR, Convection, or a combination there of, may be used for curing. The oven may be used for overhead conveyor or on-floor tow conveyor which allows parts to be loaded and conveyed through multiple curing zones within the oven proper. The conveyor is variable speed to adjust amount of time parts are exposed to curing mediums within the oven proper and the intensity of the emitters is adjustable with SCR controls. Likewise the circulation fans that create convection as heat is stripped and circulated are controlled by variable frequency drives. The combinations of curing mediums must be determined based on various factors, including substrate, finish material ambient plant conditions, etc. Testing is required to develop recipes for recommended oven settings for optimal quality of cured finish.

The PSI Halogen Convection Oven Designs work very well on overhead conveyor systems or tow lines. PSI has installed many door finishing systems utilizing this curing solution. Oven designs are modular, built in complete sections and pre wired, or built in halves to facilitate installation around existing overhead conveyor. This makes up fitting older cabinetry finishing systems very easy. Modules may be built and work in conjunction with existing conventional ovens. The footprint is much less than conventional ovens and may free up valuable space to modify finishing systems, allow additional capabilities and increased production. The cure oven is always the limitation of a finishing system; but, these curing solutions make those constraints easy to overcome.

## Vertical Emitters

