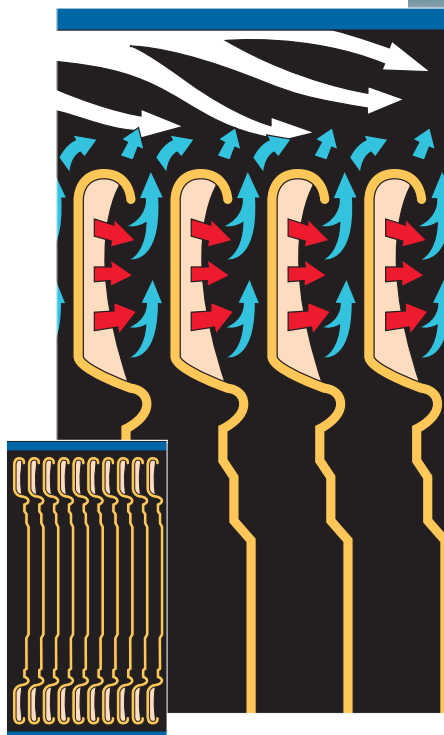


ICD Compound Dryers



Compact, energy-efficient induction-heating systems for drying water-based end compounds.



Nordson offers a complete line of compact, powerful dryers designed specifically for water-based end compounds. The dryers use innovative **induction-heating technology**, and require only a fraction of the floor space of conventional dryers while providing energy-efficient drying at speeds up to 2,000 ends per minute.

Unlike conventional convection heating systems, Nordson dryers heat only the can end, not the air around them. Compounds dry from the metal out, for faster, more complete drying. Conventional systems dry

the top surfaces of the compound first, which can trap water vapor inside the compound, creating blisters as water evolves from within the compound. This also slows the drying process.

The dryers are ideal for both aluminum and steel ends. All Nordson ICD dryers use reliable, solid-state components to provide controllable, even heating without water cooling. A simple blower is all that is needed to cool all electrical components.

Compact Size, Straight-Through Design

The ICD compound dryers range in size from just 20 inches (50 cm) to 96 inches (240 cm) in length. The compact size allows ICD dryers to be retrofit into existing end lines without major modifications.

The straight-through cagework of Nordson ICD dryers virtually eliminates the problem of line stoppages due to ends jamming in the dryer.



Ends are heated *in stick*, protecting the compound from damage during drying. With many conventional dryers, ends follow a snake-shaped path inside the dryer, which can lead to line jams and damaged curls.

Warm air is blown through the heating tube while the ends are heated inductively. The heated air, although not needed to heat the ends, aids in removal of water vapor as it evolves from the compound. Even without visible separation, water evaporates and escapes from the imperfect seal between ends. The flow of warm air in the tube continuously removes water vapor and condensation, allowing the drying process to continue rapidly.

Energy Efficiency and Savings

Nordson ICD dryers consume 50 to 70 percent less energy than conventional dryers while curing up to 2,000 ends per minute. This is because 85 to 90 percent of the power consumed by the dryer directly heats the ends, unlike conventional hot-air systems which transfer only 20 to 50 percent of the energy used to the end.

Instant on/instant off heating also contributes to energy savings. The oven requires no preheating time, so energy is used only when ends are in the unit. This reduces energy waste substantially by not operating during line stoppages.

Since ends are not heating when the line stops, they do not lose buckle strength, which is common with convection ovens. Buckle strength is reduced when aluminum ends are held at high temperatures for an extended period of time. The lighter weight metals in use today are particularly sensitive to overheating.

When the line restarts, the dryer also starts, for consistent drying and a quality product.

Simple, Automatic Operation

The ICD dryer is controlled by a microprocessor, which automatically maintains the correct heating of ends with minimal operator assistance. Initial set-up involves little more than entering the desired end temperature or power level in response to prompts on the controller's four-line message display. The ICD dryer directly controls the end temperature for consistent drying without the seasonal variations typical of convection ovens.

The unit monitors the heating and safety components on a continuous basis for safe, reliable operation. In the event of a malfunction, the microprocessor displays a fault message, detailing system status and identifying the source of the malfunction. This provides fast troubleshooting with minimal downtime.

Safe, Consistent Operation

Nordson's patented induction-heating method operates at frequencies well below 20 KHz, unlike older induction methods that operated in the 200 KHz high-frequency range. The lower frequency of the Nordson ICD dryer provides safe, controllable heating deep within the ends, for fast, thorough drying.



Magnetic Separator for Steel Ends

An optional magnetic separator located at the heater exit accelerates drying of steel ends. Carefully calibrated, permanent magnetic arrays separate the ends while warm air is blown between them. Ends are heated safely *in stick*, then separated. The warm air dries compounds quickly at the point where the moisture is most easily removed. The magnetic separator has no moving parts for simple, reliable operation.

System Specifications

ICD Induction End-Compound Dryers for Aluminum and Steel Ends

Dryers are available as single- or dual-lane units and accommodate a variety of lane configurations.

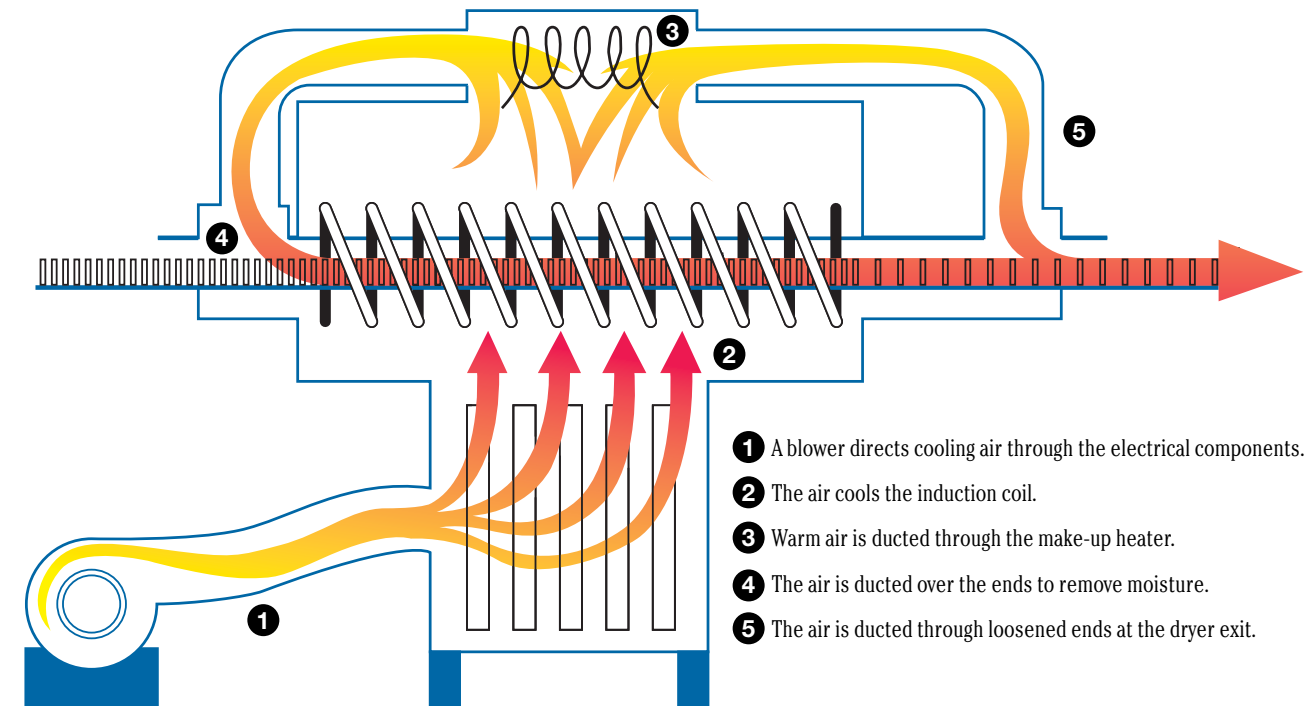
| Model Number | Single/Dual Channel | Length | Width |
|--------------------|---------------------|------------------|----------------|
| ICD - 2S (Special) | Single | 20 in. (50 cm.) | 22 in (55 cm.) |
| ICD - 2D (Special) | Dual | 20 in. (50 cm.) | (all models) |
| ICD - 3S | Single | 32 in. (80 cm.) | |
| ICD - 3D | Dual | 32 in. (50 cm.) | |
| ICD - 4S | Single | 48 in. (120 cm.) | |
| ICD - 4D | Dual | 48 in. (120 cm.) | |
| ICD - 6S | Single | 64 in. (160 cm.) | |
| ICD - 6D | Dual | 64 in. (160 cm.) | |
| ICD - 8S | Single | 80 in. (200 cm.) | |
| ICD - 9S | Single | 96 in. (240 cm.) | |

Voltages available: 380V, 400V, 415V, 440V, 480V (3 phase)

Wattage: Up to 25 Kw

Optional Magnetic Separator (for steel ends only)

| Model Number | Description | Length |
|---------------|-------------|-----------------|
| ICD - xx - S1 | Separator | 16 in. (40 cm.) |
| ICD - xx - S3 | Separator | 32 in. (80 cm.) |



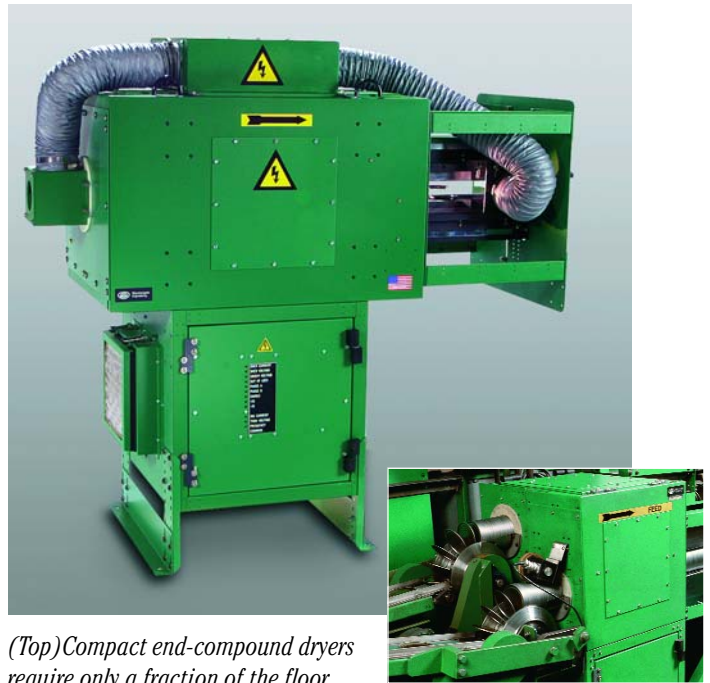
ICD Compound Dryers

Safety Features of ICD End Dryers

- Open-door safety interlock switches
- Over- and under-temperature alarms and shut-downs
- Motion sensor with required redundant start signal
- Front-panel diagnostics
- Automatic microprocessor system checkout
- System over-temperature protection



Vertical mount ICD compound dryer is ideal for the beverage can industry.



(Top) Compact end-compound dryers require only a fraction of the floor space of conventional dryers, and (inset) can dry up to 2,000 ends per minute.

Additional Options

- Dual lane motion sensing control
- Input multi-tap transformer (200V, 240V, 3ø input)
- Dual zone control
- Higher power option
- Various mounting options
- Custom colors available
- Custom systems can be configured for special applications

Nordson reserves the right to make design changes to products and components to improve their function. These changes may occur between printings.

For more information, talk with your Nordson representative or contact your Nordson regional headquarters office.

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