

Rayeman Compression Dryer



Redefining Grain Drying Systems



INTRODUCTION

The Rayeman Compression Dryer's (RCD) ground-breaking, patented technology safely and efficiently converts wet grain to premium dry grain in a process that yields the benefits of the reduction of emissions and explosions, a smaller footprint, and significantly lower capital outlay and operating costs than conventional dryer systems.

The RCDs' secret lies in the unique sets of counter-rotating, intermeshing, electrically heated screws, housed in a barrel, operating at low temperatures (220F).

Wet grain is distributed in a thin layer over the high surface area of the screws within the restricted space of the barrel.

- The process provides the optimization of heat transfer while continuously moving wet grain through the system at a constant rate
- Grain is mechanically compressed and sheared, producing mechanical energy
- Moisture is squeezed out of the grain
- Water economically evaporates out of the grain

The overall result is uniform, superior quality grain

- Dried to a customizable moisture content
- Preserving the highest fat and / or protein content
- Commanding a premium selling price

PERFORMANCE

This system is effective in taking wet grain with a maximum of 95% moisture and drying it to as low as 5% moisture, depending on your desired output capacity. The dry grain produced has no irregularities and completely maintains its original nutritional properties.

FLEXIBILITY

The Rayeman Compression Dryer is unmatched in its flexibility of desired moisture levels removed, and consistent quality of grain dried. Whether your plant processes 15 tons a day of wet material, or 5,300 tons a day, Rayeman Compression Dryers can be sized specifically for the volume of product needing to be dried, and to the desired output moisture content.

BENEFITS

- Low operating temperature
- Produces a lighter colored grain
- Does not produce additional CO₂
- Emits minimal harmful VOC's
- Explosion/fire-proof
- Smaller footprint
- Lower OPEX compared to conventional dryers
- Significantly lower CAPEX
- Adds capacity inexpensively to existing dryer system at front end, or back end

Rayeman Compression Dryer



Specifications – presented as examples

Type of Dryer	Rayeman Elements, in-Line, Connected in Series		
	93mm	160mm	285mm
Screw Diameter	93mm	160mm	285mm
Type of Material	DDG	DDG	DDG
Input Capacity	3.9 tons/day @ 5 rpm 27 tons/day @ 35 rpm	17 tons/day @ 5 rpm 120 tons/day @ 35 rpm	130 tons/day @ 5 rpm 914 tons/day @ 35 rpm
Input Moisture %	68%	68%	68%
Output Capacity	1.4 tons/day @ 5 rpm 9.8 tons/day @ 35 rpm	20 tons/day @ 5 rpm 44 tons/day @ 35 rpm	46 tons/day @ 5 rpm 325 tons/day @ 35 rpm
Desired Output Moisture %	10%	10%	10%
Number of Vents	7 – Multi-pass system	56	56
Dimensions of System	30'L x 5'W x 6'H	119'L x 7.5'W x 12'H	126'L x 7.5'W x 12'H
Operating Cost	\$0.009/lb.	\$0.0085/lb.	\$0.0065/lb.
Electrical Requirement	480v to 460v 60Hz Three phase – 1,000 amps	480v to 460v 60Hz Three phase – 1,500 amps	480v to 460v 60Hz Three phase – 2,500 amps
Motor HP	150 HP	400 HP	600 HP
Vapor Release	89 - 619 CFM	390 - 2,753 CFM	2,968 – 20,971 CFM
Removal of Vapor Pressure fan to maintain	89 - 619 @ -5 inches	390 - 2,753 @ -5 inches	2,968 – 20,971 @ -5 inches
Regenerative Thermal Oxidizer	To meet EPA requirements on HAPs and VOCs (2/3rds reduction on VOCs compared to gas fired dryers – when operating on vapor release)		
System Mounting	Mounted to the floor, ready to receive 4 legs of 480v three phase electricity, as well as plumbed with water and air sources		

At Rayeman Elements, we strive to be the leaders of the industry not only for our technology and innovations, but for our dedication and commitment to you. The Rayeman Compression Dryer is customizable to meet your specific criteria, product, capacity and moisture content. Please contact us for more information, and to discuss your specific project requirements.

Rayeman Elements, Inc.
320 Gateway Drive
Berthoud, CO 80513

Phone: +1 (970) 344-4776
Email: info@rayemanelements.com
www.rayemanelements.com