



FEED AND BIOFUEL

MOISTURE REDUCTION AND DRYING PERFORMANCE

COMBI-ZONE DRYER FOR EXTRUDED PELLETS

ANDRITZ

ENGINEERED SUCCESS

Combi-zone dryer

Specifically designed for making high-quality fish feed and pet food, covering a variety of production capacities up to 30 TPH and product sizes from 0.6–40 mm.



ADVANTAGES OF THE COMBI-ZONE DRYER

- Gentle handling of products
- High energy efficiency in costs per ton
- Drying process with respect to nutritive value
- Product size range of 0.6–40 mm
- Uniform drying of each pellet
- Excellent control at every step of the drying process
- Adjustable retention time

FEATURES

- Gentle and efficient drying
- Hygienic design with automatic cleaning system and removal of fines in each deck (not included in the basic package)
- Integrated drying air system by means of direct gas-fired burners or indirect steam exchanger
- Integrated safety devices
- Easy access to operating systems for maintenance and cleaning
- Modular design for easy installation and upgrading
- Insulated cabinet
- Configuration flexibility – available in two belt widths and with 1 to 4 decks
- Several accessories and options to match specific requirements
- Dryers available in carbon steel or stainless

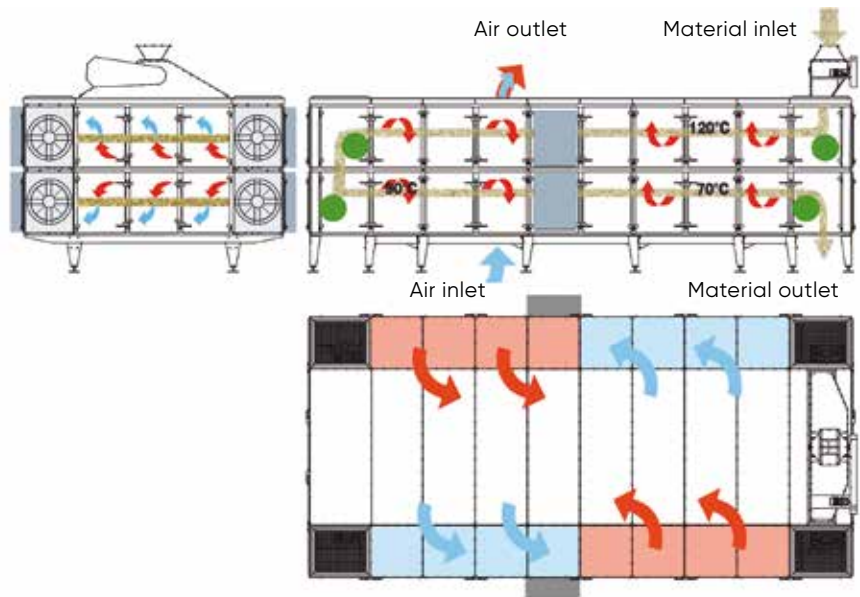
TECHNICAL INFORMATION

Dryer type	Module dimensions mm			Total height mm (excl. supporting legs)			
	Width	Height	Length	One deck	Two decks	Three decks	Four decks
CZD	4100	1250	2000	1470	2720	3970	5220
CZD/XW	5100	1250	2000	1470	2770	3970	5220

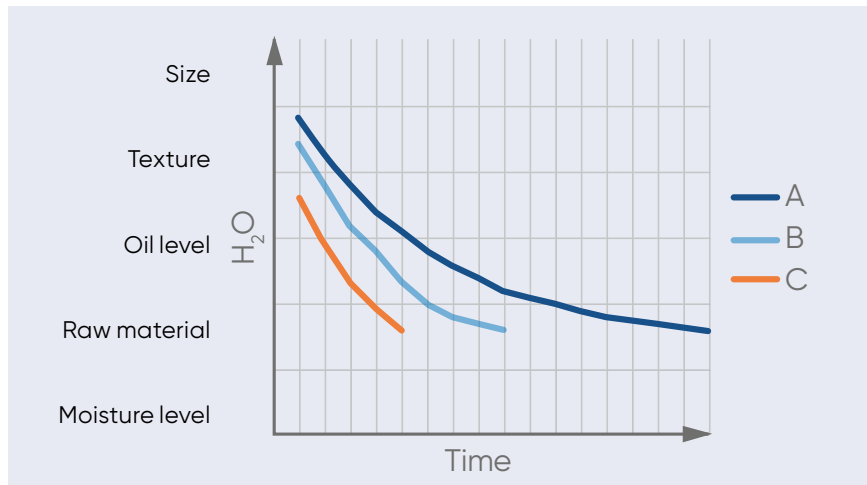
Dryer type	Belt width mm	Belt length m		Drying area m ²
		Min.	Max.	
CZD	1800	8	24	1.8 x belt length (m)
CZD/XW	2800	8	24	2.8 x belt length (m)

AIR SYSTEM ADVANTAGES

- Individual control of temperature and air flow in each drying zone
- Individual drying zones
- Control of temperature in each zone (50-135° C)
- Control of drying time per deck (15-90 min.)
- Control of air flow direction for each zone
- Optimum air cleaning possibilities by means of filter or cyclones.
- Minimized fire hazard
- Optimum flash-off for high drying efficiency
- Energy surveillance at exhaust air outlet
- Energy source based on customer requirements:
 - Indirect steam
 - Direct gas



PRODUCT CHARACTERISTICS/DRYING TIME



Drying for longer at a lower temperature produces a higher quality pellet.

A

Products with a high density, such as sinking shrimp feed, need a longer time for drying. Temperature and retention time depend on density, moisture and size.



B

Lower density kibbles, ie. petfood or floating feed is more porous which means that water evaporates easier.



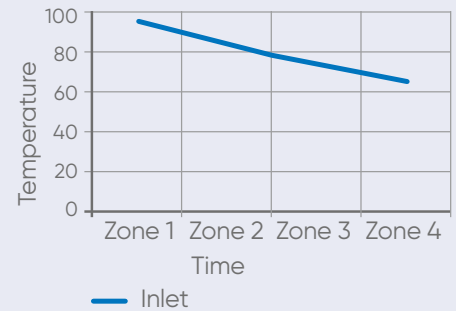
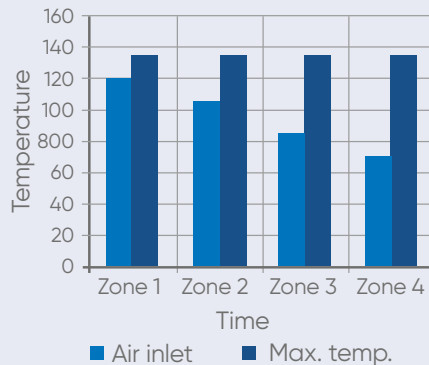
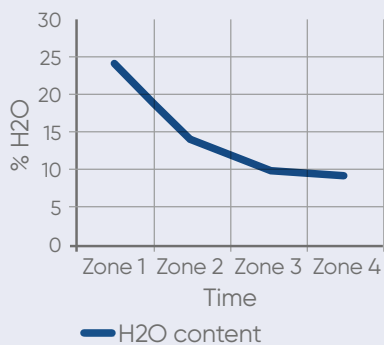
C

High-quality feed with a porous structure for better absorption of fats and other palatants.

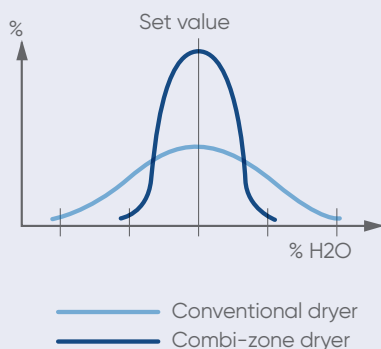


Moisture reduction and drying performance

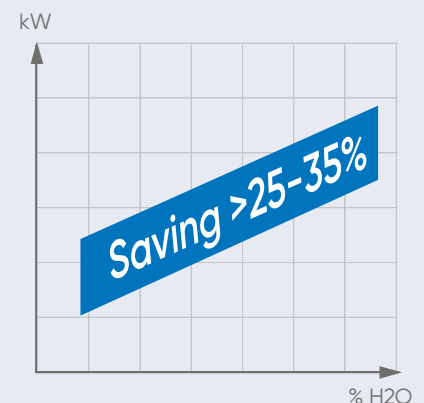
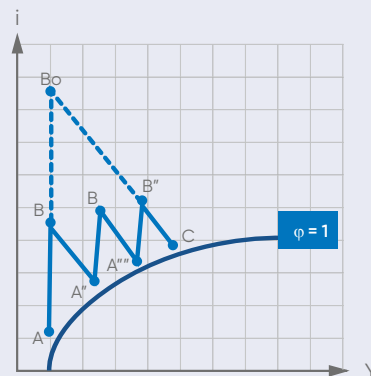
MOISTURE REDUCTION



DRYING PERFORMANCE



ENERGY EFFICIENCY



MOISTURE REDUCTION DEPENDS ON

- Control of drying air temperature for each drying zone (50-135°C)
- Drying air quantity (velocity) for each drying zone
- Retention time for each deck (15-90 min.)
- Product size, expansion, and formula (especially fat and starch)
- Flexible zone division in accordance with dryer combinations

SINKING FISH FEED

- Spread of moisture = spread of oil absorption
- Spread of moisture = spread of sinkability
- Too low moisture = floating

FISH FEED AND PET FOOD

- Too low moisture = loss of money
- Too high moisture = risk of mold
- Too high moisture = reduced crispiness

DRYING PERFORMANCE

Minimized spread of moisture



Sinking fish feed



Design details for production of high-quality feed

1 INLET AND OUTLET AIRLOCKS

- Stainless steel airlocks
- No false air at inlet/outlet
- Control of air flow and volume
- Less odor problems

2 PRODUCT DISTRIBUTION

- Motor-driven oscillating spreader
- Special server drive
- Fully adjustable system
- Completely stainless design
- Plugging detection system
- Uniform depth of pellets due to vertical distribution

3 PRODUCT DEPTH CONTROL IN ALL LAYERS

- Torsion meter for product level monitoring at each deck
- Product inlet for immediate registration of product depth variations
- Product depth control for each deck

4 CHAINS AND TRAYS

- Large flanged rollers for safe guidance of trays and minimum chain wear and load
- Trays for optimum air distribution
- Self-supporting lamellas (tray/slats)
- Air seals in full chain and tray length

5 TRAYS

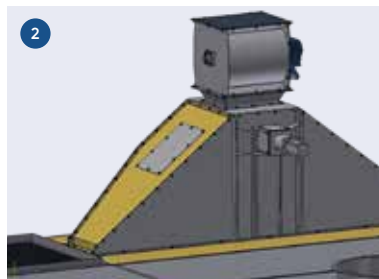
- Perforated trays for optimum air distribution
- Customized tray perforation

6 PLUGGING DETECTOR

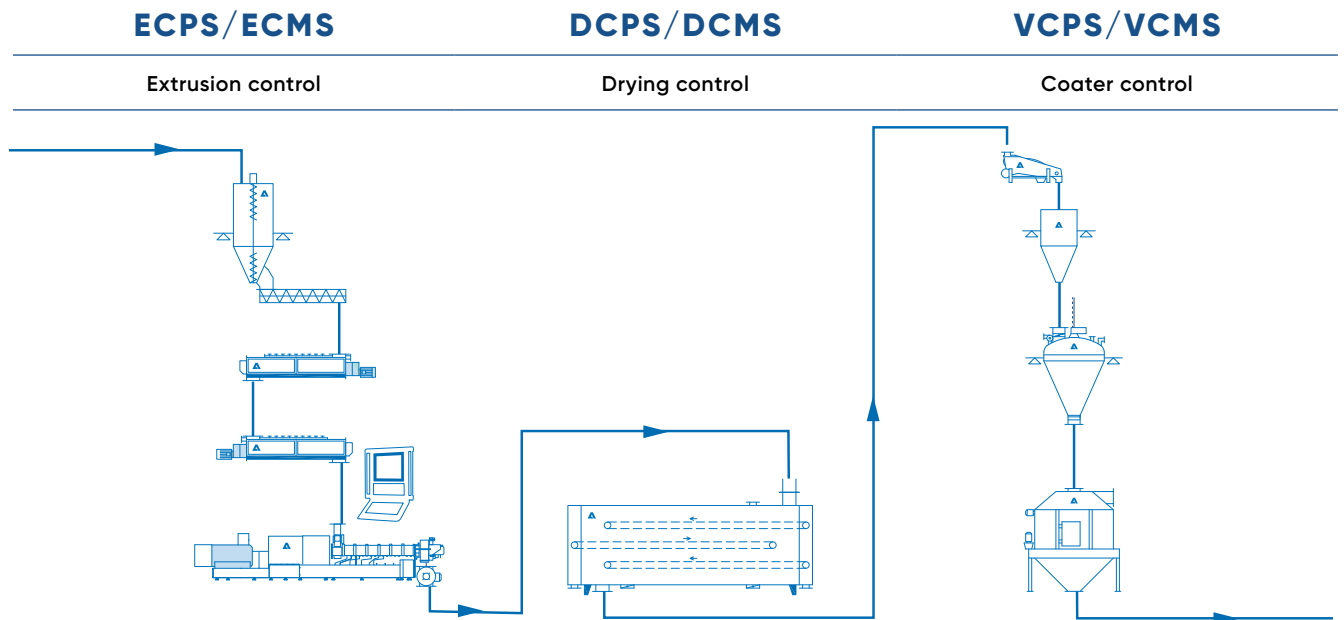
- Built-in plugging detection
- By-outlet at each deck
- Protection of chains and trays in case of plugging

7 CIP CLEANING (OPTION)

- Air plenum cleaning system
- Collecting point
- Minimum/no cleaning



Control systems for each stage of the processing line



PROCESS CONTROL SYSTEMS

Type	Extruder	Dryer	Coater	Touch control panel system	PC remote management system
Basic	ECPS	DCPS	VCPS	x	
Extended	ECMS	DCMS	VCMS	x	x

BASIC FUNCTION CONTROL

Stand-alone control system

- Extruder – ECPS;
Extruder control panel system
- Dryer – DCPS;
Dryer control panel system
- Coater – VCPS;
Coater control panel system

FUNCTIONS

- Basic functions
- Basic operation of equipment
- Manual settings/readings

EXTENDED FUNCTION CONTROL

Client server-based control system

- Extruder – ECMS;
Extruder control management system
- Dryer – DCMS;
Dryer control management system

- Coater – VCMS;
Coater control management system

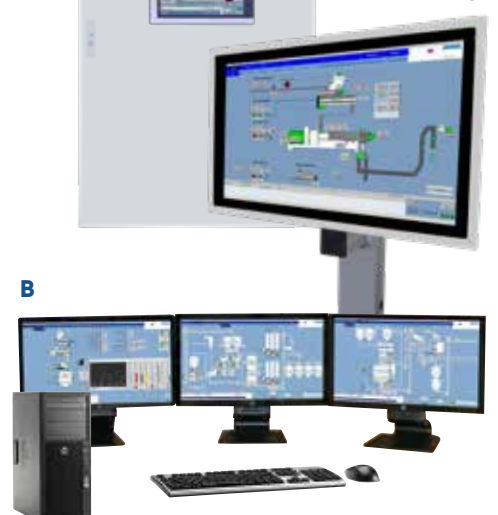
FUNCTIONS

- Extended remote control
- Fully automatic control
- Total traceability
- Auto start/stop feature
- Production management
- Database
- Recipe logging
- Remote online support

A



C



B



- A** Touch control panel system
- B** Server installation for control room
- C** Touch client for field installation

Keep your business growing with our global service network

Our excellent aftermarket service and support is what sets us apart from our competitors. Our cooperation with our customers does not end with the sale – or the machine installation. The good customer relationship is extended through important after-sales service and support.

OUR SERVICES

Our highly skilled and motivated employees stand ready to help you with:

- After-sales services, support, and follow-ups
- Spare and wear parts, maintenance, and repairs
- Process optimization
- Training of plant operators

FIELD SERVICES

We offer our customers excellent field services, where our service technicians come to you and your plant for assistance. The depth and experience of our field service specialists is unmatched – backed by the full knowledge and technical support that only the equipment manufacturer can provide.

BENEFITS

There are several benefits to be gained from continuous upgrades, optimizations, and services on your equipment:

- Maximum production
- Process knowledge and experience
- Reliability and cost efficiency
- Reduced life cycle costs
- Short and effective shutdowns
- Improved energy efficiency



SPARE AND WEAR PARTS

ANDRITZ spare and wear parts warehouses are located at strategic locations worldwide.



GLOBAL SUPPLIER – LOCAL PRESENCE

With sales, service, engineering, manufacturing and production sites located all around the world, ANDRITZ Feed and Biofuel is truly a global organization with a local presence. ANDRITZ is vital to ensuring a reliable global supply of aqua feed, animal feed, pet food, and biofuel. With full process lines accounting for half the world's production of aqua feed and biomass alone, we continuously support leading producers in achieving the highest levels in safety, quality, and control from feedstock to final product.

How can we help grow your business?

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