

## VIBRONET® - PATENTED CEREAL & PULSE DAMPENER FOR DRASTIC TEMPER TIME REDUCTION



### VIBRONET® - THE END OF TEMPER TIME

The vibration dampener vibronet® is a continuous vertical dampener to drastically reduce cereal and pulse tempering time, energy cost and total bacteria count to an absolute possible minimum. The technology offers eco-friendly and energy-efficient cereal and pulses preparation with any water-soluble liquid.



### VIBRONET® - APPLICATIONS

- Preparation of cereals (wheat, rye, barley, oats, corn, spelled, malt, etc.)
- Preparation of pulses (chickpeas, cocoa, coffee, etc.)
- Before steaming, cooking or Infrared-Micronizing
- Optimal uniform humidification before flaking
- Addition of water-soluble additives: fungicides, insecticides, etc.
- Addition of seed treatment, fertilizer, etc.

### VIBRONET® - ADVANTAGES [scientifically proven\*\*]

- **Drastic tempering time reduction: Maximum 2 – 9 hours\***
- **Uniform water penetration through entire outer hull due to water film formation**
- **Uniform wetting also of the kernel crease  $\cong$  1/3 of the kernel surface**
- **$\pm$  1.6 % more yield on bright flours\***
- **$\pm$  1 % more total yield\***
- **12 % water addition in one pass through the machine\***
- **Radical reduction of energy consumption:  $\pm$  0.2 kW / ton / hour only**
- **More hygiene: Less bacterial growth due to less temper time and vertical Clean-Design**
- **Optimal separation of hull and endosperm**
- **Higher yields on middlings and semolina**
- **Gentle conditioning: No breakage abrasion**
- **Addition of water soluble additives and liquids**
- **Lower construction cost: Less silos and transport elements**
- **More flexibility: Easy short-term changes in grain mix**
- **No changes in milling diagram or grinding properties**
- **Temperature increase of the dampened product in winter times**
- **Very low maintenance and wear**



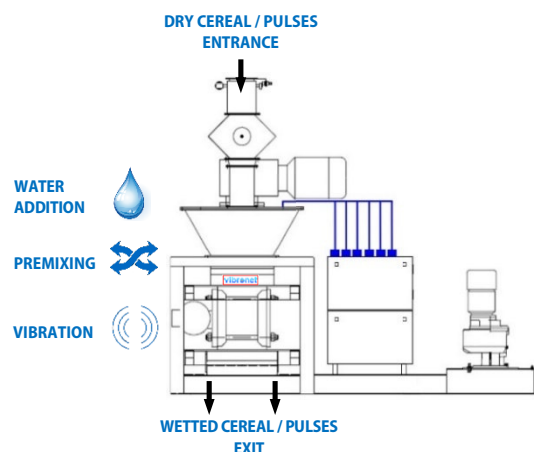
\* Depending on cereal or pulse type, hardness and installation

\*\* Federal Institute of Research of Safety and Quality of Cereals, MRI, Germany

### VIBRONET® - THE MAGIC OF VIBRATION

The continuous dampener vibronet® consists of a mechanic part with product inlet, premixing and water distribution unit, vibration unit, and product discharge unit, as well as an electric control cabinet.

- I.) A premixing device mixes a metered amount of water with the dry and cleaned product. The product-water mixture is gently mixed, preventing any kernel damage or abrasion.
- II.) The product-water mixture continuously passes through a vibrated channel according to the patented vibronet® principle. The impact of high vibration energy breaks the surface tension of the water molecules, allowing a water film to cover the entire kernel surface and penetrate fast and evenly.
- III.) A specially developed discharge device ensures continuous self-emptying of the machine.



**VIBRONET® - MORE PROFIT AND FLEXIBILITY** Comparison of conventional dampeners to vibronet® (here: 300 TPD flour mill)

	CONVENTIONAL DAMPENERS	VIBRONET® DAMPENER
TEMPER TIME REDUCTION	12 – 72 hours*	2 – 9 hours*
YIELD INCREASE	No yield increase	± 1.6 %* more white flour ± 1 %* more total yield
COST FOR CAPACITY INCREASE	Many silo bins Many transport elements	Less silo bins Less transport elements
MORE HYGIENE	Higher bacteria count Long tempering times Non-self-cleaning horizontal /inclined design	Low bacteria count Short tempering times Self-cleaning vertical design
TIME SAVINGS	Change of mix after ~24 h	Quick change of product mix
COST OF MAINTENANCE /YEAR	High maintenance and wear Wear parts ± € 3.600 <sup>*1</sup>	Very low maintenance and wear Wear parts ± € 370 <sup>*1</sup>
COST OF ENERGY /YEAR	~11 kW/h 95.040 kW x € 0.20 <sup>*1</sup> = € 19.008	~ 2.5 kW/ h 21.600 kW x € 0.20 <sup>*1</sup> = € 4.320

\* Results may vary acc. product type and installation \*1 Assumed market rate

**VIBRONET® - TECHNICAL DATA<sup>1,2</sup>**

VIBRONET® TYPE	V5	V10	V15	V25	V40	V60
CAPACITY [BASIS: DRY, CLEANED WHEAT] [T/H]	Max. 5	Max. 10	Max. 15	Max. 25	Max. 40	Max. 60
DIMENSION MACHINE [MM] [LxWxH]	1438 x 720 x 1595	1750 x 720 x 1613	2100 x 918x 1763	2100 x 918 x 2058	2370 x 1225 x 2186	3150 x 1225 x 2226
DIMENSION CONTROL CABINET [MM] [LxWxH]	800 x 300 x 1000	800 x 300 x 1000	800 x 300 x 1000	800 x 30 x 1000	800 x 300 x 1000	1000 x 300 x 1200
WEIGHT MACHINE [KG]	~550	~610	~870	~1040	~1560	~1770
WEIGHT CONTROL PANEL [KG]	~70					
CONNECTED LOAD [KW, A]	4.2kW, 9.2A	4.8kW, 10.5A	9.3kW, 17.2A	11.5kW, 21.1A	16kW, 31.2A	17 kW, 32.2A
PREMIXER MOTOR [KW]	2.2	2.2	5.5	5.5	7.5	7.5
VIBRATION MOTOR(S) [KW]	0.65	2 x 0.65	1 x 1.8	2 x 1.8	2 x 2.5	2 x 2.5
DISCHARGE MOTOR [KW]	0.55	0.55	0.55	0.55	0.55	1.5
ACTUAL POWER CONSUMPTION [KW/T/H]	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
CONTROL VOLTAGE [VDC]	24					
STANDARD OPERATING VOLTAGE	European standard [CE]: 380-480V, 50/60Hz, L1/L2/L3/PE [or V/Hz according to customer/ local specifications]					
STANDARD CABLE LENGTH [M]	- 5 m [longer cable upon request] - Pre-cabled machine: Cables fixed at the mechanic part and fitted with connectors at the electric cabinet					
MACHINE DESIGN	- Machine in carbon steel painted RAL9003 high gloss - Product inlet and discharge in stainless steel					
CONTROL PANEL	- Sheet steel painted RAL9003, for wall mounting - Powered by Siemens, incl. color touch screen, menu-driven, multi-lingual, tactile keys					
WATER PRESSURE [BAR] [MINIMUM OPERATING PRESSURE AT WATER DISTRIBUTION CABINET ENTRY]	Min. 2.5 – 4	Min. 2.5 - 4	Min. 2.5 – 4	Min. 4 - 5	Min. 5 – 6	Min. 5 – 6
WATER ADDITION QUANTITY [L/H]	Customizable according to customer need					
WATER QUALITY	- Water, water with soluble additives, cold water (no hot water allowed) - Constant, without fluctuations, filtered, free of impurities					
WATER FILTER	Minimum 90 µm directly in front of the machine water distribution cabinet entry					
WATER CONNECTION	At the machine water distribution unit [*connection size according to l/h added]					
AIR PRESSURE [BAR]	Min. 3-4, max. 8	Min. 3-4, max. 8	Min. 4-6, max. 8	Min. 4-6, max. 8	Min. 4-6, max. 8	Min. 4-6, max. 8
AIR PRESSURE QUANTITY [L/M]	Min. 200-300					
AIR PRESSURE QUALITY	Constant, oil-, fat- and water-free					
AIR PRESSURE CONNECTION	At machine water distribution unit, 8mm [OD]					

<sup>2</sup>Subject to modification



**MANUFACTURER AND GLOBAL DISTRIBUTOR**

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