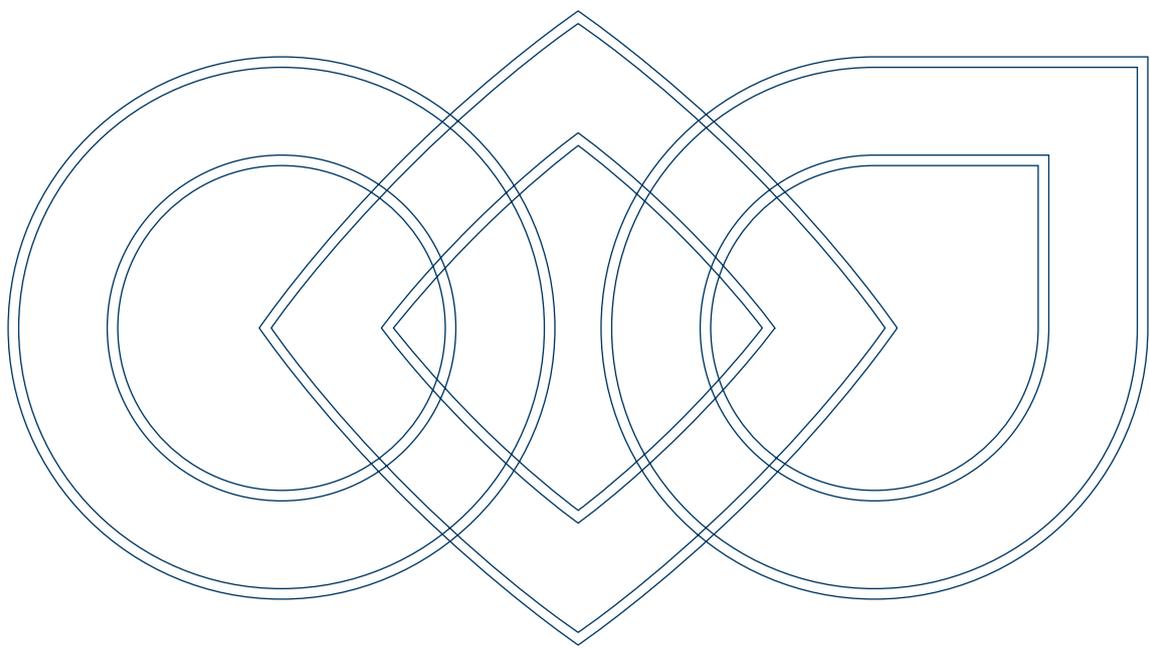


Solutions for
**Food & Beverage
Processing**



SECTOR



THE WIDEST RANGE OF SOLUTIONS FOR FOOD & BEVERAGE PROCESSING AND MACHINERY

Within the Food & Beverage industry, Bonfiglioli offers a diverse range of solutions for all types of applications. We have decades of experience in developing customized solutions for the most challenging applications around the world and incomparable expertise in typical Food & Beverage processing applications.

Some of the biggest product lines and most advanced applications in the world are powered by at least one Bonfiglioli solution, final drive, gearbox, gearmotor or inverter.

Bonfiglioli also offers specific products for hygienic, explosion-proof and enhanced protection, developed to deliver the reliability and durability typically demanded by the Food & Beverage sector.

BONFIGLIOLI HAS ALL THE EXPERIENCE NEEDED TO SUPPORT PLANTS FOR:



Grain Handling and Milling

Pag. 4 to 7



Food Baking

Pag. 8 to 11



Fruit and Beverage Processing

Pag. 12 to 15

BONFIGLIOLI ALSO PROVIDES SOLUTIONS FOR:



Fish & Meat Processing



Poultry Processing



Dairy Processing



Packaging

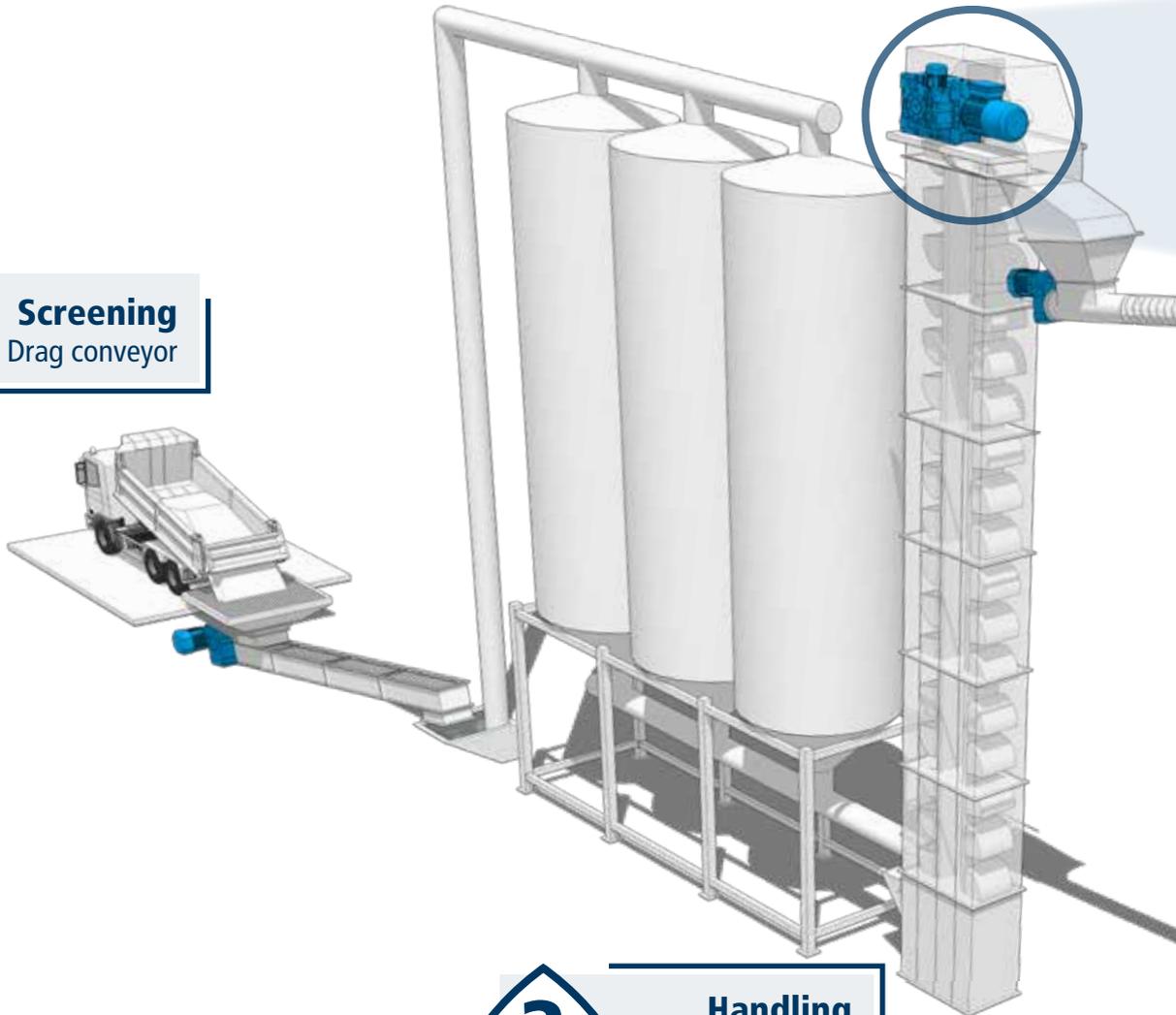


BONFIGLIOLI SOLUTIONS SERVE ALL THE FOLLOWING TYPES OF FOOD PROCESSING EQUIPMENT

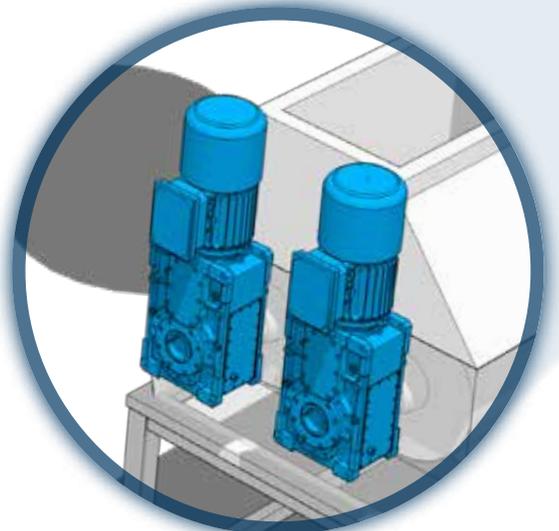
- Drying and cooking machines
- Extrusion machines (Food and Pet Food)
- Freezing and chilling lines
(spiral freezers, tunnel freezers, carton freezers, ...)
- Grading and sorting machines
- Grain logistic systems
- Grinding and flaking machines
- Homogenizing machines
- Milling machines
- Mixing / Stirring machines
- Presses
- Rendering systems
- Conveyors

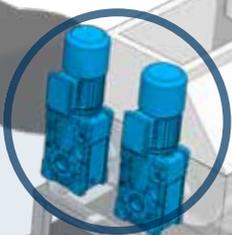
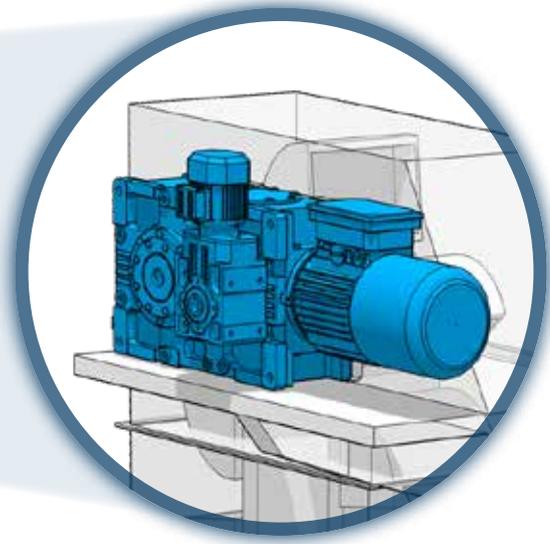
GRAIN HANDLING AND MILLING

1 **Screening**
Drag conveyor



2 **Handling**
Bucket elevator
& screw feeder





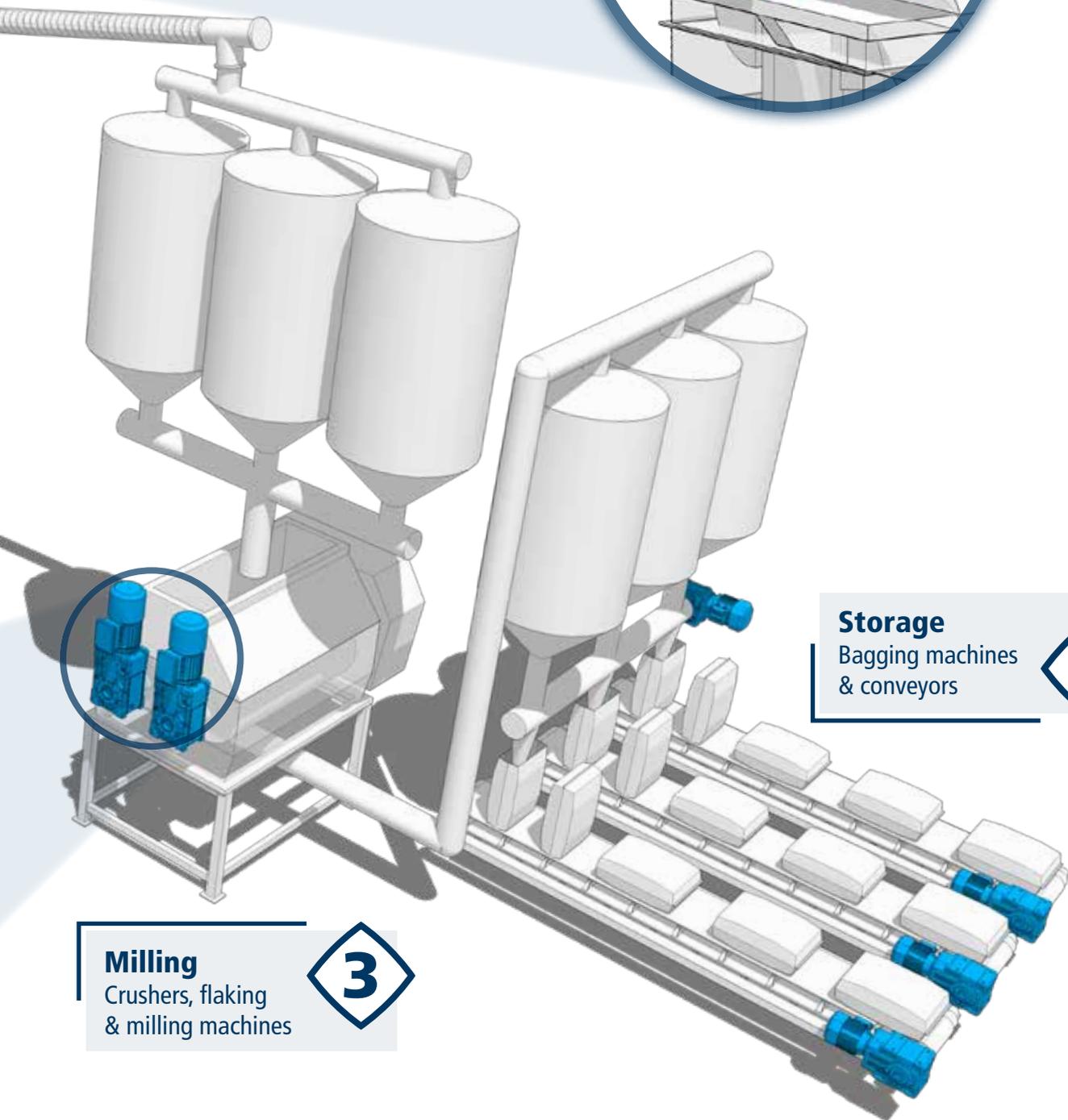
Storage

Bagging machines
& conveyors



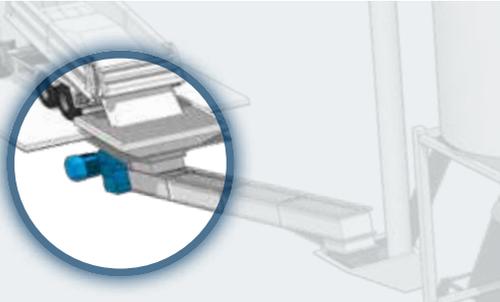
Milling

Crushers, flaking
& milling machines



GRAIN HANDLING AND MILLING

1



Screening

Solutions for drag conveyors

F - Shaft mounted gearbox and geared motor



BENEFITS

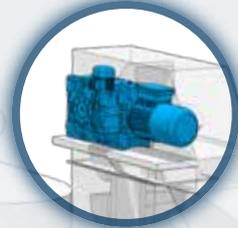
- Easy installation
- Quiet operation
- High torque capabilities



FEATURES

- ATEX-compliant gearboxes (according to Directive 2014/34/EU)
- Keyed hollow shaft with two bore options per size, or hollow shaft with shrink (metric and imperial dims)
- Backstop device
- Surface protection class C3, C4 and C5 (according to standard UNI EN ISO 12944-2)
- High and premium efficiency motors (IE2, IE3)
- Anti-condensation heaters and tropicalized windings
- Energy efficiency approval by DOE (USA Department of Energy) and NRCAN (Natural Resources Canada)

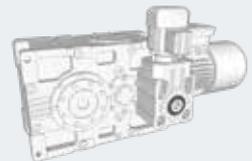
2



Handling

Solutions for bucket elevators

HDO - Heavy duty gearbox and geared motor with A - Helical bevel geared motors auxiliary drive



BENEFITS

- Integrated solution for auxiliary and main drives
- High power capacity
- One-stop-shop for a complete drive solution
- Extended lifetime & reliability

FEATURES

- Self engaging auxiliary drive for machine maintenance operations
- Backstop and overrun clutch device
- ATEX compliant gearbox according to Directive 2014/34/EU
- Torque up to 210 000 Nm
- Oil level and temperature sensors, torque arm and coupling
- Strengthened E-motor input flange with integrated self-cooling system and coupling
- Integrated forced oil lubrication option
- Surface protection class C3, C4 and C5 (according to standard UNI EN ISO 12944-2)
- Brake motors
- AC or DC brake type
- Micro-switch (control of brake operation)
- Anti-condensation heaters and tropicalized windings
- Forced ventilation with independent cooling

Active Cube - Premium Inverter



BENEFITS

- IP54 option
- Smooth start
- Torque control
- Motor temperature monitoring

FEATURES

- Wide power range and parallel connection option up to 1200 kW
- Integrated torque off safety function, external 24 Vdc control power supply
- IP 54
- Tropicalization option
- Main software features:
 - Integrated PLC function with graphic development environment
 - Torque limitation

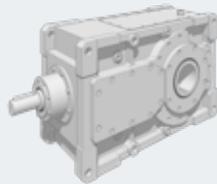
3



Milling

Solutions for flaking and milling machines

HDO - Heavy duty gearbox and geared motor (Bevel-Helical)



BENEFITS

- One-stop-shop for complete drive solutions
- Highly transmissible power
- Extensive customization
- Quiet operations
- External cooling-system free

FEATURES

- Strengthened E-motor input flange with integrated with self cooling system and coupling
- Torque range up to 210 000 Nm
- ATEX-compliant gearbox according to Directive 2014/34/EU
- Integrated forced lubrication
- Taconite seals
- Protective hollow shaft cover
- High rigidity and stiffness gear case
- Strengthened E-motor flange with integrated self-cooling and coupling
- Oil level and temperature sensors
- Surface protection class C3, C4 and C5 (according to standard UNI EN ISO 12944-2)
- High and premium efficiency motors (IE2, IE3)
- Thermal protection (bi-Metallic, PTC or KTY)
- Protective canopy
- Rotor balancing class A (standard) or B (available on request)

Agile - Smart inverter



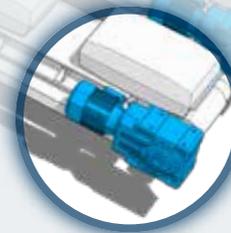
BENEFITS

- Smooth start
- Feed roll control
- Low energy consumption

FEATURES

- Sensorless vector control for asynchronous and synchronous motors
- Integrated torque off safety function
- Integrated Modbus
- Optional communication card (Profibus, CanOpen.....)
- Tropicalization option
- Main software features:
 - Energy saving function
 - Integrated PLC function with graphic development environment
 - Torque limitation

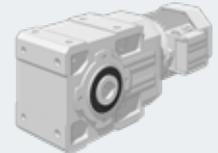
4



Storage

Solutions for bagging machines and conveyors

A - Bevel-helical geared motors



BENEFITS

- Compact layout
- Flexible mounting
- Modular design

FEATURES

- ATEX-compliant gearbox (according to Directive 2014/34/EU)
- Keyed hollow shaft (metric and imperial dims)
- Taconite seals option for larger sizes
- Surface protection class C3, C4 and C5 (according to standard UNI EN ISO 12944-2)
- High and premium efficiency motors (IE2, IE3)
- Protection rating up to IP56
- Wide range of feedback devices (incremental and absolute encoders)
- Wide range of connectors



Active - Standard AC drive



BENEFITS

- Speed control
- Smooth start

FEATURES

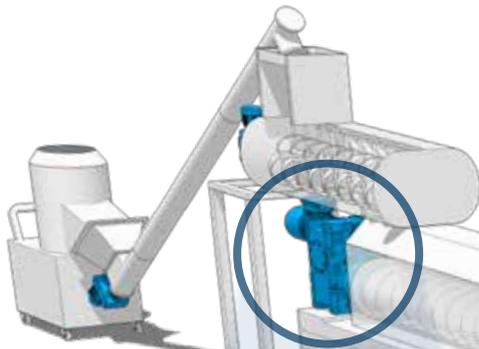
- Motor temperature monitoring
- Main software features:
 - Auto start-up and commissioning
 - Auto start after power failure

FOOD BAKING

Raw material handling

Feed system, conveyor, mixer

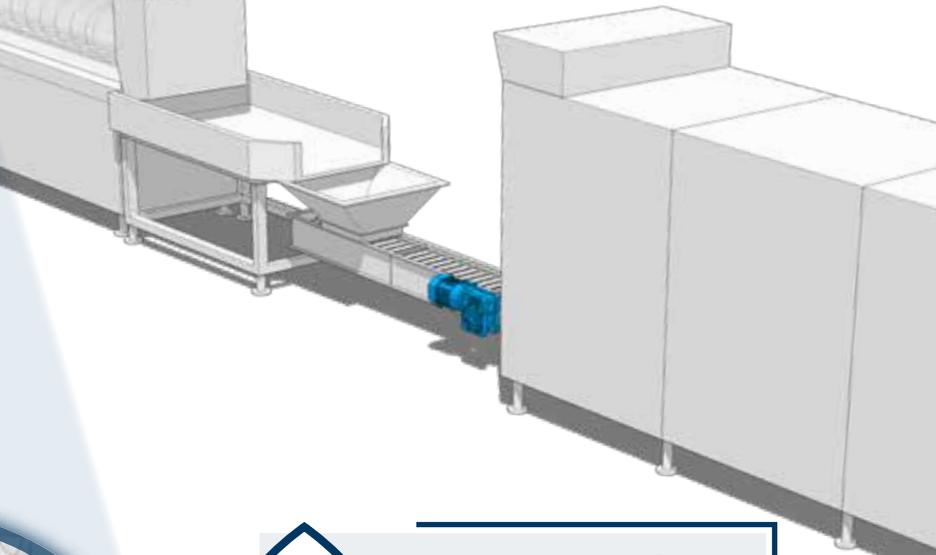
1



Processing

Extruder, shaping machine

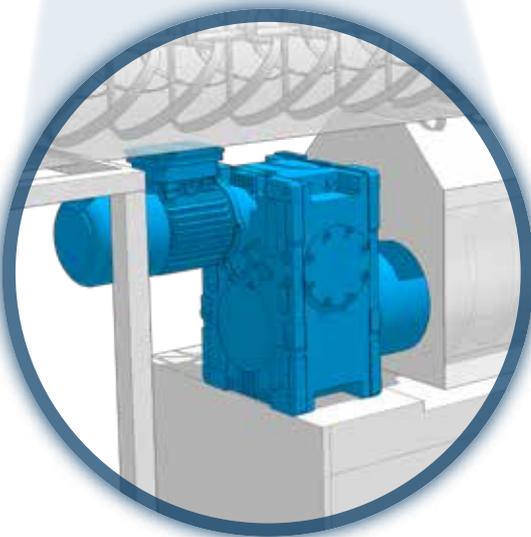
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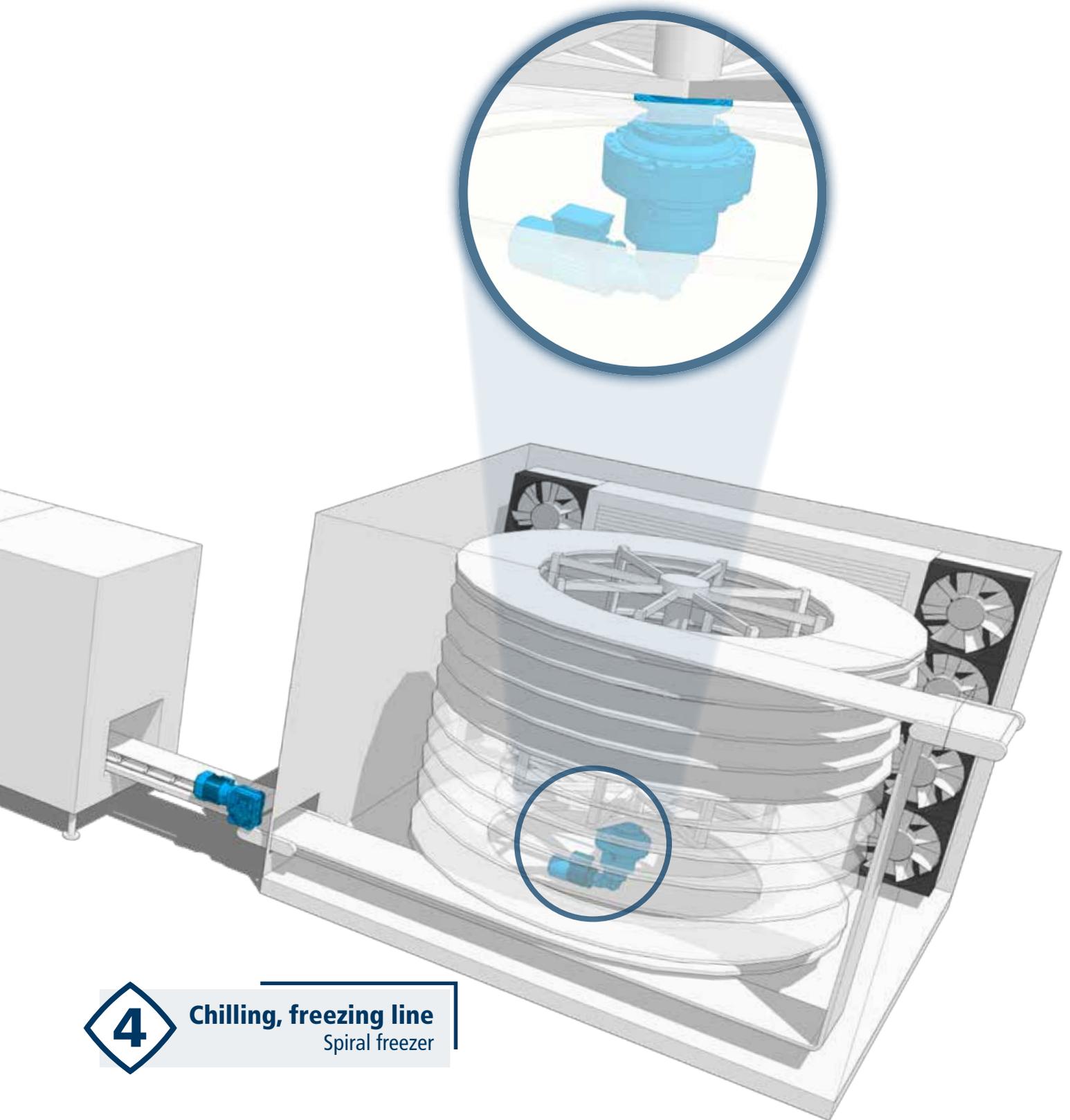


3

Drying & cooking line

Oven, dryer, frying machine





4

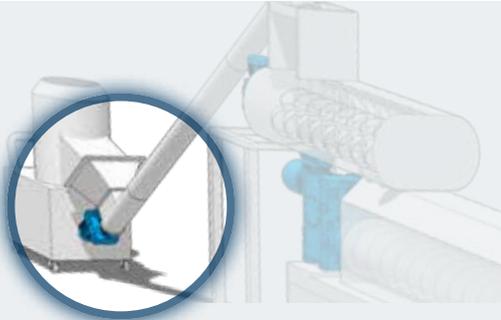
Chilling, freezing line
Spiral freezer

PACKAGING PROCESS SOLUTIONS ►

Visit www.bonfiglioli.com for more information.

FOOD BAKING

1



Raw material handling

Solutions for feeding systems

F - Shaft mounted gearbox and geared motor



BENEFITS

- Easy installation
- Quiet operation
- High torque capabilities

FEATURES

- Keyed hollow shaft with two bore options per size, or hollow shaft with shrink disc fitting (metric and imperial dims)
- Backstop device
- Surface protection class C3, C4 and C5 (according to standard UNI EN ISO 12944-2)
- High and premium efficiency motors (IE2, IE3)
- Protection rating up to IP56
- Thermal protection (bi-metallic, PTC or KTY)
- Anti-condensation heaters and tropicalized windings

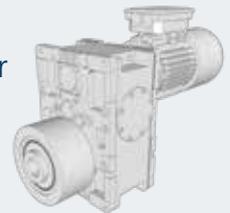
2



Processing

Solutions for extruders

HDPE - Heavy duty gearbox and geared motor



BENEFITS

- Reliable and specific design solution for single-screw extrusion machines
- Easy machine integration thanks to universal mounting gearbox case
- Customized extruder screw interface dimensions

FEATURES

- Specific heavy duty thrust bearing sourced exclusively from primary brands
- Robust nodular cast iron gear case suitable for high load capability
- Wide range of cooling system options (external & internal)
- Lubrication shared between gearbox casing and screw box
- High and premium efficiency motors (IE2, IE3)
- Protection rating up to IP56
- Thermal protection (bi-metallic, PTC or KTY)
- Anti-condensation heaters and tropicalized windings

Active Cube - Premium inverter



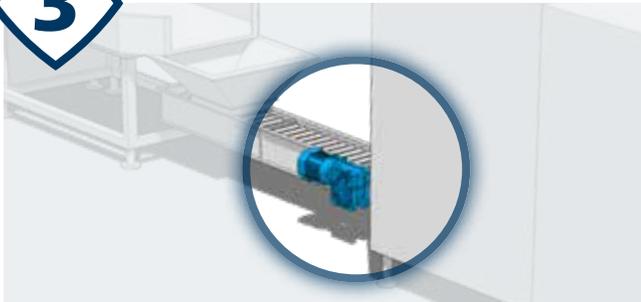
BENEFITS

- Soft start
- Positioning mode

FEATURES

- Wide power range and parallel connection option up to 1200 kW
- Integrated torque off safety function, external 24 Vdc control power supply
- IP 54
- Tropicalization option
- Main software features:
 - Integrated PLC function with graphic development environment
 - Torque limitation

3



Drying and cooking line

Solutions for ovens, dryers and frying machines

W/EP - Worm gearbox and geared motor with enhanced protection



BENEFITS

- Cost-effective
- Uncompromising quality
- Specially designed for food & beverage industries

FEATURES

- Epoxy coating (NSF & FDA approved for incidental food contact)
- AISI 316 stainless steel output shaft and stainless steel fasteners
- H1 food grade lubricant
- High and premium efficiency motors (IE2, IE3)
- Protection rating up to IP56
- Thermal protection (bi-metallic, PTC or KTY)
- Anti-condensation heaters and tropicalized windings
- Insulation class F (standard) or H (available on request)
- Surface protection class C5 (according to standard UNI EN ISO 12944-2)

4



Chilling, freezing line

Solutions for spiral freezers

300M - Planetary gearbox and geared motor



BENEFITS

- High shock load resistance
- Compact design
- One-stop-shop for complete drive solutions
- Reliable and customized solution for extreme low temperature working condition
- Wash down capability

FEATURES

- 5-stage planetary bevel geared motors
- Special lubricant and oil seals for low temperature
- Water defender system for oil seals and bearings
- Shot blasting and hot zinc spraying surface treatment
- High and premium efficiency motors (IE2, IE3)
- Protection rating up to IP56
- Thermal protection (bi-metallic, PTC or KTY)
- Anti-condensation heaters
- Total quality inspection certificate

Active Cube and/or Agile - Smart inverter



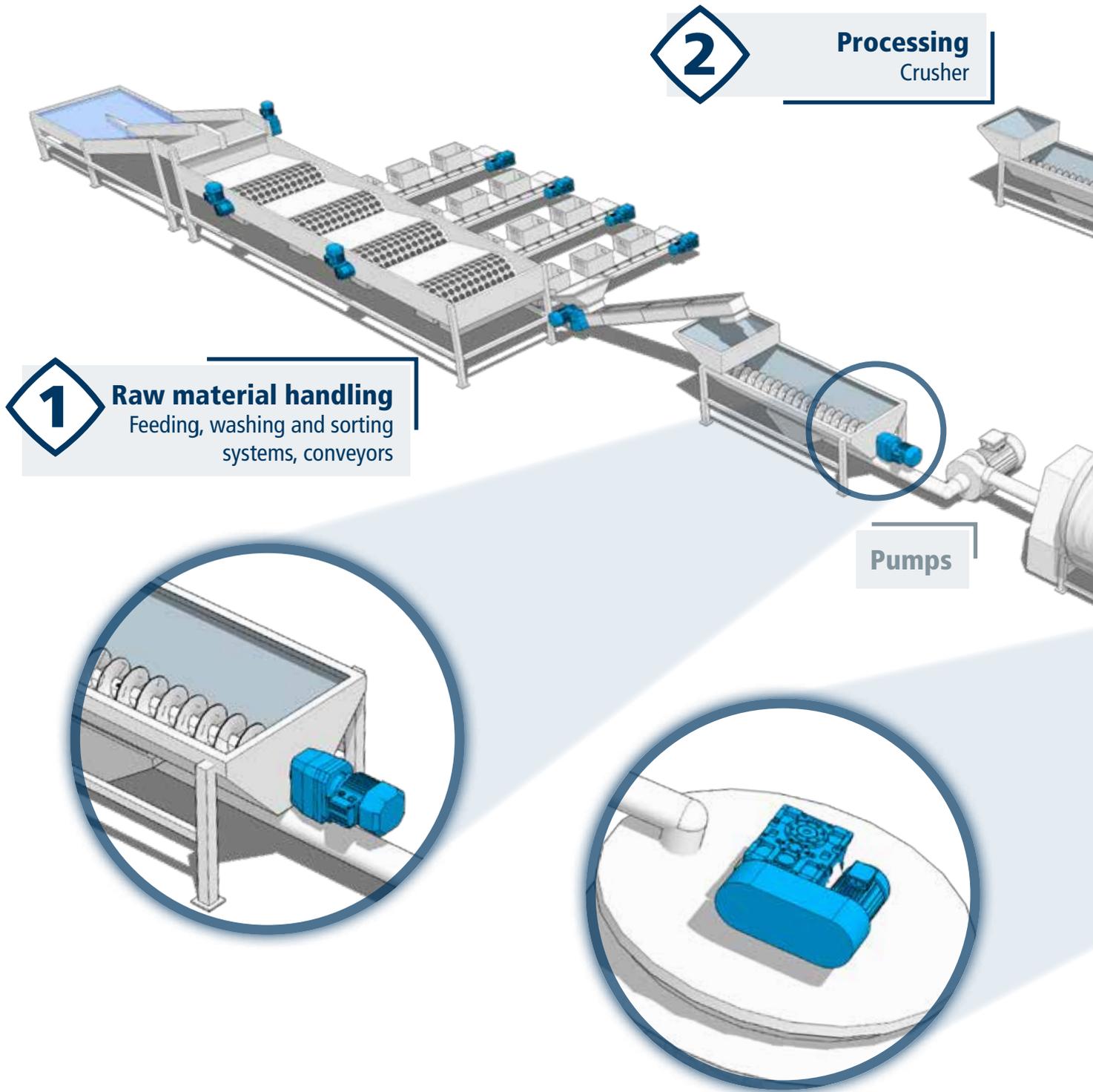
BENEFITS

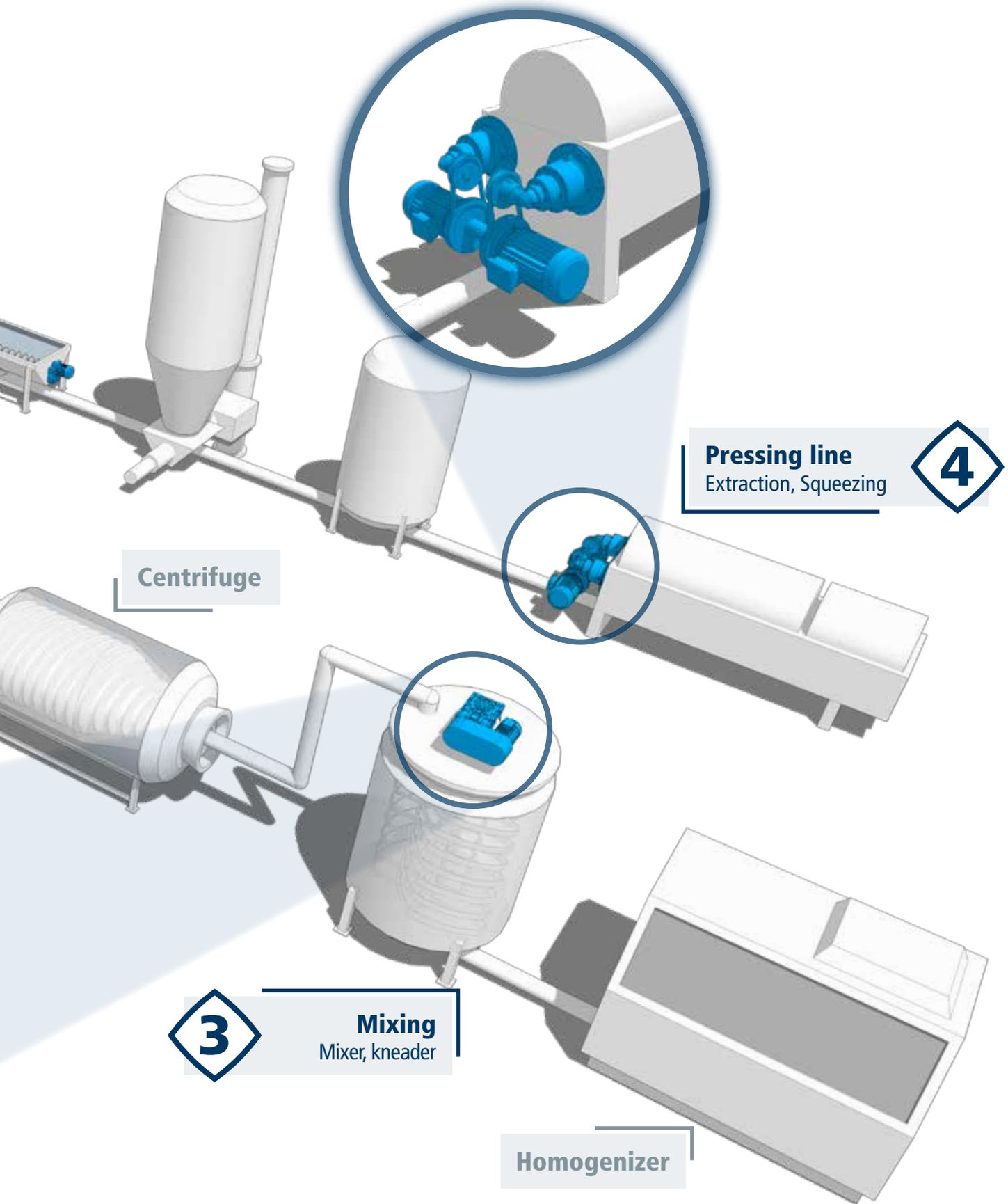
- Better control of air cooling system
- Energy efficiency

FEATURES

- Wide power range from 0.25 to 400 kW
- Coated PCBs
- Integrated PLC function with graphic development environment
- Torque limitation

FRUIT AND BEVERAGE PROCESSING





FRUIT AND BEVERAGE PROCESSING

1



Raw material handling

Solutions for washing and sorting machines

VF/EP - Worm gearbox and geared motors with enhanced protection



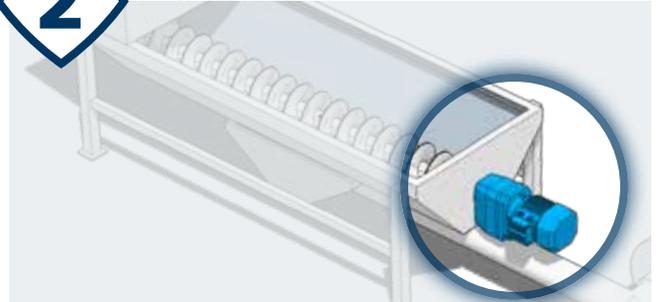
BENEFITS

- Price effective
- Uncompromising quality
- Various mounting options, shaft configurations and motor

FEATURES

- Epoxy coating (NSF & FDA approved for incidental food contact)
- AISI 316 stainless steel output shaft and stainless steel fasteners
- H1 food grade lubricant
- High and premium efficiency motors (IE2, IE3)
- Rain canopy to protect motor from water
- Tropicalized windings
- Front and rear end-shield condensation drain
- Surface protection class C5 (according to standard UNI EN ISO 12944-2)

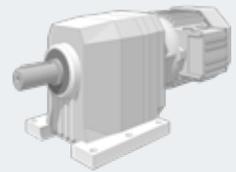
2



Processing

Solutions for crushers

C - Helical in-line gearbox and geared motor



BENEFITS

- Excellent torque density
- Ultra-compact design
- Very wide speed range

FEATURES

- Extensive choice of bolt-on output flanges
- Special seals set for applications in harsh environments
- Surface protection class C3, C4 and C5 (according to standard UNI EN ISO 12944-2)
- High and premium efficiency motors (IE2, IE3)
- Motor shaft extension
- Tropicalized windings

Agile - Smart Inverter

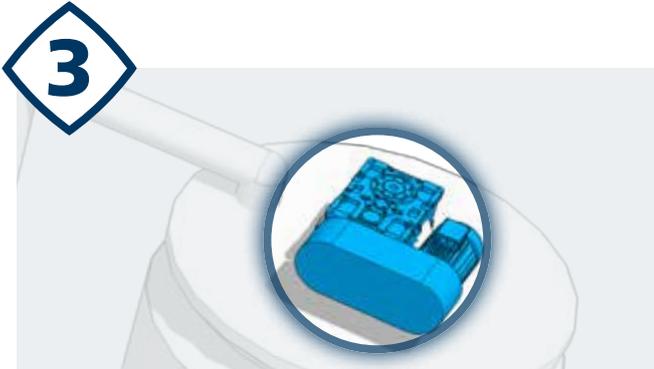


BENEFITS

- Smooth start
- Variable "cut position" for smaller particles
- Energy saving function: current consumption redirection during start phase

FEATURES

- Sensor-less vector control for asynchronous motors
- Integrated braking module
- Integrated torque off safety function
- Integrated Modbus
- Tropicalization option
- Main software features:
 - Energy saving function
 - Integrated PLC function with graphic development environment
 - Torque limitation



Mixing

Solutions for mixers and kneaders

HD - Heavy duty gearbox



BENEFITS

- Solution co-engineered with customer
- Enhanced oil leak protection
- High radial & axial load on output shaft
- Extended reliability and lifetime
- Quiet operation
- High torque capability

FEATURES

- Reinforced bearing and extended span on output shaft
- Integrated forced oil lubrication
- Back stop device option
- Drywell option
- High and premium efficiency motors (IE2, IE3)
- Insulation class F (standard) or H (available on request)
- Thermal protection (bi-metallic, PTC or KTY)

Active Cube - Premium Inverter



BENEFITS

- Smooth start
- Torque control
- Motor temperature monitoring

FEATURES

- Wide power range and parallel connection option to reach up to 1200 kW
- Integrated torque off safety function, external 24 Vdc control power supply
- IP 54
- Tropicalization option
- Main software features:
 - Integrated PLC function with graphic development environment
 - Torque limitation



Pressing line

Solutions for extraction and squeezing

300M - Planetary gearbox and geared motor



BENEFITS

- High shock load capability
- Modular design
- Flexible drive layout and mounting

FEATURES

- In-line or right angle layout solution
- Shock load up to 2,000,000 Nm
- Surface protection class C3, C4 and C5 (according to standard UNI EN ISO 12944-2)
- High and premium efficiency motors (IE2, IE3)
- Protection rating up to IP56
- Thermal protection (bi-metallic, PTC or KTY)
- Tropicalized windings

COMPLETE SOLUTIONS FOR POWER TRANSMISSION AND AUTOMATION



HEAVY DUTY

Gearboxes and Geared motors

Heavy duty parallel/right angle shaft geared motors - HDP/HDO Series

Torque range: 5 000 to 210 000 Nm

Gear ratios: 5.6 to 500

Planetary geared motors - 300 Series

Torque range: 1 250 to 1 287 000 Nm

Gear ratios: 3.4 to 5 234

Motors

Asynchronous IEC Motor - BN, BE, BX

Asynchronous Compact Motors - MN, ME, MX

A complete range of AC motors, meeting worldwide MEPS (e.g. IE3)

IE3

Power range: 0.06 to 355 kW

Poles: from 2 to 8 and multiple poles

LIGHT DUTY

Worm geared motors - W/VF Series

Torque range: 13 to 7 100 Nm

Gear ratios: 7 to 10 000

Helical geared motors - C Series

Torque range: 45 to 12 000 Nm

Gear ratios: 2.6 to 1 481

Bevel-helical geared motors - A Series

Torque range: 100 to 14 000 Nm

Gear ratios: 5.4 to 1 715

Shaft-mounted geared motors - F Series

Torque range: 140 to 14 000 Nm

Gear ratios: 6.4 to 2 099

Asynchronous motors - BN, BE, BX, M, ME, MX Series

A complete range of AC motors, meeting worldwide MEPS (e.g. IE3)

IE3

Power range: 0.06 to 355 kW

Poles: from 2 to 8 and multiple poles

Synchronous motors - BMD Series

Stall Torque: 0.2 to 115 Nm

Rated speed: from 1 600 to 6 000 min⁻¹

Power supply: 230, 400 VAC

Synchronous reluctance motor - BSR Series

Two different versions for different needs:

High efficiency IE4 and high output

IE4

Power range: 0.37 to 18.5 kW

SERVO

Precision planetary servo geared motors - TQ, TQK, TQF, TR, MP, LC, LCK, SL, KR Series

Torque range: up to 1 000 Nm

Gear ratios: up to 1 000

Backlash: lower than 2 and 15 arcmin

Synchronous motors - BMD, BCR Series

Stall Torque: 0.2 to 115 Nm

Rated speed: from 1 600 to 6 000 min⁻¹

Power supply: 230, 400 VAC

Synchronous motors with integrated drives - iBMD Series

Stall Torque: 2.7 to 36 Nm

Rated speed: 3 000 min⁻¹

Power supply: 560 VDC



Inverters

Cabinet solution - Active Cube 8 IP 54

Power range: 200 up to 1 200 kW

Voltage: 400 V, 525V, 690V

Premium inverter - Active Cube Series

200V: 0.25 up to 9.2 kW

400V: 0.25 up to 400 kW

Premium inverter - Active Cube Series

200V: 0.25 up to 9.2 kW

400V: 0.25 up to 400 kW

Smart inverter - Agile Series

200V: 1 phase 0.12 up to 3 kW / 3 phase 0.25 up to 7.5 kW

400V: 0.25 up to 11 kW

Compact inverter - S2U Series

200V: 0.2 – 2.2 kW

Servo inverter - ANG Series

200V: 1 or 3 phase 0.25 up to 9.2 kW

400V: 0.25 up to 400 kW

Premium inverter - Active Cube Series

200V: 0.25 up to 9.2 kW

400V: 0.25 up to 400 kW

Smart inverter - Agile Series

200V: 1 phase 0.12 up to 3 kW / 3 phase 0.25 up to 7.5 kW

400V: 0.25 up to 11 kW

HMI

Human Machine Interfaces - BMI Series

2 Display sizes – 7" and 10" True flat front panel in IP65

High resolution 480x272 up to 1024x600 pixels

Human Machine Interfaces - BMI Series

2 Display sizes – 7" and 10" True flat front panel in IP65

High resolution 480x272 up to 1024x600 pixels

Human Machine Interfaces - BMI Series

2 Display sizes – 7" and 10" True flat front panel in IP65

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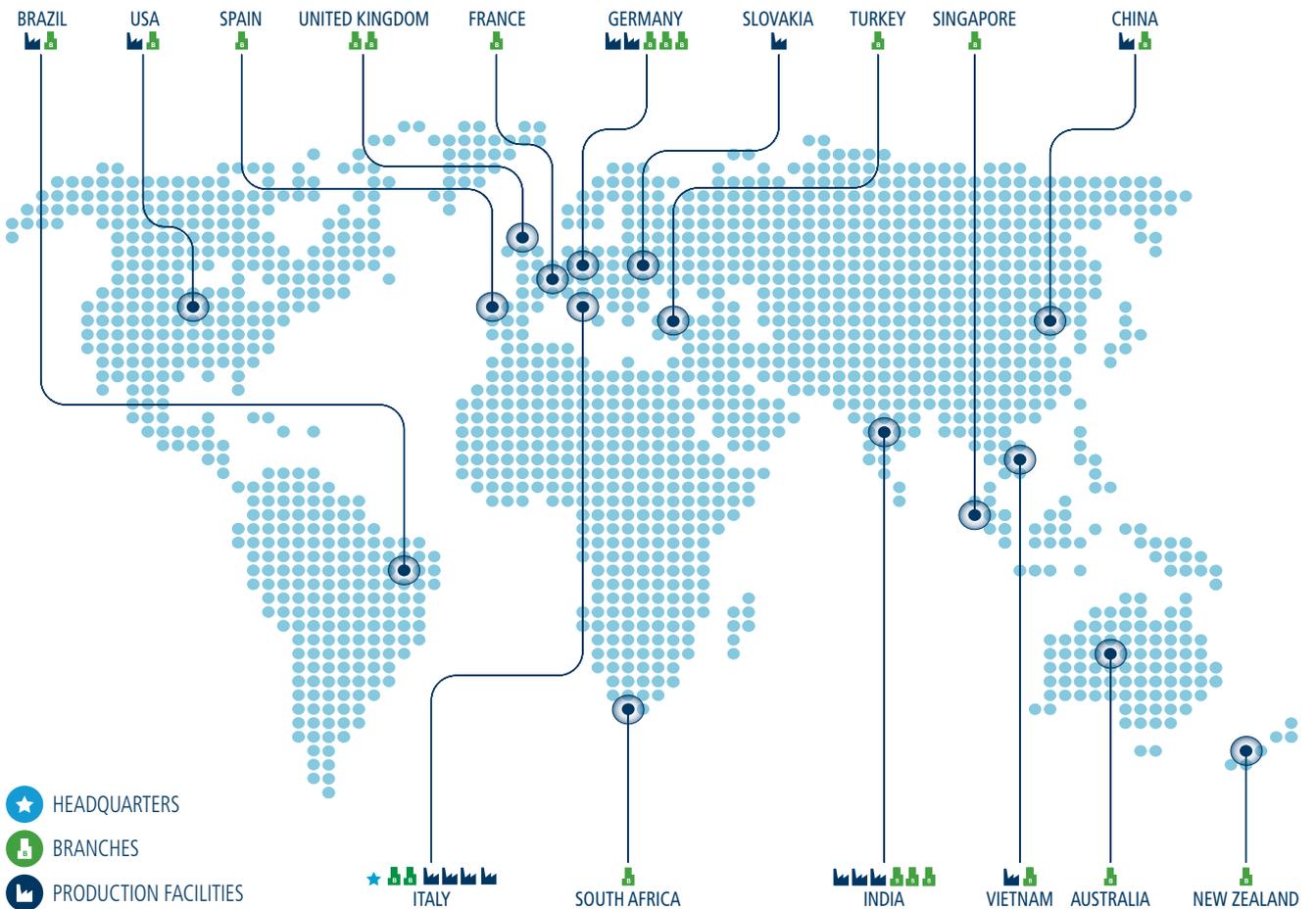
HEAVY DUTY

LIGHT DUTY

SERVO

Bonfiglioli worldwide presence

Bonfiglioli is located in regions and countries around the world that enable us to provide faster sales and service to customers.
We are around the world, and around the corner.



LOCAL SUPPORT
 Sales, Customer Service,
 Warranty, Tech support,
 Spare parts



**21 BRANCH OFFICES
 IN 15 COUNTRIES**



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