

Solutions for Packaging

Packaging



MARKETS &
APPLICATIONS





Packaging



Liquid filling process

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Solid packaging process

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The most reliable solutions for Packaging Processes

The diversity of packaging types and packaging machines makes performance requirements differ widely. From high overload specifications to parallel control of multiple motors, from high breakaway torque to continuous low speed functioning, and from synchronization to controlled braking, Bonfiglioli has created dedicated solutions to meet the requirements of all machines.

Reducing dimensions, increasing flexibility, resisting extreme load conditions and facilitating integration are the basic features that are offered by Bonfiglioli's solutions.

Our solutions satisfy even the strictest performance specifications imposed by customers and guarantee the highest levels of efficiency and energy saving.

In terms of performance, Bonfiglioli guarantees high output, speed and efficiency from the production cycle.

Bonfiglioli also provides solutions for:



FOOD & BEVERAGE PROCESSING



WAREHOUSE & MATERIAL HANDLING

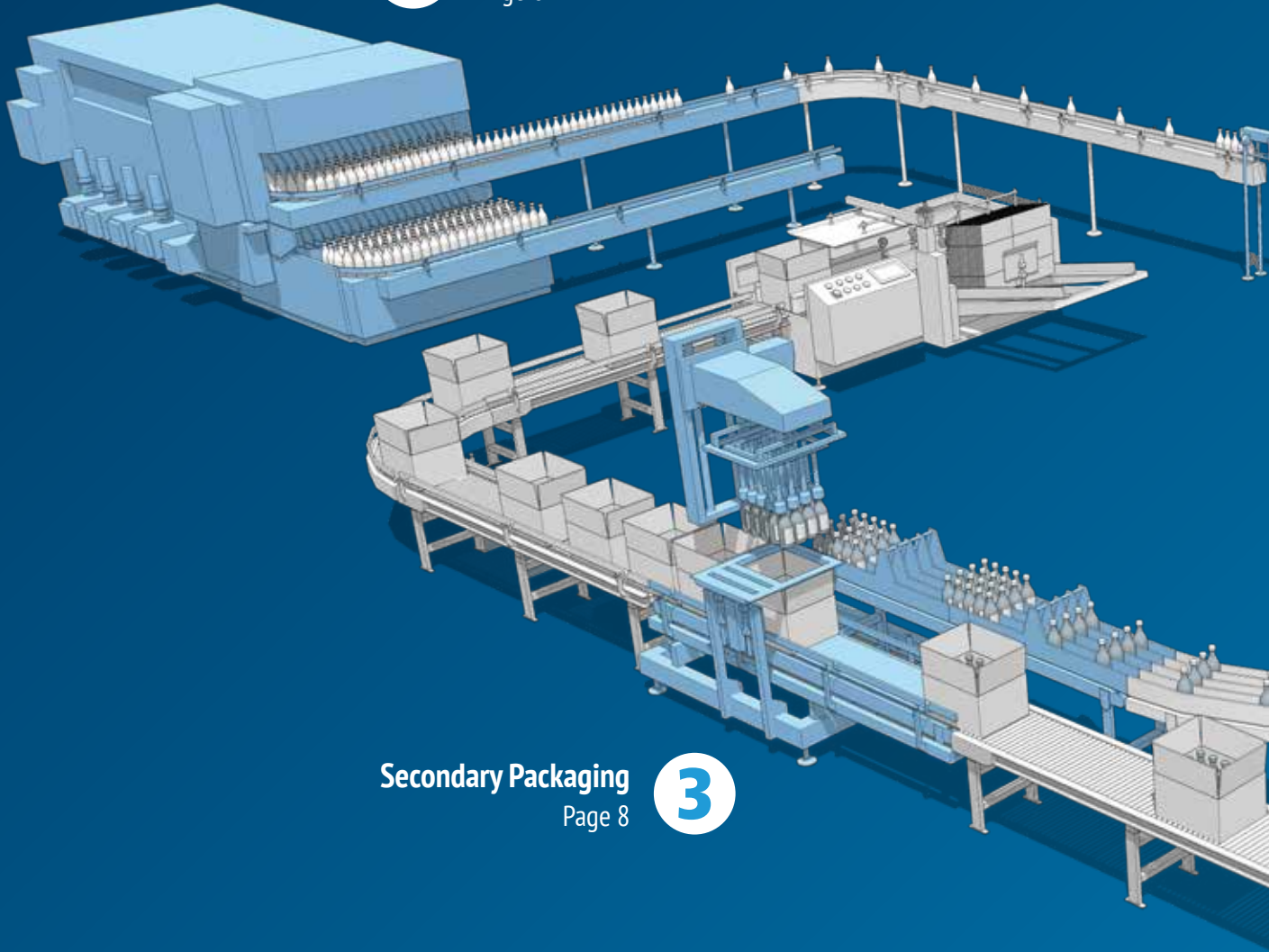
www.bonfiglioli.com

Products for all types of packaging equipment:

- Cleaning, Sterilizing & Drying machines
- Flow Pack machines
- Filling, Dosing, Capping machines
- Labelling machines
- Carton Forming machines
- Carton Filling machines
- Carton Closing machines
- Palletizing machines
- Wrapping machines
- Handling systems

Liquid Filling Process

1 Cleaning, Sterilizing & Drying Page 6



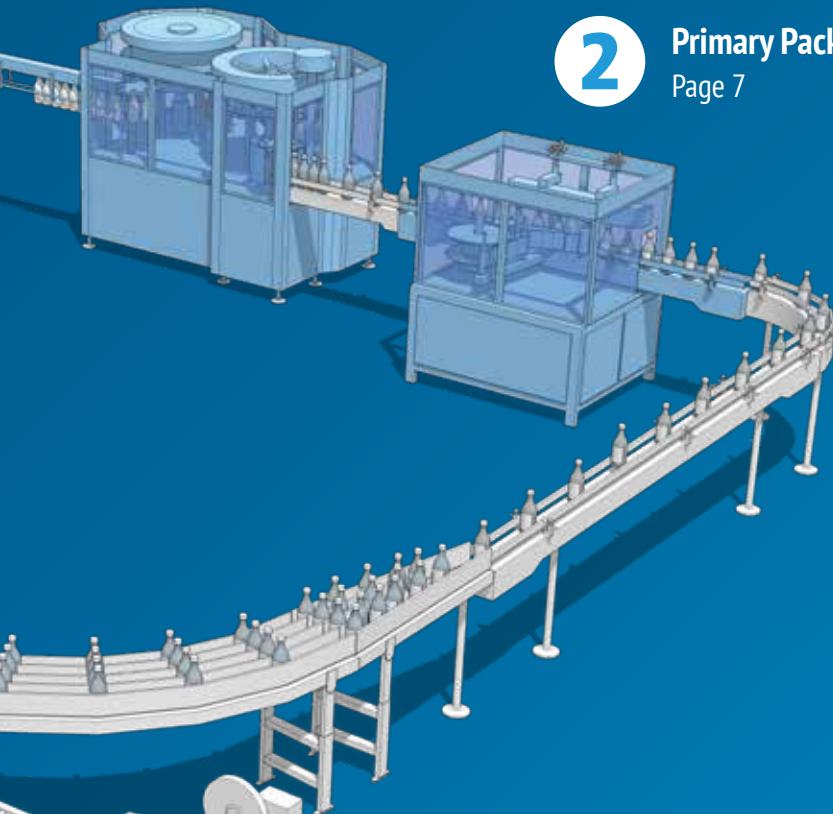
Secondary Packaging Page 8

3



2 Primary Packaging

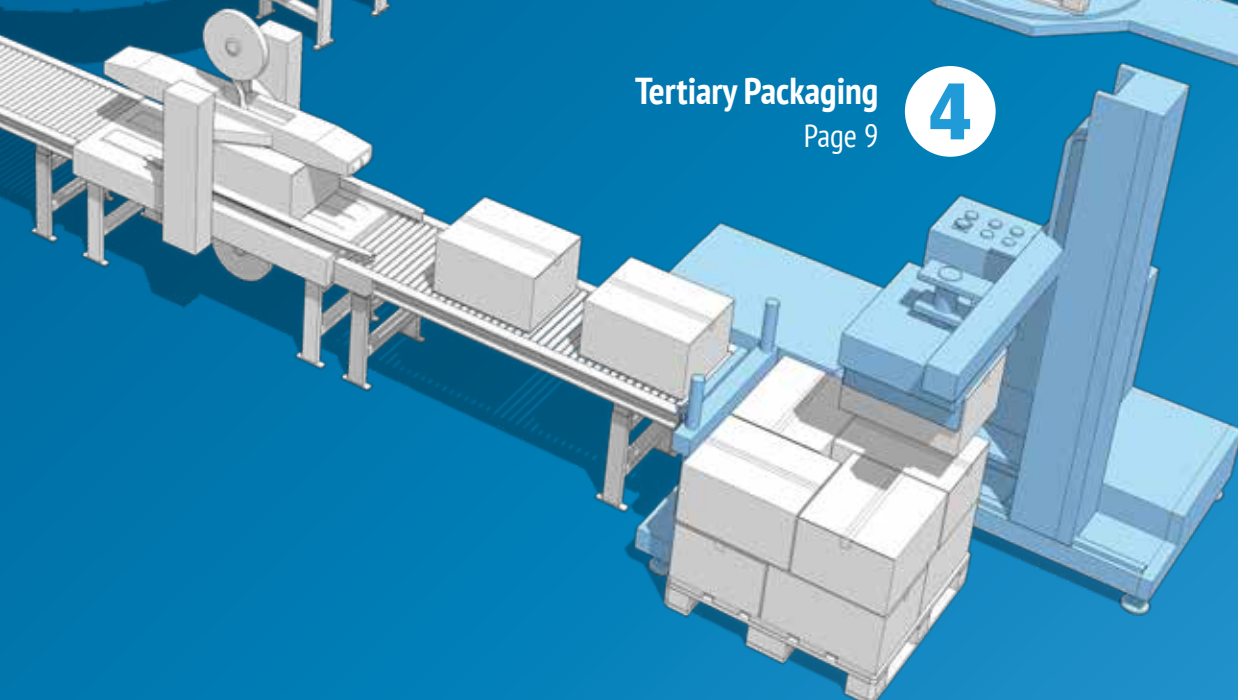
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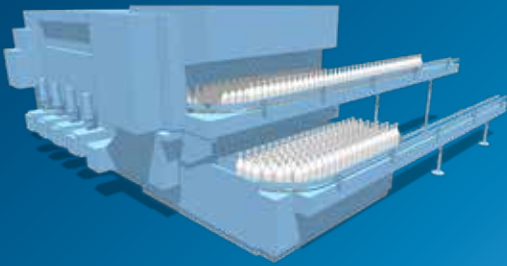
Tertiary Packaging

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Liquid Filling Process



Cleaning, Sterilizing & Drying Bottle Washer Machine

1

Hygiene, product safety, space efficiency and reliability are key features in bottle washing machines. Bonfiglioli understands customers' needs well and has developed specific products with enhanced protection and features to meet specific environmental requirements. Our solutions meet these requirements outstandingly and supply machine manufacturers with an extremely broad, dedicated selection of gearmotors.

VF Series Universal Worm Gearmotors & Units

Benefits

- Cost effective
- Uncompromising quality
- EP version specially designed for food & beverage industries

Features

- High and premium efficiency motors (IE2, IE3)



A Series Helical Bevel Gearmotors & Units

Benefits

- Compact
- Universal mounting
- Modular design

Features

- Keyed hollow shaft (metric and inch series)
- High and premium efficiency motors (IE2, IE3)
- Wide range of feedback devices (incremental and absolute encoders)



Agile Series Smart inverter

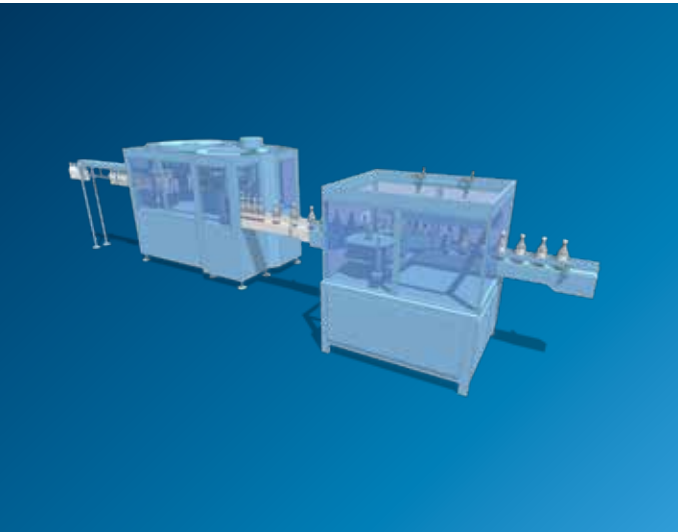
Benefits

- Low energy consumption

Features

- Series optionally extendable for field bus communication
- Sensorless control of synchronous and asynchronous motors
- Modbus and Systembus onboard
- DC link connection
- Integrated brake chopper
- Power failure control
- Programmable PI Controller
- Integrated VPLC
- Master/slave function with electronic gear
- Integrated safe torque off STO (SIL 2 / PL d) function
- Energy Saving function
- Intelligent current limits
- Output frequency 0...599 Hz, higher frequencies on request
- Diagnosis and setup via integrated keypad and integrated Service interface for PC connection





Primary packaging

2

Filling, dosing, capping & labeling machine

From bottle filling to labeling, the primary packaging phase poses a number of challenges, including speed, precision and synchronization. We can provide state-of-the-art integrated solutions that fit customers' needs. Our low-backlash precision gearboxes, highly dynamic, high-efficiency servo motors and drives are an excellent combination for these applications.

A Series Helical Bevel Gearmotors & Units

Benefits

- Compact
- Universal mounting
- Modular design

Features

- Keyed hollow shaft (metric and inch series)
- High and premium efficiency motors (IE2, IE3)
- Wide range of feedback devices (incremental and absolute encoders)

TQ+iBMD Servo gearmotor with Integrated Drive

Benefits

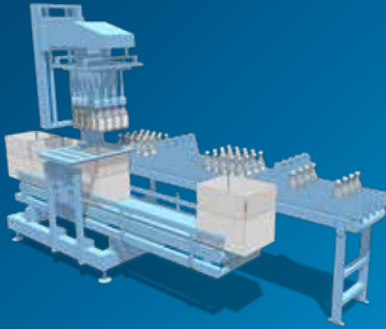
- Decentralized solution
- High precision and dynamic
- Highly compact
- Integrated programmability (ST language)

Features

- Interpolated mode
- Positioning
- CAM profile
- Capture mode
- Codesys Driver



Liquid Filling Process



Secondary packaging

3

Carton forming machines, pick & place, carton closing machine

Secondary packaging involves machines that perform a variety of jobs, from building boxes, to placing products inside them, and finally closing them.

Bonfiglioli knows the challenges of these applications and provides solutions to meet them all. From maximally space-saving precision gearboxes to inverters, our customers can rely on Bonfiglioli as full line supplier.

TQ Series

Precision planetary gearbox with

BMD Series

Permanent magnet servo motor

Benefits

- High precision and dynamic
- Highly compact
- High stiffness
- Designed for continuous and intermittent duty

Features

- Different feedback systems available
- Brake option
- Inertia flywheel
- Customized windings on request



A Series

Helical bevel gearbox with

BMD Series

Permanent magnet servo motor

Benefits

- Highly dynamic
- Energy-saving solution
- Reduced installation space
- Reinforced bearings
- Wide range of accessories such as:
 - Torque arm
 - Fluoroelastomer oil seals
 - Taconite seals

Features

- Reduced backlash option RB
- IP 65 (standard) and up to IP 67 protection
- Wide output speed selection range



Active Cube Series

Premium inverter

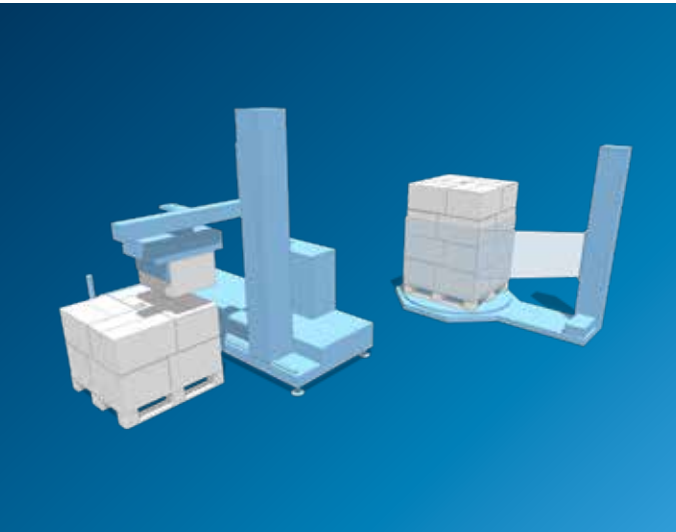
Benefits

- Interpolated operating mode
- Smooth start
- Torque control

Features

- Series optionally extendable for field bus communication and encoder evaluation
- Plug-in power terminals (up to 3kW)
- Plug-in and programmable control terminals
- DC link connection
- Integrated brake chopper
- Positioning function via field bus (Motion Control compatible to CiA DS402)
- Integrated VPLC
- Master/slave function with electronic gear
- Power failure control
- Integrated safe torque off STO (SIL 3 / PL e) function
- Output frequency 0...599 Hz, higher frequencies on request
- Diagnosis and setup via optional keypad or PC software





Tertiary packaging

Palletizing & wrapping machines

4

Tertiary packaging involves palletizing and wrapping machines that receive the filled boxes from the previous process and prepare them for final shipping.

Bonfiglioli's solutions for these applications meet the need for both high dynamics and precision. We provide solutions that ensure speed and precision when moving the finished product.

A Series

Helical Bevel Gearmotors & Units

Benefits

- Compact
- Universal mounting
- Modular design

Features

- Keyed hollow shaft (metric and inch series)
- High and premium efficiency motors (IE2, IE3)
- Wide range of feedback devices (incremental and absolute encoders)

BMS Series

Compact servo geared solution

Benefits

- Compactness, gear motor length reduced up to 25%
- Combination of servo gearmotors with high precision planetary gearbox
- All in one product, easy to select and order

Features

- Compact design
- High precision and dynamics
- Matching between application demands and geared motor operating area that lead to a smaller servopackage
- High flexibility in the selection of options

ANG Series

Servo inverter

Benefits

- Interpolated mode
- Fast loops control
- 2 encoder inputs

Features

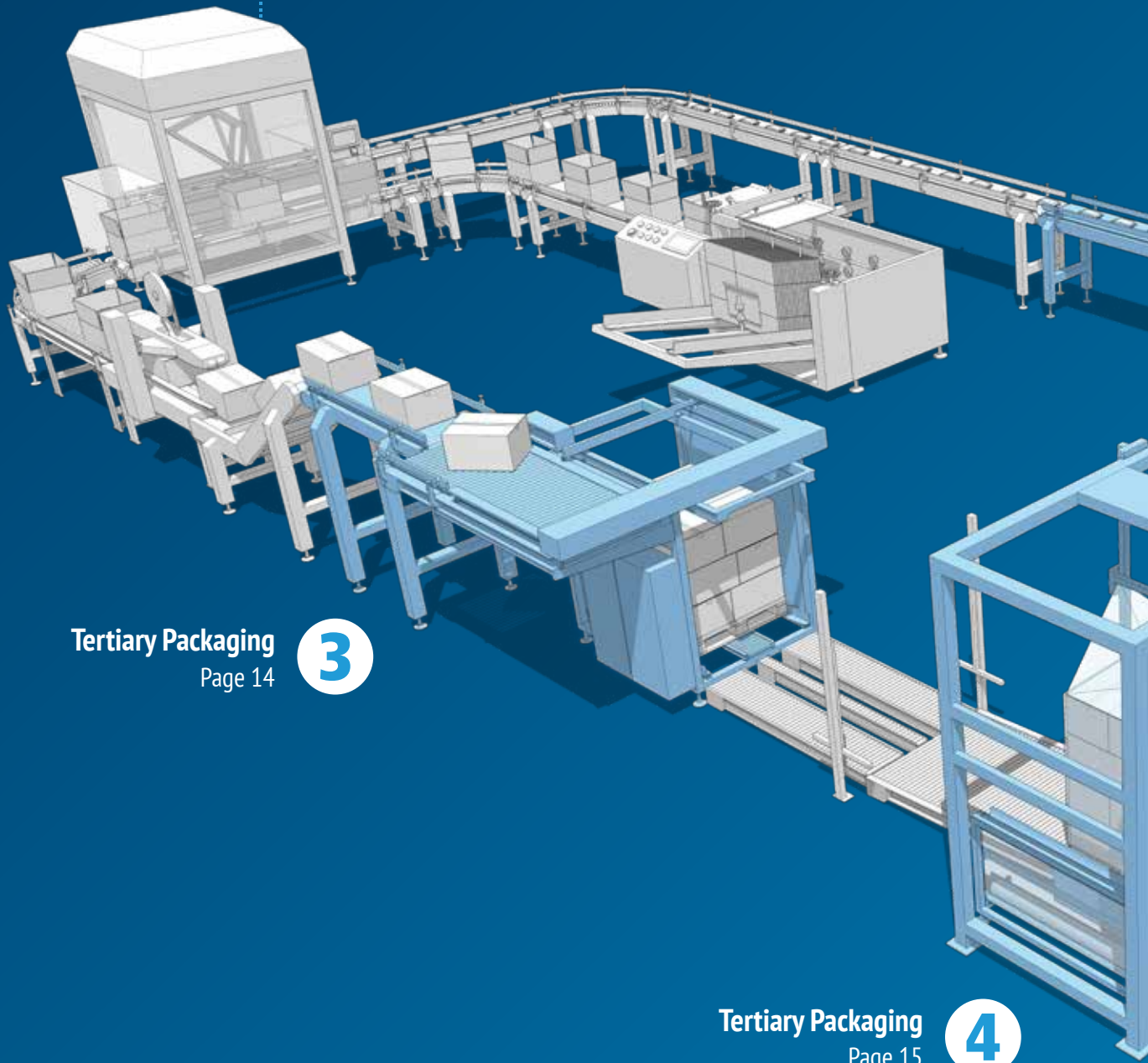
- Different variants include field bus connection and encoder evaluation
- Plug-in power terminals (up to 3kW)
- Plug-in and programmable control terminals
- DC link connection
- Integrated brake chopper
- Positioning function via field bus (Motion Control compatible to CiA DS402)
- Cubic Interpolation
- Integrated VPLC
- Master/slave function with electronic gear
- Power failure control
- Integrated safe torque off STO (SIL 3 / PL e) function
- Output frequency 0...599 Hz, higher frequencies on request
- Diagnosis and setup via optional keypad or PC software



Solid Packaging Process

Secondary Packaging

- Carton Forming Machine
- Carton Filling Machine (Pick & Place)
- Carton Closing Machine



Tertiary Packaging
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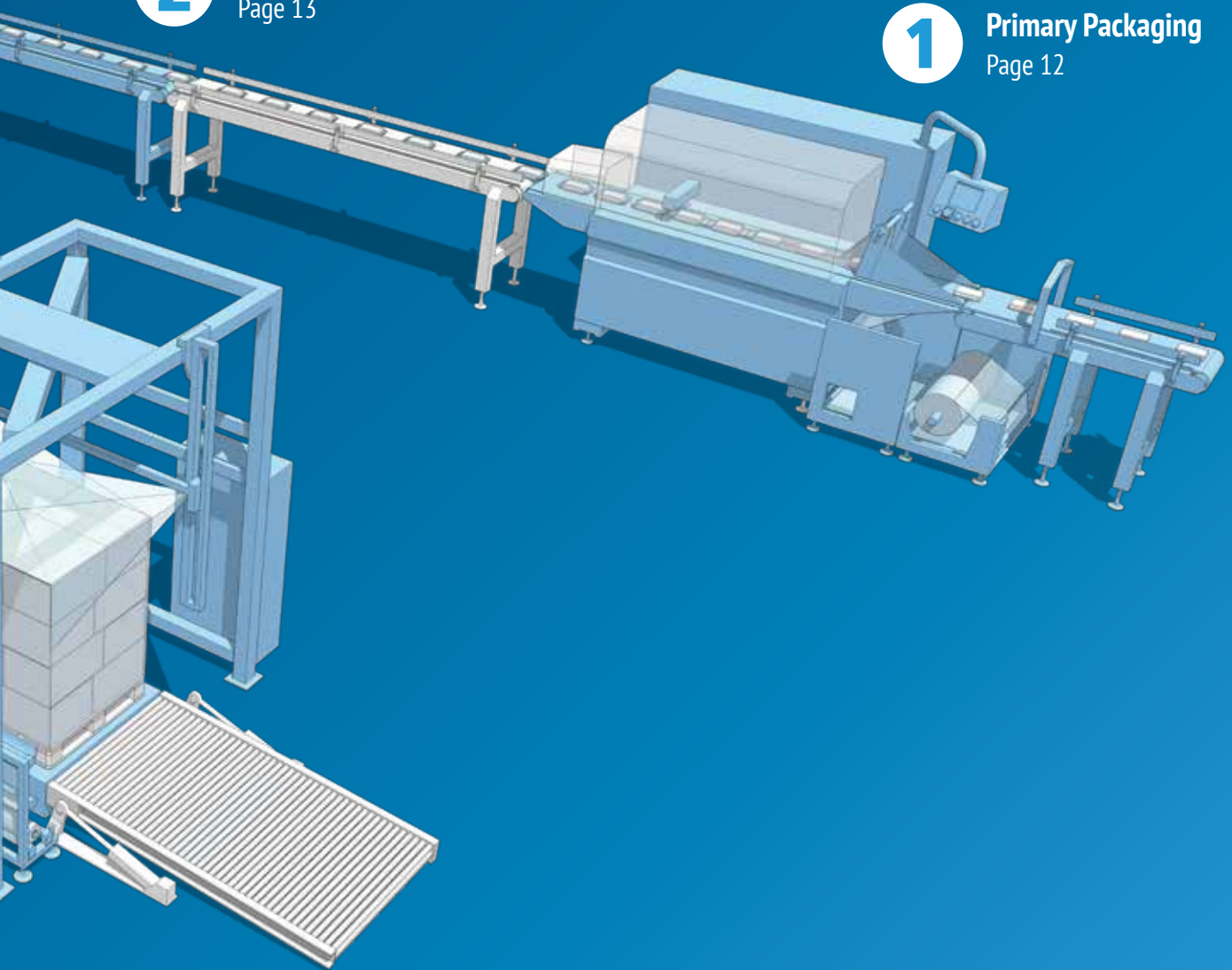
Tertiary Packaging
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2 Handling
Page 13

1 Primary Packaging
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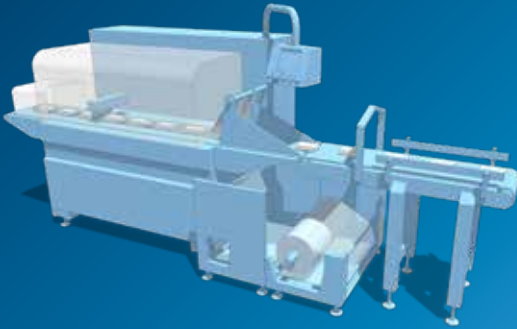
Solid Packaging Process

Primary Packaging

Flow pack machines

1

The Flow Pack (HFFS) process involves automatic machines working at a high rate of production. Compact, modular, dynamic, high-precision solutions allow us to supply drive and control systems for both Horizontal Fill Form Seal (HFFS) and Vertical Fill Form Seal (VFFS) machines that provide proper conveyor transfer of material to an unwinder for sealing with a single roll of film.



Infeed Conveyor-Smart Belt:

A Series

Helical bevel gearbox with

BMD Series

Permanent magnet servo motor

Benefits

- Compact design
- Universal mounting
- Modular design

Features

- Keyed hollow shaft (metric and inch series)
- Super premium efficiency motors (IE4)
- Wide range of feedback devices
- Up to IP 67 insulation class



Unwinder:

A Series

Helical Bevel Gearmotors & Units

Benefits

- Compact design
- Universal mounting
- Modular design

Features

- Keyed hollow shaft (metric and inch series)
- High and premium efficiency motors (IE2, IE3)
- Wide range of feedback devices (incremental and absolute encoders)



Rotary Sealing Knives:

iBMD Series

Servomotor with integrated drive

Benefits

- Decentralized solution
- High precision and dynamic
- Highly compact

Features

- Interpolated mode
- Positioning
- CAM profile
- Capture mode



Active Cube
and/or
Agile Series
Smart inverter

Benefits

- Loading system
- Speed control or position mode with servomotor BMD
- Manual or fully automatic feeding
- "No production no bag" function

Features

- EtherCAT
- Linear interpolation
- High efficiency
- Robust and reliable solution
- Multi communication protocols
- Sensorless vector control



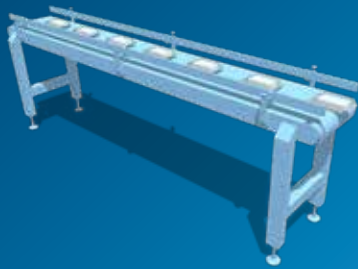


2

Handling

Smart conveyors

Smart conveyors are key elements that drive the packaging process from beginning to end. Our drives provide smooth, quiet operations and, thanks to our inverters, our solutions provide unsurpassed control of conveyor speed and motion.



A Series

Helical bevel gearbox with

BMD Series

Permanent magnet servo motor

Benefits

- Highly dynamic
- Energy-saving solution
- Reduced installation space
- Reinforced bearings
- Wide range of accessories such as:
 - Torque arm
 - Fluoroelastomer oil seals
 - Taconite seals

Features

- Reduced backlash option RB
- IP 65 (standard) and up to IP 67 protection
- Wide output speed selection range

F Series

Helical Parallel-Shaft Gearmotors & Units

Benefits

- Easy installation
- Low noise
- High torque capability

Features

- Keyed hollow shaft - two bore options per size, keyless shrink disc fitting (metric series)
- Insulation Class up to IP56
- Surface protection class C3, C4 and C5 (according to UNI EN ISO 12944-2 standard)
- High and premium efficiency motors (IE2, IE3)

Agile Series

Smart inverter

Benefits

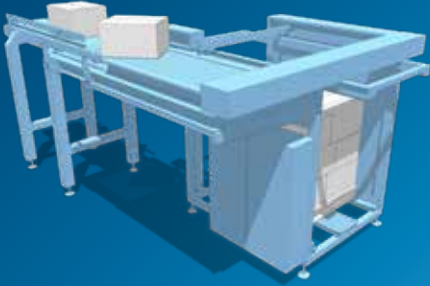
- Smooth start
- Feed roll control
- Low energy consumption

Features

- Series optionally extendable for field bus communication
- Sensorless control of synchronous and asynchronous motors
- Modbus and Systembus onboard
- DC link connection
- Integrated brake chopper
- Power failure control
- Programmable PI Controller
- Integrated VPLC
- Master/slave function with electronic gear
- Integrated safe torque off STO (SIL 2 / PL d) function
- Energy Saving function
- Intelligent current limits
- Output frequency 0...599 Hz, higher frequencies on request
- Diagnosis and setup via integrated keypad and integrated Service interface for PC connection



Solid Packaging Process



Tertiary Packaging Palletizing machines

3

Last but not least, the tertiary phase includes both palletizing and wrapping machines to prepare the product for shipment. We provide solutions that can handle high speeds and precise movement, while stabilizing and properly aligning the material.

F Series

Helical Parallel-Shaft Gearmotors & Units

Benefits

- Easy installation
- Low noise
- High torque capability

Features

- Keyed Hollow Shaft - Two Bore Options per Size, Keyless Shrink Disc Fitting (Metric series)
- Keyed Hollow Shaft (Inch series)
- Backstop device
- High and premium efficiency motors (IE2, IE3)



Active Cube Series Premium inverter

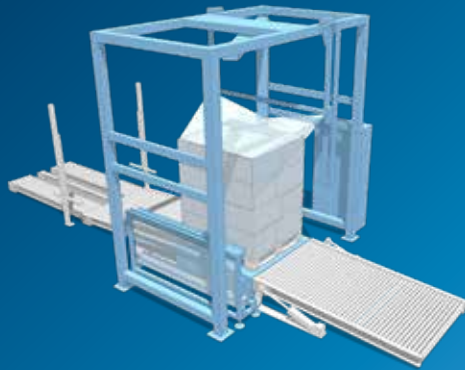
Benefits

- Interpolated operating mode
- Smooth start
- Torque control

Features

- Series optionally extendable for field bus communication and encoder evaluation
- Plug-in power terminals (up to 3kW)
- Plug-in and programmable control terminals
- DC link connection
- Integrated brake chopper
- Positioning function via field bus (Motion Control compatible to CiA DS402)
- Integrated VPLC
- Master/slave function with electronic gear
- Power failure control
- Integrated safe torque off STO (SIL 3 / PL e) function
- Output frequency 0...599 Hz, higher frequencies on request
- Diagnosis and setup via optional keypad or PC software





Tertiary Packaging Wrapping machines

4

Last but not least, the tertiary phase includes both palletizing and wrapping machines to prepare the product for shipment. We provide solutions that can handle high speeds and precise movement, while stabilizing and properly aligning the material.

C Series In-line Gearmotors & Units

Benefits

- Top torque density
- Highly compact
- Wide speed choice

Features

- Wide choice of output bolt-on-flanges
- Surface protection class C3, C4 and C5 (according to UNI EN ISO 12944-2 standard)



Agile Series Smart inverter

Benefits

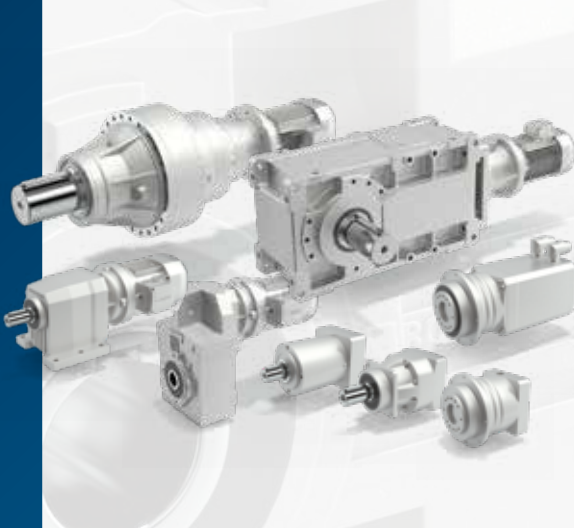
- Smooth start
- Feed roll control
- Low energy consumption

Features

- Series optionally extendable for field bus communication
- Sensorless control of synchronous and asynchronous motors
- Modbus and Systembus onboard
- DC link connection
- Integrated brake chopper
- Power failure control
- Programmable PI Controller
- Integrated VPLC
- Master/slave function with electronic gear
- Integrated safe torque off STO (SIL 2 / PL d) function
- Energy Saving function
- Intelligent current limits
- Output frequency 0...599 Hz, higher frequencies on request
- Diagnosis and setup via integrated keypad and integrated Service interface for PC connection



Complete solutions for Power Transmission & Automation



Gearboxes & Geared motors

- **Heavy duty parallel/right angle shaft geared motors**
HDP/HDO Series
Torque range: 13 to 7,100 Nm
Gear ratios: 7 to 10,000
- **Planetary geared motors** | **300 Series**
Torque range: 1,250 to 1,287,000 Nm
Gear ratios: 3.4 to 5,234

- **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

- **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 17 arcmin

Motors

- **Asynchronous IEC Motor** | **BN, BE, BX Series**
Asynchronous Compact Motors | **MN, ME, MX Series**
A complete range of AC motors, meeting worldwide MEPS (e.g. IE3)
Power range: 0.06 to 355 kW
Poles: from 2 to 8 and multiple poles

IE3

- **Asynchronous motors** | **BN, BE, BX, M, ME, MX Series**
A complete range of AC motors, meeting worldwide MEPS (e.g. IE3)
Power range: 0.06 to 355 kW
Poles: from 2 to 8 and multiple poles

IE3

- **Synchronous motors** | **BMD Series**
Stall torque: 0.85 to 60 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
Power range: 0.37 to 18.5 kW

IE3

- **Synchronous motors** | **BMD, BCR Series**
Stall torque **BMD**: 0.85 to 60 Nm
Stall torque **BCR**: 0.2 to 115 Nm
Rated speed **BMD**: from 1,600 to 6,000 min⁻¹
Rated speed **BCR**: from 2000 to 4500 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**

ACU210: 0,25 - 9,2 kW / 1- or 3-phase | **ACU410*:** 0,25 - 400 kW / 3-phase
ACU510*: 160 - 400 kW / 3-phase | **ACU610*:** 160 - 400 kW / 3-phase

- **Premium inverter | Active Cube Series**

ACU210: 0,25 - 9,2 kW / 1- or 3-phase | **ACU410*:** 0,25 - 400 kW / 3-phase
ACU510*: 160 - 400 kW / 3-phase | **ACU610*:** 160 - 400 kW / 3-phase

- **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**

S2U230S--(F) IP66: 0.2 - 2.2 kW / 1-phase

- **Servo inverter | ANG Series**

ANG210: 0.25 - 9.2 kW / 1- or 3-phase | **ANG410*:** 0.25 - 400 kW / 3-phase
ANG510*: 160 - 400 kW / 3-phase | **ANG610*:** 160 - 400 kW / 3-phase

- **Premium inverter | Active Cube Series**

ACU210: 0,25 - 9,2 kW / 1- or 3-phase | **ACU410*:** 0,25 - 400 kW / 3-phase
ACU510*: 160 - 400 kW / 3-phase | **ACU610*:** 160 - 400 kW / 3-phase

- **Smart inverter | Agile Series**

202V: 0.12 - 3 kW / 1-phase | 0.25 - 7.5 kW / 3-phase
402V: 0.25 - 11 kW / 3-phase

* up to 1200 kW with parallel connection



HMI

- **Human Machine Interfaces | BMI Series**

3 Display sizes 3.5", 7", 10.1"
 True flat front panel in IP65
 High resolution 480x272 up to 1,024x600 pixels

- **Human Machine Interfaces | BMI Series**

3 Display sizes 3.5", 7", 10.1"
 True flat front panel in IP65
 High resolution 480x272 up to 1,024x600 pixels

- **Human Machine Interfaces | BMI Series**

3 Display sizes 3.5", 7", 10.1"
 True flat front panel in IP65
 High resolution 480x272 up to 1,024x600 pixels

Global Presence



Bonfiglioli is a market force with a presence spanning 22 countries on 5 continents. Our organization makes the most of geographic proximity to offer complete solutions combining efficiency and competence.



3700
EMPLOYEES



21
BRANCHES



14
PLANTS



550
DISTRIBUTORS



80
COUNTRIES

We Are a Global Company

Thanks to an international network of sales branches and closely interconnecting production plants, we can guarantee the same high standards of Bonfiglioli quality anywhere at any given time. Aware that our direct presence in local markets is the key to long-lasting success, our family includes 21 sales branches, 14 production plants and more than 500 distributors around the world.

Our organization is always close by, offering complete and efficient solutions and supporting our customers with dedicated services, such as co-engineering or after-sales assistance.



Bonfiglioli Worldwide Locations

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We have a relentless commitment to excellence, innovation and sustainability. Our team creates, distributes and services world-class power transmission and drive solutions to keep the world in motion.

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