Bonfiglioli
Forever Forward

Solutions for
Textile Industry

Textile

MARKETS &
APPLICATIONS

Textile

The widest range of solutions for Textile processing and machinery

Being one of the leading companies in drive technology and a reliable long-term partner with extensive know-how in the textile machine sector, Bonfiglioli drive specialists work side by side with your machine experts to develop tailored and forward-thinking integrated solutions for your requirements. This covers the entire drive including solutions for Industry 4.0 Applications.

Our drive system portfolio has the suitable features to respond to the demanding environment typical of the textile sector, characterized by air polluted by fibers, high ambient temperatures and management of occasionally mains failures.

This, combined with a comprehensive range of Professional Services, enables us to fulfill your requirements with tailored solutions aimed at minimizing the Total Cost of Ownership of plants through significant reduction of maintenance efforts, energy consumption, and process downtimes.

Bonfiglioli also provides solutions for:

- FOOD & BEVERAGE PROCESSING
- LOGISTICS & INDUSTRIAL CRANES
- PACKAGING PROCESSES
- WAREHOUSE & MATERIAL HANDLING

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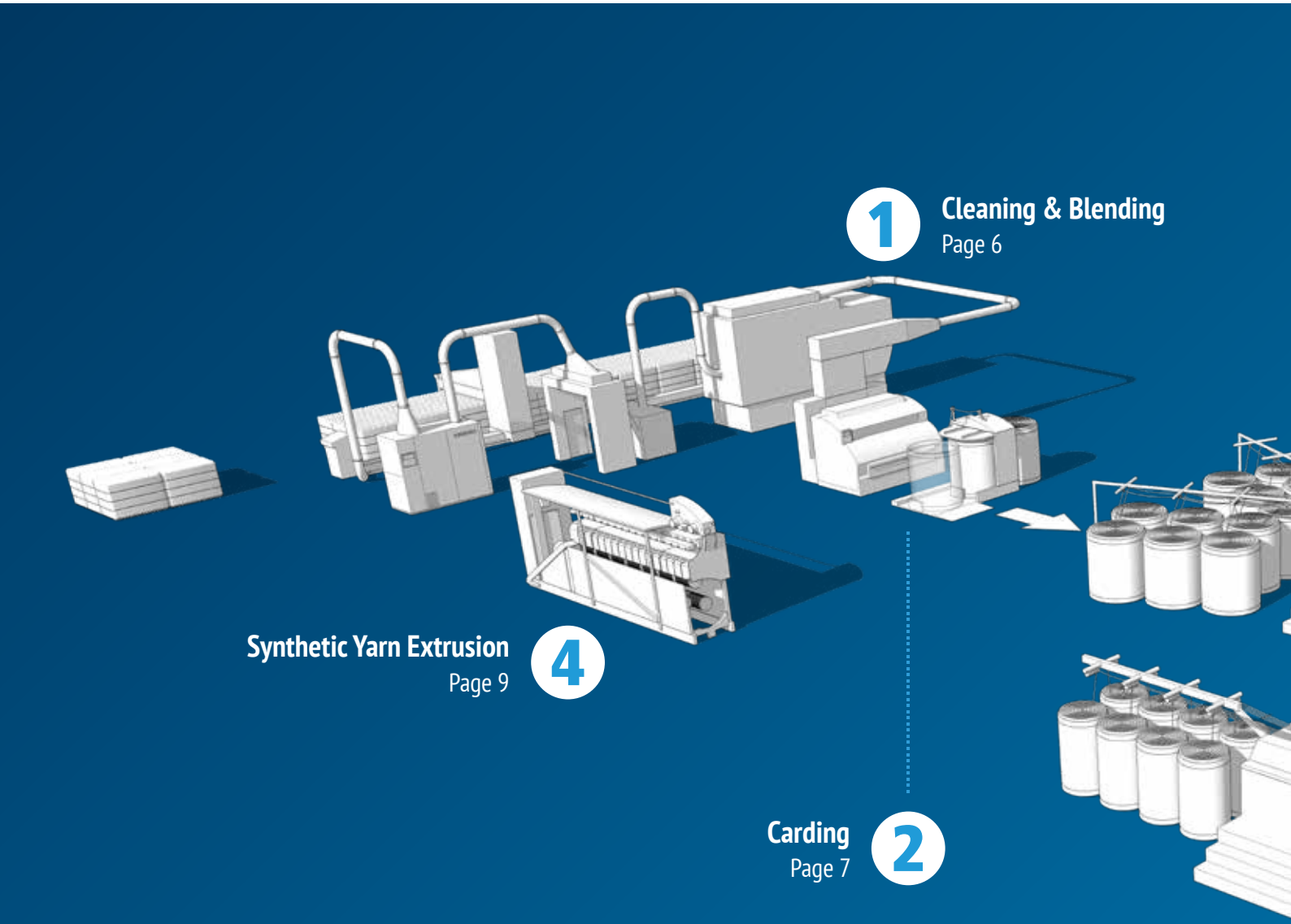
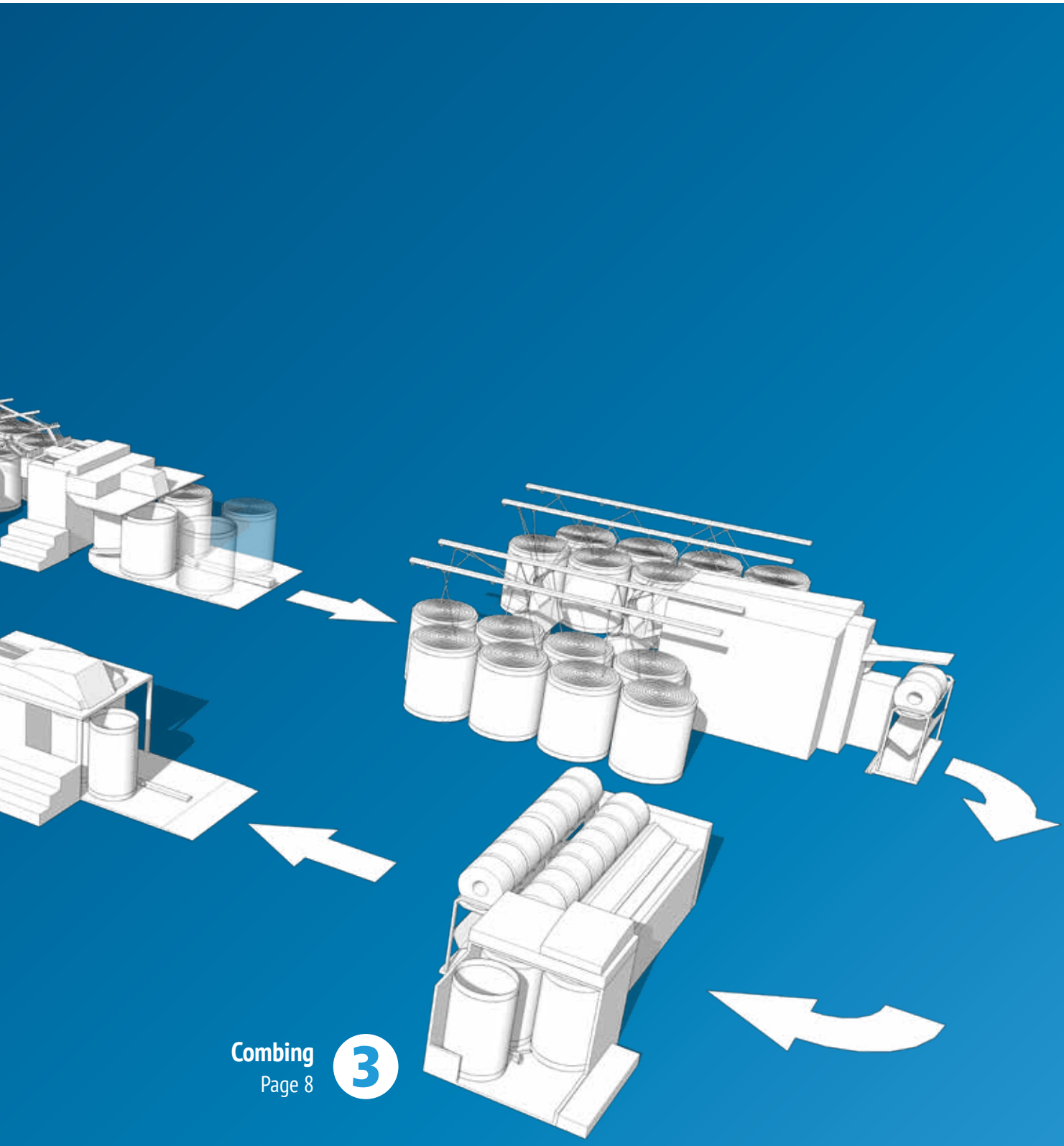
Products for all types of textile applications:

- Bale opening
- Cleaning & Blending
- Carding
- Pre drawing
- Lapping
- Combing
- Synthetic Yarn extrusion
- Roving
- Ring spinning
- Air-jet spinning
- Rotor spinning
- Winding
- Doubling & Twisting
- Dyeing
- Direct warper/Beaming machine
- Weaving
- Warp knitting
- Cutting machine

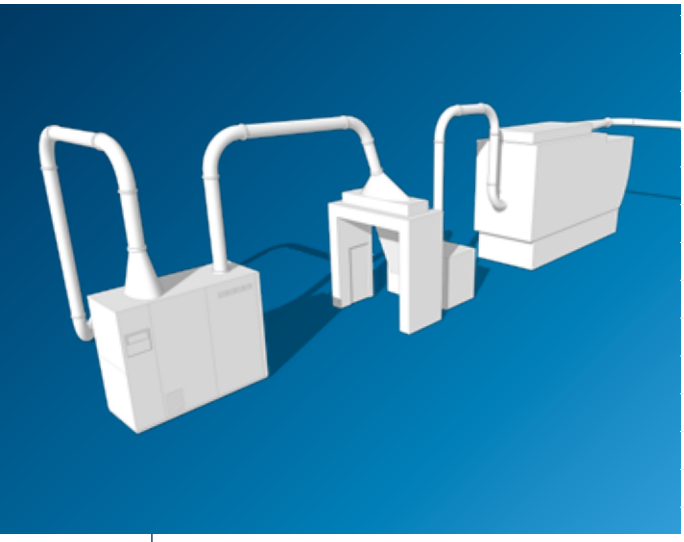
Preparation Process





Combing 3
Page 8

Preparation Process



Cleaning & Blending

1

Bonfiglioli product range presents the suitable features to operate in the harsh environment conditions, such as high dust and humidity, typical of the preparation phase. The matching motor and frequency inverter combinations ensure an optimized cleaning and blending process with an effective removal of impurities and dust while minimizing material waste and a homogeneous intermingling of fibers.

BSR Series
Synchronous Reluctance Motors

Benefits
- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 frequency inverter series
- Effective torque and speed control (also at low speed) without encoder

BX Series
Asynchronous IE3 Motors

Benefits
- Reliability and robustness
- Different options like encoder and mechanical brake

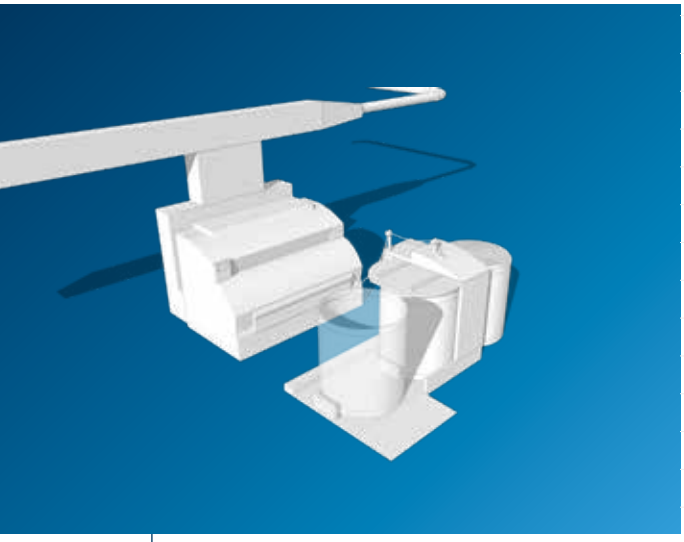
Features
- IE3 Efficiency class
- Power range: 0.75 to 22 kW
- Nominal speed range: 0 to 1500 rpm as 4 pole motor

Active Cube and Agile Series
Smart inverters

Benefits
- Mounting and cooling according to the environment: Standard, ColdPlate, Feedthrough or Liquid
- Controlled process speed for the quality of the production material
- Enabling high efficiency for the inverter, motor and gearbox combination

Features
- Wide power range from 0.25 to 400 kW
- Coated PCBs (as standard or option)
- Closed loop or open loop control
- Adjustable torque limitation
- Optional Fieldbus connectivity

Optional Encoder evaluation in Active Cube Series



Carding

2

Bonfiglioli provides complete solutions for carding machines with features designed to respond to the demanding environmental conditions typical of the textile sector, such as humidity, dust, and dirt.
In particular, the Agile and Active Cube inverters are specifically designed to operate in harsh environments and ensure the necessary level of control for a highly effective constant speed carding process and controlled fiber transport, allowing for excellent use of raw materials and a consequent high sliver quality.

BSR Series
Synchronous Reluctance Motors

Benefits
- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 frequency inverter series
- Effective torque and speed control (also at low speed) without encoder

BX Series
Asynchronous IE3 Motors

Benefits
- Reliability and robustness
- Different options like encoder and mechanical brake

Features
- IE3 Efficiency class
- Power range: 0.75 to 22 kW
- Nominal speed range: 0 to 1500 rpm as 4 pole motor

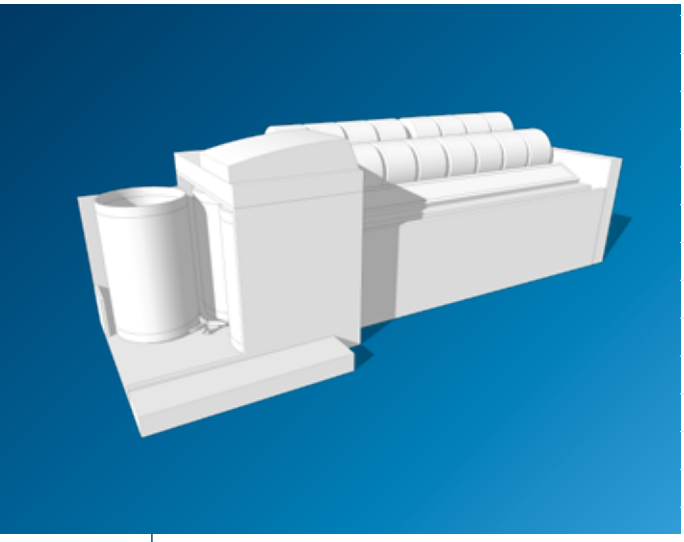
Active Cube and Agile Series
Smart inverters

Benefits
- Mounting and cooling according to the environment: Standard, ColdPlate, Feedthrough or Liquid
- Controlled process speed for the quality of the production material
- Enabling high efficiency for the inverter, motor and gearbox combination

Features
- Wide power range from 0.25 to 400 kW
- Coated PCBs (as standard or option)
- Closed loop or open loop control
- Adjustable torque limitation
- Optional Fieldbus connectivity

Optional Encoder evaluation in Active Cube Series

Preparation Process



Combing 3

The comber machine represents a crucial step in the process to obtain high quality yarns.
Bonfiglioli offers high-performance IP65 asynchronous motors in combination with Active Cube or Agile frequency inverters, which ensure optimally coordinated combing movements for a smooth, controlled fiber treatment to achieve effective parallelization and straightening of curled fibers and removal of residual impurities.

BSR Series
Synchronous Reluctance Motors

Benefits
- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 frequency inverter series
- Effective torque and speed control (also at low speed) without encoder

BX Series
Asynchronous IE3 Motors

Benefits
- Reliability and robustness
- Different options like encoder and mechanical brake

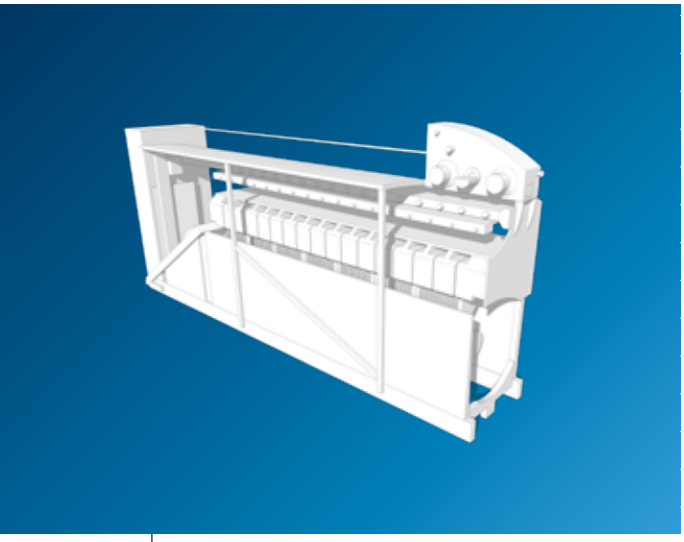
Features
- IE3 Efficiency class
- Power range: 0.75 to 22 kW
- Nominal speed range: 0 to 1500 rpm as 4 pole motor

Active Cube and Agile Series
Smart inverters

Benefits
- Mounting and cooling according to the environment: Standard, ColdPlate, Feedthrough or Liquid
- Controlled process speed for the quality of the production material
- Enabling high efficiency for the inverter, motor and gearbox combination

Features
- Wide power range from 0.25 to 400 kW
- Coated PCBs (as standard or option)
- Closed loop or open loop control
- Adjustable torque limitation
- Optional Fieldbus connectivity

Optional Encoder evaluation in Active Cube Series



Synthetic Yarn Extrusion

4

The Bonfiglioli drive portfolio suitable for this application includes IP65 asynchronous motors, synchronous motors with high protection class IP65 and IP67, and synchronous reluctance motors up to IE4 Super Premium efficiency class for optimal performance and energy saving. The Active Cube and Agile inverter series have features such as high overload capability for starting, precise speed control, and robust strength that make them well suited for the demanding environment typical of the textile sector, which is characterized by humidity, dust, and dirt. Both of these series are designed for use in high temperature environments and available with dedicated cooling concepts and coated printed circuit boards.

A Series
Helical bevel gearbox with BMD Series
Permanent magnet servo motor

Benefits
- High efficient solution
- Robust
- Compact

Features
- Motor efficiency up to IE4
- Sensorless control available
- Wide range of feedback devices
- Modular design
- Optimized servo package
- Parking brake (optional)
- UL certification
- Flying wheel

BSR Series
Synchronous Reluctance Motors

Benefits
- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 frequency inverter series
- Effective torque and speed control (also at low speed) without encoder

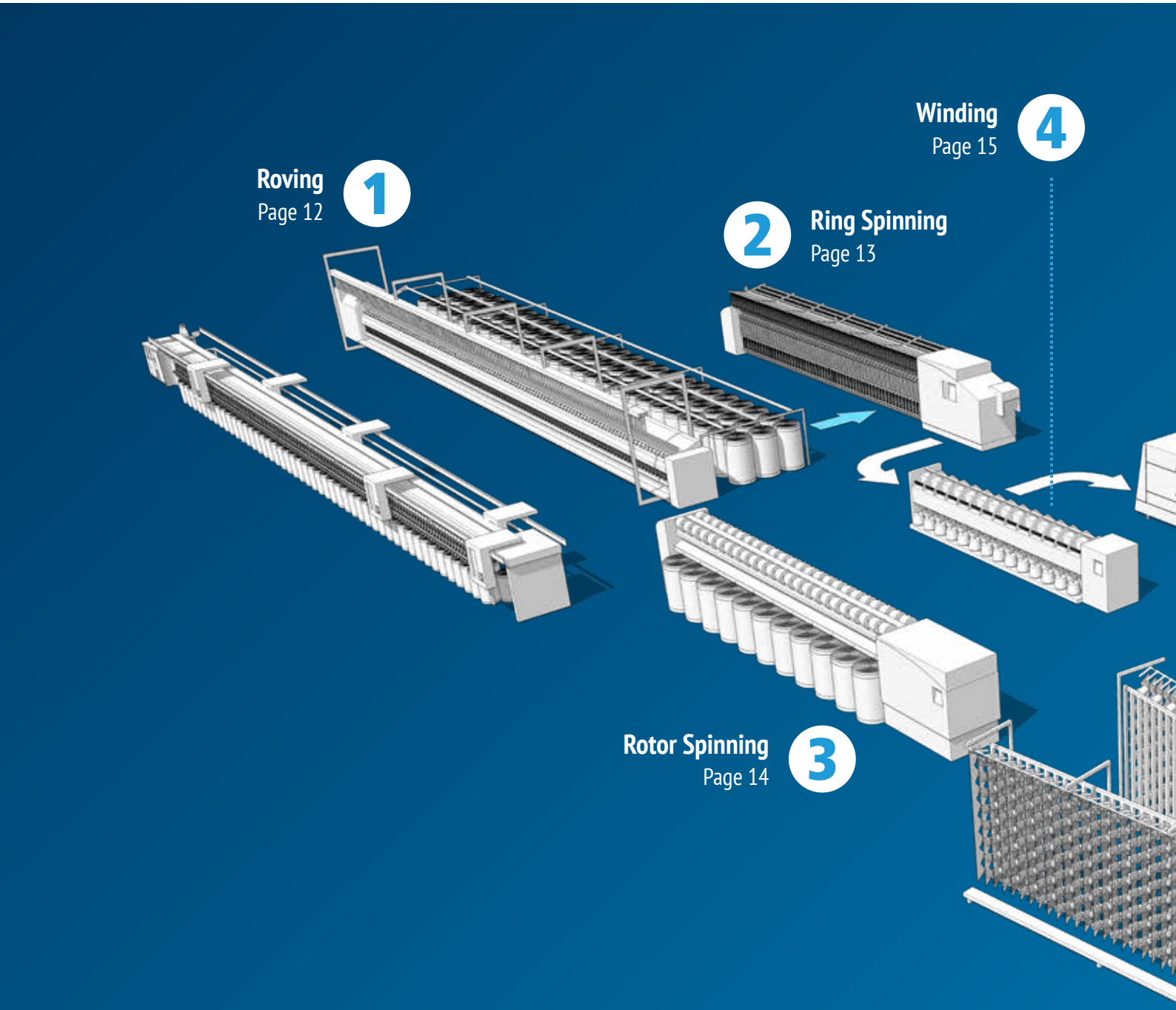
Active Cube and Agile Series
Smart inverters

Benefits
- Mounting and cooling according to the environment: Standard, ColdPlate, Feedthrough or Liquid
- Controlled process with torque or speed control for the quality of the production material
- Reliable ramp up and ramp down process to ensure continuous material properties
- High efficiency as inverter, motor and gearbox combination

Features
- Wide power range from 0.25 to 400 kW
- DC link connection between frequency inverters
- Coated PCBs (as standard or option)
- Adjustable torque limitation
- Tension control with PI controller
- Fieldbus connectivity

Optional Encoder evaluation in Active Cube Series

Spinning & Yarn Finishing



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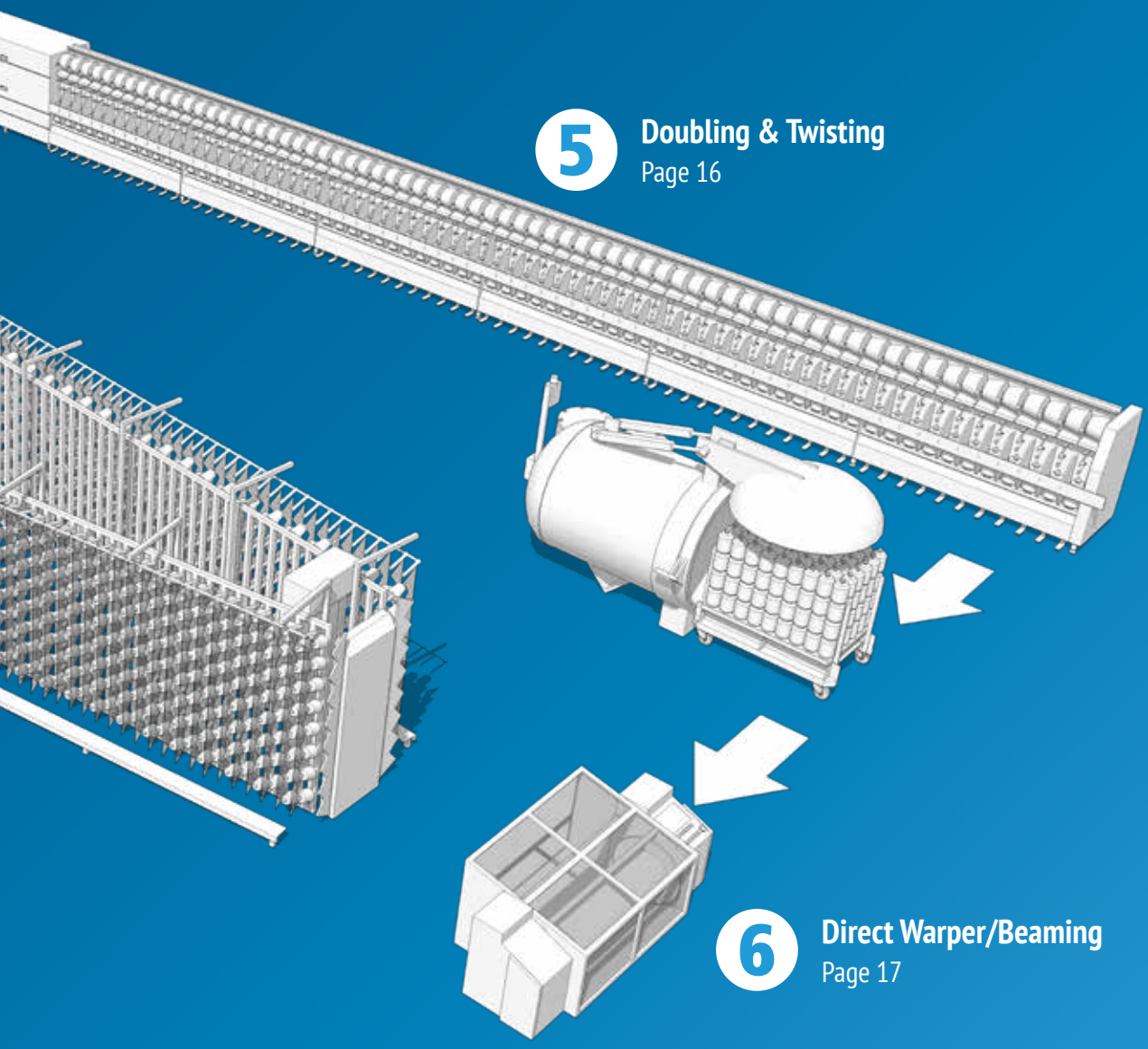
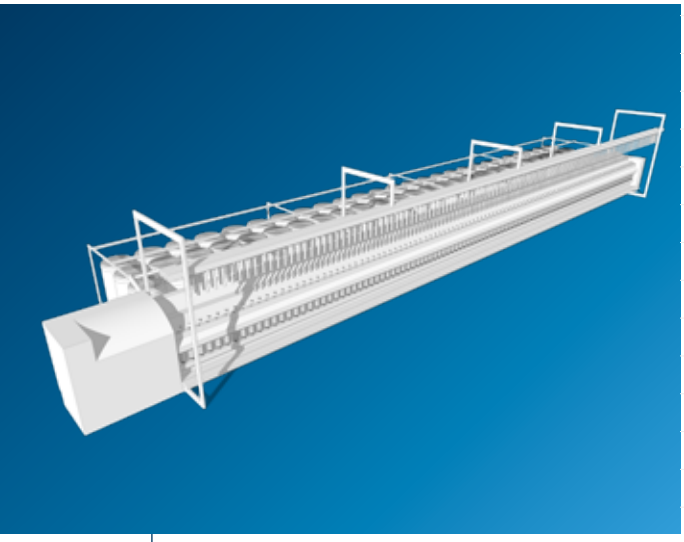


5 **Doubling & Twisting**
Page 16

6 **Direct Warper/Beaming**
Page 17

Spinning & Yarn Finishing



Roving

1

Our wide range of gearmotors offers numerous options for gear ratios and optimal usage of machine space. In addition, Bonfiglioli class IP65 asynchronous motors in combination with the Active Cube series provide the right solution to cope with the environmental conditions typical of textile processing such as humidity, dust, or dirt. These frequency inverters are designed for use in high temperature environments and equipped with dedicated cooling concepts and coated printed circuit boards. In addition, they include a specific function for power failure management to minimize the risk of yarn breakages in case of power failures.

F Series

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

BSR Series

Synchronous Reluctance Motors

Benefits

- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features

- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 drive series
- Effective torque and speed control (also at low speed) without encoder

Active Cube Series

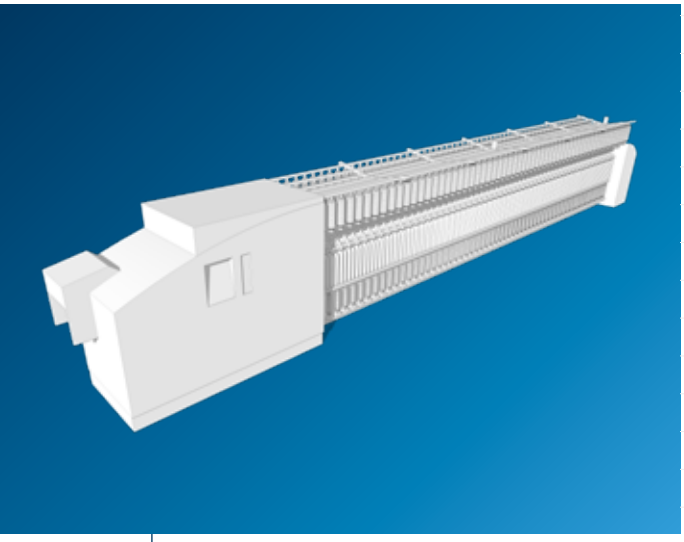
Premium inverter

Benefits

- Modular inverter platform to adapt the inverter to the machine
- Reliable and precise Process control
- Smooth Start and Stop control
- Power failure management with controlled ramp down

Features

- Power range: 0.25 to 400 kW
- Speed or Torque Control
- Option modules to include field bus communication and encoder evaluation
- Plug-in power terminals (up to 4 kW)
- Plug-in and programmable control terminals
- DC link connection
- Integrated brake chopper
- Integrated VPLC
- Integrated safe torque off STO (SIL 3 / PL e) function
- Output frequency 0...599 Hz
- Diagnosis and setup via optional keypad or PC software
- Optional Encoder evaluation



Ring Spinning

2

Bonfiglioli offers several different drive concepts for ring spinning applications: IP65 asynchronous motors, IP65 and IP67 synchronous motors and synchronous reluctance motors up to IE4 Super Premium efficiency class for the optimum performance and power requirements of your machine. Our dedicated inverter series are designed for the demanding environment typical of the textile sector and equipped with dedicated cooling concepts and coated printed circuit boards. In addition, they include a power failure management to minimize the risk of yarn breakages in case of power failures.

A Series
Helical bevel gearbox with
BMD Series
Permanent magnet servo motor

Benefits
- High efficient solution
- Robust
- Compact

Features
- Wide range of feedback devices
- Sensorless control available
- Modular design
- Optimized servo package

C Series
Helical in-line gearbox and geared motor

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

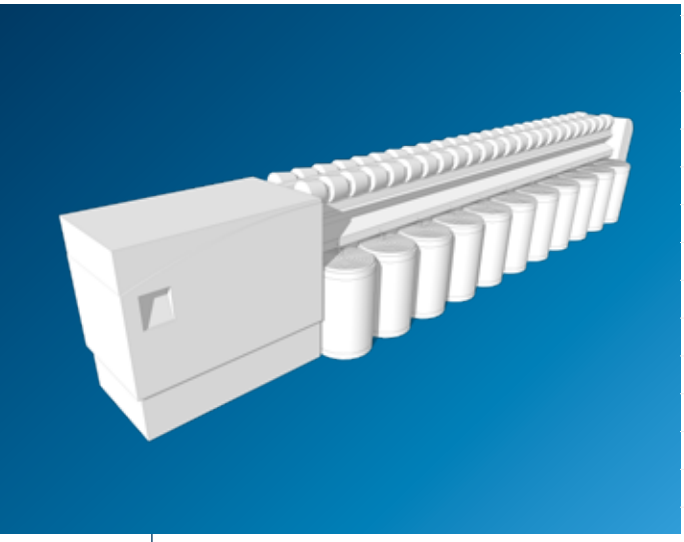
Features
- Extensive choice of bolt-on output flanges
- Special seals set for applications in harsh environments
- Surface protection class C3, C4 and C5 (according to standard UNI EN ISO 12944-2)
- High and premium efficiency motors (IE2, IE3)
- Motor shaft extension
- Tropicalized windings

Active Cube Series
Premium inverter

Benefits
- Modular inverter platform to adapt the inverter to the machine
- Reliable and precise Process control
- Smooth Start and Stop control
- Power failure management with controlled ramp down

Features
- Power range: 0.25 to 400 kW
- Speed or Torque Control
- Option modules to include field bus communication and encoder evaluation
- Plug-in power terminals (up to 4 kW)
- Plug-in and programmable control terminals
- DC link connection
- Integrated brake chopper
- Integrated VPLC
- Integrated safe torque off STO (SIL 3 / PL e) function
- Output frequency 0...599 Hz
- Diagnosis and setup via optional keypad or PC software
- Optional Encoder evaluation

Spinning & Yarn Finishing



Rotor Spinning

3

The drive portfolio suitable for this application includes IP65 asynchronous motors, synchronous motors with high protection class IP65 and IP67, and synchronous reluctance motors up to IE4 Super Premium efficiency class for the optimum performance and power requirements of your machine. The dedicated frequency inverters are designed for use in high temperature environments and equipped with dedicated cooling concepts and coated printed circuit boards. Our experience with the piecing process when starting rotor spinning machines ensures reduction of standstill times and manual labor required for these machines during start up.

A Series
Helical bevel gearbox with
BMD Series
Permanent magnet servo motor

Benefits
- High efficient solution
- Robust
- Compact

Features
- Wide range of feedback devices
- Sensorless control available
- Modular design
- Optimized servo package

BSR Series
Synchronous Reluctance Motors

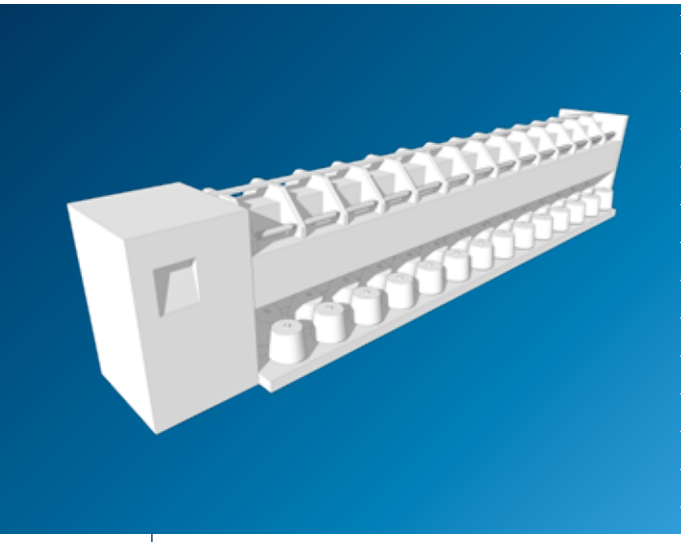
Benefits
- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 drive series
- Effective torque and speed control (also at low speed) without encoder

Active Cube Series
Premium inverter

Benefits
- Modular inverter platform to adapt the inverter to the machine
- Reliable and precise Process control
- Smooth Start and Stop control
- Power failure management with controlled ramp down

Features
- Power range: 0.25 to 400 kW
- Speed or Torque Control
- Option modules to include field bus communication and encoder evaluation
- Plug-in power terminals (up to 4 kW)
- Plug-in and programmable control terminals
- DC link connection
- Integrated brake chopper
- Integrated VPLC
- Integrated safe torque off STO (SIL 3 / PL e) function
- Output frequency 0...599 Hz
- Diagnosis and setup via optional keypad or PC software
- Optional Encoder evaluation



Winding

4

Bonfiglioli offers IP 65 asynchronous motors and synchronous reluctance motors up to IE4 Super Premium efficiency class for optimal performance in energy saving, combined with the Active Cube and ANG inverter series with a robust design for the demanding environment typical of the textile sector, which is characterized by humidity, dust, and dirt. Both of these series are designed for use in high temperature environments and equipped with dedicated cooling concepts and coated printed circuit boards. In addition, they include a specific function for power failure management to minimize the risk of yarn breakages in case of power failures.

A Series
Helical bevel gearbox with
BSR Series
Synchronous Reluctance Motors

Benefits
- Reduced total cost of ownership (TCO)
- Compactness
- Reliability and robustness
- Modular design

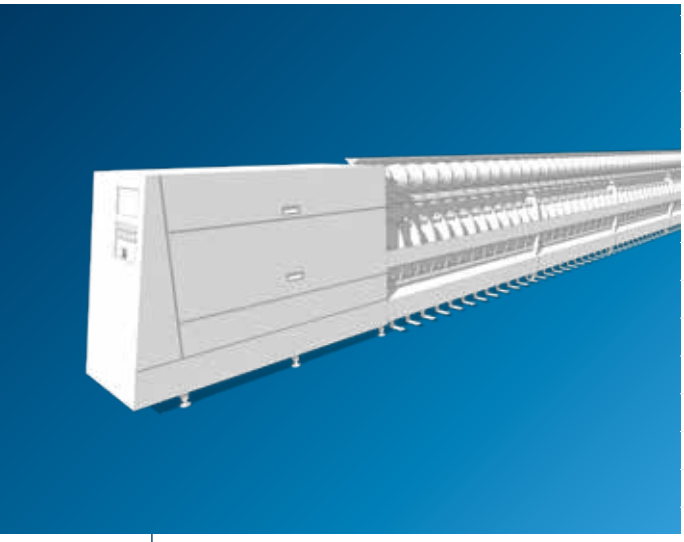
Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency up to IE4
- Effective torque and speed control (also at low speed) without encoder
- Optimized drive package

Active Cube Series
Premium inverter

Benefits
- Modular inverter platform to adapt the inverter to the machine
- Reliable and precise Process control
- Smooth Start and Stop control
- Power failure management with controlled ramp down

Features
- Power range: 0.25 to 400 kW
- Speed or Torque Control
- Option modules to include field bus communication and encoder evaluation
- Plug-in power terminals (up to 4 kW)
- Plug-in and programmable control terminals
- DC link connection
- Integrated brake chopper
- Integrated VPLC
- Integrated safe torque off STO (SIL 3 / PL e) function
- Output frequency 0...599 Hz
- Diagnosis and setup via optional keypad or PC software
- Optional Encoder evaluation

Spinning & Yarn Finishing



Doubling & Twisting

5

Bonfiglioli solutions for doubling and twisting applications perfectly match the results required of this production phase, such as an increase in the smoothness, eveness, uniformity and compactness of yarn, and better twist deposition.
Bonfiglioli offers drive combinations including IP65 asynchronous motors and synchronous reluctance motors up to IE4 Super Premium efficiency class, controlled by dedicated inverters.

A Series
Helical bevel gearbox with
BMD Series
Permanent magnet servo motor

Benefits
- High efficient solution
- Robust
- Compact

Features
- Wide range of feedback devices
- Sensorless control available
- Modular design
- Optimized servo package

BSR Series
Synchronous Reluctance Motors

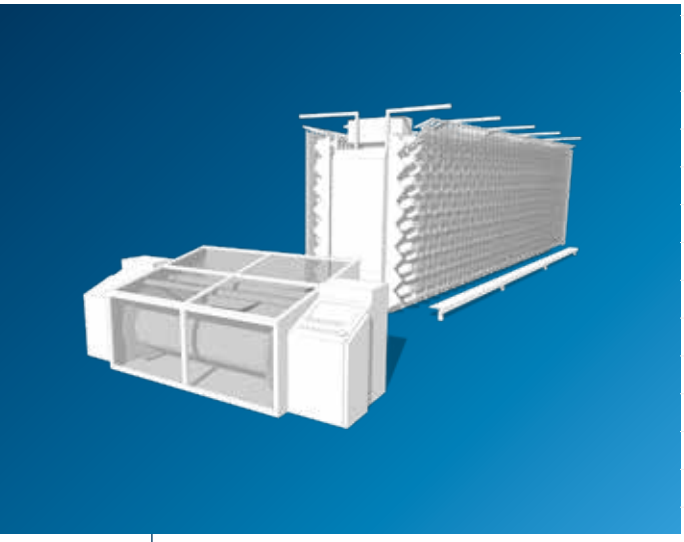
Benefits
- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 drive series
- Effective torque and speed control (also at low speed) without encoder

Active Cube Series
Premium inverter

Benefits
- Modular inverter platform to adapt the inverter to the machine
- Reliable and precise Process control
- Smooth Start and Stop control
- Power failure management with controlled ramp down

Features
- Power range: 0.25 to 400 kW
- Speed or Torque Control
- Option modules to include 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
- Integrated VPLC
- Integrated safe torque off STO (SIL 3 / PL e) function
- Output frequency 0...599 Hz
- Diagnosis and setup via optional keypad or PC software
- Optional Encoder evaluation



Direct Warper/Beaming

6

Bonfiglioli offers asynchronous motors with optional high protection class IP65, in combination with the Agile or Active Cube series for the direct warping phase, which offer the right features for effective operation in these machine types. Thanks to the excellent control performance of speed and torque, Bonfiglioli solutions ensure a uniform and constant yarn tension during the process, minimizing the rate of breakage and allowing the yarn to completely retain its elastic properties and strength. In addition, the advanced control technology enables fast and uniform spreading of the yarn throughout the whole width of the warping.

BSR Series
Synchronous Reluctance Motors

Benefits
- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 drive series
- Effective torque and speed control (also at low speed) without encoder

BX Series
Asynchronous IE3 Motors

Benefits
- Reliability and robustness
- Different options like encoder and mechanical brake

Features
- IE3 Efficiency class
- Power range: 0.75 to 22 kW
- Nominal speed range: 0 to 1500 rpm as 4 pole motor

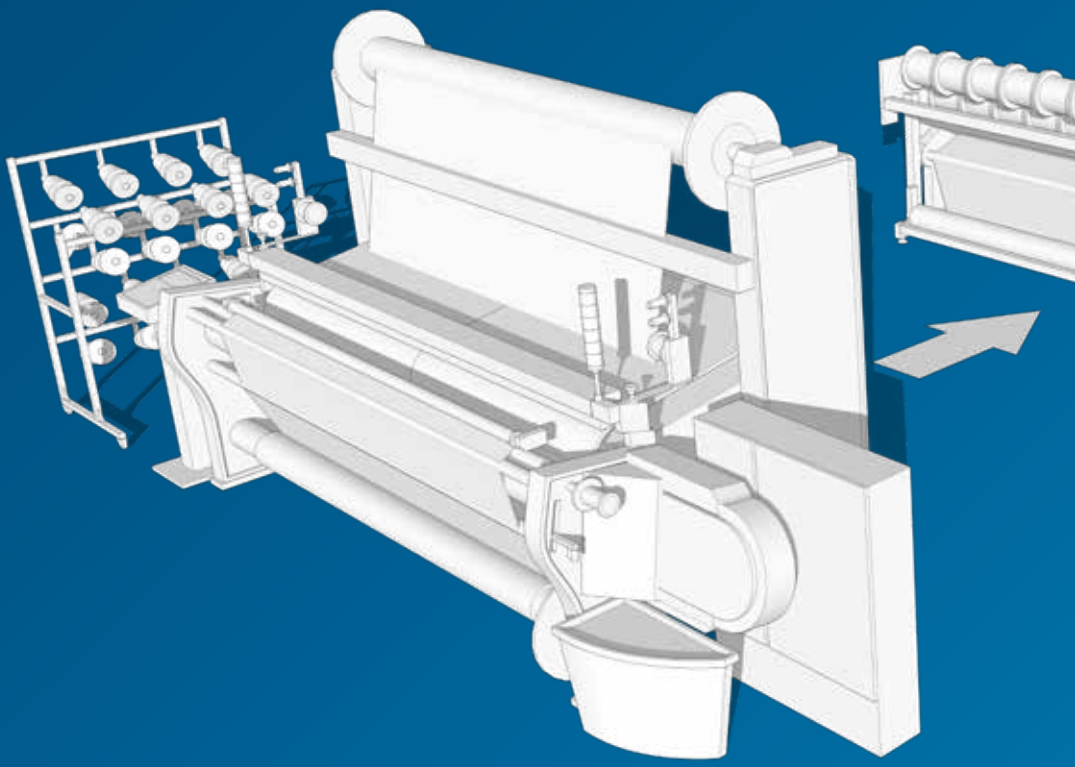
Active Cube and Agile Series
Smart inverters

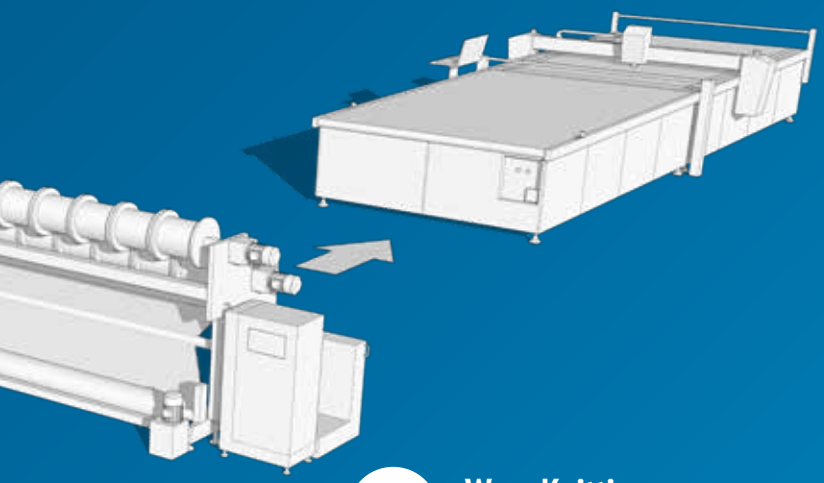
Benefits
- Mounting and cooling according to the environment: Standard, ColdPlate, Feedthrough or Liquid
- Controlled process speed for the quality of the production material
- Enabling high efficiency for the inverter, motor and gearbox combination

Features
- Wide power range from 0.25 to 400 kW
- Coated PCBs (as standard or option)
- Closed loop or open loop control
- Adjustable torque limitation
- Optional Fieldbus connectivity

Optional Encoder evaluation in Active Cube Series

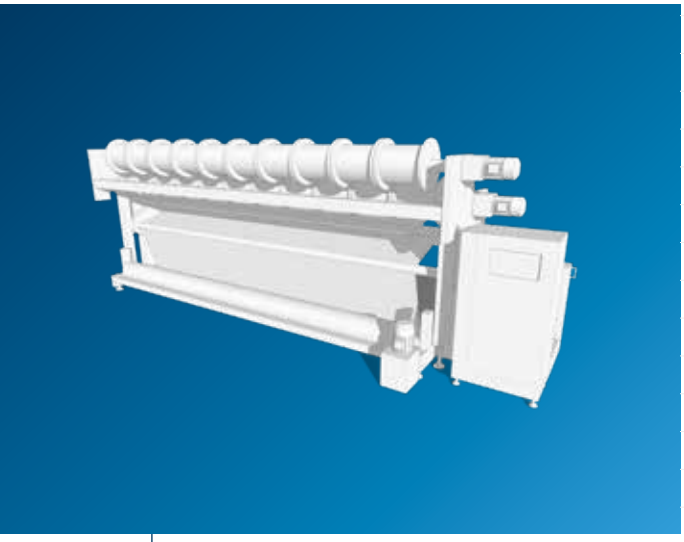
Fabric production





1 **Warp Knitting**
Page 20

Fabric production



Warp Knitting

1

Bonfiglioli offers different drive concepts for warp knitting machines: IP65 asynchronous motors, IP65 and IP67 synchronous motors and synchronous reluctance motors up to IE4 Super Premium efficiency class for the optimum performance and power requirements of your machine. Bonfiglioli inverter series offer excellent speed and position control for the main axis and beam axis. The dedicated design allows operation in the demanding environments typical of warp knitting machines. The frequency inverter series are available with dedicated cooling concepts and coated printed circuit boards, which allow them to cope with high temperature environments.

A Series
Helical bevel gearbox with
BMD Series
Permanent magnet servo motor

Benefits
- High efficient solution
- Robust
- Compact

Features
- Wide range of feedback devices
- Sensorless control available
- Modular design
- Optimized servo package

BSR Series
Synchronous Reluctance Motors

Benefits
- Reduced total cost of ownership (TCO)
- Retrofit solution thanks to IEC design
- Reliability and robustness

Features
- High energy efficiency of the drive system class up to IES2
- Motor efficiency class up to IE4
- Eco-friendly
- Two packages available: High Efficiency and High Output
- Power range: 0.37 to 18.5 kW
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed
- High Output motors have a reduced frame up to two sizes if compared with IM
- Optimized compatibility with Active Cube 410 drive series
- Effective torque and speed control (also at low speed) without encoder

Active Cube and ANG Series
Premium inverter and Servo inverter

Benefits
- Mounting and cooling according to the environment: Standard, ColdPlate, Feedthrough or Liquid
- Controlled process speed for the quality of the production material
- Enabling high efficiency for the inverter, motor and gearbox combination

Features
- Wide power range from 0.25 to 400 kW
- Coated PCBs (as standard or option)
- Closed loop or open loop control
- Adjustable torque limitation
- Optional Fieldbus connectivity

Optional Encoder evaluation in Active Cube Series

Specific functions for the textile sector

Software engineering made easy

For different application purposes the Bonfiglioli frequency inverters offer fitting software functions:

- Speed Control and its extensions for machines with and without encoder feedback
  - Speed control
  - Torque control with jerkless switch over between speed control and torque control
  - Process control with a PI or PID controller
  - Winding control
  - Master/Slave operation via Systembus
  - Positioning control according to CiA 402 standard
- Signaling of abnormal behavior with warning and fault messages (via LED, digital outputs or Fieldbus)
- Machine depending setup of fault behavior and threshold levels for warnings and faults
- Error history and actual values history (average values & maximum values)

Connectivity: open standards

Fieldbus connectivity for CANopen, EtherCAT, PROFINET, VARAN, PROFIBUS links the frequency inverter to the preferred PLC system.

The Ethernet based systems EtherCAT & PROFINET allow also simultaneous access for the diagnosis (and also parameter setup) via VPlus on the PC.

Field bus
CANopen
Profibus DP V1
RS-232
RS-485 (Modbus or VABus)
DeviceNet
EtherCAT
Profinet
Ethernet/IP
Modbus/TCP
VABus/TCP

Energy efficiency

For a responsible resource usage, energy efficiency is a major task today for every production machine to reduce the ecological impact and saving operation costs at the same time.

The following approaches help to increase the energy efficiency of the drives and therefore for the whole machine:

- Smart energy usage
- Converting energy with high efficiency
- Using kinetic energy during braking
- Reducing energy consumption through energy saving functions in the frequency inverter

The full Bonfiglioli axis (inverter + gearbox + motor) offers a complete package of highly dynamic drive systems for increasing production efficiency.

Traversing Function

Traversing functions are important to ensure high material quality of the final product.

A typical setup involves a master/slave relation through a Systembus connection, where the traversing is adjusted automatically in both master and slave inverters to ensure the required yarn layout on the bobbin.

Harsh environments

- DC-Bus & Mains failure: we take care that the machine can react during a power failure with a managed ramp down and in this way material damages (i.e. yarn breaks) can be prevented.
- Products for use in high temperature environments: thanks to the cold plate and the feedthrough solutions, the heat losses are outside the cabinet, allowing space savings. Device variants without fans and without electrolyte capacitors improve the longevity of the inverters and their robustness to work in harsh environments (high temperature).
- Alternative cooling concepts for frequency and servo inverter
- Availability of coated printed circuit boards

Complete solutions for Power Transmission & Automation

Gearboxes & Geared motors

HEAVY DUTY

- **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

LIGHT DUTY

- **Worm geared units | W/VF Series**
  Torque range: 13 to 7,100 Nm
  Gear ratios: 7 to 10,000
- **Helical geared units | C Series**
  Torque range: 45 to 12,000 Nm
  Gear ratios: 2.6 to 1,481
- **Bevel-helical geared units | A Series**
  Torque range: 100 to 14,000 Nm
  Gear ratios: 5.4 to 1,715
- **Shaft-mounted geared units | F Series**
  Torque range: 140 to 14,000 Nm
  Gear ratios: 6.4 to 2,099

SERVO

- **Precision planetary servo geared units**
  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 pole-changing
  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
  IE4
- **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 2,000 to 4,500 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: 400 VAC / 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

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Research & Development

Bonfiglioli's global research and development create breakthrough solutions that integrate the most advanced mechanical, electrical and hydraulic technologies. They meet the most demanding application requirements and support our customers' growth.

More than 200 employees around the world are involved in the group's research and development.

DESIGN YOUR SOLUTIONS

CO-ENGINEERING

We support our customers' projects from beginning to end.

At Bonfiglioli, we believe that product development relies on passion, efficient processes, and the ability to understand our customers' needs accurately.

First, our team identify the customer's needs after in-depth analysis drawn from our specific application expertise.

Through dedicated calculation tools, we can simulate the transmission's capabilities and performance allowing reducing development time.

The alignment phase allows us then to adapt our proposal according to key factors of performance, installation and maintenance.

The test centers at Bonfiglioli

Bonfiglioli's test laboratories support the various phases of the product life cycle, including development, certification and the production of solutions developed and manufactured in our plants around the world.

Our specialists are true partners to the R&D, technical and quality departments. They help validate each Bonfiglioli product from the smallest critical component to the overall solution.

The test centers regularly conduct additional tests to ensure the product durability and confirm the specifications declared during the official approval stage.

Quality, Health & Safety

Our team is wholly dedicated to continuous improvement in the quality, safety and environmental sphere, throughout the entire value chain, from the smallest supplier to the end client.

Bonfiglioli management systems are certified ISO 9001: 2015, ISO 14001: 2015 and OHSAS 18001: 2007, while our products are covered by international certifications. Responsibility, excellence and continuous improvement are the basic elements that make us the favored partner of our clients and suppliers.

SYSTEM CERTIFICATION

PRODUCTS CERTIFICATION

Quality

Bonfiglioli is committed to achieving the highest ethical and quality standards. These standards are documented in the Bonfiglioli Quality Management System.

Our products are intended to generate value for our customers. We are committed to designing, manufacturing and supplying effective products and services that set a benchmark for quality in the industry.

Based on defined procedures and instructions, the Bonfiglioli Quality Management System has been established not only to ensure the ongoing quality of our products and processes, but also to guarantee continuous improvement.

Bonfiglioli has also implemented a Quality Policy which sets customer focus as a primary goal. The Quality Policy is used to set and deploy goals and objectives at every level of the organization. The fulfilment of these objectives is measured on a regular basis with appropriate performance indicators.

Health & Safety: Sustainability starts with safety

Prevention of accidents and incidents is a key element of our company's sustainable strategy and an integral part of each one of our business processes. The successful management of risks is essential for protecting our employees and assets and thereby contribute therefore strengthening.

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.

3780 EMPLOYEES	20 BRANCHES	13 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 20 sales branches, 13 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.

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Bonfiglioli
Forever Forward

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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