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 HAS COMPREHENSIVE EXPERIENCE TO SUPPORT MACHINERY DESIGN IN THE:

Liquid filling process
Page 4 to 7

Solid packaging process
Page 8 to 11

THESE ARE ALL THE POSSIBLE 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
   Bottle Washer Machine

3. Secondary Packaging
   Carton Forming Machine •
   Carton Filling Machine (Pick & Place) •
   Carton Closing Machine •

VF - Worm gearmotor

ANG - Servo Inverter
Primary Packaging
Filling, Dosing, Capping & Labelling Machines

Tertiary Packaging
Palletizing (Pick & Place) & Wrapping Machines

A - Helical bevel gearmotor
LIQUID FILLING PROCESS

1 Cleaning, Sterilizing & Drying
Solutions for Bottle Washer Machine

VF - Worm gearmotor

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

**FEATURES**
- High and premium efficiency motors (IE2, IE3)

A - Helical bevel gearmotor

**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 - Smart sensorless frequency inverter

**BENEFITS**
- Low energy consumption

**FEATURES**
- Sensor-less vector control for asynchronous and synchronous motors
- Integrated torque off safety function
- Integrated Modbus
- Optional communication card (Profinet, CanOpen,……)
- Tropicalization option
- Main software features:
  - Integrated PLC function with graphic development environment
  - Torque limitation

2 Primary Packaging
Solutions for Filling, Dosing, Capping & Labelling Machines

A - Helical bevel 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

TQ+iBMD - Servo gearmotor

**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)
Solutions for Carton Filling Machine (Pick & Place)

**TQ** - Precision planetary gearbox with **BMD** - 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** - Helical bevel gearbox with **BMD** - Permanent magnet servo motor

**BENEFITS**
- Compact
- Universal mounting
- Modular design

**FEATURES**
- Keyed hollow shaft (metric and inch series)
- Super premium efficiency motors (IE4)
- Wide range of feedback devices
- Brake option
- Inertia flywheel
- Customized windings on request

**Active Cube** - Premium Inverter

**BENEFITS**
- Interpolated operating mode
- Smooth start
- Torque control

**FEATURES**
- Ethernet based drive
- Wide power range and parallel connection option to reach up to 1200 kW
- Integrated torque off safety function, external 24 Vdc control power supply
- Tropicalization option
- Integrated PLC function with graphic development environment

Solutions for Palletizing (Pick & Place) & Wrapping Machines

**A** - Helical bevel gearmotor

**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** - 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**
- Three dynamics: possible to choose between three different overspeed in acceleration

**ANG** - Servo Inverter

**BENEFITS**
- Interpolated mode
- Fast loops control
- 2 encoder inputs

**FEATURES**
- EtherCAT, CAN open integrated
- Absolute encoders
- Resolver
- PCB coated
SOLID PACKAGING PROCESS

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

2 Tertiary Packaging
Palletizing Machine

3 Tertiary Packaging
Wrapping Machine

F - Shaft mounted gearmotor
Primary Packaging
Flow Pack Machine

Handling
Smart Conveyors

BMS - Compact Servo
Geared Solution

C - Coaxial gearmotor
SOLID PACKAGING PROCESS

1 Primary Packaging

Solutions for Flow Pack Machine

- **Infeed Conveyor-Smart Belt:**
  A - Helical bevel gearbox with
  BMD - Permanent magnet servo motor

  **BENEFITS**
  Compact design, Universal mounting, Modular design

  **FEATURES**
  - Keyed hollow shaft (metric and inch series)
  - Super premium efficiency motors (IE2, IE3)
  - Wide range of feedback devices

- **Unwinder:**
  A - Helical bevel gearmotor

  **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 - 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** - 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 Tertiary Packaging

Solutions for Palletizing Machine

**F - Shaft mounted gearmotor**

**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)
- Back stops device
- High and premium efficiency motors (IE2, IE3)

**Active Cube** - Premium Inverter

**BENEFITS**
- Interpolated operating mode
- Smooth start
- Torque control

**FEATURES**
- Ethernet based drive
- Wide power range and parallel connection option to reach up to 1200 kW
- Integrated torque off safety function, external 24 Vdc control power supply
- Tropicalization option
- Integrated PLC function with graphic development environment
**Solutions for Wrapping Machine**

**C - Coaxial gearmotor**

**BENEFITS**
- Top torque density
- Highly compact
- Wide speed choice

**FEATURES**
- Wide choice of output bolt-on-flanges
- Special seals set for severe environment applications
- Surface protection class C3, C4 and C5 (according to UNI EN ISO 12944-2 standard)

**Agile - Smart sensorless frequency inverter**

**BENEFITS**
- Smooth start
- Feed roll control
- Low energy consumption

**FEATURES**
- Sensor-less vector control for asynchronous and synchronous motors
- Integrated torque off safety function
- Integrated Modbus
- Optional communication card (ProfiBus, CanOpen….)

**Handling**

**Solutions for Smart Conveyors**

**A - Helical bevel gearbox with BMD - Permanent magnet servo motor**

**BENEFITS**
- Compact
- Universal mounting
- Modular design

**FEATURES**
- Sensorless control
- Protection rating up to IP65 (motor), IP56 (gearbox)
- Surface protection class C3, C4 and C5 (according to UNI EN ISO 12944-2 standard)
- Super premium efficiency motors (IE4)
- Wide range of feedback devices (absolute encoders)

**F - Shaft mounted gearmotor**

**BENEFITS**
- Easy installation
- Low noise
- High torque capability

**FEATURES**
- Keyed hollow shaft - two bore options per size, keyless shrink disc fitting (metric series)
- Protection rating 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 - Smart sensorless frequency inverter**

**BENEFITS**
- Smooth start
- Feed roll control
- Low energy consumption

**FEATURES**
- Sensor-less vector control for asynchronous and synchronous motors
- Integrated torque off safety function
- Integrated Modbus
- Optional communication card (ProfiBus, CanOpen….)
COMPLETE SOLUTIONS FOR POWER TRANSMISSION AND AUTOMATION

**Gearboxes and Geared motors**

**HEAVY DUTY**

**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

**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

**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

**Motors**

**Asynchronous IEC Motor - BN, BE, BX**
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

**Asynchronous Compact Motors - MN, ME, MX**
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

**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

**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
- Power range: 0.37 to 18.5 kW

**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

Human Machine Interfaces - BMI Series
2 Display sizes – 7" and 10" True flat front panel in IP65
High resolution 480x272 up to 1024x600 pixels

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

Human Machine Interfaces - BMI Series
2 Display sizes – 7" and 10" True flat front panel in IP65
High resolution 480x272 up to 1024x600 pixels
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.
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.