

# Solutions for HEAVY INDUSTRY

**じ**の Bonfiglioli

We engineer dreams

# BONFIGLIOLI SOLUTIONS FOR HEAVY INDUSTRY

Among Bonfiglioli product portfolio, a wide range of solutions is dedicated to heavy industry applications. By offering complete solutions (gearboxes-motors-inverters), we are able to satisfy all the market requirements in terms of robustness, quality and superior reliability.

Operating from the Bonfiglioli many subsidiaries around the world, our technical service is always available to support customers in selecting the most suitable type and size of product for the application at hand.









# A ONE-STOP SHOP FOR ALL YOUR INDUSTRIAL APPLICATIONS

Every year, Bonfiglioli manufactures over 1.5 million products offering its customers fully integrated and solutions, ideal for a wide range of applications in over twenty industrial sectors.

With more than 60 years of experience, our extensive range of gearboxes, gearmotors, electric motors and inverters offers the opportunity to benefit from exceptional technical characteristics and superb performance in all industrial applications.

Our mechatronic solutions for industrial automation deliver the highest possible level of precision, efficiency and energy optimization. These solutions include precision planetary gearboxes, servomotors, open and closed loop inverters, servo inverters and regenerative inverters.









# **ALWAYS BY OUR CUSTOMER'S SIDE, ALL OVER THE WORLD**

Bonfiglioli has globalized production over the years. Today, we operate 14 manufacturing plants around the world to serve customers in local markets more effectively. Our plants in Italy, Germany, USA, Brazil, India, China, Vietnam, and Slovakia form a truly efficient distribution network.

Excellence is our number one priority.

We use the latest technologies to optimize our daily production. Bonfiglioli is fully committed to a more sustainable workplace and supports various local initiatives.

All Bonfiglioli employee pay the utmost attention to even the smallest details, to ensure that our customers receive products with unrivalled quality.









**MANUFACTURING** 

**INDUSTRY 4.0 FAST DELIVERY** TIMES

SHARING THE VALUE OF OUR WORK **WITH YOU** 

Our team is fully dedicated to continuous improvement in the fields of quality, safety and the environment, across the entire value chain, from the smallest supplier to the end customer.

Bonfiglioli management systems are certified to ISO 9001:2008, ISO 14001 and OHSAS 18001, while our products are covered by 7 international certifications.

Responsibility, excellence and continuous improvement are some of the basic elements that make Bonfiglioli a preferred partner.

# SYSTEM CERTIFICATIONS:







# PRODUCT CERTIFICATIONS:















# HEAVY MACHINERY HAS BONFIGLIOLI PRODUCTS AT ITS HEART

The HDP parallel shaft, HDO right-angle and 300 planetary series offer designers the ultimate flexibility in build architecture and transmissible power range.

For every installation, cooling or lubrication requirement, each gearmotor can easily be rendered fit-for-purpose through the long, complete list of standard options and accessories.

# Logistics

(belt, chain, bucket, screw conveyors, gantry and trolley drives, etc.)

# Winch and Lift

(cranes, hoists, winches, etc.)

# **Packaging**

(filling machines, palletizers, stackers, etc.)

# Raw material and resources

(metals, petroleum, forestry, rubber, plastics, cement, sand & stone, etc.)

# Mining

(ore crushers, apron and screw feeders, bucket elevators, mills and kilns, etc.)

# **Purification and Production**

(pulp and paper, air cooling, sewage, recycling, etc.)







# PRODUCT RELIABILITY IS ACHIEVED THROUGH A PRODUCTION PROCESS GEARED TOWARDS EXCELLENCE

All essential parts are produced in Bonfiglioli's own plant using constantly updated machine tools of the latest generation.

Machining technology is therefore fully owned by Bonfiglioli and part of a know-how acquired over 50 years of manufacturing.

Today, precision machining is very much a part of Bonfiglioli's consolidated heritage.

The CNC machine tools and equipment used for the production of gears and other essential component parts are all state-of-the-art in terms of quality, efficiency and productivity in general.

Advanced machinery has always been central to Bonfiglioli's production system and Bonfiglioli has always assigned top priority to the quality and efficiency of its machine park, and has invested accordingly.







# BONFIGLIOLI PRODUCTS

# INDUSTRIAL PLANETARY GEARMOTORS & UNITS



# **300M Series**

Bonfiglioli's 300M Series is an outstanding solution for all heavy-duty applications where compactness is not an option. Thanks to its modular design, the 300M Series can be customized to match an extremely wide range of applications. Bonfiglioli's expertise in planetary technology ensures high-quality product design and manufacturing procedures. The 300 Series operates without unwanted downtime even in the harshest environments. This planetary gearbox achieves top-class flexibility thanks to several outputs, as well as input configurations available for all 20 sizes.



ATEX GEARBOX AVAILABLE

# **GEAR RATIOS**

· 3.4 ... 2,916

# **MECHANICAL RATING**

· up to 1,050 kW

# **MOTORS**

- · Input with solid shaft
- Input with e-motor coupling:
  - M, ME, MX (compact asynchronous)
  - BN, BE, BX (IEC asynchronous)
  - BSR (IEC reluctance)
  - BS (IEC single phase)

# **MOTOR OPTIONS**

- Thermistors and thermostat sensors
- · Independent forced cooling
- Incremental, sin/cos absolute single/multi-turn encoders
- Tropicalization
- · Anti-condensate heaters
- Backstop

# MAIN OPTIONS

- In line/right angle version
- · Independent cooling unit
- Patented integrated cooling solution
- Taconite seals
- ATEX certification for explosive environments

# **KEY BENEFITS**

- · High torque density
- Extreme speed reduction and high output torque
- Low maintenance cost
- Extremely customizable
- Flexibility
- Usable in explosive environments

# **KEY FEATURES**

- Highly transmissible torque/weight ratio
- Combined version (HD, A, W/VF series)
- · High quality standards
- High shock resistance
- Wide range of options and accessories
- Electric and hydraulic motor compatible
- Built-in cooling fan
- ATEX version 2G/2D

#### **TORQUE (Nm)** 1,250 300 301 2,460 303 2,970 304 3,960 305 5,800 306 10,840 307 15,680 309 23,240 310M 33,460 311M 49,210 313M 60,940 314M 80,640 315M 100,800 316M 134,390 317M 207,490 318M 297,550 319 471,190 655,740 321 323 890,310 1 286 000 325



# **HELICAL BEVEL HEAVY DUTY GEAR UNITS**



# **HDO Series**

When high torque, robustness, reliability and long-operating life are required, Bonfiglioli's HDO Series is the best possible option. Thanks to high-quality materials and an optimized design, the HD Series can operate in the harshest environments, as well as in explosive atmospheres, with low maintenance costs and long service intervals. The HDO Series can also be fully customized thanks to an extremely broad portfolio of options and accessories.



# **GEAR RATIOS**

· 5.6 ... 490

# **MOTORS**

- · Input with solid shaft
- · Input with e-motor coupling:
- BN, BE, BX (IEC asynchronous)
- BSR (IEC reluctance)

# **MOTOR OPTIONS**

- Thermistors and thermostat sensors
- · Independent forced cooling
- Incremental, sin/cos absolute single/multi-turn encoders
- Tropicalization
- · Anti-condensation heaters

# **MAIN OPTIONS**

- · Fan cooling, cooling coil, oil heater
- · External cooling unit
- Backstop
- Forced lubrication
- Temperature and oil level sensors
- Drywell
- · Taconite seals
- ATEX certification for explosive environments

# **KEY BENEFITS**

- · Highly transmissible power
- Robustness
- · Mounting flexibility
- · Reliability
- Usable in explosive environments

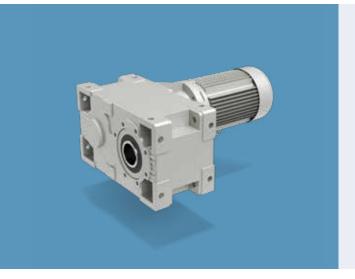
# **KEY FEATURES**

- · Spheroidal cast iron housing
- I/O shaft planarity and gearbox symmetry
- Wide range of options and accessories
- · High design standards
- Atex gearbox for explosive environments 2G/2D

#### **TORQUE (Nm)** HDO 71 8,990 HDO 81 14,740 HDO 91 21,610 HDO 95 23,200 HDO 100 28,210 HDO 110 31,790 HDO 120 41,250 HDO 125 49,240 69,570 HDO 130 87,060 HDO 140 117,200 HDO 150 147,070 HDO 160 HDO 170 HDO 180



# HELICAL PARALLEL SHAFT HEAVY DUTY GEAR UNITS



# **HDP Series**

When high torque, robustness, reliability and long-operating life are required, Bonfiglioli's HDP Series is the best possible option. Thanks to high-quality materials and an optimized design, the HD Series can operate in the harshest environments, as well as in explosive atmospheres, with low maintenance costs and long service intervals. The HDP Series can also be fully customized thanks to an extremely broad portfolio of options and accessories.



# **GEAR RATIOS**

· 7.1 ... 500

# **MOTORS**

- · Input with solid shaft
- · Input with e-motor coupling:
  - BN, BE, BX (IEC asynchronous)
  - BSR (IEC reluctance)

# **MOTOR OPTIONS**

- Thermistors and thermostat sensors
- · Independent forced cooling
- Incremental, sin/cos absolute single/multi-turn encoders
- Tropicalization
- · Anti-condensation heaters

# **MAIN OPTIONS**

- · Fan cooling, cooling coil, oil heater
- · External cooling unit
- Backstop
- Forced lubrication
- Temperature and oil level sensors
- Drywell
- · Taconite seals

# **KEY BENEFITS**

- · High transmissible power
- Robustness
- Mounting Flexibility
- · High customization level
- Reliability

# **KEY FEATURES**

- · Spheroidal Cast Iron Housing
- I/O Shaft planarity and gearbox symmetry
- Wide range of options and accessories
- · High standards design
- Atex- gearbox for explosive environments 2G/2D

#### **TORQUE (Nm)** HDP 60 5,190 HDP 70 7,080 HDP 80 12,600 HDP 90 17,900 HDP 100 28,210 HDP 110 31,790 HDP 120 41,250 HDP 125 49,240 69,570 HDP 130 87,060 HDP 140 HDP 150 117,200 147,070 HDP 160 190,190 HDP 170 HDP 180

# **PREMIUM INVERTERS**



# **Active Series**

The Bonfiglioli Active Series contains flexible frequency inverters that are both versatile and easy to use. This product features high performance control and unbeatable advantages in scalability and compact size.

# POWER SUPPLY & POWER RANGE

- ACT201: 0.55 9.2 kW / single or three-phase 200 - 240V / 50 - 60 Hz (± 10%)
- ACT401: 0.55 132 kW / threephase 360 - 480V / 50 - 60 Hz (± 10%)

# **MOTOR CONTROL**

- · Asynchronous AC motors
- Permanent magnet synchronous (brushless) motors

# **MOUNTING OPTIONS**

- · Cabinet mounting for all sizes
- Optional feed-through mounting
- Optional DIN rail mounting frame size 1
- · Optional ColdPlate mounting

# **ENCLOSURE**

· IP20 (EN 60529)

# **KEY FEATURES**

Field-oriented control with or without encoder

# **RATED SPEED**

· 0...599 Hz

# **ENCLOSURE**

• IP20 (EN 60529)

# **CERTIFICATIONS**

• UL508c

# **CONFORMITY**

- CE
- FN61800

# HARDWARE FEATURES

- Integrated dynamic braking module
- DC link connection
- · Standard HTL encoder interface
- Motor temperature monitoring
- Plug-in power terminals (up to 3kW)
- Plug-in and programmable control terminals
- 6 digital input, 1 multifunction input
- 1 digital output, 1 multifunction output
- 1 relay output (changeover contact)

# **SOFTWARE FEATURES**

- Programmable reference value channel
- Programmable start and stop characteristics
- Motor potentiometer
- · Programmable S curve
- 4 data sets
- Auto startup and commissioning
- · Auto reset after failure
- Auto start after power failure
- · PL controller
- Programmable logic and timer functions
- · Volume flow control
- Bumpless torque/speed changeover,
- Master/slave function with electronic gear,
- Simple positioning function,
- Mechanical brake control free of friction
- Index control
- Intelligent current limits
- Power failure control
- Comprehensive monitoring and protection capabilities
- High speed control
- Functions for lift, crane and winch applications
- 3 different brake management functions



# HIGH PERFORMANCE FREQUENCY INVERTER



# **Active Cube Series**

Active Cube (ACU) is the high performance frequency inverter with a wide power range from 0.25 kW to 400 kW (with parallel drive connection up to 1200 kW). It can control asynchronous, synchronous and synchronous reluctance motors in open and closed loop operations. Several optional modules for communication and expansions for I/O control and encoder evaluation make the premium frequency inverter ideal for a wide range of high performance applications, such as warehouse and material handling, automatic storage systems, textile machines, packaging, food & beverage, motion control and hoists and cranes applications. For integration in functional safety environments, ACU offers STO functionality according to SIL 3 and PL e.

# POWER SUPPLY & POWER RANGE

- ACU210: 0.25 9.2 kW / single or three-phase 200 - 240V / 50 - 60 Hz (± 10%)
- ACU410: 0.25 400 kW / threephase 360 - 480V / 50 - 60 Hz (± 10%)
  - Parallel connection up to 1200 kW
- ACU510: 160 400 kW / threephase 525V / 50 - 60 Hz (± 10%)
   Parallel connection up to 1200 kW
- ACU610: 160 400 kW / threephase 690V / 50 - 60 Hz (± 10%)
   Parallel connection up to 1200 kW

# MOTOR CONTROL

(open loop or optional closed loop):

- Asynchronous AC motors
- Synchronous Reluctance motors
- Permanent magnet synchronous (brushless) motors

# **MOUNTING OPTIONS**

- · Cabinet mounting for all sizes
- · Optional feed-through mounting
- Optional DIN rail mounting frame size 1
- Optional ColdPlate (sizes 1 to 5)
- Optional liquid cooling (sizes 5 to 8)

# **OVERLOAD CAPACITY**

- · up to 150% for 60 seconds
- · up to 200% for 1 second

# **KEY FEATURES**

- Optionally expanding series 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 with CiA 402)
- 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

# **OPTIONS**

- Different field bus options, such as CANopen, PROFIBUS, Modbus, EtherCAT, PROFINET, Varan
- Optional I/O extensions for additional digital and analogue inputs & outputs
- Optional keypad for diagnostics and parameter setup
- · Optional PC interface
- Optional accessories like brake resistor, mains chokes, mains filters

# **ENCLOSURE**

· IP20 (EN 60529)



# **OUR GLOBAL PRESENCE**

Thanks to an international network of closely interconnected commercial and production sites, we can guarantee the same high standards of Bonfiglioli quality anywhere at any given time. We know that our direct presence in local markets is the key to long-lasting success, so our family includes 18 production sites, 23 commercial sites and more than 550 distributors around the world.

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

18
PRODUCTION SITES

23
COMMERCIAL SITES



550
DISTRIBUTORS

~4,700

#### **AUSTRALIA**

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

# **HEADQUARTERS**

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