



Bonfiglioli

Industrial

Mechatronic Drives & Solutions



Bonfiglioli

power, control and green solutions

Power, control and green solutions



Mechatronic Drives & Solutions

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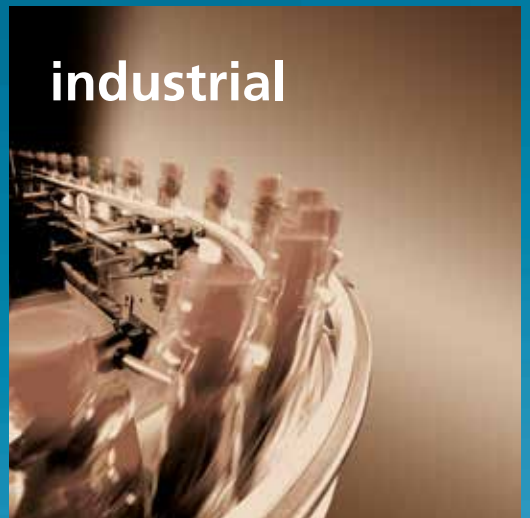
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Bonfiglioli solutions

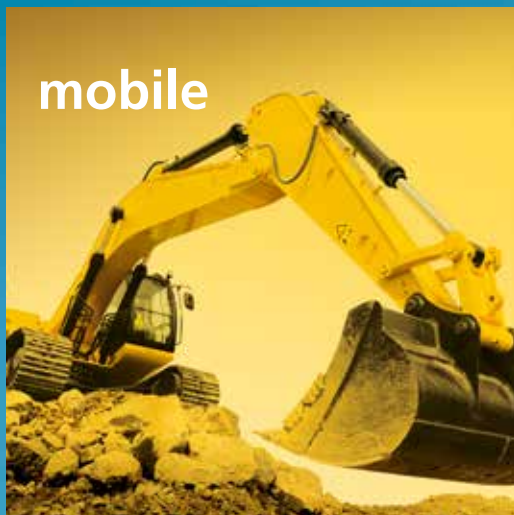
wind



industrial



mobile



photovoltaic



Mechatronic Drives & Solutions

Machines today need to be faster, more flexible, and must be able to solve more complex automation functions than ever before. Machine builders must constantly look at innovative ways to build more energy-efficient machines reducing development costs.

This means that in addition to the technical aspects of drive technology in industrial plants, decisive criteria for planning and implementing drive concepts are energy efficiency, energy demand, flexibility, life cycle costs (LCC) and total cost of ownership (TCO).

Bonfiglioli is a leading drive and automation specialist in mechatronic applications. We are able to develop electronically orientated products as well as mechatronic and vertically integrated solutions. Utilizing its mechanical, electrical, electronic and applications competences, Bonfiglioli can assist you to design cost effective and energy efficient machines and installations, aligning their performance to precisely meet your needs.

Energy efficiency

The theme of energy saving has become of great interest because of the problem related to national energy dependence, the growing demand for electricity and considerations related to environmental protection. If we consider the distribution of electricity consumption in the industrial sector, is known as the most energy is used to power asynchronous three-phase motors.

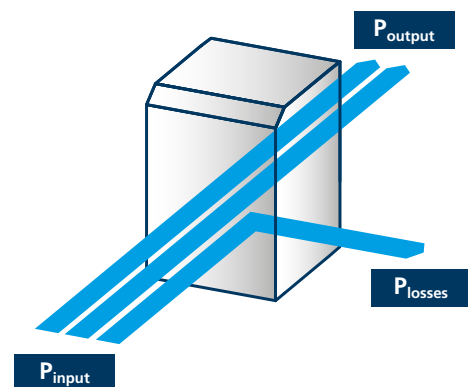
The fact is slowly getting recognized that electric motor system in industrial applications are responsible for 45% of global electricity consumption. This means: start here! The electricity savings potential is huge, the technologies are ready.

Every market sector is different, but all face a common challenge: remaining profitable in the face of raw material and energy costs without compromising quality or productivity. Bonfiglioli technology specialists will help analyze and optimize energy use to deliver savings in every phase of the processes.

Bonfiglioli organization is a partner in the analysis of energy improvement of your machine able to provide to you optimized and reliable solution. Furthermore, Bonfiglioli expertise in energy optimization of industrial applications and in renewable energy is a precious benefit.

How can we get energetically efficient solutions?

To obtain a solution energetically efficient the objective is to reduce losses between the input power and the output power. The Bonfiglioli R&D aims to minimize these losses with innovative and intelligent solutions.



How can we reduce energy consumption?

Increasing energy efficiency in an application means reducing consumption. How can we do it? Current technologies allow us to achieve high levels of energy efficiency through specific types of interventions, integrable with one another, thus potentially accumulate the advantages.

How Bonfiglioli can contribute to energy savings?

Using electrical energy intelligently across an optimized selection and optimizing whole configuration to operate at maximum efficiency point.

Converting energy with a high degree of efficiency using high efficiency product:

- Frequency inverter;
- Standby functionality;
- Synchronous motors and high efficiency AC motors;
- Gearboxes with high efficiency.

Using energy recovering solutions like:

- Energy exchange between the drives;
- Intermediate storage of the braking energy;
- Braking energy feeding back.

Mechatronic Drives & Solutions

Watch out for hidden costs! Life cycle costs (LCC) and total cost of ownership (TCO)

Many studies reveal that the much hailed cost-benefit driven, modern technology oriented industry is not energy efficient. The major concern in industry is product volume and cost, thus profitability in competitive global markets. Many issues like Life Cycle Cost (LCC) are hidden below everyday cost cutting efforts, split responsibilities of investment and operating costs and insecure future production plans. These industries run at higher cost than necessary and are an unnecessary high load on the environment.

A more comprehensive approach based on the Total Cost of Ownership (TCO), allows us to offer the customer much more innovative and reliable machines. In fact, the TCO approach, applied increasingly to B2B, lets you base the purchase decision not only on the initial price, but on the assessment of the impact of technology on its user for its whole life, till obsolescence: the purchase decision must take into consideration a wide range of costs such as those of maintenance, downtime, the overall consumption, environmental impact product, the final cost of disposal, the space occupied and so on.

All sectors have to review their potential of improved energy efficiency. All applications, like pumps, fans, compressors for air and cold, conveyer and other industry handling & processing equipment, need to be reassessed.

CO2 requirements

On 9 March 2007, the 27 EU member states have signed an agreement that confirmed their commitment to reducing greenhouse gas emissions by 20% by 2020, compared to 1990 levels. This is an ambitious goal, which doubles the emissions reductions already established by the Kyoto Protocol for 2012.

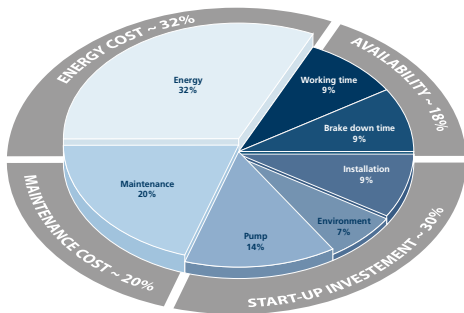
Bonfiglioli supports its customers in selecting the right motor with personal consulting in order to take into account the efficiency regulations for asynchronous motors.

Not only you can save money, you can actually help in the global efforts to conserve our environment by reducing the amount of CO² that is produced globally.

Versatility

The solutions for each movement within the industrial plants require a high degree of versatility. This need also causes the development of innovative mechatronic drive system: the integration of mechanical components (gear units, motors) with electronic components allows to get compact solutions aimed at advanced functionalities and energy efficiency. The mechatronic modules perform the production goals and inherit flexible and agile manufacturing properties in the production scheme.

Bonfiglioli's MDS Division truly becomes a One-Stop-Shop representing the "Riskless partner in the Energy Efficient Power transmission Solutions".



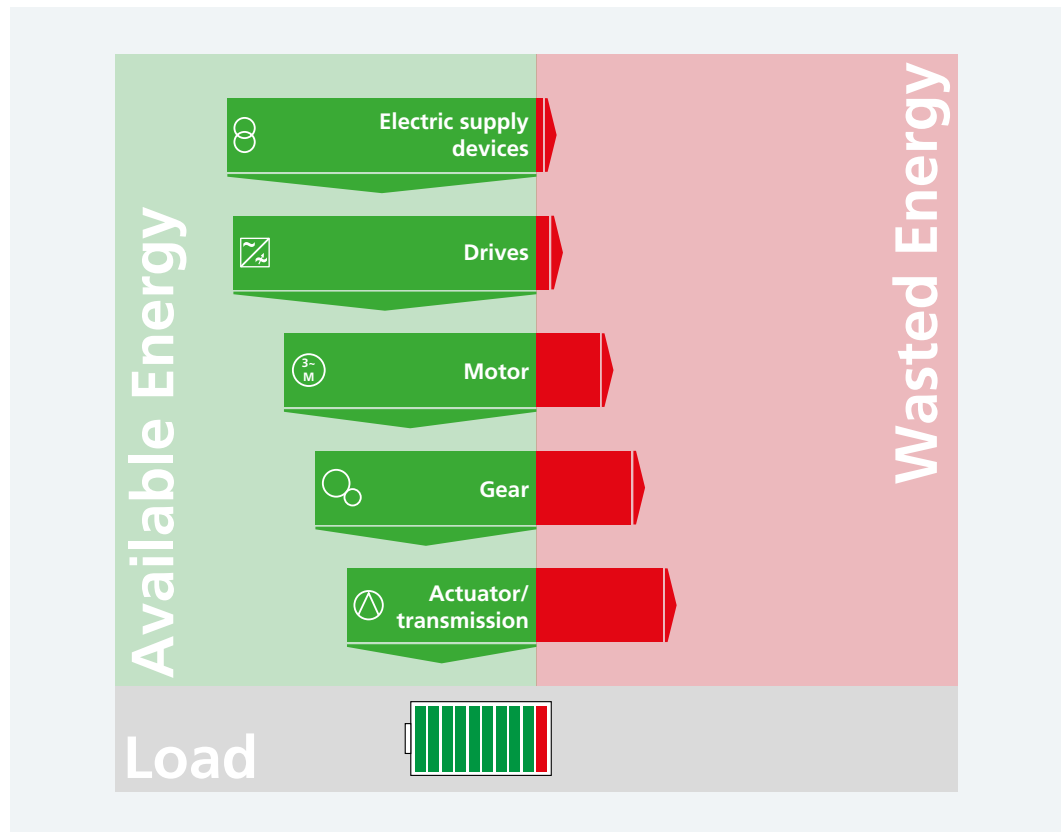
Energy Efficient Solutions

Which is the mix of energy consumption in the power transmission?

To maximize the energy savings, it's important to look at the entire drive train including inverter, motor and gearbox.

Each component in a system will inherently add some inefficiency, and these energy losses multiply together to provide an overall system efficiency.

For example an improvement of a few % energy losses on gear level allows to reduce motor size, the inverter size and electrical cabinet as well.



Energy Efficient Solutions

Is it sufficient?

What if we consider the energy efficiency over the entire life cycle of solution:

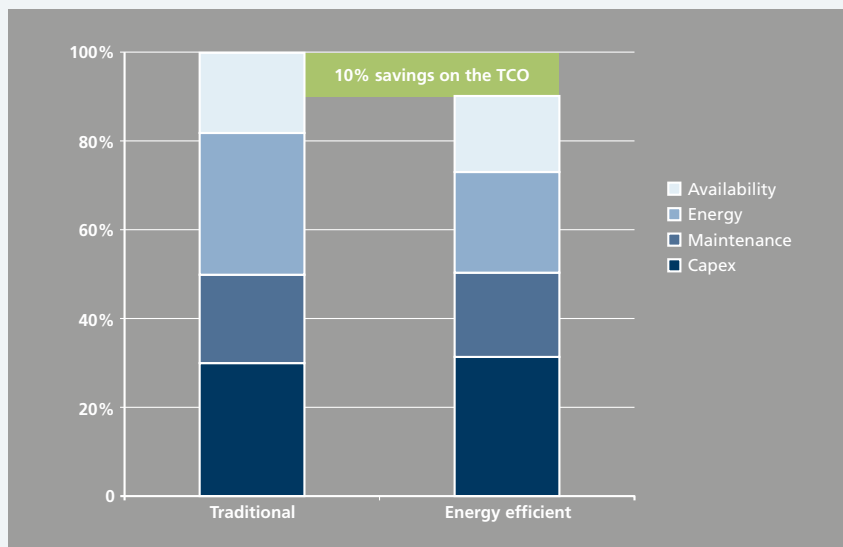
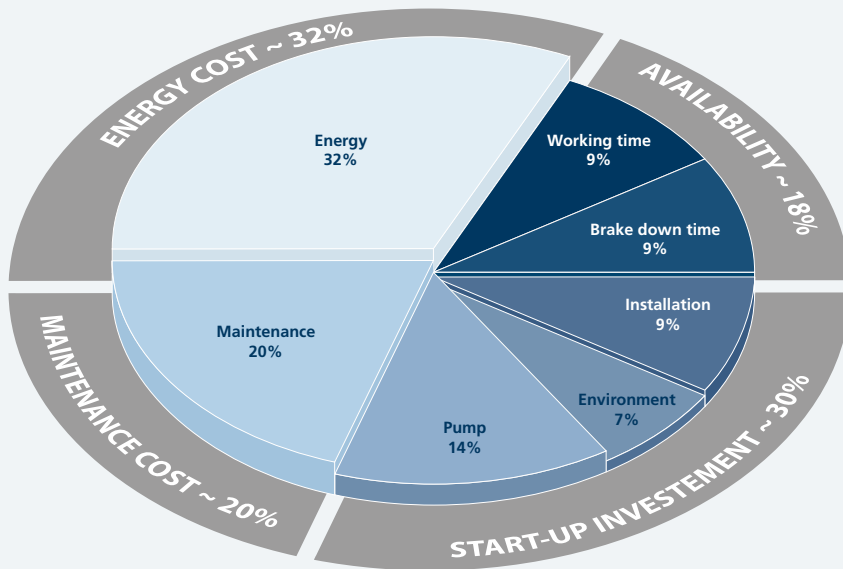
CAPEX (CAPital Expenditure)

Funds to acquire or upgrade physical assets such as property, industrial buildings or equipment.

OPEX (OPerating Expenditure)

Expenses related to the production of its goods and services:

- Energy consumption
- Productivity
- Maintenance (labor)
- Spare parts
- Reliability (uptime)
- Life time



Energy Efficient Solutions

Using electrical energy intelligently across an optimized selection

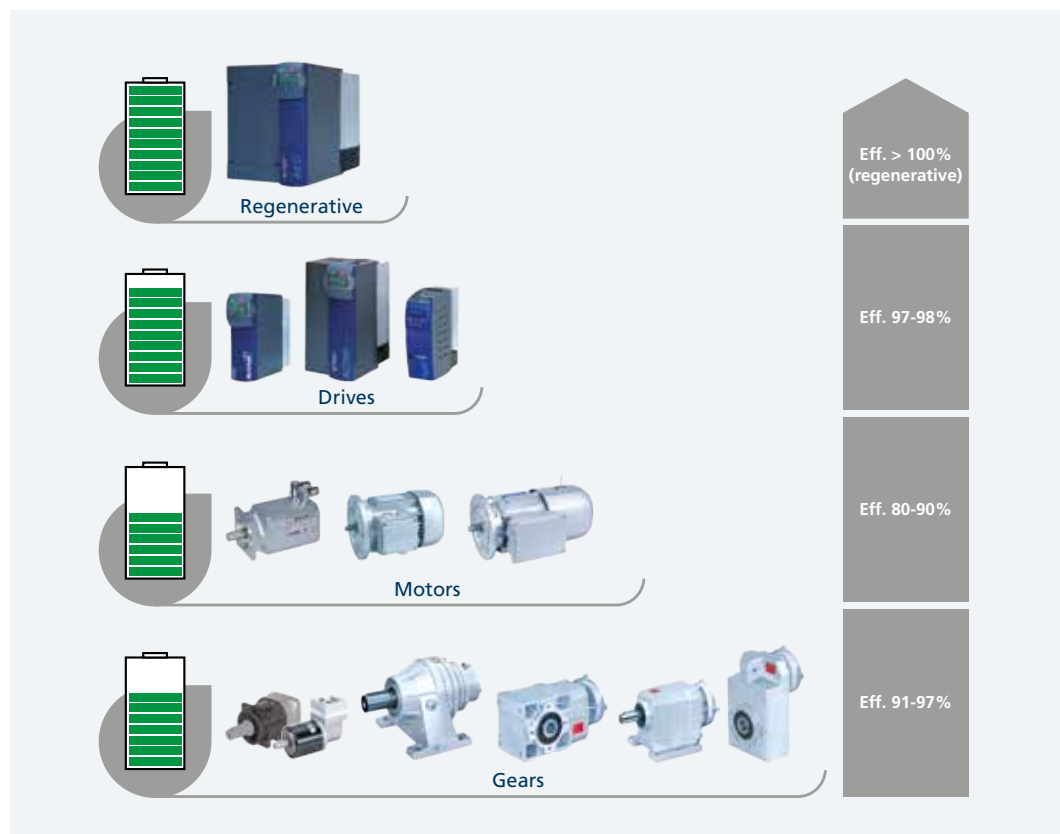
- Optimizing whole configuration to operate at maximum efficiency point

Converting energy with a high degree of efficiency using high efficiency product

- Frequency inverter
- Standby functionality
- Synchronous motors and high efficiency AC motors
- Gearboxes with high efficiency

Using energy recovering solutions like

- Energy exchange between the drives
- Intermediate storage of the braking energy
- Braking energy feeding back



Standby Function

Agile inverter dramatically reduces consumption in no working time by disconnecting all unessential electronic devices:

- Keypad screen
- Cooling fans (if possible)
- Internal unnecessary circuits

Typical Cost Savings in Applications*

Application	Duty cycle	Cost savings
Textile machines	80 - 90%	28 ... 56 €
Packaging machines	55 - 65%	98 ... 126 €
Heating, ventilation, air cond.	15 - 20%	224 ... 238 €
Drilling machines	5 - 10%	252 ... 266 €
Crane, hoist	4 - 8%	258 ... 269 €
Door actuation	< 1%	> 277 €

(*) Saved energy thanks to this feature, with energy cost of 0.20 € / kWh, based on 10 years life of the inverter.

Industry Sector Expertise

Bonfiglioli Riduttori brings decades of experience supporting customers across a broad spectrum of industry sectors. We are capable of meeting the most diverse demands providing you with the right technologies you require. Our industry expertise means we understand your

applications: products and requirements must correspond and form a solution that matches your application.

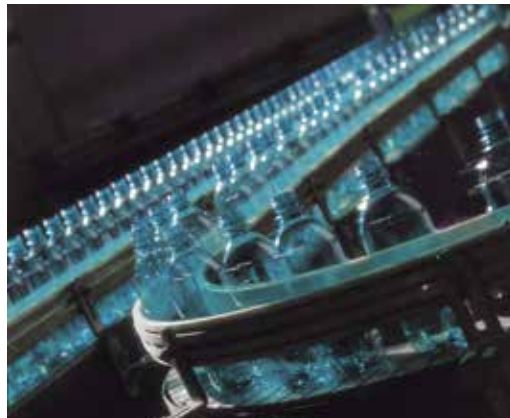
Our high-quality and energy-efficient drive and automation solutions always offer you customized and complete approaches.

Some of the industrial sectors we serve

- Commercial HVAC
- Machine Tools
- Packaging & Labeling
- Food, Beverage & Tobacco
- Textiles
- Semiconductor
- Printing
- Robotics
- Materials Handling
- Rubber & Plastics
- Paper & Paperboard
- Conveyors
- Water treatment
- Waste treatment
- Elevators & Escalators
- Electronics & Electronics Assembly
- Cranes & Hoists
- Woodworking
- Medical & Scientific
- Energy production
- Renewable Energy
- Material Transformation
- Mining
- Glass Working Machinery
- Aerospace & Defence
- Sugar refinery



Packaging industry



Beverage industry



Textile industry



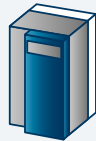
Lifting industry

Food & Beverage technology conveyors Bonfiglioli's typical solutions

Our AGILE series provide in a sensorless vector inverter innovations able to boost plant efficiency through open loop vector control of brushless motors, MMC memory cards and web control. Our

inverters are easy to install, program and quick to start-up. Thanks to gentle start and stops, we can prevent bottle scuffing and avoid bottle jam.

Inverters Agile series



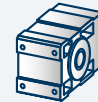
Type	Power kW
AGL402-02	0.25
AGL402-03	0.37
AGL402-05	0.55
AGL402-07	0.75
AGL402-09	1.1
AGL402-11	1.5

Motors BE series



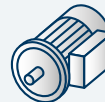
Type	kW rating
BE 80B	0.75
BE 90S	1.1
BE 90LA	1.5

Gears A series



Type	Torque [Nm]
A 05	100
A 10	150
A 20	250
A 30	410
A 35	600
A 41	850

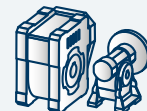
Motors BN series



Type	kW rating
BN 56A	0.06
BN 56B	0.09
BN 63A	0.12
BN 63B	0.18
BN 63C	0.25
BN 71A	0.25
BN 71B	0.37

Type	kW rating
BN 71C	0.55
BN 80A	0.55
BN 80B	0.75
BN 80C	1.1
BN 90S	1.1
BN 90LA	1.5

Gears VF W & VF W_EP series



Type	Torque [Nm]
VF 27	13
VF 30	24
VF 44	55
VF 49	88
W 63	190
W 75	320
W 86	440



General purpose pallets & boxes conveyors Bonfiglioli's typical solutions

Movement ramp speed control permits starting and braking phases to be calibrated in order to eliminate the risk of loads falling. The inverter positioning system is precise and reliable and allows pallets to be positioned correctly even at high operating speeds.

In our Active Cube series, we offer a full series of solution & servo drives, compact and flexible, dedicated to high demanding industrial automation systems and to motion control architectures. We are able to control and supervise the all system through the most important communication protocols

(CANopen/CiA, EtherCAT/ETG, Profibus, Profinet, DeviceNet, Ethernet).

Synchronisation of the entire movement system allows picking & placing, movement speeds and action times to be calibrated precisely in order to avoid congestion, breakages and waste, etc.

Operating speeds are subject to variable calibration and adapted to suit operating conditions, in order to guarantee efficiency and reduce waste. Thanks to these mechanisms, movements are optimised, guaranteeing maximum flexibility and short set-up times.

Inverters Active Cube series



Type	Power kW (400V)
ACU401-01	0.25
ACU401-03	0.37
ACU401-05	0.55
ACU401-07	0.75
ACU401-09	1.1
ACU401-11	1.5
ACU401-12	1.85
ACU401-13	2.2
ACU401-15	3.0

Type	Power kW (230V)
ACU201-01	0.25
ACU201-03	0.37
ACU201-05	0.55
ACU201-07	0.75
ACU201-09	1.1
ACU201-11	1.5
ACU201-13	2.2
ACU201-15	3.0

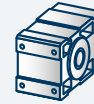
Motors BE series



Type	kW rating
BE 80B	0.75
BE 90S	1.1
BE 90LA	1.5
BE 100LA	2.2
BE 100LB	3

Gears A series

Type	Torque [Nm]
A 05	100
A 10	150
A 20	250
A 30	410
A 35	600
A 41	850



Gears F series

Type	Torque [Nm]
F 10	140
F 20	250
F 25	400
F 31	600
F 41	1100



Gears C series

Type	Torque [Nm]
C 05	45
C 11	100
C 21	200
C 31	300
C 35	450
C 41	600
C 51	1000



Energy saving conveyors Bonfiglioli's typical solutions


No matter whether static or dynamic, lifting or lowering, moving or positioning: our wide array of block modules and solutions allow a smooth internal material flow.

With smart conveyors we guarantee an optimised connection to upstream and downstream systems. In addition, we support you in making these processes flexible, individual and energy-efficient. Solutions are chosen to meet operational and efficiency needs, and can therefore vary widely in type and complexity. The smartest solutions permit

extremely competitive TCOs thanks both to low initial investment costs and guaranteed energy efficiency. Solutions with brushless and sensorless motors are ideal for the control of conveyors in combination with high-efficiency gearboxes.


Bonfiglioli can offer other energy saving possibilities such as, in phases during which the system dissipates energy (e.g. lowering lifts) our regenerative inverters can recover it instead of allowing this.

Inverters Agile series



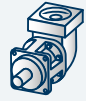
Type	Power kW
AGL402-02	0.25
AGL402-03	0.37
AGL402-05	0.55
AGL402-07	0.75
AGL402-09	1.1
AGL402-11	1.5
AGL402-13	2.2
AGL402-15	3.0

Motors BMD series



Type	Torque [Nm]
BMD 65 1.7	1.7
BMD 65 2.2	2.2
BMD 82 3.2	3.2
BMD 82 4.4	4.4
BMD 102 7.2	7.2
BMD 102 9.6	9.6
BMD 118 10.2	10.2
BMD 118 14	14
BMD 145 16.8	16.8
BMD 145 22	22
BMD 170 34	34
BMD 160L	125

Gears TQK series




Type	Rated torque [Nm]
TQK 060	30
TQK 070	70
TQK 090	200
TQK 130	400
TQK 160	800

Type	Acceleration torque [Nm]
TQK 060	45
TQK 070	100
TQK 090	300
TQK 130	600
TQK 160	1200

Backlash [arcmin]		
Type	2 stage	3 stages
Standard	5	7
TQK 060	6	8
TQK 070		


Motors BTS series



Type	Torque [Nm]
BTD2 0026	0.26
BTD2 0053	0.53
BTD2 0074	0.74
BTD2 0095	0.95
BTD3 0095	0.95
BTD3 0190	1.9
BTD3 0225	3.25
BTD3 0420	4.2

Type	Torque [Nm]
BTD4 0410	4.1
BTD4 0630	6.3
BTD4 0860	8.6
BTD5 1160	11.6
BTD5 1490	14.9
BTD5 1870	18.7
BTD5 2730	27.3

Gears LCK series




Type	Rated torque [Nm]
LCK 050	12
LCK 070	25
LCK 090	43
LCK 120	110
LCK 155	300

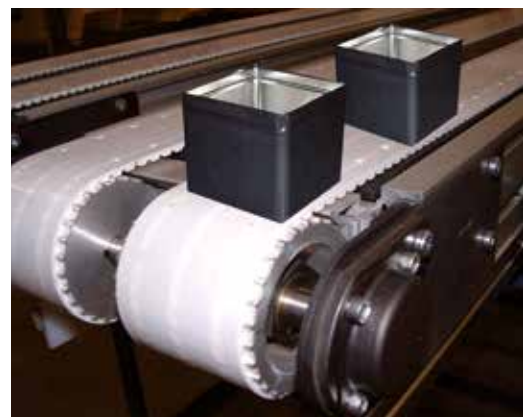
Type	Acceleration torque [Nm]
LCK 050	20
LCK 070	35
LCK 090	80
LCK 120	190
LCK 155	450

Backlash [arcmin]		
Type	2 stages	3 stages
Standard	6	8

Gears A series



Type	Torque [Nm]
A 05	100
A 10	150
A 20	250
A 30	410
A 35	600



Wood working tooling machinery Bonfiglioli's typical solutions

Bonfiglioli's experience in the field of woodworking machines is especially extensive in high-speed and spindle applications.

Woodworking machine spindles (asynchronous and synchronous) require perfect control of supply currents as well as torque and rotation speed (with or without feedback control).

Solutions that are especially designed for this sector permit us to guarantee extremely competitive

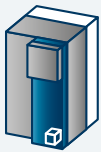
TCOs and the certainty of satisfying even the most specific customer needs.

Benefits:

- Energy saving and efficiency
- Possibility of energy recovery during braking phases
- Reduced heat generation thanks to accurate speed and movement control
- Possibility of custom solutions

Axes

Inverters Active Cube series



Type	Power kW (400V)
ACU401-01	0.25
ACU401-03	0.37
ACU401-05	0.55
ACU401-07	0.75
ACU401-09	1.1
ACU401-11	1.5

Type	Power kW (230V)
ACU201-01	0.25
ACU201-03	0.37
ACU201-05	0.55
ACU201-07	0.75
ACU201-09	1.1
ACU201-11	1.5

Motors BMD series

Type	Torque [Nm]
BMD 65 1.7	1.7
BMD 65 2.2	2.2
BMD 82 3.2	3.2
BMD 82 4.4	4.4
BMD 102 7.2	7.2
BMD 102 9.6	9.6
BMD 118 10.2	10.2
BMD 118 14	14
BMD 145 16.8	16.8
BMD 145 22	22
BMD 170 34	34
BMD 160L	125



Gears MP series

Type	Rated torque [Nm]
MP 053	20
MP 060	30
MP 080	70
MP 105	170



Type	Acceleration torque [Nm]
MP 053	30
MP 060	45
MP 080	100
MP 105	250

Backlash [arcmin]			
Type	1 stage	2 stages	3 stages
Standard	15	15	17
Reduced	10	10	12

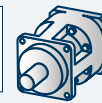
Motors BTD series



Type	Torque [Nm]
BTD2 0026	0.26
BTD2 0053	0.53
BTD2 0074	0.74
BTD2 0095	0.95
BTD3 0095	0.95
BTD3 0190	1.9
BTD3 0325	3.25
BTD3 0420	4.2

Gears TQ series

Type	Rated torque [Nm]
TQ 060	30
TQ 070	70
TQ 090	200



Type	Acceleration torque [Nm]
TQ 060	45
TQ 070	100
TQ 090	300

Backlash [arcmin]		
Type	1 stag	2 stages
Standard	3	5
TQ 060	4	6
TQ 070		

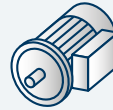
Handling

Inverters Agile series



Type	Power kW
AGL402-02	0.25
AGL402-03	0.37
AGL402-05	0.55
AGL402-07	0.75
AGL402-09	1.1
AGL402-11	1.5
AGL402-13	2.2
AGL402-15	3.0
AGL402-18	4.0

Motors BN series



Type	kW rating
BN 63C	0.25
BN 71A	0.25
BN 71B	0.37
BN 71C	0.55
BN 80A	0.55
BN 80B	0.75
BN 80C	1.1

Type	kW rating
BN 90S	1.1
BN 90LA	1.5
BN 90LB	1.85
BN 100LA	2.2
BN 100LB	3
BN 112M	4

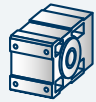
Gears W series

Type	Torque [Nm]
W 63	190
W 75	320



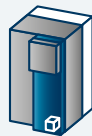
Gears A series

Type	Torque [Nm]
A 10	150
A 20	250
A 30	410



High speed spindle drive

Inverters Active Cube series



Type	Power kW
ACU401-21	7.5
ACU401-22	9.2
ACU401-23	11
ACU401-25	15
ACU401-27	18.5

Inverters Active series



Type	Power kW
ACT401-21	7.5
ACT401-22	9.2
ACT401-23	11
ACT401-25	15
ACT401-27	18.5

Inverters Agile series



Type	Power kW
AGL402-21	7.5
AGL402-22	9.2
AGL402-23	11



Textile spinning, winding and flyers Bonfiglioli's typical solutions

Bonfiglioli boasts many years of experience in the textile sector through its centre of excellence, Bonfiglioli Vectron.

Our strengths include:

- Customisation according to client specifications
- Precise and reliable control

- Sector-specific safety systems to avoid problems like yarn breakage, etc.
- Smooth winding speeds and precisely controlled yarn tension at all times
- Controlled shut-down functions
- Highly energy-efficient solutions

Inverters Active Cube series



Type	Power kW
ACU401-01	0.25
ACU401-03	0.37
ACU401-05	0.55
ACU401-07	0.75
ACU401-09	1.1
ACU401-11	1.5
ACU401-12	1.85
ACU401-13	2.2
ACU401-15	3.0
ACU401-18	4.0
ACU401-19	5.5
ACU401-21	7.5
ACU401-22	9.2
ACU401-23	11
ACU401-25	15
ACU401-27	18.5
ACU401-29	22

Type	Torque [Nm]
BMD 65 1.7	1.7
BMD 65 2.2	2.2
BMD 82 3.2	3.2
BMD 82 4.4	4.4
BMD 102 7.2	7.2
BMD 102 9.6	9.6
BMD 118 10.2	10.2
BMD 118 14	14
BMD 145 16.8	16.8
BMD 145 22	22
BMD 170 34	34
BMD 160L	125

Motors BMD series



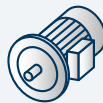
Motors BTD series

Type	Torque [Nm]
BTD2 0026	0.26
BTD2 0053	0.53
BTD2 0074	0.74
BTD2 0095	0.95
BTD3 0095	0.95
BTD3 0190	1.9
BTD3 0325	3.25
BTD3 0420	4.2

Type	Torque [Nm]
BTD4 0410	4.1
BTD4 0630	6.3
BTD4 0860	8.6
BTD5 1160	11.6
BTD5 1490	14.9
BTD5 1870	18.7
BTD5 2730	27.3

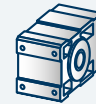


Motors BE series



Type	kW rating
BE 80B	0.75
BE 90S	1.1
BE 90LA	1.5
BE 100LA	2.2
BE 100LB	3
BE 112M	4
BE 132S	5.5
BE 132MA	7.5
BE 132MB	9.2
BE 160M	11
BE 160L	15
BE 180M	18.5
BE 180L	22

Gears A series



Type	Torque [Nm]
A 05	100
A 10	150
A 20	250
A 30	410
A 35	600
A 41	850
A 50	1500
A 55	2000
A 60	2800

Gears F series



Type	Torque [Nm]
F 10	140
F 20	250
F 25	400
F 31	600
F 41	1100
F 51	1800
F 60	2900




Stretch wrapping machine Bonfiglioli's typical solutions

Bonfiglioli can supply advanced solutions for stretch-wrapping machines that guarantee great reliability in both synchronisation and positioning. Our solutions feature systems for stopping the machine safely and accurately to prevent film

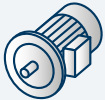
breakage. They also ensure high energy efficiency thanks to the use of specific inverter functions and high-efficiency drive train components.

Inverters Agile series



Type	Power kW
AGL402-03	0.37
AGL402-05	0.55
AGL402-07	0.75
AGL402-09	1.1
AGL402-11	1.5
AGL402-13	2.2
AGL402-15	3.0
AGL402-18	4.0
AGL402-19	5.5
AGL402-21	7.5
AGL402-22	9.2
AGL402-23	11

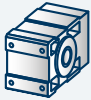
Motors BE series



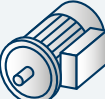
Type	kW rating
BE 80B	0.75
BE 90S	1.1
BE 90LA	1.5

Gears A series

Type	Torque [Nm]
A 10	150
A 20	250
A 30	410
A 35	600



Motors BN series




Type	kW rating
BN 56A	0.06
BN 56B	0.09
BN 63A	0.12
BN 63B	0.18
BN 63C	0.25
BN 71A	0.25
BN 71B	0.37

Type	kW rating
BN 71C	0.55
BN 80A	0.55
BN 80B	0.75
BN 80C	1.1
BN 90S	1.1
BN 90LA	1.5


Gears C series

Type	Torque [Nm]
C 11	100
C 21	200
C 31	300
C 35	450
C 41	600



Gears W series

Type	Torque [Nm]
W 63	190
W 75	320





Marble and stone working tooling machinery Bonfiglioli's typical solutions

Marble and stone machines require perfect control of supply currents as well as torque and rotation speed. Solutions that are especially designed for this sector permit us to guarantee extremely competitive TCOs and the certainty of satisfying even the most specific customer needs.

Benefits:

- Energy saving and efficiency;
- Possibility of energy recovery during braking phases;
- Reduced heat generation thanks to accurate speed and movement control;
- Possibility of custom solutions.

Axes

Inverters Active Cube series



Type	Power kW (400V)
ACU401-01	0.25
ACU401-03	0.37
ACU401-05	0.55
ACU401-07	0.75
ACU401-09	1.1
ACU401-11	1.5

Type	Power kW (230V)
ACU201-01	0.25
ACU201-03	0.37
ACU201-05	0.55
ACU201-07	0.75
ACU201-09	1.1
ACU201-11	1.5

Motors BMD series

Type	Torque [Nm]
BMD 65 1.7	1.7
BMD 65 2.2	2.2
BMD 82 3.2	3.2
BMD 82 4.4	4.4
BMD 102 7.2	7.2
BMD 102 9.6	9.6
BMD 118 10.2	10.2
BMD 118 14	14
BMD 145 16.8	16.8
BMD 145 22	22
BMD 170 34	34
BMD 160L	125



Gears MP series

Type	Rated torque [Nm]
MP 053	20
MP 060	30
MP 080	70
MP 105	170



Type	Acceleration torque [Nm]
MP 053	30
MP 060	45
MP 080	100
MP 105	250

Backlash [arcmin]			
Type	1 stage	2 stages	3 stages
Standard	15	15	17
Reduced	10	10	12

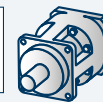
Motors BTD series



Type	Torque [Nm]
BTD2 0026	0.26
BTD2 0053	0.53
BTD2 0074	0.74
BTD2 0095	0.95
BTD3 0095	0.95
BTD3 0190	1.9
BTD3 0325	3.25
BTD3 0420	4.2

Gears TQ series

Type	Rated torque [Nm]
TQ 060	30
TQ 070	70
TQ 090	200



Type	Acceleration torque [Nm]
TQ 060	45
TQ 070	100
TQ 090	300

Backlash [arcmin]		
Type	1 stag	2 stages
Standard	3	5
TQ 060		
TQ 070	4	6

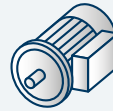
Handling

Inverters Agile series



Type	Power kW
AGL402-02	0.25
AGL402-03	0.37
AGL402-05	0.55
AGL402-07	0.75
AGL402-09	1.1
AGL402-11	1.5
AGL402-13	2.2
AGL402-15	3.0
AGL402-18	4.0

Motors BN series



Type	kW rating
BN 63C	0.25
BN 71A	0.25
BN 71B	0.37
BN 71C	0.55
BN 80A	0.55
BN 80B	0.75
BN 80C	1.1

Type	kW rating
BN 90S	1.1
BN 90LA	1.5
BN 90LB	1.85
BN 100LA	2.2
BN 100LB	3
BN 112M	4

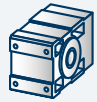
Gears VF series

Type	Torque [Nm]
VF 63	190
VF 75	320



Gears A series

Type	Torque [Nm]
A 10	150
A 20	250
A 30	410



High speed spindle drive

Inverters Active Cube series



Type	Power kW
ACU401-25	15
ACU401-27	18.5
ACU401-29	22
ACU401-31	30
ACU401-33	37
ACU401-35	45
ACU401-37	55

Inverters Active series



Type	Power kW
ACT401-25	15
ACT401-27	18.5
ACT401-29	22
ACT401-31	30
ACT401-33	37
ACT401-35	45
ACT401-37	55



Vertical Stocking System Bonfiglioli's typical solutions

Bonfiglioli boasts extensive practical experience in the management of vertical stocking automatic logistical systems as well as high co-engineering capacity, to meet customer requirements. Our highly energy-efficient solutions can not only optimise energy consumption during lifting movements but also recover energy during the lowering phase – energy that would otherwise be

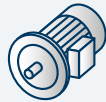
lost. We can provide solutions with competitive TCOs thanks to control systems that can handle the various movements (lifting/lowering, pick out/place in) using just one inverter to minimise initial investment. We offer reliable and precise solutions to meet customer needs in terms of dynamics and performance.

Inverters Active Cube series



Type	Power kW
ACU401-15	3
ACU401-18	4
ACU401-19	5.5
ACU401-21	7.5
ACU401-22	9.2
ACU401-23	11
ACU401-25	15

Motors BE series



Type	kW rating
BE 80B	0.75
BE 90S	1.1
BE 90LA	1.5
BE 100LA	2.2
BE 100LB	3
BE 112M	4
BE 132S	5.5
BE 132MA	7.5
BE 132MB	9.2
BE 160M	11
BE 160L	15

Gears A series

Type	Torque [Nm]
A 05	100
A 10	150
A 20	250
A 30	410
A 35	600
A 41	850



Gears F series

Type	Torque [Nm]
F 20	250
F 25	400
F 31	600
F 41	1100

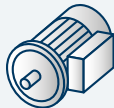


Inverters Agile series



Type	Power kW
AGL402-02	0.25
AGL402-03	0.37
AGL402-05	0.55
AGL402-07	0.75

Motors BN series



Type	kW rating
BN 63C	0.25
BN 71A	0.25
BN 71B	0.37
BN 71C	0.55
BN 80A	0.55

Gears VF series



Type	Torque [Nm]
VF 63	55
VF 75	88



One-Stop Shop

Our services

All Bonfiglioli solutions enjoy a prompt and reliable technical assistance worldwide. Specialist personnel with an in-depth knowledge of the market in which they work provide pre-sales,

installation, after-sales and user documentation service. In details, we offer a full range of services tailored to suit our customers wishes and needs.

Before installation		Mechanical and Mechatronic studies
		Product customization
		Realization of prototypes, tests and analysis reports
		On-site activities
		Start-up assistance
		Commissioning
	After installation	
		Customer service

Training

Agile Inverter

Innovative, eco-friendly, user-friendly.

Agile series provide in a sensorless vector inverter innovations able to boost plant efficiency through open loop vector control of brushless motors and MMC memory cards.

Agile inverters are easy to install, program and quick to start-up without the needs of specialized resources.



Power range (AGL402)

0.25 ... 11 kW / three-phase 320-530V / 50-60 Hz ($\pm 10\%$)

Power range (AGL202)

0.12 ... 7.5 kW / single or three-phase 200-240V / 50-60 Hz ($\pm 10\%$)

Motor compatibility

Two types of motor:

Asynchronous AC motors

Permanent magnet synchronous (brushless) motors

Type of control

Selectable control function:

V/f control for asynchronous motors

Sensor-less vector control for asynchronous motors

Sensor-less vector control for brushless motors

Degree of protection

IP20 (EN 60529)

Main hardware features

Power supply from common DC bus

Integrated braking module

Short circuit / ground fault protection

Integrated Safe Torque Off safety system

Plug-in and programmable control terminals

6 digital inputs, 2 multifunctional A/D inputs

1 multifunctional I/O, 1 digital output

1 multifunctional A/D/pulse output, 1 relay output (alarm)

available power outputs: +24 V DC, +10 V DC

optional separate 24 V DC electronic power supply

standard serial interfaces: RS232, RS485, Systembus

Integrated Modbus

Optional expansion modules

Resource Pack memory card

Optional communication modules

PROFIBUS-DPV1, CANopen, RS232, RS485, DeviceNet, EtherCAT®, PROFINET, VABus/TCP*, Modbus TCP*, EtherNet I/P

PC software

VPlus suite

Main software features

Permanent motor tuning

Selective Multi-Motor Control (SMMC)

Energy saving function

Ready to use application masks

Integrated maintenance wizard

Alarm history

Motor and inverter state memory

Autodiagnosics

Integrated PLC function with graphic development environment

Integrated oscilloscope function

Customisable units of measurement

(*) Optional 2 ports.

Type	Power kW
AGL402-02	0.25
AGL402-03	0.37
AGL402-05	0.55
AGL402-07	0.75
AGL402-09	1.1
AGL402-11	1.5
AGL402-13	2.2
AGL402-15	3.0
AGL402-18	4.0
AGL402-19	5.5
AGL402-21	7.5
AGL402-22	9.2
AGL402-23	11

Type	Power kW (3ph)
AGL202-02	0.25
AGL202-03	0.37
AGL202-05	0.55
AGL202-07	0.75
AGL202-09	1.1
AGL202-11	1.5
AGL202-13	2.2
AGL202-15	3.0
AGL202-18	4.0
AGL202-19	5.5
AGL202-21	7.5

Type	Power kW (1ph)
AGL202-02	0.12
AGL202-03	0.18
AGL202-05	0.25
AGL202-07	0.37
AGL202-09	0.55
AGL202-11	0.75
AGL202-13	1.1
AGL202-15	1.5
AGL202-18	2.2
AGL202-19	3
AGL202-21	3



Active Solution Drive

Versatility, rating, performances.

A full series of flexible solution drives that are versatile and extremely easy to use, featuring control for high performance and unbeatable advantages in their scalability and compact size.

Type	Power kW
ACT401-05	0.55
ACT401-07	0.75
ACT401-09	1.1
ACT401-11	1.5
ACT401-12	1.85
ACT401-13	2.2
ACT401-15	3.0
ACT401-18	4.0
ACT401-19	5.5
ACT401-21	7.5
ACT401-22	9.2

ACT401-23	11
ACT401-25	15
ACT401-27	18.5
ACT401-29	22
ACT401-31	30
ACT401-33	37
ACT401-35	45
ACT401-37	55
ACT401-39	65
ACT401-43	75
ACT401-45	90
ACT401-47	110
ACT401-49	132

ACT201-05	0.55
ACT201-07	0.75
ACT201-09	1.1
ACT201-11	1.5
ACT201-13	2.2
ACT201-15	3.0
ACT201-18	4.0
ACT201-19	5.5
ACT201-21	7.5
ACT201-22	9.2

Power range (ACT401)

0.55 - 132 kW / three-phase 360 V - 480 V / 50 Hz - 60 Hz ($\pm 10\%$)

Power range (ACT201)

0.55 - 9.2 kW / single or three-phase 200 V - 240 V / 50 Hz - 60 Hz ($\pm 10\%$)

Type of control

Selectable Vector control function:
sensor-less control, sensor-less field oriented control, field oriented control with encoder

Overload capacity

150% for 60s / 200% for 1s

Switching frequency

2, 4, 8, 12, 16 kHz

Enclosure

IP20 (EN 60529)

EMC filter

Integrated up to 9.2 kW (EN 61800-3)

Main standard hardware features

Integrated dynamic braking module, DC link connection, Standard 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)

Optional expansion modules

Expansion of analog, digital inputs and outputs, additional encoder or resolver input, repetition frequency output, System bus

Optional communication modules

RS232, RS485, PROFIBUS-DP, CANopen

Optional keypad

Removable keypad KP500 with copy function, Cabinet mounting kit and handheld for keypad

Optional PC software

VPlus for Windows operating system with set-up, terminal monitor, actual value window, scope function and teleservice

Main software features

Programmable reference value channel, Programmable start and stop characteristics, Motor potentiometer, Programmable S curve, 4 data sets, Auto start-up and commissioning, Auto reset after failure, Auto start after power failure, PI controller, Programmable logic and timer functions, Volume flow control, Bump-less torque / speed changeover, Master / Slave function with electronic gear, Enhanced positioning function, Mechanical brake control free of friction, Index and stability control, Intelligent current limits, Power failure regulation, Comprehensive monitoring and protection capabilities, High speed control, Function for lift, crane and winch applications, 3 different brake Management Functions.

Active Cube Solution & Servo Drive

Versatility, promptness, accuracy.

A full series of solution & servo drives, compact and flexible, dedicated both to high demanding industrial automation systems and to motion control architectures, all matched with Bonfiglioli servomotors.



Power range (ACU401)

0.25 ... 132 kW / three-phase 360 -480V / 50-60 Hz (± 10%)

Power range (ACU201)

0.25 ... 9.2 kW / single or three-phase 200 -240V / 50-60 Hz (± 10%)

Type of control

Selectable Vector control function: sensor-less control, sensor-less field oriented control, field oriented control with speed sensor, field oriented control of synchronous servomotors with speed/position sensor

Overload capacity

200% for 1min (size 01 and 03) / 150% for 1min (other ratings),
Shorter overload: 200% for 1sec all ratings

Switching frequency

2, 4, 8, 12, 16 kHz

Enclosure

IP20 (EN 60529)

EMC filter

Integrated up to 9.2 kW (EN 61800-3)

Main standard hardware features

Integrated safe torque off function, External 24Vdc supply for control board and electronics, Integrated dynamic braking module, DC link connection, Standard encoders interface, Resolver module for feedback acquisition from Bonfiglioli servomotors, 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)

Optional expansion modules

Expansion of analog, digital inputs and outputs, additional encoder or resolver input and SinCos, Hiperface or EnDat 2.1 Encoder, repetition frequency output, System bus

Optional communication modules

PROFIBUS-DPV1, CANopen, RS232, RS485, DeviceNet, EtherCAT®, PROFINET, VABus/TCP*, Modbus TCP*, EtherNet I/P

Optional keypad

Removable keypad KP500 with copy function, Cabinet mounting kit and handheld for keypad

PC software VPlus

Windows-based engineering "workbench" with easy interface, Drive parameters set-up, Terminal monitor, Actual value window, Scope function, Bonfiglioli servomotors quick-configuration window, Motion block parameters management, Teleservice

Main software features

32 Programmable Motion blocks, 36 Homing functions according to CANopen DSP4.02, Unit converter, Jog function, Absolute and relative positioning modes, Touch probe, Teach-In functions, Rotary table control, Programmable reference value channel, Programmable start and stop characteristics, Motor potentiometer, Programmable S curve, 4 data sets, Auto start-up and commissioning, Auto reset after failure, Auto start after power failure, PI controller, Programmable logic and timer functions, Bump less torque / speed changeover, Master / Slave function with electronic gear, Index and stability control, Intelligent current limits, Power failure regulation, Comprehensive monitoring and protection capabilities, High speed control, Function for lift, crane and winch applications, 3 different brake Management Functions. Advanced application functions: advanced brake release control, spindle control up to 1000Hz, traverse function for winders, Volume flow control, load evaluation.

(*) Optional 2 ports.

Type	Power kW
ACU401-01	0.25
ACU401-03	0.37
ACU401-05	0.55
ACU401-07	0.75
ACU401-09	1.1
ACU401-11	1.5
ACU401-12	1.85
ACU401-13	2.2
ACU401-15	3.0
ACU401-18	4.0
ACU401-19	5.5
ACU401-21	7.5
ACU401-22	9.2
ACU401-23	11
ACU401-25	15
ACU401-27	18.5
ACU401-29	22
ACU401-31	30
ACU401-33	37
ACU401-35	45
ACU401-37	55
ACU401-39	65
ACU401-43	75
ACU401-45	90
ACU401-47	110
ACU401-49	132
ACU201-01	0.25
ACU201-03	0.37
ACU201-05	0.55
ACU201-07	0.75
ACU201-09	1.1
ACU201-11	1.5
ACU201-13	2.2
ACU201-15	3.0
ACU201-18	4.0
ACU201-19	5.5
ACU201-21	7.5
ACU201-22	9.2



S2U Variable Frequency Drive

The Ideal drive for your lean application projects.

Intuitive and simple, but powerful and effective.

S2U is the Bonfiglioli Vectron compact Inverter for efficient speed and torque control of electric motors, up to 2.2kW.

The simple installation and use, together with connectivity and outstanding range of functions, make it the perfect drive for the control of those applications where productivity and short time to market are critical.

Type	Power kW
S2U230S-02	0.20
S2U230S-03	0.40
S2U230S-07	0.75
S2U230S-11	1.5
S2U230S-13	2.2

Power range

0.20 ... 2.2 kW / single-phase 200-240V / 50-60 Hz (+10, -15%)

Type of control

V/F control with automatic torque compensation function

Overload capacity

150% for 60s

Switching frequency

1-16 kHz

Enclosure

IP20

EMC filter

Integrated Class C2 filter

Main standard hardware features

- 5 models in 2 frame sizes
- 2 Analog Input (0-10V and 0-20 or 4-20mA)
- 5 Digital Input (programmable multifunction)
- 1 Analog Output (programmable multifunction).
- 1 Relay output (programmable multifunction).
- 1 RJ45 terminal for communication with PC.

Keypad

Built-in standard keypad with potentiometer

Main functions

- 100% configuration compatibility with Bonfiglioli Synthesis series
- Selectable auto re-start after power loss
- 2 acc/dec times - 4 S curves available
- Overload detection
- PID control
- Torque boost
- Stall prevention
- Motor temperature protection
- Heat sink overheat protection
- Selectable stop method
- JOG frequency
- Alarm history
- Short power loss override
- Output Short-Circuit protection
- DC injection braking.
- Auto sequencer. 8 preset speeds and 8 preset times.
- Momentary power loss start
- Auto restart after fault. 10 attempts.
- Direct start on Power up
- Parameter access lock

BMD series

Permanent Magnet AC servomotors



Bonfiglioli Permanent Magnet AC Synchronous motors series.

They are manufactured using the "salient pole" technology. The dimensions of the motor are drastically reduced, with considerable advantages in terms of torque density, overall dimensions and dynamic performance.

Thanks to the high quality and performance of the Neodymium iron boron rare-earth magnets maximize performance in terms of very high accelerations and withstand high overloads without risk of demagnetization of the magnets.

Stall torque

1.7 Nm ... 125 Nm

Rated speed

1600; 3000; 4500; 5500; 6000 min⁻¹

Power supply

230, 400 Vac

Inertia

0.04 ... 2.82 (Kg·m² × 10⁻³)

Conformity

2006/95/EC (LVD) and 2004/108/EC (EMC)

Electromagnetical Holding Brake (Optional)

24 Vdc

Additional flywheel (optional)

0.05 ... 7.00 (Kg·m² × 10⁻³)

Feedback

2-poles resolver with excitation frequency 8 KHz or 10 KHz

Absolute encoder EnDAT 2.1 (single turn / multiturn) encoder with sincos track

Absolute encoder Hiperface (single turn / multiturn) encoder with sincos track
Sensorless (no feed-back)

Degree of protection

IP65, IP67

Temperature sensor

PTC, KTY

Certification

CE, UL

Type	Torque [Nm]
BMD 65 1.7	1.7
BMD 65 2.2	2.2
BMD 82 3.2	3.2
BMD 82 4.4	4.4
BMD 102 7.2	7.2
BMD 102 9.6	9.6
BMD 118 10.2	10.2
BMD 118 14	14
BMD 145 16.8	16.8
BMD 145 22	22
BMD 170 34	34
BMD 160 L	125

BTD series

Compact AC brushless servomotors



A range of compact servomotors.

BTD Series servomotors are designed to provide effective solutions for applications demanding high efficiency, compact motors.

The extremely small size of these motors, achieved by the use of advanced materials and design technology, ensures exceptional dynamics and low temperature operation. Equipped with IP65 push-pull connectors (IP67 connectors are optional), in conformity to EMC requirements, and a PTC temperature probe with reinforced insulation, these motors guarantee secure electrical connections under a huge variety of operating conditions.

Stall torque

0.26 ... 27 Nm

Rated speed

3000, 4500 min⁻¹

Power supply

230, 400 Vac

Inertia

Low for BTD sizes from 0.26 Nm ... to 1 Nm

Conformity

2006/95/EC (LVD) and 2004/108/EC (EMC)

Electromagnetical Holding Brake (Optional)

24 Vdc

Feedback

2-poles resolver with excitation frequency 5 KHz or 10 KHz

Absolute encoder EnDAT 2.1 (single turn / multiturn) encoder with sincos track

Absolute encoder Hiperface (single turn / multiturn) encoder with sincos track

Temperature sensor

PTC

Certification

CE, UL

Type	Torque [Nm]
BTD2 0026	0.26
BTD2 0053	0.53
BTD2 0074	0.74
BTD2 0095	0.95
BTD3 0095	0.95
BTD3 0190	1.9
BTD3 0325	3.25
BTD3 0420	4.2
BTD4 0410	4.1
BTD4 0630	6.3
BTD4 0860	8.6
BTD5 1160	11.6
BTD5 1490	14.9
BTD5 1870	18.7
BTD5 2730	27.3



BCR series AC brushless servomotors

A range of high performance servomotors.

BCR Series servomotors are designed to satisfy the needs of continuous and transient high torque applications. Thanks to a wide torque range and above average instantaneous overload ratings, BCR servomotors are robust enough for even the most demanding drive applications. Equipped with IP65 push-pull connectors (IP67 connectors are optional), in conformity to EMC requirements, and with a PTC temperature probe with reinforced insulation, these motors guarantee a secure electrical connection under a huge variety of operating conditions.

Type	Torque [Nm]
BCR2 0020	0.2
BCR2 0040	0.4
BCR2 0060	0.6
BCR2 0080	0.8
BCR3 0065	0.65
BCR3 0130	1.3
BCR3 0250	2.5
BCR3 0300	3
BCR4 0100	1
BCR4 0260	2.6
BCR4 0530	5.3
BCR4 0750	7.5
BCR5 0660	6.6
BCR5 1050	10.5
BCR5 1350	13.5
BCR5 1700	17
BCR5 2200	22
BCR6 1350	13.5
BCR6 1900	19
BCR6 2200	22
BCR6 2900	29
BCR7 2700	27
BCR7 3200	32
BCR7 4000	40
BCR8 0400	40
BCR8 0680	68
BCR8 0930	93
BCR8 1150	115

Stall torque

0.2 ... 115 Nm

Rated speed

2000, 3000, 4500 rpm

Power supply

230, 400 Vac

Inertia

Low for BCR sizes from 0.2 Nm ... to 1 Nm

Conformity

2006/95/EC (LVD) and 2004/108/EC (EMC)

Electromagnetical Holding Brake (Optional)

Optional 24 Vdc

Feedback

2-poles resolver with excitation frequency 5 KHz or 10 KHz

Absolute encoder EnDAT 2.1 (single turn / multiturn) encoder with sincos track

Absolute encoder Hiperface (single turn / multiturn) encoder with sincos track

Temperature sensor

PTC

Certification

CE, UL

BE series IE2 AC motors



Class IE2 high efficiency AC motors.

The IEC-normalized BE motors comply with IEC 60034-30:2008 (efficiency classes) and all the applicable international standards, including the EMC and LV Directives. They are available in the 0.75 - 22 kW range in the foot and the flange mounting version, the latter in both the IM B5 and the IM B14 configuration. Single version is available with generally, two brake options offered, one DC and one AC supply, lending further flexibility to the system. Finally, all motors are inverter duty.

kW rating (4 pole)

0.75 ... 22 kW

Frame sizes

80B ... 180L

Pole numbers

2, 4, 6

Mounting options

Foot IM B3

Flange IM B5 and IM B14

Operation

50 Hz and 60 Hz

Compliance

IEC 60034-30:2008 (IE), 640/2009/EC

2006/95/EC (LVD) and 2004/108/EC (EMC)

Inverter duty

All frame sizes

Housing

Cast aluminium

Main brake features

DC and AC supply

Faster brake engage/disengage through electronically

Controlled AC/DC rectifier type NB, SB, NBR, SBR (options)

Main options

Thermistors and thermostat sensors

Separate supply forced ventilation

Line driver and push-pull incremental encoder

CSA and UL approved design

Type	kW rating
BE 80B	0.75
BE 90S	1.1
BE 90LA	1.5
BE 100LA	2.2
BE 100LB	3
BE 112M	4
BE 132S	5.5
BE 132MA	7.5
BE 132MB	9.2
BE 160M	11
BE 160L	15
BE 180M	18.5
BE 180L	22



BN series AC motors

A complete range of AC motors developed for gearmotor duty that will exceed expectations.

The IEC-normalized BN motors comply with all the applicable international standards, including the EMC and LV Directives. They are available in the 0.06 - 30 kW range in the foot and the flange mounting version, the latter in both the IM B5 and the IM B14 configuration. Single and multispeed versions available with generally, three brake options offered, one DC and two AC supply, lending further flexibility to the system. Finally, all motors are inverter duty.

Type	kW rating
BN 56A	0.06
BN 56B	0.09
BN 63A	0.12
BN 63B	0.18
BN 63C	0.25
BN 71A	0.25
BN 71B	0.37
BN 71C	0.55
BN 80A	0.55
BN 80B	0.75
BN 80C	1.1
BN 90S	1.1
BN 90LA	1.5
BN 90LB	1.85
BN 100LA	2.2
BN 100LB	3
BN 112M	4
BN 132S	5.5
BN 132MA	7.5
BN 132MB	9.2
BN 160MR	11
BN 160M	15
BN 180M	18.5
BN 180L	22
BN 200L	30

kW rating (4 pole)

0.06 ... 30 kW

Frame sizes

56A ... 200L

Pole numbers

2, 4, 6, 8, 2/4, 2/6, 2/8, 2/12, 4/6, 4/8

Mounting options

Foot IM B3

Flange IM B5 and IM B14

Operation

50 Hz and 60 Hz

Compliance

2006/95/EC (LVD) and 2004/108/EC (EMC)

Inverter duty

All frame sizes

Housing

Cast aluminium

Main brake features

DC and AC supply

Faster brake engage/disengage through electronically

Controlled AC/DC rectifier type NB, SB, NBR, SBR (options)

Main options

Thermistors and thermostat sensors

Separate supply forced ventilation

Line driver and push-pull incremental encoder

CSA and UL approved design

LC series

Precision planetary gearboxes



Low backlash at a competitive price.

The LC Series of planetary gearboxes is characterised by low backlash, silent running and easy motor coupling.

Torque range

12 ... 300 Nm

Maximum acceleration torque

20 ... 450 Nm

Transmission ratios

3 ... 100

Output configuration

Flange mounting

Input configuration

Wide range of coupling configurations to suit most common servomotors

Maintenance

Lubricated for life

Type	Rated torque [Nm]
LC 050	12
LC 070	25
LC 090	43
LC 120	110
LC 155	300

Type	Acceleration torque [Nm]
LC 050	20
LC 070	35
LC 090	80
LC 120	190
LC 155	450

Type	Backlash [arcmin]	
	1 stage	2 stages
Standard	12	15
Reduced	6	8

LCK series

Low backlash right-angle gearboxes



The economical, precise and efficient solution wherever space is at a premium.

LCK Series gearboxes offer the same exceptional performance as the LC in-line series, but their right-angle design makes them easier to install in tight spaces.

Torque range

10 ... 300 Nm

Maximum acceleration torque

20 ... 450 Nm

Transmission ratios

6 ... 100

Output configuration

Flange mounting

Input configuration

Wide range of coupling configurations to suit most common servomotors

Maintenance

Lubricated for life

Type	Rated torque [Nm]
LCK 050	12
LCK 070	25
LCK 090	43
LCK 120	110
LCK 155	300

Type	Acceleration torque [Nm]
LCK 050	20
LCK 070	35
LCK 090	80
LCK 120	190
LCK 155	450

Type	Backlash [arcmin]	
	2 stages	3 stages
Standard	6	8

MP series Precision planetary gearboxes



High precision for high performance.

The MP Series of precision planetary gearboxes is characterised by a wide range of mounting configurations, silent running, and superbly easy motor coupling.

Type	Rated torque [Nm]
MP 053	20
MP 060	30
MP 080	70
MP 105	170
MP 130	450
MP 160	700
MP 190	1000

Backlash [arcmin]

Type	1 stage	2 stages	3 stages
Standard	15	15	17
Reduced	10	10	12

Type	Acceleration torque [Nm]
MP 053	30
MP 060	45
MP 080	100
MP 105	250
MP 130	700
MP 160	950
MP 190	1200

Torque range

20 ... 1000 Nm

Maximum acceleration torque

30 ... 1200 Nm

Transmission ratios

3 ... 1000

Output configuration

Flange mounting

Input configuration

Wide range of coupling configurations to suit most common servomotors

Maintenance

Lubricated for life

TR series Precision planetary gearboxes



Maximum precision for highly dynamic applications.

TR Series planetary gearboxes set new standards for low backlash, superb reliability, extremely silent operation and compatibility with all leading brands of servomotor.

Type	Rated torque [Nm]
TR 053	20
TR 060	30
TR 080	70
TR 105	170
TR 130	450
TR 160	700
TR 190	1000

Backlash [arcmin]

Type	1 stage	2 stages	3 stages
Standard	5	5	7
Reduced	3	3	5

Type	Acceleration torque [Nm]
TR 053	30
TR 060	45
TR 080	100
TR 105	250
TR 130	700
TR 160	950
TR 190	1200

Torque range

20 ... 1000 Nm

Maximum acceleration torque

30 ... 1200 Nm

Transmission ratios

3 ... 1000

Output configuration

Flange mounting

Input configuration

Wide range of coupling configurations to suit most common servomotors

Maintenance

Lubricated for life

SL series

Precision planetary gearboxes for pulley drives



Perfect for timing belt drives.

The new SL Series from Tecnoingranaggi knows no rivals when it comes to compactness, efficiency and an optimised design for use with timing belt drive systems. SL Series precision planetary gearboxes are the ideal complement to servo-drive systems in applications that need to combine the precision and high overhung loads with ultra compact dimensions. SL Series, without pulleys, are also ideal for revolving tables.

Torque range

18 ... 110 Nm

Maximum acceleration torque

35 ... 190 Nm

Transmission ratios

3 ... 10

Output configuration

Flange mounting

Input configuration

Wide range of coupling configurations to suit most common servomotors

Maintenance

Lubricated for life

Type	Rated torque [Nm]
SL 070	25
SL 090	43
SL 120	110

Type	Acceleration torque [Nm]
SL 070	35
SL 090	80
SL 120	190

Backlash [arcmin]	
Type	
Standard	12
Reduced	6

KR series

Low backlash right-angle gearboxes



The economical, flexible and efficient solution for low backlash right-angle transmissions.

The KR Series of low backlash, right-angle gearboxes delivers the best possible combination of precision, dynamics and compactness. A wide range of input and output configurations combined with a selection of transmission ratios give these gearboxes unrivalled flexibility.

Torque range

3 ... 120 Nm

Maximum acceleration torque

14 ... 170 Nm

Transmission ratios

1, 2, 5

Output configuration

Hollow shaft with keyway, Solid shaft, single or double sided, Hollow shaft with shrink disc, Mounting flange

Input configuration

Wide range of coupling configurations to suit most common servomotors

Maintenance

Lubricated for life

Type	Rated torque [Nm]
KR 010	10
KR 020	24
KR 030	55
KR 040	120

Type	Acceleration torque [Nm]
KR 010	14
KR 020	35
KR 030	75
KR 040	170

Backlash [arcmin]	
Type	
Standard	8



TQ series Precision planetary gearboxes

The TQ Series of precision planetary gearboxes is designed to ensure highest positioning accuracy, highest torsional rigidity and higher performance for highly dynamic application.

The technical design of this gearbox also allows high axial and radial loads on the output shaft and a very silent operation.

Type	Rated torque [Nm]
TQ 060	30
TQ 070	70
TQ 090	200
TQ 130	400
TQ 160	800

Type	Acceleration torque [Nm]
TQ 060	45
TQ 070	100
TQ 090	300
TQ 130	600
TQ 160	1200

Backlash [arcmin]		
Type	1 stage	2 stages
Standard	3	5
TQ 060 TQ 070	4	6

Torque range

30 ... 800 Nm

Maximum acceleration torque

45 ... 1200 Nm

Transmission ratios

3 ... 100

Output configuration

Square flange mounting

Input configuration

Wide range of coupling configurations to suit most common servomotors

Maintenance

Lubricated for life

A series Helical-bevel gearmotors



When efficiency and versatility meet each other.

The A series is the first product to prove equally good in regard to efficiency and versatility within a highly competitive context, both performance- and price-wise.

Torque range

100 ... 14000 Nm

Mechanical rating ($n_1 = 1400 \text{ min}^{-1}$)

0.22 ... 150 kW

Gear ratios

5.4 ... 1715

Output

Foot and shaft mount - two bore options per size, Keyless shrink disc fitting, Metric or Inch series solid output shaft, Taper bushings matching more shaft diameters, Splined hollow shaft to DIN 5480

Input

IEC and NEMA motor adaptors
Servomotor adaptors
Metric or inch series solid input shaft

Main gear options

Backstop, Reinforced bearings for higher overhung load capacity, Reduced backlash

Applicable AC motors

Integral motors and brake motors - M series / ME series
IEC-normalized motors and brake motors - BN series / BE series
Single and dual speed motors

Main brake features

DC and AC supply
Faster brake engage/disengage through electronically
Controlled AC/DC rectifier type SB, NBR, SBR (options)

Main motor options

Thermistors and thermostat sensors
Separate supply forced ventilation
Line driver and push-pull incremental encoder

Type	Torque [Nm]
A 05	100
A 10	150
A 20	250
A 30	410
A 35	600
A 41	850
A 50	1500
A 55	2000
A 60	2800
A 70	5000
A 80	8000
A 90	14000

C series In-line helical gearmotors



When Customers benefit from the know-how developed over the years.

Top torque density, product variety, extremely wide speed choice, great compactness and price effectiveness make the C series the unparalleled line of helical gearmotors and speed reducers.

Torque range

45 ... 12000 Nm

Mechanical rating ($n_1 = 1400 \text{ min}^{-1}$)

0.08 ... 213 kW

Gear ratios

2.6 ... 1481

Output

Foot and flange mount
Metric or inch series solid output shaft

Input

IEC and NEMA motor adaptors
Servomotor adaptors
Metric or inch series solid input shaft

Applicable AC motors

Integral motors and brake motors - M series / ME series, IEC-normalized motors and brake motors - BN series / BE series, Single and dual speed motors

Main brake features

DC and AC supply
Faster brake engage/disengage through electronically
Controlled AC/DC rectifier type SB, NBR, SBR (options)

Main motor options

Thermistors and thermostat sensors
Separate supply forced ventilation
Line driver and push-pull incremental encoder

Type	Torque [Nm]
C 05	45
C 12	100
C 22	200
C 32	300
C 36	450
C 41	600
C 51	1000
C 61	1600
C 70	2300
C 80	4000
C 90	7200
C 100	12000



F series Shaft mounted gearmotors

Ruggedness and effectiveness to the state-of-the-art.

No better, easier and neater installation than with a shaft mounted unit of the F series. Lightweight and performing, an F unit is the dependable drive for all the material handling applications.

Type	Torque [Nm]
F 10	140
F 20	250
F 25	400
F 31	600
F 41	1100
F 51	1800
F 60	2900
F 70	5000
F 80	8000
F 90	14000

Torque range

140 ... 14000 Nm

Mechanical rating ($n_1 = 1400 \text{ min}^{-1}$)

0.17 ... 125 kW

Gear ratios

6.4 ... 2099

Output

Keyed hollow shaft - two bore options per size

Keyless shrink disc fitting

Plug-in solid output shaft as an option

Input

IEC-normalized motor adaptors

Servomotor adaptors

Solid input shaft

Applicable AC motors

Integral motors and brake motors - M series / ME series, IEC-normalized motors and brake motors - BN series / BE series, Single and dual speed motors

Main brake features

DC and AC supply, Faster brake engage/disengage through electronically, Controlled AC/DC rectifier type SB, NBR, SBR (options)

Main motor options

Thermistors and thermostat sensors
Separate supply forced ventilation
Line driver and push-pull incremental encoder



VF W series Worm gearmotors

A smart design enhanced by latest materials technology and advanced manufacturing.

Wormgears of the VF and W series are milestones for the industry worldwide.

They succeeded in combining uncompromising quality with state-of-the-art technology and renown price effectiveness.

Absolute flexibility is achieved by the wide choice of mounting options, shaft configurations and motor interfaces, all offered as standard. The helical-worm and the double-worm versions, with or without the torque limiter, also enhance a highly versatile drive system.

Type	Torque [Nm]
VF 27	13
VF 30	24
VF 44	55
VF 49	88
W 63	190
W 75	320
W 86	440
W 110	830
VF 130	1500
VF 150	2000
VF 185	3600
VF 210	5000
VF 250	7100

Torque range

13 ... 7100 Nm

Mechanical rating ($n_1 = 1400 \text{ min}^{-1}$)

0.04 ... 75 kW

Gear ratios

7 ... 10000

Output

Keyed hollow shaft, Plug-in solid output shaft, Torque limiter as an option

Input

IEC-normalized motor adaptors

Solid input shaft

Applicable AC motors

Integral motors and brake motors - M series / ME series, IEC-normalized motors and brake motors - BN series / BE series
Single and dual speed motors

Main brake features

DC and AC supply, Faster brake engage/disengage through electronically, Controlled AC/DC rectifier type SB, NBR, SBR (options)

Main motor options

Thermistors and thermostat sensors
Separate supply forced ventilation
Line driver and push-pull incremental encoder



The New Mechatronic Drives & Solutions Division

Bonfiglioli Riduttori S.p.A. has been actively present in the industrial power transmission market since 1956, and today offers a commanding presence covering over 80 countries, with 17 own Subsidiaries worldwide and manufacturing facilities in 5 countries.

The strategic acquisition of Vectron GmbH in 2001 allowed Bonfiglioli to gain a foothold in the electronics sector for motion control systems.

In 2003 the integration of Tecnoingranaggi, a leading manufacturer of low backlash gear units, completed Bonfiglioli's offering, transforming it into a true supplier of Mechatronic solutions.

Today Bonfiglioli further consolidates its unique market position with the creation of the "Industrial Mechatronic Drives & Solutions Division" (MDS).

The MDS Division's mission is to become the "Riskless partner in the Energy Efficient Power transmission market", with the long-term objective of transforming Bonfiglioli into a key player in Mechatronic Drives & Solutions.

This entails the convergence of mechanical, electric, electronic and applications competences.

The MDS Division's product perimeter is represented by brushless motors, precision planetary gearboxes, inverters and servo drives. The combination of these products, mated to the complete Bonfiglioli offering within the Industrial market, allows Bonfiglioli to become a One-Stop-Shop for Mechatronics Applications, with the objective to develop electronic-oriented products as well as Mechatronic and vertically integrated solutions.

Two Centers of Excellence will drive MDS'. The first is Vectron in Germany, with strong technical, R&D and manufacturing capabilities as regards electronic components, and most notably inverters and servo drives.

The second is BMR, Bonfiglioli's new facility created specifically to support the MDS Division.

BMR is situated in Rovereto, within the Italian Alps close to the Austrian border. BMR will concentrate on brushless motors and precision planetary gearboxes, and itself also offers a strong R&D capability as well as a state-of-the-art production facility capable of manufacturing the sophisticated products assigned to it.

Together Vectron and BMR will drive the development of new and customer orientated product solutions which aim at the very top of the power transmission product offering pyramid.

The MDS Division represents an autonomous group within Bonfiglioli featuring its own dedicated sales, R&D and Supply Chain functions.

MDS spans internationally and utilizes Bonfiglioli's Subsidiaries to directly contact its customers using streamlined international teams, creating close working relationships with the customer to ensure their individual needs are met and their potential is uncovered.

MDS' is represented by the strong technical support supplied by its DSC (Drive Service Center) team, a group of technical experts within both the Subsidiaries and R&D centers who together have the task of understanding and satisfying the customers' needs.

The combination of these commitments will allow the MDS Division to concentrate on offering its customers complete integrated solutions which minimize their energy consumption, reduce their Total Cost of Ownership, recuperate energy from their processes, and offer highly precise solutions to their exact needs, ie. a move from a supply of mere products to a supply of complete solutions to individual needs.

By doing so Bonfiglioli's MDS Division truly becomes a One-Stop-Shop representing the "Riskless partner in the Energy Efficient Power transmission Solutions".

Branches and facilities



Canada



France



United Kingdom



Deutschland



Österreich

Production facilities

Bonfiglioli Riduttori S.p.A (Lippo di Calderara - Headquarter)
Bonfiglioli Riduttori S.p.A (Vignola - Italy)
Bonfiglioli Riduttori S.p.A (Calderara di Reno - Italy)
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Bonfiglioli Riduttori S.p.A (Forlì - Italy)
Bonfiglioli Mechatronic Research S.p.A. (Rovereto - Italy)
Bonfiglioli Vectron GmbH (Germany)
Bonfiglioli Slovakia s.r.o (Slovakia)
Bonfiglioli Vietnam Ltd. (Vietnam)
Bonfiglioli Transmission PVT. Ltd. (India)

USA



Brasil



Spain



South Africa



India



★ Headquarters

B Subsidiary

Production facility

MDS Mechatronics Drives & Solutions dedicated network

Production facility
Slovakia

★ B Production facility MDS
Italia

B MDS
Türkiye

B MDS
China

Branches

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Bonfiglioli Transmission Australia PTY Ltd. (Australia)
Bonfiglioli Transmission Australia PTY Ltd. (New Zealand)
Bonfiglioli do Brasil Ltda. (Brazil)
Bonfiglioli Canada Inc. (Canada)
Bonfiglioli USA Inc. (USA)
Bonfiglioli Drives (Shanghai) Co.Ltd. (China)
Bonfiglioli Transmissions France S.A. (France)
Bonfiglioli Deutschland GmbH (Germany)
Bonfiglioli Österreich GmbH (Austria)
Bonfiglioli UK Ltd. (United Kingdom)
Bonfiglioli Italia S.p.A. (Italy)
Bonfiglioli South Africa PTY. Ltd. (South Africa)
Bonfiglioli Turkey Jsc. (Turkey)
Bonfiglioli Vietnam Ltd. (Vietnam)
Bonfiglioli South East Asia (Singapore)
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Bonfiglioli has been designing and developing innovative and reliable power transmission and control solutions for industry, mobile machinery and renewable energy applications since 1956.