

Product Range Catalogue

## Solutions designed for a greener tomorrow





# Power, control and green solutions





#### From the founder

"I must admit that we have made great progress in just fifty years. Our company has seen impressive growth and our products have won recognition for their quality worldwide. If I had to do it all again, I'd do it exactly as I did the first time round, because I had the full backing of management, my employees and my family. My wife and my children have always given me their full support, even in the most difficult times.

They have always encouraged me to carry on. I have built up their company not just for my own satisfaction but for the future, for my family and for my employees, and to see our name, our brand, succeeding. So it's still full speed ahead!"

April 2006 on the occasion of company's Fiftieth Anniversary

#### **Clementino Bonfiglioli**

#### Message from the Chairman

A big 'hello' to you all! It is my pleasure to invite you to read on and find out how the Bonfiglioli Group is changing. We are all aware that the changes occurring worldwide cannot be stopped. They can only be turned into opportunities. This was my father's conviction, and one that he put into practice with passion and determination throughout his life.

Thanks to his drive and inspiration, the Bonfiglioli group has embraced new technologies, found new applications and become a truly global player. We have invested in renewable energy and in the green economy, with the intention of supplying the world not just with products, but with complete, advanced solutions.

Today we can look to the future with confidence. We have the ability to win the trust of those who do not yet know us, and the justify the fidelity of those who have been using our products and supporting our company for years. My gratitude goes out to all of them and to all of you. Thank you!

Sonia Bonfiglioli



#### **Mission + Vision**

Designing and manufacturing innovative and reliable solutions for power transmission and control in the industrial, mobile and renewable energy sectors.

Encouraging and promoting sustainable and shared development worldwide, through dynamic, responsible, prompt and customer-oriented services."

#### Values

Challenge Respect Accountability Winning Together



### **Empowering Power Transmission for Industries**



With our extensive knowledge and experience in the power transmission arena, we continuously innovate and launch new products, aimed at meeting the varied application needs of our customers. Our product spectrum ranges from worm and helical gear motors to planetary drives, from electric motors to frequency inverters, manufactured at our Chennai production facility in India, applying state-of-the-art technology, ensuring superior quality standards and matching the best cost/performance ratio.

At Bonfiglioli, we are geared to deliver a wide range of solutions from simple to complex. Bonfiglioli Group, is an ideal partner to enhance the performance and competitiveness of your machines.

Experience the world with Bonfiglioli.

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### Bonfiglioli, one name for a large international group

It was back in 1956 that Clementino Bonfiglioli established in Bologna, Italy, the company that still bears his name. Now, some fifty years later, the same enthusiasm and dedication is driving Bonfiglioli to become the world's top name in power transmission and control solutions. Through directly controlled subsidiaries and production plants around the world, Bonfiglioli designs, manufactures and distributes a complete range of gearmotors, drive systems and planetary gearboxes, and boasts the most integrated offering on the market today.

This commitment of excellence and providing best solutions to our customers can be seen in Group new trademark and payoff "Forever Forward", which was adopted as part 60th Anniversary Celebration of Bonfiglioli Group.

The new payoff represents the spirit of the Bonfiglioli business approach of providing innovative and forward-looking solutions for customers that help them meet the needs of their business.

The previous payoff, "Power, control and green solutions," represented the products and solutions Bonfiglioli provides to customers, while the new payoff is more representative of the company's commitment to the future, for Bonfiglioli and for its customers. Bonfiglioli will celebrate its 60th anniversary in 2016. The new payoff is a reminder of the success and growth of the company has achieved so far, and the commitment to sustaining the success for at least another 60 years.

Bonfiglioli's new payoff has strong, historical roots and has been inspired by the words of founder Clementino Bonfiglioli: "Avanti avanti a tutta forza!" which means "Forward with full force!"

In a market in which excellent product quality alone is no longer sufficient, Bonfiglioli also provides experience, know-how, an extensive sales network, excellent pre-sales and after-sales service and modern communication tools and systems to create high level solutions for industry, mobile machinery and renewable energy.



### Bonfiglioli India - The beginning ...

Bonfiglioli Transmissions Pvt. Ltd., India is a fullyowned subsidiary of Bonfiglioli, Italy having its manufacturing facilities in Chennai, India. The stateof-the-art factories not only caters to the demand of Indian subcontinent but also exports over 20% to the world markets.

We design, manufacture and distribute a complete range of gear motors, drive systems and planetary gearboxes to satisfy the most demanding needs for industrial processes and automation. Bonfiglioli India is accredited with ISO 9001:2000 (Vision 2000) Quality Certification by TÜV.

With twin manufacturing facilities of over 45,500 sq. Mts, a skilled workforce of 800+ and a wide-spread dealer network across India alongwith Regional offices, Bonfiglioli India is poised to cater to the complex demands of the Indian manufacturing sector.







## Innovative solutions for industrial field

Bonfiglioli Riduttori today is one of the leading brands in the power transmission industry. The company's success is the result of a business strategy that relies on three fundamental factors: know-how, innovation and quality. The complete range of Bonfiglioli gearmotors offers excellent technical characteristics and guarantees the highest performance. Substantial investment and technical expertise have enabled the company to achieve an annual production of 1,600,000 units using fully automated processes.

Certification of the company's Quality System by DNV and TÜV is proof of the high quality standards achieved.

Centres of excellence around the world allow the Bonfiglioli Group to guarantee the high levels of quality and efficiency needed to compete in industry today. Optimised lean manufacturing principles, major investments in research and development to maintain a high level of innovation, a "local for local" service strategy, and a customer service network that is near to the customer and can rely on a large number of directly controlled subsidiaries and distributors all over the world, enable the Bonfiglioli group to be flexible and rapid and to stay in close touch with the changing needs of the markets it serves.

With the acquisition of the Vectron brand, Bonfiglioli established itself as leader in the industrial automation sector.

Bonfiglioli Vectron supplies products and services for completely integrated inverter solutions. These solutions complement Bonfiglioli's power transmission and control offering to the industrial sector.





### Bonfiglioli Industrial -Footprint in India

Bonfiglioli Transmissions Private Limited (BTPL), Chennai is a 100% subsidiary of the Bonfiglioli Riduttori S.p.A. The company started its operations in 1999 and inaugurated state-of-the-art facility in the year 2000 at Chennai where it manufactures; Inline Helical Gear Reducers, Shaft Mounted Gear Boxes, Planetary Gear Units and various Components. This was the first facility outside the European boundaries with indigenous production that caters to domestic as well as export markets. About 55% of the Indian Production is consistently exported worldwide. Bonfiglioli India is accredited with ISO 9001:2000 (Vision 2000) Quality Certification by TÜV.

To meet the increasing demand of the India's manufacturing sector, augment the existing production capacity and introduce new Plant, BTPL opened a new facility dedicated to the Industrial Sector at Mannur near Chennai in 2011. Spread across 27,000 sqm the facility reinstates the commitment towards India and makes us the part of the India's growth story.

Bonfiglioli India employees 450 strong workforce directly and 150 indirectly. 85% of raw material is sourced in India to ensure the cost & performance parameters. A strong marketing & sales team spread across 13 major cities supported with 50 plus nationwide dealer network ensures the superior products are not just available at doorstep but also match best cost/performance ratio.

At Bonfiglioli, we are geared to deliver a wide range of solutions – from simple to complex. Bonfiglioli Group, is an ideal partner to enhance the performance and competitiveness of your machines.

Experience the world with Bonfiglioli!





## Bonfiglioli products

Industrial market segment is covered through the following Product Lines:

### **Product offer**

#### Helical gearmotors

- 12 AS series
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- 14 5 series 15 F series
- 16 A series

#### Worm gearmotors

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#### **Electric motors**

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- 27 BTD/BCR series

#### **Precision gearboxes**

- 28 LC series
- 29 TR / MP series
- 30 TQ series

#### AC drives

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- 32 Agile
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- 34 Active cube





### AS series In-line helical gearmotors

#### Performance and Price Effectiveness Alongside Tradition

The dependable and performing solution for all in-line drive applications featuring unsurpassed Quality to Price ratio. Foot or flange mounting are possible in any mounting position, making the installation easier than ever.

Туре	Torque [Nm]
AS 16	50
AS 20	100
AS 25	200
AS 30	350
AS 35	530
AS 45	800
AS 55	1350
AS 60	2300
AS 80	4200
AS 90	6800
AS 100	12000

#### **Transmission Torque**

25 ... 12000 Nm

#### Mechanical Rating (n<sub>1</sub>= 1400 min<sup>-1</sup>) Up to 132kW

#### Gear ratios

 $i_n = 4.34 \dots 202.1$ 

#### Output configurations Solid keyed shaft

#### **Input configurations**

IEC motor mounting provision 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) Brake microswitch

#### **Main motor options**

Forever Forward

### 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.





Туре	Torque [Nm]
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

#### **Torque range** 37 ... 12000 Nm

**Mechanical rating (n<sub>1</sub>= 1400 min<sup>-1</sup>)** 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 Metric or inch series solid input shaft Servo motor adaptors

#### **Main gear options**

Reduced backlash Viton oil seals

#### ATEX compliance C11 ... C61

#### 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) Brake microswitch

#### Main motor options





## **Single reduction helical gearmotors**

#### Simplicity above all.

Simple and yet powerful is the S series, developed for the pump industry as well as the fan and blower application. Foot and flange mounted, with shaft dimensions to the UNEL - MEC standard.

Туре	Torque [Nm]
S 10	21
S 20	37
S 30	70
S 40	125
S 50	200

**Torque range** 21 ... 200 Nm

**Mechanical rating (n<sub>1</sub>= 1400 min<sup>-1</sup>)** 0.12 ... 11.6 kW

#### **Gear ratios**

1.4 ... 13.1

#### Output

Foot and flange mount

#### 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) Brake microswitch

#### **Main motor options**

### 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.

#### **Torque range** 140 ... 14000 Nm

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

### 0.17 ... 125 kW

**Gear ratios** 6.4 ... 2188

#### 0.4 ... 210

#### 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 Solid input shaft Servo motor adaptors

#### **ATEX compliance**

F10 ... F60

#### 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) Brake microswitch

#### Main motor options

Туре	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





### 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.

Туре	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

#### **Torque range** 100 ... 14000 Nm

**Mechanical rating (n<sub>1</sub> = 1400 min<sup>-1</sup>)** 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 adapters Metric or inch series solid input shaft

#### **ATEX compliance**

A10 ... A60

#### Main gear options

Backstop Reinforced bearings for higher overhung load capacity Reduced backlash Torque arm Taconite seals

#### **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) Brake microswitch

#### **Main motor options**

Thermistors and thermostates sensors Separate supply forced ventilation Line driver and push-pull incremental encoder Additional input cable entry Plug & play connectors 16



### VF & W series Worm gears

### 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 given by the wide choice of several 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 add up, creating a highly versatile drive system.

#### Torque range

#### 13 ... 9200 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

#### Main gear options

Reduced backlash Double ended input shaft at non-drive end Viton oil seals

#### ATEX compliance

VF30 ... VF49 W63 ... W110

#### 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) Brake microswitch

#### Main motor options



Туре	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
VF / VF 130 / 250	9200



### W VF\_EP series Gearmotors for hostile environments

#### When multi-purpose products become specific and meet industry requirements.

Wormgears and motors are also available in the enhanced protection "EP" configuration, featuring food grade specifications and extra corrosion protection, ensuring risk free operation in hygienic environments, and facilitate effective sanitising. In addition to food processing applications, the EP configuration will also suit the requirements of the chemical and pharmaceutical industry, as well as marine on-board and quayside installations.

#### Applications

Food processing, chemical and pharmaceutical industry Marine on-board and quayside installations Corrosive and/or highly hygienic environments

#### **Availability on**

Gears : VF 44, VF 49, W 63, W 75, W 86 Motors : BN 63 ... BN 112 / M1SD ... M3LC

#### **Standard features**

Stainless steel hollow shaft Stainless steel mounting hardware and tag Oil seals loaded with stainless steel spring Sealed gearcase (unvented) Unused tapped holes closed with button plugs Four draining holes on motor DE and NDE shield Motor protection IP 56

#### Options

Epoxy primer + epoxy top coating FDA Washdown duty oil seals Food grade lubricant, class H1

#### Configurations

Foot, flange and shaft mount

#### Accessories

Plug-in solid output shaft from stainless steel Safety cover for the hollow output shaft Torque arm 18

Forever Forward

### TA series Shaft mounted speed reducers

#### The sturdy and weather-resistant product for the material handling industry.

The TA series has long established itself in the industry until become a best seller for the quarry and mine applications where absolute reliability and low maintenance are key factors. Also appreciated is the backstop option that prevents backdriving in case of incline conveyors.

#### **Torque range** 180 ... 17000 Nm

**Mechanical rating (n<sub>1</sub> = 1400 min<sup>-1</sup>)** 1.1 ... 226 kW

#### **Gear ratios**

5.0 ... 31.5

#### Output

Keyed hollow shaft Up to three bore options per frame size

#### Gearcase

Sturdy cast iron housing suitable for outdoor installation

#### Backstop

Available on all frame sizes - externally accessible

Now Available in Motor Flange

Туре	Torque [Nm]
TA 30	180
TA 35	420
TA 40	950
TA 45	1400
TA 50	2300
TA 60	3600
TA 70	5100
TA 80	7000
TA 100	11000
TA 125	17000





### HDP series Parallel Shaft Gear Units

#### The new benchmark in the parallel shaft category.

Torque ratings consistently high, gear ratios in close progression, numerous mounting options along with compact dimensions will ease the engineering of any application. The housing from nodular cast iron ensures robustness even In the harshest environment and the class of precision around gears are machined into helps to produce an extremely quiet and vibration-free operation.

Туре	Torque [Nm]
HDP 60	5190
HDP 70	7080
HDP 80	12600
HDP 90	17900
HDP 100	28200
HDP 110	31700
HDP 120	41000
HDP 125	49000
HDP 130	69500
HDP 140	87000
HDP 150	117000
HDP 160	147000
HDP 170	190000
HDP 180	210000

#### Torque range

5000 ... 210000 Nm

#### Gear ratios

7.1 ... 534.5

#### Mounting

Foot, flange, shaft mounting

#### Input

Solid shaft, motor adapter

#### Output

Solid (single and double extension), keyed hollow, shrink disc

#### Options

Fan cooling, cooling coil, heaters Independent cooling systems Backstop Non-contacting seals Forced lubrication Temperature and oil level sensors Drywell Torque arm Taconite seals Thrust Bearings

### HDO series Bevel helical speed reducer

### The heavy-duty product that matches performance and versatility with compactness.

The new bevel helical series from Bonfiglioli optimises superior performance with compact dimensions and flexibility. The several options that can be selected from the catalogue facilitate customization to meet specific application requirements. Gear case from nodular cast iron guarantee rigidity in all circumstances while gears, integrally ground finished on their profile, ensure quiet and vibration-free operation even in the harshest conditions.

#### **Torque range**

25650 ... 210000 Nm

#### **Gear ratios**

5.6 ... 400

#### Mounting

Foot, flange, shaft mounting

#### Input

Solid shaft, lantern housing c/w flexible coupling double input shaft (pony drive)

#### Output

Solid (single and double extension), keyed hollow, shrink disc

#### Options

Fan cooling, cooling coil, heaters Independent cooling systems Backstop Non-contacting seals Forced lubrication Temperature and oil level sensors Drywell for installations with vertical shaft Taconite seals



Туре	Torque [Nm]
HDO 100	28200
HDO 110	31700
HDO 120	41000
HDO 125	49000
HDO 130	69500
HDO 140	87000
HDO 150	117000
HDO 160	147000
HDO 170	190000
HDO 180	210000



Туре

300

301

303

304

305

306

307

309

310

311

313

314

315

316

317

318

319

321

323

325

327

329



Torque [Nm]

1250

2460

2970

3960

5800

10840

15680

23240

34120

48330

57970

84000

105000

138820

208110

280580

476410

655740

890310

1286700

2880000

4160000

### **300 series** Planetary drives

#### A powerful solution to heavy duty drive needs.

Compact, and yet extremely powerful, are the units of the 300 series. Their planetary drive train makes them the ideal choice for all the severe duty applications where shock loadings and impacts are more the rule than the exception. The product configuration is highly versatile, due to largely modular option options as far as the mounting, the gear layout, the output shaft and the motor interface. All features are available for each of the 22 closely spaced frame sizes, spanning over the 1250 - 41,60,000 Nm torque range. Finding the perfect match to any drive problem is therefore more than a wish, it is something users can safely rely on - always.

#### **Torque range**

1,250 ... 41,60,000 Nm

#### Mechanical rating $(n_1 = 1500 \text{ min}^{-1})$ up to 450 kW

#### **Gear ratios**

3.4 ... 5040

#### Gear unit versions

In line

Right angle (with Gleason bevel gear set) Combination of planetary & worm gear Combination of planetary & bevel helical gear

#### Output

Foot and flange mounted Output shaft: keyed solid, splined, splined hollow, hollow shaft with shrink disc hollow shaft with double keyway

#### Input

IEC and NEMA motor adaptors Solid input shaft with or without fan cooling - inch or metric dims. Hydraulic motor adaptors

#### **ATEX compliance**

300 ... 325

#### Main gear options

Backstop Reinforced bearings for higher overhung load capacity Reduced backlash Torque arm Independent cooling system Taconite Seals

#### **Applicable AC motors**

Compact motors and brake motors M series IEC motors and brake motors BN series Single and dual speed motors

#### Main brake features

DC and AC supply Faster brake engage/disengage through electronically controlled rectifier Controlled AC/DC rectifier type SB, NB (optional) Brake microswitch

#### **Main motor options**

Thermistors and thermostatic sensors Independent forced cooling Line driver and push-pull incremental encoder

### RAN series Bevel gears

#### The handy drive when it comes to angled transmissions.

The units of the RAN series are designed to fit the purposes of transmissions laid out in right angle setting. Easy to fit and almost maintenance-free, RAN units offer multiple shaft arrangements and a choice of several exact gear ratios, beside the 1:1, that come handy when designing synchronized drive systems. Also available in the version for screw jack duty.

### **Torque range** 2.8 ... 3000 Nm

**Mechanical rating (n<sub>1</sub>= 1400 min<sup>-1</sup>)** 0.15 ... 90 kW

### **Gear ratios** 1.0 ... 7.7

Shaft arrangement Single and double shaft projection

#### Input

Solid input shaft

#### RAN 1 / RAN 2 / RAN 2R

#### Input

Solid - single and double projection Output shaft Keyed hollow

#### **Gear ratios**

I = 3

#### **Rated thrust capacity**

RAN 1 50000 N RAN 2 80000 N RAN 2R 150000 N



Туре	Torque [Nm]
RAN 1	1350
RAN 2	3000
RAN 2R	3000
RAN 8	2.8
RAN 15	13
<b>RAN 18</b>	22
RAN 20	37
RAN 24	120
RAN 25	54
RAN 28	190
RAN 38	380
RAN 48	700







### **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 and multispeed versions are 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.

#### Туре Power [Kw] **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

### **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 Controlled AC/DC rectifier type NB, SB, NBR, SBR (options) Brake microswitch

#### **Main motor options**



### BN series IE1 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 dual pole 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.

#### **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 SB, NBR, SBR (options) Brake microswitch

#### **Main options**





Туре	Power [Kw]
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
<b>BN 160MR</b>	11
BN 160M	15
BN 180M	18.5
BN 180L	22
BN 200L	30





### **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.

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

#### Stall torque

1.7 Nm ... 45 Nm

#### Rated speed

1600; 3000; 4500; 5500; 6000 min<sup>-1</sup>

#### Power supply

230, 400 Vac

#### Inertia

0.04 ... 2.82 (Kgm<sup>2</sup> x 10<sup>-3</sup>)

#### Conformity

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

#### Electromagnetical Holding Brake (Optional) 24 Vdc

#### Additional flywheel (optional)

0.05 ... 7.00 (Kgm2 x 10<sup>-3</sup>)

#### Feedback

2-poles resolver with excitation frequency 8 KHz or 10 Khz Absolute encoder EnDAT 2.1 (single turn / multiturn) encoder with sincos track Absolure encoder Hiperface (single turn / multiturn) encoder with sincos track Sensorless (no feed-back)

#### Degree of protection

Ip65, IP67

**Temperature sensor** PTC, IP67

#### Certification

CE, UL

### BTD/BCR series Compact AC brushless servomotors

#### A range of compact servomotors.

BTD series servomotors are designed to provide effective solutions for application 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

#### 0.2 ... 115 Nm

Rated speed 2000,3000,4500 rpm

#### **Power supply**

230, 400 Vac

Inertia Low 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 8KHz or 10KHz 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



Туре	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
BCR5 2730	27.3
Туре	Torque [Nm]
BCR2 0020	0.2
BCR2 0020	0.2
BCR2 0040	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
<b>D G D G G G G G G G G G G</b>	
BCR8 0680	68
BCR8 0680 BCR8 0930 BCR8 1150	68 93 115







### LC series Planetary Precision Gearbox

#### Low backlash at a competitive price

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

Туре	Rated Torque [Nm]
LC 050	12
LC 070	25
LC 090	43
LC 120	110
LC 155	300

	Acceleration Torque [Nm]
LC 050	20
LC 070	35
LC 090	80
LC 120	190
LC 155	420

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

#### Torque range

12 ... 300 Nm

### Maximum acceleration torque 20 ... 450 Nm

20 11 130 1111

#### Transmission ratios

3 ... 100

#### Output configuration Flange mounting

#### Input configuration

Wide range of coupling configurations to suit most common servomotors

#### Maintenance

Lubricated for life

G: =

### **TR / MP series** Planetary Precision Gearbox

Maximum precision for highly dynamic applicaions / high precision for optical results.

TR planetary drives are landmark for extremely reduced backlash, silent operation and facilitated motor assembly along with top reliability. TR units will match servomotors from most makes.

Reduced backlash, smooth operation, easy motor assembly and numerous product configurations as standard options are some of the many outstanding features of the MP series.

### **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

Туре	Torque [Nm]		
	Rated Acceleration		
TR 053	20	30	
TR 060	30	45	
TR 080	70	100	
TR 105	170	250	
TR 130	450	700	
TR 160	700	950	
TR 190	1000	1200	

	Backlash [arcmin]			
Туре	1 stage 2 stages 3 stages			
Standard	5	5	7	
Reduced	3 3 5			

Туре	Torque [Nm]		
	Rated	Acceleration	
MP 053	20	30	
MP 060	30	45	
MP 080	70	100	
MP 105	170	250	
MP 130	450	700	
MP 160	700	950	
MP 190	1000	1200	

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





### TQ / TQK / TQF **Planetary Precision Gearbox**

The TQ Series of low backlash planetary gearboxes is designed to deliver the highest possible level of transmission precision. Low backlash combined with a high torsional stiffness guarantees a very competent product, especially in high dynamic and reversing applications. The technical design of this gearbox also allows high axial and radial loads on the output shaft and a very silent operation.

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

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

#### **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

### **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.

#### **Power range**

0.20 ... 2.2 kW / single-phase 200-240 V / 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

Туре	Power kW
S2U230S-02	0.2
S2U230S-03	0.4
S2U230S-07	0.75
S2U230S-11	1,5
S2U230S-13	2.2







### Agile Variable Frequency Drive

#### 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 kW - 11 kW / three-phase 320-530V / 50-60 Hz (±10%)

#### Power range (AGL202)

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 (in preparation), EtherNet I/P (in Preparation)

#### 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 Autodiagnostics Integrated PLC function with graphic development environment Integrated oscilloscope function Customisable units of measurement

Туре	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	11.0

Туре	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

Туре Power kW (1ph) AGL202-02 0.12 0.18 AGL202-03 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 3.0 AGL202-21 3.0

### Active series Solution Drives

#### 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.

Power range (ACT401) 0.55 - 132 kW / three-phase 360 V - 480 V / 50 Hz - 60 Hz (± 10%)

Power range (ACT201) 0.55 - 9.2 kW / single or three-phase 200 V - 240 V / 50 Hz - 60 Hz (± 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.



_	-
Туре	Power kW*
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
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	100
ACT401-49	132





Туре	Power kW*
ACU201-01	0.25
ACU201-03	0.37
ACU201-05	0.55
ACU201-07	0.75
ACU201-09	1.10
ACT201-11	1.50
ACU201-13	2.20
ACU201-15	3.00
ACU201-18	4.00
ACU201-19	5.50
ACU201-2	7.50
ACU201-22	9.20
ACU401-01	0.25
ACU401-03	0.37
ACU401-05	0.55
ACU401-07	0.75
ACU401-09	1.10
ACU401-11	1.50
ACU401-12	1.85
ACU401-13	2.20
ACU401-15	3.00
ACU401-18	4.00
ACU401-19	5.50
ACU401-21	7.50
ACU401-22	9.20
ACU401-23	11.00
ACU401-25	15.00
ACU401-27	18.50
ACU401-29	22.00
ACU401-31	30.00
ACU401-33	37.00
ACU401-35	45.00
ACU401-37	55.00
ACU401-39	65.00
ACU401-43	75.00
ACU401-45	90.00
ACU401-47	110.00
ACU401-49	132.00
ACU401-51	160.00
ACU401-53	200.00
ACU401-55	250.00
ACU401-57	315.00
ACU401-59	355.00
ACU401-61	400.00

### 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, in match with Bonfiglioli servomotors.

#### Power range (ACU401)

0.25 - 132 kW / three-phase 360 V - 480 V / 50 Hz - 60 Hz (± 10%) 160 kW - 1.2 mW / 3ph - 360-480 V/ 560 V / 690 V

#### Power range (ACU201)

0.25 - 9.2 kW / single or three-phase 200 V - 240 V / 50 Hz - 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 encoder, repetition frequency output, System bus

#### **Optional communication modules**

Rs232, RS485, Modbus,, CANopen, Profibus-DPV1, 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

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.

### **Applications** Stacker & reclaimer









### Material handling, sugar mill, ceramic industry













## Construction, Mining, Textile & Other Applications Industries



















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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.

Bonfiglioli Transmissions (Pvt.) Ltd.

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