

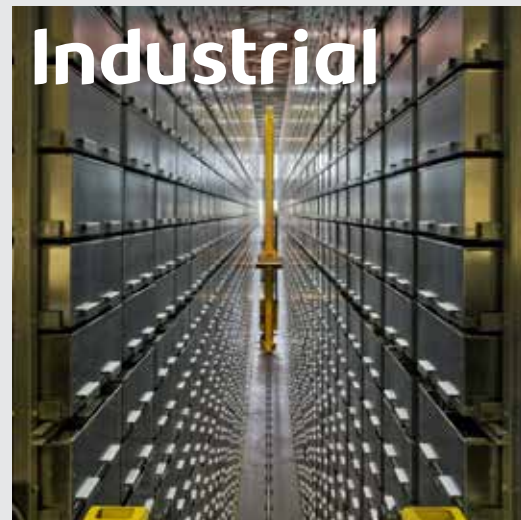


 **Bonfiglioli**  
Industrial

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Products range

# Bonfiglioli solutions



## Innovative solutions for the 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.

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**



## Specific solutions for power transmission and motion control

Product diversification, process automation, and quality have enabled Bonfiglioli to play a leading role in industry.

Bonfiglioli's policy focuses on integrated solutions, competence, innovative technology and careful production planning as key factors in guaranteeing customer satisfaction.

The Bonfiglioli product portfolio aims at meeting the toughest and most sophisticated requirements in industrial processes and automation solutions.



# Bonfiglioli products

## Product offer

Industrial market segment is covered through the following Product Lines:



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# 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 adapters  
Metric or inch series solid input shaft

**Main gear options**

Backstop  
Reinforced bearings for higher overhung load capacity  
Reduced backlash  
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)

**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.



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

**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

# S series

## 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.



### Torque range

21 ... 200 Nm

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

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)

### Main motor options

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

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



## 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 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

# 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 renowned 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.



**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

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

## 300 series

### Planetary gearmotors



#### 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 the largely modular options of mounting, gear layout, output shafts and motor interfaces. All features are available for each of the 20 closely spaced frame sizes, spanning over the 1250 - 1286700 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.

Type	Torque [Nm]
300	1250
301	2460
303	2970
304	3960
305	5800
306	10840
307	15680
309	23240
310	34120
311	48330
313	57970
314	84000
315	105000
316	138820
317	208110
318	280580
319	476410
321	655740
323	890310
325	1286000

#### Torque range

1250 ... 1286000 Nm

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

up to 450 kW

#### Gear ratios

3.4 ... 5234

#### Gear unit versions

In line

Right angle (with Gleason bevel gear set)

#### Output

Foot and flange mounted

Output shaft: keyed solid, splined, splined hollow, hollow shaft with shrink disc

#### Input

IEC and NEMA motor adaptors

Solid input shaft with or without fan cooling - inch or metric dims.

#### 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 reaction through electronically controlled rectifier

#### Main motor options

Thermistors and thermostat sensors

Independent forced cooling

Line driver and push-pull incremental encoder

# HDP series

## Parallel shaft gear units

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

High torque ratings, gear ratios in close progression, numerous mounting options, together with compact dimensions will facilitate the engineering of any application.

The housing, made from nodular cast iron ensures robustness even in the harshest environment. State of the art precision ground gears help to produce an extremely quiet and vibration-free product.



**Torque range**

5000 ... 210000 Nm

**Gear ratios**

7.1 ... 500

**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
- Forced lubrication
- Temperature and oil level sensors
- Drywell
- Taconite seals

Type	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

## HDO series

### Bevel helical gear units



**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 many standard options that can be selected from the catalogue facilitate customization to meet specific application requirements.

The gear case is nodular cast iron to guarantee rigidity in all circumstances while the gears, using latest profile ground finishing techniques, ensure quiet and vibration-free operation even in the harshest conditions.

Type	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

#### Torque range

28200 ... 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

Forced lubrication

Temperature and oil level sensors

Drywell

Taconite seals

# TA series

## Shaft mounted speed reducers

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

The TA series is long established, and well respected in industry, especially in quarry and mine applications where absolute reliability and low maintenance are key factors. Also appreciated is the backstop option that prevents backdriving on inclined conveyors or elevators.



**Torque range ( $n_1 = 900 \text{ min}^{-1}$ )**

150 ... 16000 Nm

**Mechanical rating ( $n_1 = 900 \text{ min}^{-1}$ )**

1.1 ... 156 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

Type	Torque [Nm]
TA 30	150
TA 35	400
TA 40	900
TA 45	1350
TA 50	2100
TA 60	3500
TA 70	4900
TA 80	6600
TA 100	10500
TA 125	16000



# 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 largely maintenance-free, RAN units offer multiple shaft arrangements and a choice of several exact gear ratios, beside the 1:1, that come in handy when designing synchronized drive systems. Also available in the version for screw jack duty.

Type	Torque [Nm]
RAN 1	1350
RAN 2	3000
RAN 2R	3000
RAN 8	3
RAN 15	8
RAN 18	15
RAN 20	28
RAN 24	80
RAN 25	39
RAN 28	150
RAN 38	300
RAN 48	600

### Torque range

3 ... 3000 Nm

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

0.15 ... 91 kW

### Gear ratios

1.0 ... 7.4

### 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

# 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 approved  
 Washdown duty oil seals  
 Food grade lubricant, class H1

### Configurations

Foot, flange and shaft mount

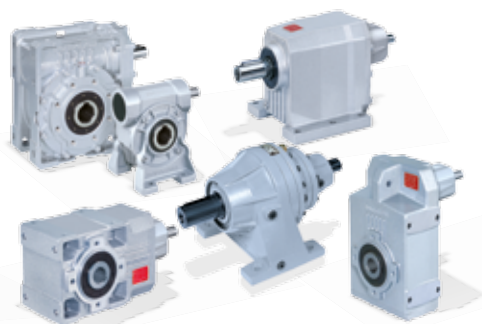
### Accessories

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

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

# ATEX series

## Gearboxes for explosive environments



### Ideal for potentially explosive conditions.

ATEX-compliant gear units in categories 2G and 2D are available, according to the classification set forth by the European Directive 94/9/CE, applying to areas with presence of potentially explosive atmosphere.

Type	Torque [Nm]
C 12	100
C 22	200
C 32	300
C 36	450
C 41	600
C 51	1000
C 61	1600
A 10	150
A 20	250
A 30	410
A 35	600
A 41	850
A 50	1500
A 55	2000
A 60	2800
F 10	140
F 20	250
F 25	400
F 31	600
F 41	1100
F 51	1800
F 60	2900
VF 30	24
VF 44	55
VF 49	88
W 63	190
W 75	320
W 86	440
W 110	830
300	1250
301	2460
303	2970
304	3960
305	5800
306	10840
307	15680
309	23240
310	34120
311	48330
313	57970
314	84000
315	105000
316	138820
317	208110
318	280580
319	476410
321	655740
323	890310
325	1286000

### Coaxials series C

Torque range: 100 ... 1600 Nm

### Bevel helicals series A

Torque range: 150 ... 2800 Nm

### Shaft mounts series F

Torque range: 140 ... 2900 Nm

### Worm gears series VF and W

Torque range: 24 ... 830 Nm

### Planetaries series 300

Torque range: 1250 ... 1286000 Nm

# 3/H series

## Combined gearboxes

**Performance and technology of the planetary gearboxes with the robustness and reliability of bevel helical gearboxes.**

Bonfiglioli's 3/H gearboxes combine the high technology, performance and efficiency of planetary gearboxes with the robustness, quality and reliability of bevel helical gearboxes. These planetary/bevel helical combination gear boxes deliver the high transmissible torque of Bonfiglioli planetary 300 Series along with the excellent power transmission characteristics of bevel helical HDO Series and are ideal for applications that demand high power density along with medium-low output speeds.



**Torque range**

98000 ... 1200000 Nm

**Gear ratios**

1:100 ... 1:1000

**Rated power**

up to 980 kW

**Reference torque**

up to 1200 kNm

**Output versions**

- Solid cylindrical shaft
- Solid shaft with keyway
- Solid shaft with supporting feet
- Solid shaft with keyway and supporting feet
- Hollow shaft with shrink disc
- Hollow shaft with keyway

**Input versions**

- Single sided cylindrical shaft
- Flange with motor coupling bell and intermediary elastic joint between the cylindrical shafts of the motor and gearbox.

**Mounting position**

- Horizontal input shaft
- Vertical input shaft

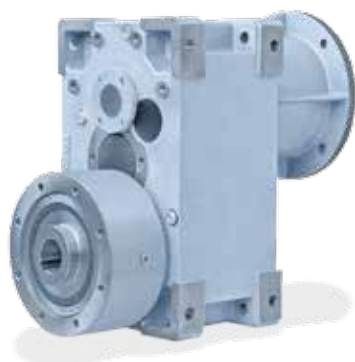
**Shaft arrangement**

Depending on the needs of the application, 3/HDO combination gearboxes can be supplied with output shafts on the left or right side.

**Options & Accessories**

- Auxiliary thermal devices
- Forced lubrication
- Backstop device

Type	Torque [Nm]
3/HDO 15	98000
3/HDO 16	130000
3/HDO 17	175000
3/HDO 18	260000
3/HDO 19	440000
3/HDO 21	615000
3/HDO 23	830000
3/HDO 25	1200000



## HDPE series

### Extruder gearbox

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

The HDPE Extruder gearbox series is the configuration specifically developed for single-screw extruder drive generated from the renowned heavy duty series HDP, with which it shares most of the component parts and gearing.

Mounted forward to the sturdy nodular cast iron case, and housed into a robust extruder support, HDPE units feature a heavy duty spherical roller thrust bearing of series 294...E, exclusively sourced from primary brands.

Type	Torque [Nm]
HDP 60	4650
HDP 70	6350
HDP 80	11500
HDP 90	16550
HDP 100	24000
HDP 110	28700
HDP 120	35300
HDP 130	59300
HDP 140	75000

**Torque range**

4650 ... 75000 Nm

**Gear Ratios**

7,1  $i_N$  125.0 with progression = 1,12

**Mounting**

Foot

**Input**

solid shaft, direct motor mounting, lantern housing with flexible coupling

**Output shaft**

Thrust bearing of various dimension and capacity and hollow shafts of various shapes and dimensions

Standard shaft is keyed hollow to UNI 6604

Mounting dimensions to customer specifications can be provided

**Options**

Cooling coil, autonomous cooling units, temperature and oil level sensors

# LC series

## Low backlash planetary gearboxes

LC planetary precision gearboxes represent a flexible solution, and economic alternative together with an optimal performance and reliability.

**Improved performance as the key to downsizing.**

Enhanced performance of our LC precision gearboxes ("P" option) may open up important downsizing options as an option in many applications where previously was impossible to ensure a higher transmissible output torque.

As an additional benefit downsizing lead to an improvement of energy efficiency by selecting a more compact gearbox with higher torque density and reducing significantly the accelerating mass.

Transmissible torque is now improved up to 40%!!!



**Torque range**

12 ... 450 Nm

**Maximum acceleration torque**

20 ... 700 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

**Product Line Up**

High Torque Density Option "P" available to extend the product performance

Optimal Acceleration and Nominal Torques

Optimal Radial and Axial Load Capacities

Designed for Cyclic and Continuous Duty

Optimal Torsional Stiffness

Geometrical Backlash less than 6 arcmin

Universal design allow any Mounting Orientation

Type	Rated torque [Nm]
LC 050	12
LC 070	25
LC 070P	30
LC 090	43
LC 090P	65
LC 120	110
LC 120P	155
LC 155	300
LC 155P	450

Type	Acceleration torque [Nm]
LC 050	20
LC 070	35
LC 070P	55
LC 090	80
LC 090P	120
LC 120	190
LC 120P	300
LC 155	450
LC 155P	700

	Backlash [arcmin]
Standard	lower than 12 arcmin
Reduced	lower than 16 arcmin



## LCK series

### Low backlash right-angle gearboxes

LCK replicate in the right angle layout excellent features already typical of the inline products LC series. Right angle layout is the solution to space problems often posed by increasingly compact machines. This series represent a flexible solution, and economic alternative together with an optimal performance and reliability.

**Enhanced performance of our LCK precision gearboxes** ("P" option) may open up important downsizing options as an option in many applications where previously was impossible to ensure a higher transmissible output torque.

As an additional benefit downsizing to an improvement of energy efficiency by selecting a more compact gearbox with higher torque density and reducing significantly the accelerating mass.

Transmissible torque is now improved up to 40%!!!

#### Torque range

10 ... 450 Nm

#### Maximum acceleration torque

20 ... 700 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

#### Product Line Up

High Torque Density Option "P" available to extend the product performance

Optimal Torque Density

Optimal Acceleration and Nominal Torques

Optimal Radial and Axial Load Capacities

Designed for Cyclic and Continuous Duty

Optimal Torsional Stiffness

Geometrical Backlash less than 6 arcmin

Universal design allow any Mounting Orientation

Type	Rated torque [Nm]
LCK 050	12
LCK 070	25
LCK 070P	30
LCK 090	43
LCK 090P	65
LCK 120	110
LCK 120P	155
LCK 155	300
LCK 155P	450

Type	Acceleration torque [Nm]
LCK 050	20
LCK 070	35
LCK 070P	55
LCK 090	80
LCK 090P	120
LCK 120	190
LCK 120P	300
LCK 155	450
LCK 155P	700

#### Backlash [arcmin]

Standard	lower than 6 arcmin
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# MP series

## Low backlash planetary gearboxes

MP planetary precision gearboxes are landmark for optimal performance, along with top reliability. Available in different configuration (with input right angle; with output right angle; and hollow shaft, with solid input shaft), and servo-adapters to comply with most servomotors mechanical interface from the market.



**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

**Product Line Up**

- Higher Torque Density
- Higher Acceleration and Nominal Torques
- Higher Radial and Axial Load Capacities
- Designed for Cyclic and Continuous Duty
- Higher Torsional Stiffness
- Geometrical Backlash less than 10 arcmin
- Highest flexibility (low / reduced backlash; standard / reinforced bearings; different constructive version) to match with your specific requirement.

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

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

Backlash [arcmin]	
Standard	lower than 15 arcmin
Reduced	lower than 10 arcmin





## TR series

### Low backlash planetary gearboxes

TR planetary precision gearboxes are landmark for extremely reduced backlash, optimal performance, silent operation and facilitated motor assembly along with top reliability. Available in different configuration (with input right angle; with output right angle and hollow shaft; with solid input shaft), and servo-adapters to comply with most servomotors mechanical interface from the market.

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

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

	Backlash [arcmin]
Standard	lower than 5 arcmin
Reduced	lower than 3 arcmin

#### 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

#### Product Line Up

Higher Torque Density  
Higher Acceleration and Nominal Torques  
Higher Radial and Axial Load Capacities  
Designed for Cyclic and Continuous Duty  
Higher Torsional Stiffness  
Higher precision due to geometrical backlash less than 3 arcmin  
Quiet running  
Highest flexibility (low / reduced backlash; standard / reinforced bearings; different constructive version) to match with your specific requirement.

# SL series

## Low backlash planetary gearboxes for pulley drives

SL planetary precision gearbox knows no rivals in compactness, efficiency and optimization for timing belt pulley drive systems. This series is the ideal complement to conveyor belt servo-drives and all other applications needing to combine high precision with ultra-compact size.

**Enhanced performance of our SL precision gearboxes** ("P" option) may open up important downsizing options as an option in many applications where previously was impossible to ensure a higher transmissible output torque.

As an additional benefit downsizing lead to an improvement of energy efficiency by selecting a more compact gearbox with higher torque density and reducing significantly the accelerating mass.

Transmissible torque is now improved up to 40%!!!

**Torque range**

25 ... 155 Nm

**Maximum acceleration torque**

35 ... 300 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

**Product Line Up**

- High Torque Density Option "P" available to extend the product performance
- Higher Acceleration and Nominal Torques
- Higher Radial and Axial Load Capacities
- Designed for Cyclic and Continuous Duty
- Higher Torsional Stiffness
- Geometrical Backlash less than 6 arcmin
- Optionally available with a timing belt pulley.
- Quiet running
- Universal design allow any mounting orientation



Type	Rated torque [Nm]
SL 070	25
SL 070P	30
SL 090	43
SL 090P	65
SL 120	110
SL 120P	155

Type	Acceleration torque [Nm]
SL 070	35
SL 070P	55
SL 090	80
SL 090P	120
SL 120	190
SL 120P	300

	Backlash [arcmin]
Standard	12
Reduced	6



## KR series

### Low backlash right-angle gearboxes

Flexible, efficient economical solution to applications calling for space saving right angle drives with minimal backlash.  
Available in different configurations with numerous input and output configuration.

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]
Standard	8

#### 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

#### Product Line Up

Best combination of Dynamics, Compactness and Precision  
Designed for Cyclic and Continuous Duty  
Good Torsional Stiffness  
Geometrical Backlash less than 8 arcmin

# TQ series

## Low backlash planetary gearboxes

TQ features a higher positioning. Whether torque, robustness, or precision - this attractive product range scores in every category.



### 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

### Product Line Up

- Outstanding Torque Density
- Outstanding Acceleration and Nominal Torques
- Outstanding Radial and Axial Load Capacities
- Designed for Cyclic and Continuous Duty
- Markedly higher Torsional Stiffness
- Extremely Geometrical Backlash less than 2 arcmin
- Quiet running
- Universal design allow any mounting orientation

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]
<b>Standard</b>	<b>lower than 4 arcmin</b>
<b>Reduced</b>	<b>lower than 2 arcmin</b>



## TQK series

### Low backlash right-angle gearboxes

TQK angular gearbox features a higher positioning like TQ inline serie. This exceptional gearbox is the solution to space problems often posed by increasingly compact machines. Whether torque, robustness, or precision - this attractive product range scores in every category.

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]
<b>Standard</b>	<b>lower than 5 arcmin</b>
<b>Reduced</b>	<b>lower than 4 arcmin</b>

#### 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

#### Options

Smooth, keyless output shaft

#### Maintenance

Lubricated for life

#### Product Line Up

Outstanding Torque Density  
 Outstanding Acceleration and Nominal Torques  
 Outstanding Radial and Axial Load Capacities  
 Designed for Cyclic and Continuous Duty  
 Markedly higher Torsional Stiffness  
 Extremely Geometrical Backlash less than 4 arcmin  
 Quiet running  
 Universal design allow any mounting orientation

# BN/M 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.



### 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

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

## BE/ME 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.

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

### 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

# BX/MX series

## New IE3 Motors

The release of the new BX/MX motors is a further expression of our sensitiveness to the environment preservation.

The BX/MX motors fulfil the requirements of IE3 efficiency class, according to the international standard IEC 60034-30.

The "X" of the new BX/MX motors stands for "excellence" in efficiency, being IE3 the top efficiency rating currently formalized by global standards.



### Power Range (4 pole)

5.5 ... 22 kW

### Frame Sizes

132S ... 180L

### Pole Numbers

4

### Mounting Options

Foot IM B3

Flange IM B5 and IM B14

### Operation

50 Hz

### Compliance

IEC 60034-30:2008 (IE),

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

### Inverter Duty

All frame sizes

### Housing

Cast aluminium

### 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
BX 132S	5.5
BX 132MA	7.5
BX 160MA	9.2
BX 160MB	11
BX 160L	15
BX 180M	18.5
BX 180L	22





## BS series

### Single-phase induction motors

**A range of motors dedicated to domestic and light workshop duty.**

Single-phase motors of the BS series are manufactured to the applicable IEC standards and are of the enclosed type, externally ventilated and with run capacitor permanently connected.

Motors are available in the B5 and B14 flange mountings, in the 4-pole execution.

For applications requiring high starting torque the version with both the run and starting capacitor can be specified.

Type	kW rating
BS 56A	0.06
BS 56B	0.09
BS 63A	0.12
BS 63B	0.18
BS 71A	0.25
BS 71B	0.37
BS 80A	0.55
BS 80B	0.75
BS 90S	1.1
BS 90L	1.5

**kW ratings**

0.06 ... 1.5 kW

**Frame sizes**

56A to 90L

**Poles**

4

**Mounting**

Flange mounting IM B5 and IM B14

**Frequency**

50 and 60 Hz

**European norms**

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

**Housing**

Cast Aluminium

**Main options**

Starting and run capacitors

Bimetal thermal protector

Balanced winding

# BC series

## DC motors

**A comprehensive range of permanent magnet DC motors.**

The BC series of motors are the simple, proven and economical solution to the requirements of DC drives. The materials and the design concepts exploited allow the use of BC motors under the severest duty and with 4-quadrants thyristor converters. Motors can be operated in the -20 to +40 °C ambient temperature range and are IP54 protected and class F insulated.



**Torque range**

0.3 ... 4.5 Nm

**Speed**

1500, 2000, 3000 min<sup>-1</sup>

**Supply**

12, 24, 36, 48,65, 110, 180, Vdc

**Configurations**

IM B5 and IM B14 Flange Mount

**Ventilation**

BC110 ... BC140 non-ventilated  
BC220 ... BC310 TEFC

Type	Torque [Nm]
BC 110	0.3
BC 120	0.8
BC 140	1.4
BC 220	0.9
BC 240	1.2
BC 270	2.2
BC 310	4.5



## 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.

Type	Torque [Nm]
BMD 65 0.85	0.85
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 170 45	45
BMD 160 L	125

#### Stall torque

0.85 ... 125 Nm

#### Rated speed

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

#### Power supply

230, 400 Vac

#### Conformity

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

#### Electromagnetical Holding Brake (Optional)

24 Vdc

#### Inertia

High acceleration capacity due to lower motor moment of inertia

#### Additional flywheel (optional)

Excellent behavior with superior load inertia due to the high intrinsic moment of inertia

#### 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

# 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<sup>-1</sup>

### Power supply

230, 400 Vac

### Inertia

High acceleration capacity due to lower motor moment of inertia

### 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]
BT2 0026	0.26
BT2 0053	0.53
BT2 0074	0.74
BT2 0095	0.95
BT3 0095	0.95
BT3 0190	1.9
BT3 0325	3.25
BT3 0420	4.2
BT4 0410	4.1
BT4 0630	6.3
BT4 0860	8.6
BT5 1160	11.6
BT5 1490	14.9
BT5 1870	18.7
BT5 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  
(High instantaneous overload)

#### Rated speed

2000, 3000, 4500 rpm

#### Power supply

230, 400 Vac

#### Inertia

High acceleration capacity due to lower motor moment of inertia

#### 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

# Agile series 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 (± 10%)

**Power range (AGL202)**

0.12 ... 3 kW / single phase 200-240V / 50-60 Hz (± 10%)  
0.25 ... 7.5 kW / three-phase 200-240V / 50-60 Hz (± 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 series 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 360-480V / 50-60 Hz (± 10%)

### Power range (ACT201)

0.55 ... 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 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 series

## 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 speed and positioning 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 SIL2**

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**

Vplus software provides a common programming and monitoring platform for all Bonfiglioli inverter drives. Easy programming interface with real time oscilloscope. A simple and guided procedure for set up with Bonfiglioli Motors. Logic functions programming. 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





## Active Cube series - Size 8

### Solution & Servo Drive

#### Energy efficient, versatile and compact.

A full series of solution & servo drives, compact and flexible, dedicated both to high demanding industrial automation systems and to motion control architectures, prepared to operate energy efficient synchronous and asynchronous motors with and without speed sensor.

Type	Power kW
ACU401-51	160
ACU401-53	200
ACU401-55	250
ACU401-57	315
ACU401-59	355
ACU401-61	400

Rated voltage: 400V

Type	Power kW
ACU601-51	160
ACU601-53	200
ACU601-55	250
ACU601-57	315
ACU601-59	355
ACU601-61	400

Rated voltage: 690V

#### Power range (ACU401)

160 ... 400 kW / three-phase 380 V (-15%) ... 480 V (+10%) / 50 - 60 Hz ( $\pm 10\%$ )

#### Power range (ACU601)

160 ... 400 kW / three-phase 500 ... 690 V ( $\pm 10\%$ ) / 50 - 60 Hz ( $\pm 10\%$ )

#### 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

150% for 1min

Shorter overload: 180% for 1sec all ratings

#### Switching frequency

2, 4, 8 kHz

#### Enclosure

IP20 (EN 60529)

#### EMC filter

External filter

#### Main standard hardware features SIL2

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), 1 additional relais for external precharge, possibility for a 3-level-concept, possibility for a 12-pulse-rectifire-concept

#### 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

Profibus-DP, CANopen, RS232, RS485, DeviceNet, EtherCAT®, ProfiNet, Ethernet VA BUS TCP

#### Optional keypad

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

#### PC software VPlus

Vplus software provides a common programming and monitoring platform for all Bonfiglioli inverter drives. Easy programming interface with real time oscilloscope. A simple and guided procedure for set up with Bonfiglioli Motors. Logic functions programming. 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 500Hz, traverse function for winders, Volume flow control, load evaluation.

# VCB series

## Inverter

**Convenient in operation and flexible in application.**

Reliable, highly compact and a robust choice for any application, this inverter with high-level functions soundly meets the requirements of a constantly evolving market.



**Power range (VCB400)**

132 ... 800 kW / three-phase 320-506V / 45-66 Hz

**Type of control**

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

**Overload capacity**

120% / 150% for 60s

**Switching frequency**

1 kHz up to 4 kHz

**Enclosure**

IP20 up to 355 kW (EN 60529) / IP54 on demand

**Main standard hardware features**

Three-phase 230 V and three-phase 500 V on demand  
DC link connection, Plug-in and programmable control terminals  
8 digital input, 3 analog input  
2 digital output, 1 analog output  
1 Relay output (changeover contact)

**Optional expansion modules**

Motor temperature monitoring, expansion of analog, digital inputs and outputs,  
additional encoder or resolver input, repetition frequency output, Safety relay in  
combination with expansion module

**Optional communication modules**

RS232, RS485, PROFIBUS-DP, CANopen, LON

**Optional keypad**

Removable keypad KP100

**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 start after power failure, PI controller, Volume flow control, Bump-  
less torque / speed changeover, Master / Slave function with electronic gear, Dynamic  
braking and motor chopper, Mechanical brake control free of friction, Intelligent current  
limits, Power failure regulation, Index and stability control, Comprehensive monitoring  
and protection capabilities, Function for lift, crane and winch applications

Type	Power kW
VCB400-250	132
VCB400-300	160
VCB400-370	200
VCB400-460	250
VCB400-570	315
VCB400-610	355



## S2U series

### 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 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  
 Auot restart after fault. 10 attempts.  
 Direct start on Power up  
 Parameter access lock

## BMI series

### Human Machine Interfaces

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#### Human Machine Interface solution suitable for any environment.

The new Bonfiglioli Human Machine Interface series offers high performance and quality at affordable price. In combination with PLC functionality integrated in Inverters of Agile and Active Cube Series Bonfiglioli offers a high performance and cost effective solution for many applications which can be controlled directly by drives functionality without need of PLC.



#### Key Features

- 3 Display sizes – 3.5", 7" and 10"
- Robust ABS plastic chassis
- True Flat front panel in IP65
- High resolution 480 x 272 up to 1024 x 600 Pixels
- 65.536 Colours
- Ethernet communication port as standard
- Optional Field bus communications for IT series

#### Applications

- Textile
- Cranes
- Wood
- Material Handling
- Packaging
- Paper
- Plastic
- Energy

## Our qualities

### Sharing the value of our work with you



The development of effective, tailored solutions for a wide range of applications is a fundamental aspect of our work.

We succeed in this because we co-operate closely with our customers, listen to their requests and work with them to improve our own performance.

Bonfiglioli is determined to deliver the best service possible – before, during and after the sale of any of our products – by applying all our know-how, experience, technology, and advanced communication tools. Bonfiglioli works to the strictest standards of quality and safety, as certified by seven different internationally recognised institutes.

We believe in innovation, and back up this belief by dedicating 100 of our people and 5 activity centres to research and development, and by working hand in hand with some of the world's most prestigious universities.

Our work increasingly brings us into contact with other nations and cultures, for which we have the greatest respect and with whom we share a vision of sustainable development based on renewable energy.

This bond of commitment allows us to be an authoritative and reliable global partner for the present and the future.



# Bonfiglioli Worldwide



## Headquarters

**ITALY** • Lippo di Calderara, Bologna



## Branches

**AUSTRALIA** • Sydney  
**BRAZIL** • São Paulo  
**CANADA** • Toronto  
**CHINA** • Shanghai  
**FRANCE** • Paris  
**GERMANY** • Neuss  
**GERMANY** • Krefeld  
**INDIA** • Chennai  
**INDIA** • Mannur  
**INDIA** • Bangalore  
**ITALY** • Milano  
**ITALY** • Rovereto  
**NEW ZEALAND** • Auckland  
**SOUTH AFRICA** • Johannesburg  
**SINGAPORE** • Singapore  
**SPAIN** • Barcelona  
**TURKEY** • Izmir  
**UNITED KINGDOM** • Redditch  
**UNITED KINGDOM** • Warrington  
**USA** • Cincinnati  
**VIETNAM** • Ho Chi Minh



## Production facilities

**ITALY** • Calderara di Reno, Bologna  
 Casting and gearcutting plant  
 Assembly HDP, HDO, 300 series  
**ITALY** • Vignola, Modena  
 Gearmotor assembly plant  
 Precision gearbox manufacturing and assembly plant  
**ITALY** • Forlì  
 Planetary gearboxes manufacturing and assembly plant  
**ITALY** • Rovereto, Trento  
 Brushless motor and precision gearboxes production  
**GERMANY** • Krefeld  
 Inverter plant  
**SLOVAKIA** • Považská Bystrica  
 Large gearboxes manufacturing plant  
**INDIA** • Chennai  
 Planetary gearbox manufacturing and assembly plant  
**INDIA** • Mannur  
 Gearmotors manufacturing and assembly plant  
**INDIA** • Bangalore  
 Photovoltaic Inverter assembly  
**VIETNAM** • Ho Chi Minh  
 Electric motor plant  
**CHINA** • Shanghai  
 Photovoltaic Inverter assembly  
**BRAZIL** • São Paulo  
 Planetary gearboxes manufacturing and assembly plant  
**USA** • Hebron  
 Planetary gearboxes manufacturing and assembly plant



## Resellers

**AFRICA** • Algeria, Egypt, Kenya, Morocco, South Africa, Tunisia  
**ASIA** • Bahrain, China, Emirates, Japan, Jordan, Hong Kong, India, Indonesia, Iran, Israel, Kuwait, Malaysia, Oman, Pakistan, Philippines, Qatar, Saudi Arabia, Singapore, South Korea, Syria, Thailand, Taiwan, Vietnam  
**EUROPE** • Albania, Austria, Belgium, Bielorusia, Bulgaria, Cyprus, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Holland, Hungary, Germany, Great Britain, Greece, Ireland, Italy, Lettonia, Lituania, Luxemburg, Malta, Montenegro, Norway, Poland, Portugal, Romania, Russia, Slovakian Republic, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine  
**LATIN AMERICA** • Argentina, Bolivia, Brasil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Peru, Uruguay, Venezuela  
**NORTH AMERICA** • Canada, United States  
**OCEANIA** • Australia, New Zealand

## Bonfiglioli worldwide network

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[www.bonfiglioli.fr](http://www.bonfiglioli.fr)

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**Industrial**  
 Bonfiglioli Transmission PVT Ltd.  
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 Tel. +91(0) 44 6710 3800 - Fax +91(0) 44 6710 3999  
[www.bonfiglioli.in](http://www.bonfiglioli.in)

### Mobile, Wind

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 Fax +91(0) 44 24780091 - 24781904  
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### Photovoltaic

Bonfiglioli Renewable Power Conversion India (P) Ltd  
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 Peenya Industrial Area, Bangalore - 560 058  
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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.

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