



*Solutions for*  
**WATER  
TREATMENT**

 **Bonfiglioli**



# EFFICIENT AND COMPACT SOLUTIONS FOR WATER TREATMENT

From desalination to purification, the water & wastewater sector is complex and requires reliable solutions to ensure the uninterrupted flow of operations.

With a full portfolio of automation products, Bonfiglioli is able to offer efficient solutions for any kind of application in support of wastewater treatment plants. Easy maintenance, adaptability, compactness and high torque values are other fundamental features required for water and wastewater processes.

Perfect control of the drive speed, the water flow and pressure are key elements allowing us to supply our customers with energy saving solutions for the pumps, conveyors and filters typically used in this sector.

**Bonfiglioli has all the experience needed to support the following water treatment processes:**



## Water Screening process

Page 4 to 7



## Wastewater & Sludge treatment

Page 8 to 11

## Pre-Sales & After Sales Services:



Pre-Sales support and co-engineering (gears and bearings lifetime calculation according to required standards, load verifications etc.)



Tailored service and warranty plans



Tailored solution as per Customer needs (special output shaft design and auxiliary devices like brakes, couplings etc.)

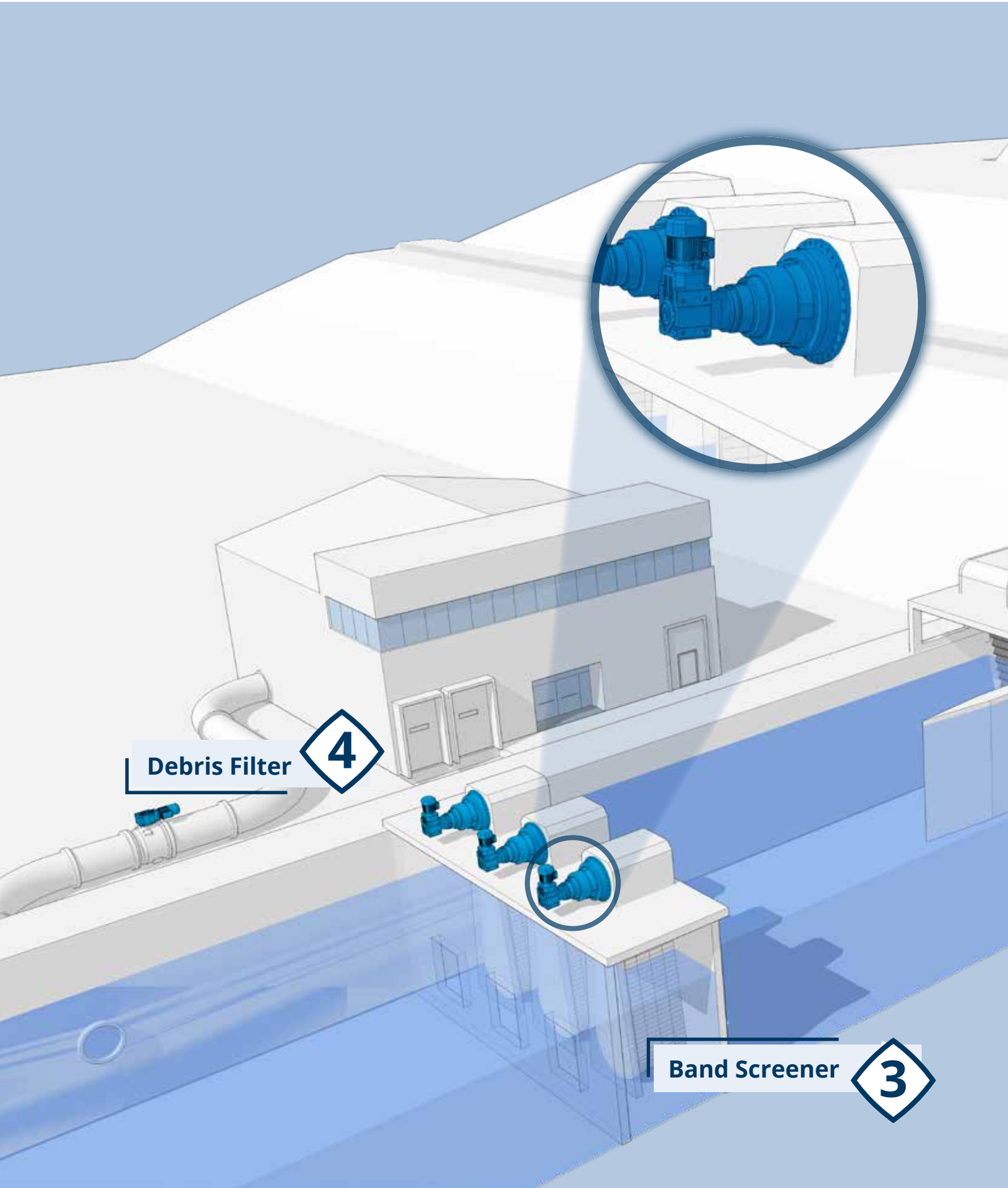


## Discover all processes of the Water & Wastewater industry:

- Water-Gate
  - Flap Gate
  - Flum Gate
  - Roller Gate
- Trash Rake
  - Rack and pinion Trash Rake
  - Chain Trash Rake
  - Cable Trash Rake
- Band Screener
- Debris Filter
- Thickener & Clarifier
- Anaerobic Digester
- Screw Press
- Aerator
  - Vertical low speed Aerator
  - Paddle Aerator

EXAMPLES OF SOLUTIONS WE OFFER

## WATER SCREENING PROCESS

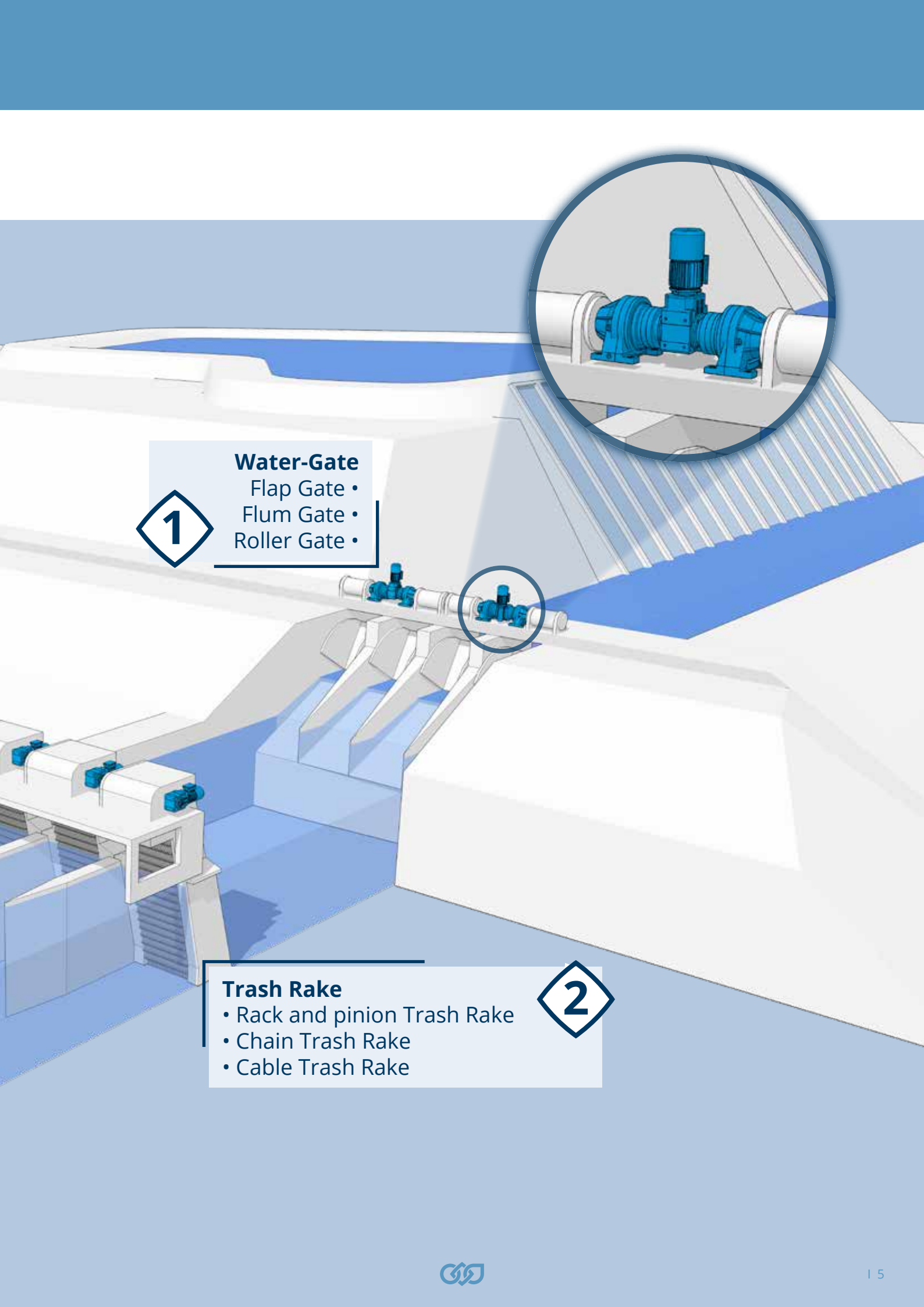


Debris Filter

4

Band Screener

3



1

**Water-Gate**

- Flap Gate •
- Flum Gate •
- Roller Gate •

2

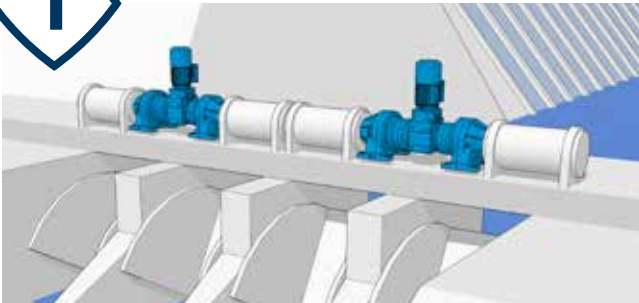
**Trash Rake**

- Rack and pinion Trash Rake
- Chain Trash Rake
- Cable Trash Rake

Examples of solutions we offer

## WATER SCREENING PROCESS

1



### Water Gate **Solutions**

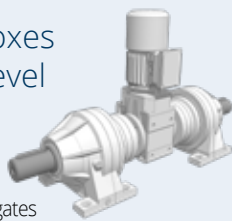
**3/A/3** - Planetary gearboxes combined with helical bevel geared motor

#### BENEFITS

- Also suitable for high torque application gates
- Easy to match the application's required speed
- Easy installation even in tight spaces (simplified maintenance)
- Suitable for pinion/chain transmission

#### FEATURES

- Nominal Torque up to 1300 kNm
- Wide ratio range (300+combined)
- Modular design
- High radial load capability on output shaft



2



### Trash Rake **Solutions**

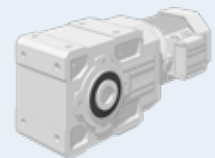
**A** - Helical bevel geared motor

#### BENEFITS

- Effective use of space
- Easy maintenance
- Mounting flexibility

#### FEATURES

- Right angle layout
- Wide torque range
- Oil expansion tank (TBV)
- Several output options



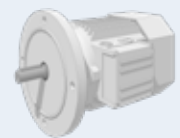
### **BSR** - Synchronous Reluctance Motors

#### BENEFITS

- High dynamics
- Reduced total cost of ownership ( TCO)
- Reliability and Robustness
- Space savings

#### FEATURES

- Power range: 0.37 to 18.5 kW
- IE4 Efficiency class or High output
- Low rotor inertia
- Low heat dissipation
- High speed range: 0 to 4500 rpm (max)
- High torque at zero speed



### **Active Cube** - Premium Inverter

#### BENEFITS

- Multi-drive synchronization & torque control
- Drive Control is highly customizable
- Extremely compact

#### FEATURES

- Power range: 0.25 to 400 kW (parallel connection: up to 1200 kW)
- Electric shaft with master/slave configuration (Systembus)
- Master & slave control & communication protocol
- PLC with integrated functionality
- Optional: Water cooling, IP 54 cabinet



#### GEARBOXES & GEARED MOTORS OPTIONS:

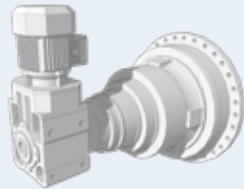
Motor anticondensate heaters and tropicalized windings, Protection Degree up to IP 56, C4 or C5 surface protection according to ISO 12944-2, Energy certified motors compliant to most MEPS (Minimum Efficiency Performance Standards), Fluoroelastomer and double lip seals.

3



## Band Screener **Solutions**

**3/A** - Planetary gearbox combined with Helical bevel geared motor



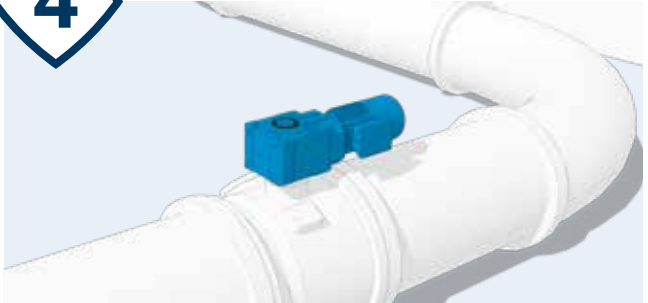
### **BENEFITS**

- High torque transmission and power output
- High level of flexibility in layout and mounting position
- Reliable operation with vertical installation
- Space-saving solution

### **FEATURES**

- Backstop device
- Planetary and helical bevel gear technology
- Shaft mounting
- Rain Canopy

4



## Debris Filter **Solutions**

**A** - Helical bevel geared motor



### **BENEFITS**

- High layout and mounting position flexibility
- Easy installation
- Energy Saving
- Cost Effective

### **FEATURES**

- Shaft mounting
- Torque arm
- High Efficiency
- Shrink disc shaft coupling

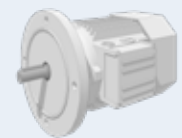
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Motor anticondensate heaters and tropicalized windings, Protection Degree up to IP 56, C4 or C5 surface protection according to ISO 12944-2, Energy certified motors compliant to most MEPS (Minimum Efficiency Performance Standards), Fluoroelastomer and double lip seals.



## EXAMPLES OF SOLUTIONS WE OFFER

### WASTEWATER & SLUDGE TREATMENT

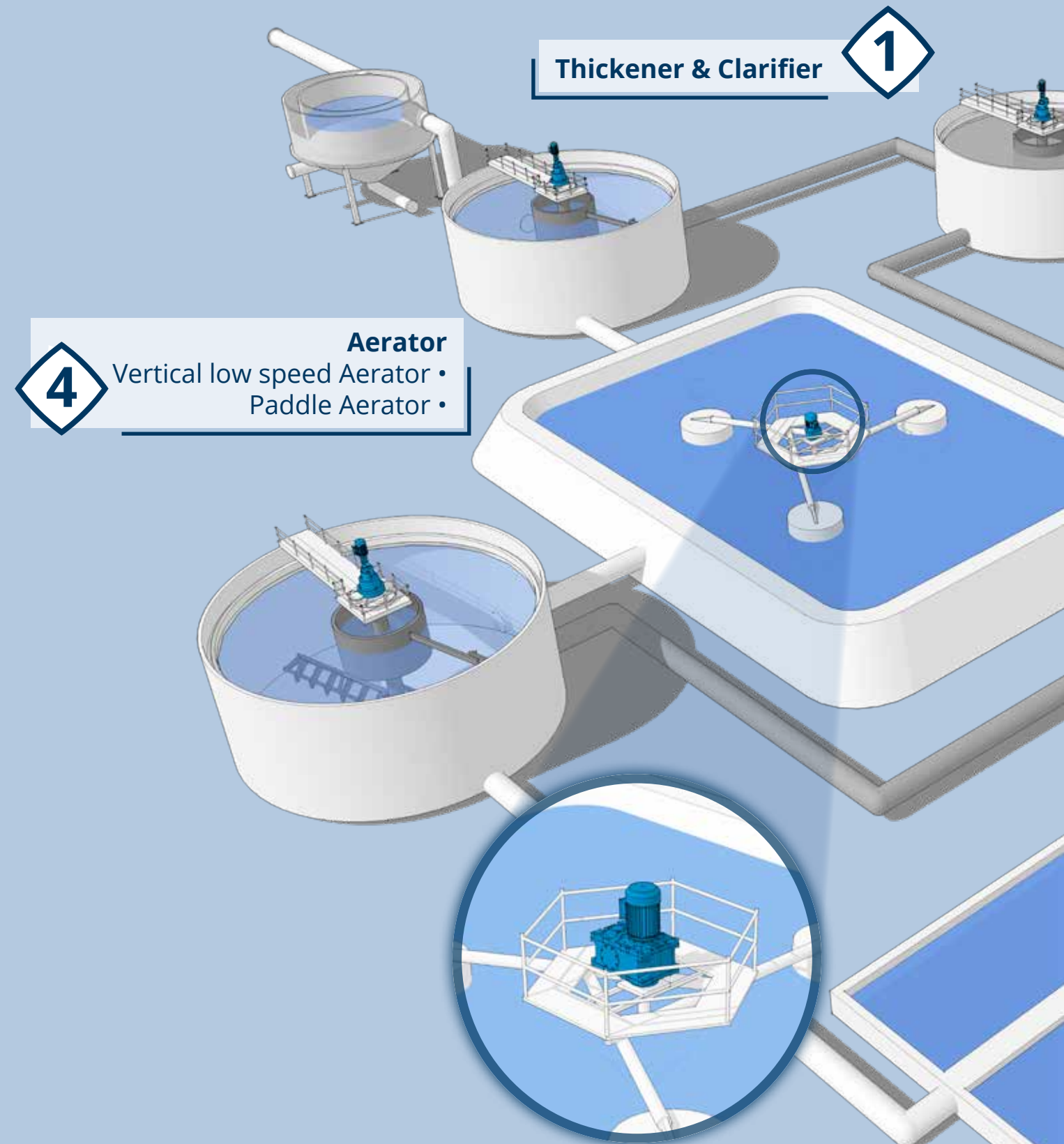
Thickener & Clarifier

1

4

**Aerator**

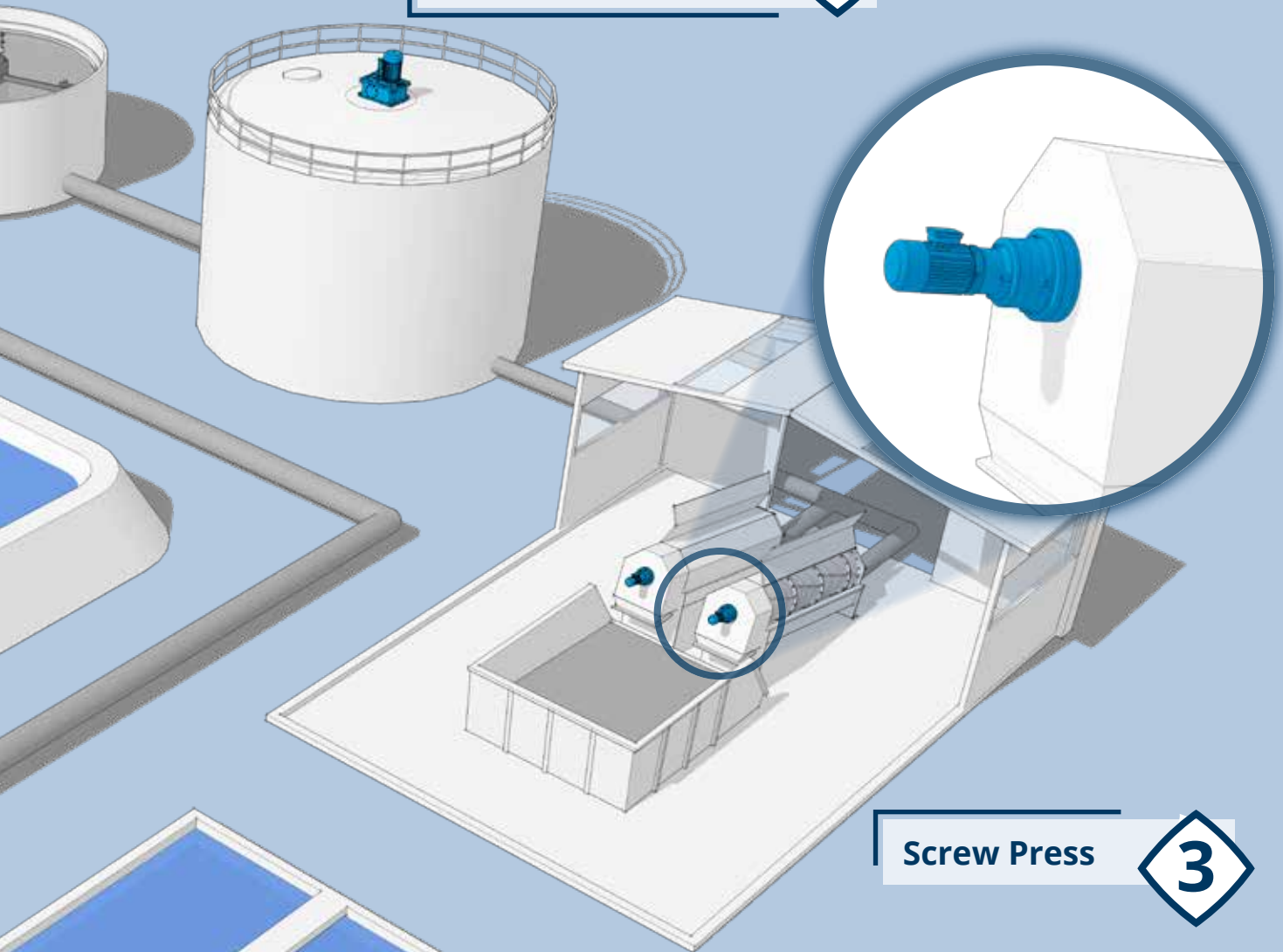
Vertical low speed Aerator •  
Paddle Aerator •





Anaerobic Digester

2



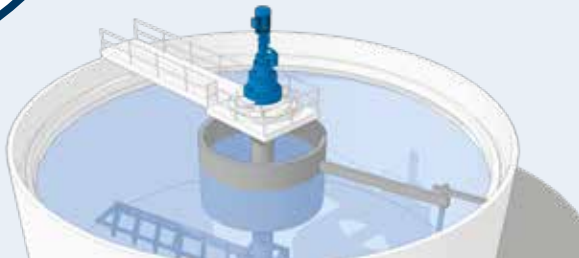
Screw Press

3

## EXAMPLES OF SOLUTIONS WE OFFER

**WASTEWATER & SLUDGE TREATMENT**

1

Thickener & Clarifier **Solutions****300M** - Planetary gearbox and geared motor**BENEFITS**

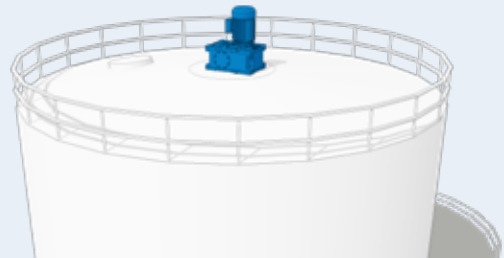
- Prevents system failures due to blade overloads
- High shock load capacity
- Compact
- Extended lifetime & reliability
- Torque control

**FEATURES**

- Integrated torque limiter (Combined solution with VF/W)
- Increased bearing load capability
- Integrated load cell
- Modular design
- Shock load up to 2,000,000 Nm
- Oil expansion tank & oil level switch



2

Anaerobic Digester **Solutions****F** - Shaft mounted geared motor**BENEFITS**

- High flexibility
- Reliable operation in tilted positions
- Easy to match the required output speed
- Safe operation in explosive environments
- No external devices needed
- No oil service required

**FEATURES**

- Non-standard mounting positions possible
- High ratios availability
- ATEX compliant product line (per Directive 2014/34/EU)
- Integrated torque arm
- Heater and tropicalized wiring
- Anti-condensation drain
- Small, lifetime-sealed units

**Active Cube** - Premium Inverter**BENEFITS**

- Multi-drive synchronization & torque control
- Drive Control is highly customizable
- Extremely compact

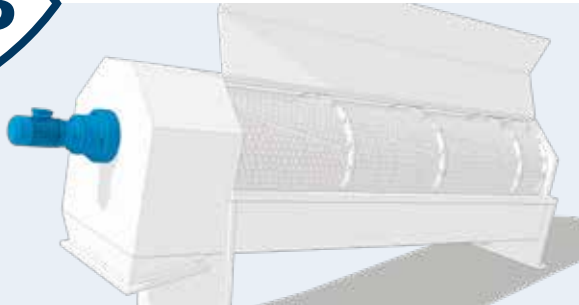
**FEATURES**

- Power range: 0.25 to 400 kW (parallel connection: up to 1200 kW)
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**GEARBOXES & GEARED MOTORS OPTIONS:**

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3



## Screw Press **Solutions**

### **300M** - Planetary gearbox and geared motor

#### **BENEFITS**

- Simple to match the required screw speed
- Easy to install
- High axial and radial load capacity
- High torque output
- Compact
- Highly flexible

#### **FEATURES**

- Wide Torque & Ratio Range
- Wide range of possible mounting configurations
- Wide range of accessories (shrink disk output flange...)
- High-performance output bearings
- Torque arm
- High torque density
- Modular: Ratio group set can be changed separately



4



## Aerator **Solutions**

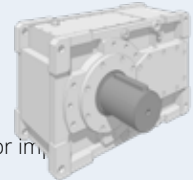
### **HDP** - Heavy duty geared motor (Helical-Parallel)

#### **BENEFITS**

- Direct and reliable coupling with aerator impeller
- High power output
- Minimized oil contamination risk
- High reliability
- Long oil service interval

#### **FEATURES**

- Reinforced bearing and extended span on output shaft
- Wide range of cooling options
- Drywell
- Special breathers
- 14 gearbox sizes
- Modular design



## **Active Cube** - Premium Inverter

#### **BENEFITS**

- Multi-drive synchronization & torque control
- Drive Control is highly customizable
- Extremely compact

#### **FEATURES**

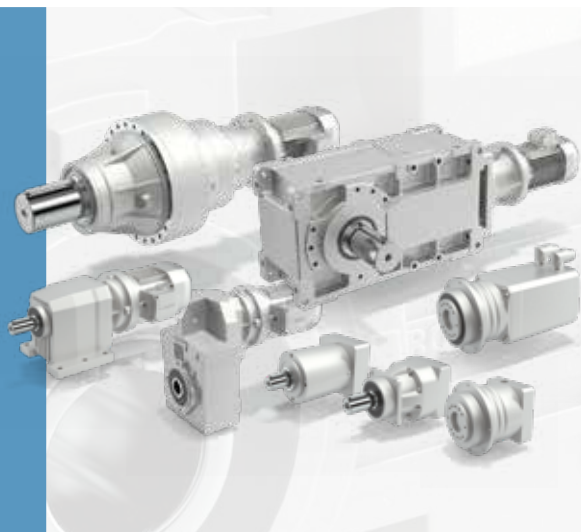
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Motor anticondensate heaters and tropicalized windings, Protection Degree up to IP 56, C4 or C5 surface protection according to ISO 12944-2, Energy certified motors compliant to most MEPS (Minimum Efficiency Performance Standards), Fluoroelastomer and double lip seals.

# COMPLETE SOLUTIONS FOR POWER TRANSMISSION & AUTOMATION



## Gearboxes & Geared motors

## Motors

HEAVY DUTY

- **Heavy duty parallel/right angle shaft geared motors HDP/HDO Series**  
Torque range: 13 to 7,100 Nm  
Gear ratios: 7 to 10,000
- **Planetary geared motors | 300 Series**  
Torque range: 1,250 to 1,287,000 Nm  
Gear ratios: 3.4 to 5,234

- **Asynchronous IEC Motor | BN, BE, BX Series**  
**Asynchronous Compact Motors | MN, ME, MX Series**  
A complete range of AC motors, meeting worldwide MEPS (e.g. IE3)  
Power range: 0.06 to 355 kW  
Poles: from 2 to 8 and multiple poles

IE3

LIGHT DUTY

- **Worm geared motors | W/VF Series**  
Torque range: 13 to 7,100 Nm  
Gear ratios: 7 to 10,000
- **Helical geared motors | C Series**  
Torque range: 45 to 12,000 Nm  
Gear ratios: 2.6 to 1,481
- **Bevel-helical geared motors | A Series**  
Torque range: 100 to 14,000 Nm  
Gear ratios: 5.4 to 1,715
- **Shaft-mounted geared motors | F Series**  
Torque range: 140 to 14,000 Nm  
Gear ratios: 6.4 to 2,099

- **Asynchronous motors | BN, BE, BX, M, ME, MX Series**  
A complete range of AC motors, meeting worldwide MEPS (e.g. IE3)  
Power range: 0.06 to 355 kW  
Poles: from 2 to 8 and multiple poles
- **Synchronous motors | BMD Series**  
Stall torque: 0.85 to 60 Nm  
Rated speed: from 1,600 to 6,000 min<sup>-1</sup>  
Power supply: 230, 400 VAC
- **Synchronous reluctance motor | BSR Series**  
Two different versions for different needs: High efficiency IE4 and high output  
Power range: 0.37 to 18.5 kW

IE3

IE4

SERVO

- **Precision planetary servo geared motors TQ, TQK, TQF, TR, MP, LC, LCK, SL, KR Series**  
Torque range: up to 1,000 Nm  
Gear ratios: up to 1,000  
Backlash: lower than 2 and 17 arcmin

- **Synchronous motors | BMD, BCR Series**  
Stall torque BMD: 0.85 to 60 Nm  
Stall torque BCR: 0.2 to 115 Nm  
Rated speed BMD: from 1,600 to 6,000 min<sup>-1</sup>  
Rated speed BCR: from 2,000 to 4,500 min<sup>-1</sup>  
Power supply: 230, 400 VAC
- **Synchronous motors with integrated drives | iBMD Series**  
Stall Torque: 2.7 to 36 Nm  
Rated speed: 3,000 min<sup>-1</sup>  
Power supply: 560 VDC



## Inverters

### ■ Cabinet solution | Active Cube 8 IP 54

**Power range:** 200 up to 1,200 kW  
**Voltage:** 400 V, 525V, 690V

### ■ Premium inverter | Active Cube Series

**ACU210:** 0,25 - 9,2 kW / 1- or 3-phase | **ACU410\*:** 0,25 - 400 kW / 3-phase  
**ACU510\*:** 160 - 400 kW / 3-phase | **ACU610\*:** 160 - 400 kW / 3-phase

### ■ Premium inverter | Active Cube Series

**ACU210:** 0,25 - 9,2 kW / 1- or 3-phase | **ACU410\*:** 0,25 - 400 kW / 3-phase  
**ACU510\*:** 160 - 400 kW / 3-phase | **ACU610\*:** 160 - 400 kW / 3-phase

### ■ Smart inverter | Agile Series

**200V:** 1-phase 0.12 up to 3 kW / 3-phase 0.25 up to 7.5 kW  
**400V:** 0.25 up to 11 kW

### ■ Compact inverter | S2U Series

**S2U230S--(F) IP66:** 0.2 - 2.2 kW / 1-phase

### ■ Servo inverter | ANG Series

**ANG210:** 0.25 - 9.2 kW / 1- or 3-phase | **ANG410\*:** 0.25 - 400 kW / 3-phase  
**ANG510\*:** 160 - 400 kW / 3-phase | **ANG610\*:** 160 - 400 kW / 3-phase

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**ACU510\*:** 160 - 400 kW / 3-phase | **ACU610\*:** 160 - 400 kW / 3-phase

### ■ Smart inverter | Agile Series

**202V:** 0.12 - 3 kW / 1-phase | 0.25 - 7.5 kW / 3-phase  
**402V:** 0.25 - 11 kW / 3-phase

\* up to 1200 kW with parallel connection



## HMI

### ■ Human Machine Interfaces | BMI Series

3 Display sizes 3.5", 7", 10.1"  
True flat front panel in IP65  
High resolution 480x272 up to 1,024x600 pixels

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# OUR GLOBAL PRESENCE

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Thanks to an international network of closely interconnected commercial and production sites, we can guarantee the same high standards of Bonfiglioli quality anywhere at any given time. We know that our direct presence in local markets is the key to long-lasting success, so our family includes 20 production sites, 26 commercial sites and more than 550 distributors around the world.

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



**20**  
PRODUCTION SITES

**26**  
COMMERCIAL SITES

**80**  
COUNTRIES

**550**  
DISTRIBUTORS

**~4,800**  
PEOPLE

## AUSTRALIA

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Tel. +34 93 447 84 00



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PRODUCTION



ASSEMBLY



SALES



SERVICE



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

#### HEADQUARTERS

##### Bonfiglioli S.p.A

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