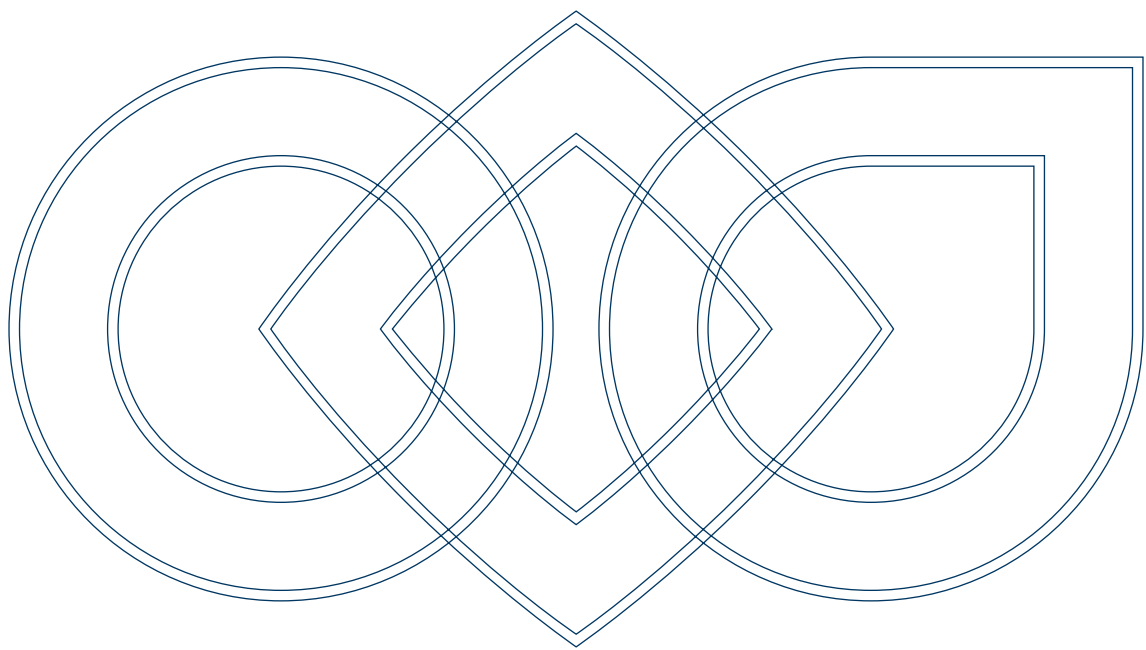


Solutions for **Sugar Cane Mill Plants**



APPLICATION



BONFIGLIOLI SOLUTIONS FOR SUGAR CANE MILL PLANTS

Sugar cane is becoming more and more important and the industry attracting ever greater interest as a result of increased global demand for food grade sugar and the growing use of ethanol as an alternative to fossil fuels.

Sugar producers will soon find themselves obliged to improve the productivity and energy efficiency of their processes in order to satisfy rising demand and survive in a more competitive market.

Power transmission is destined to play a key role in the renewal of production processes.

Bonfiglioli offers customers a vast amount of experience acquired from sugar cane processing plants around the world. This makes us the perfect partner for investments aimed at boosting production capacity and optimising energy efficiency, whether through modernisation projects or new installations.

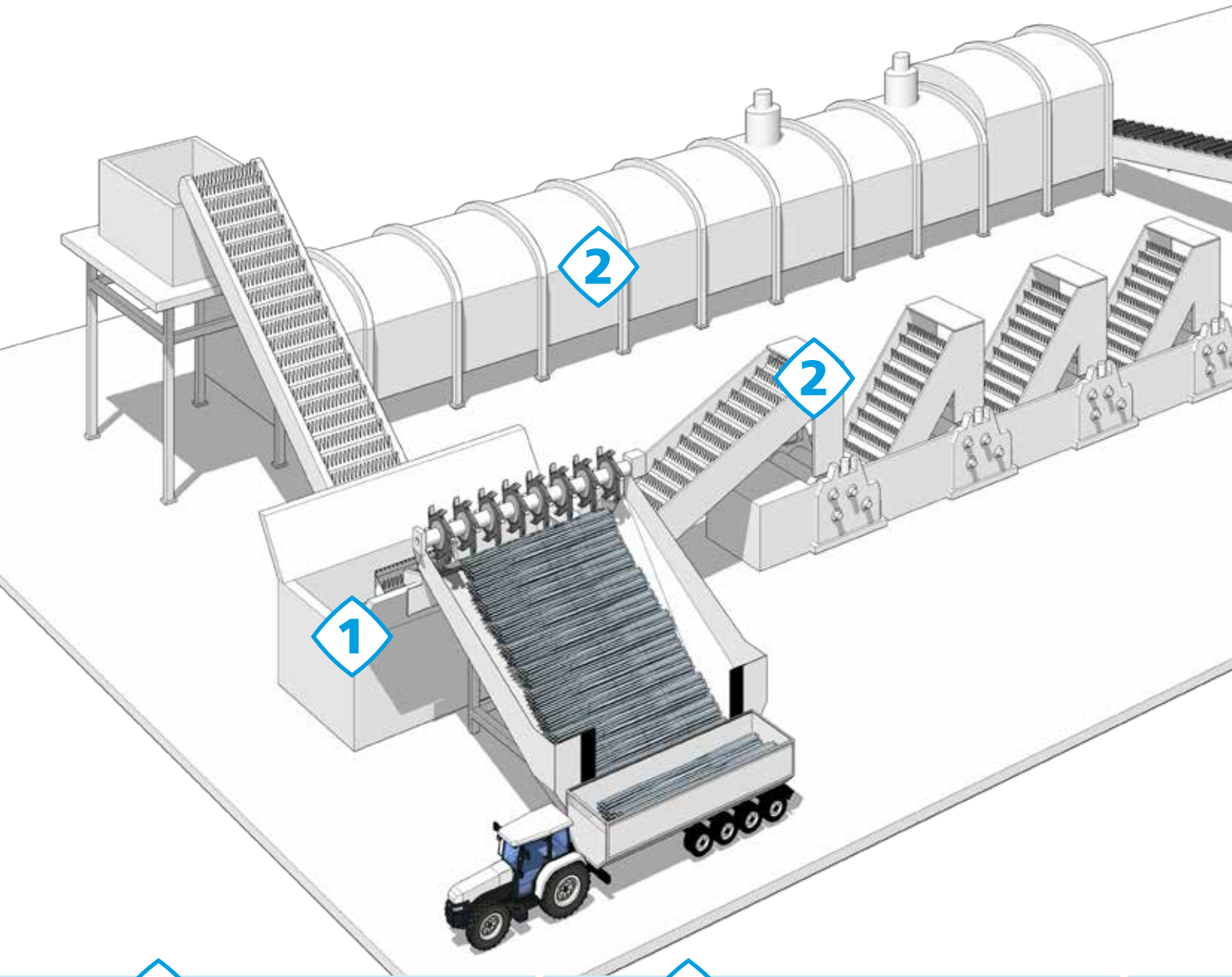
Our extensive catalogue of mechanical gearboxes is complemented by a complete range of inverters for optimised power transmission and control. Our specific solutions for sugar cane processing include high power, compact gearmotors, planetary and combined gearboxes, and multi-drive solutions complete with inverters for speed control and synchronisation.

Over 60 years of experience in managing and serving key accounts and global partners in a wide range of heavy duty sectors represent a real guarantee of competence, reliability and service.

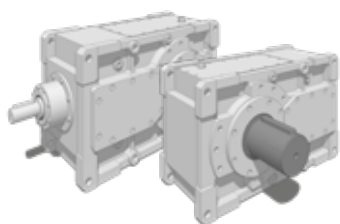
Our team of application engineers is at your service to examine the requirements of your own plant and propose modern and innovative solutions for improving the productivity, reliability and energy efficiency of your production processes.



Solutions for Sugar Cane Mill Plants

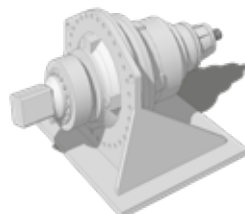


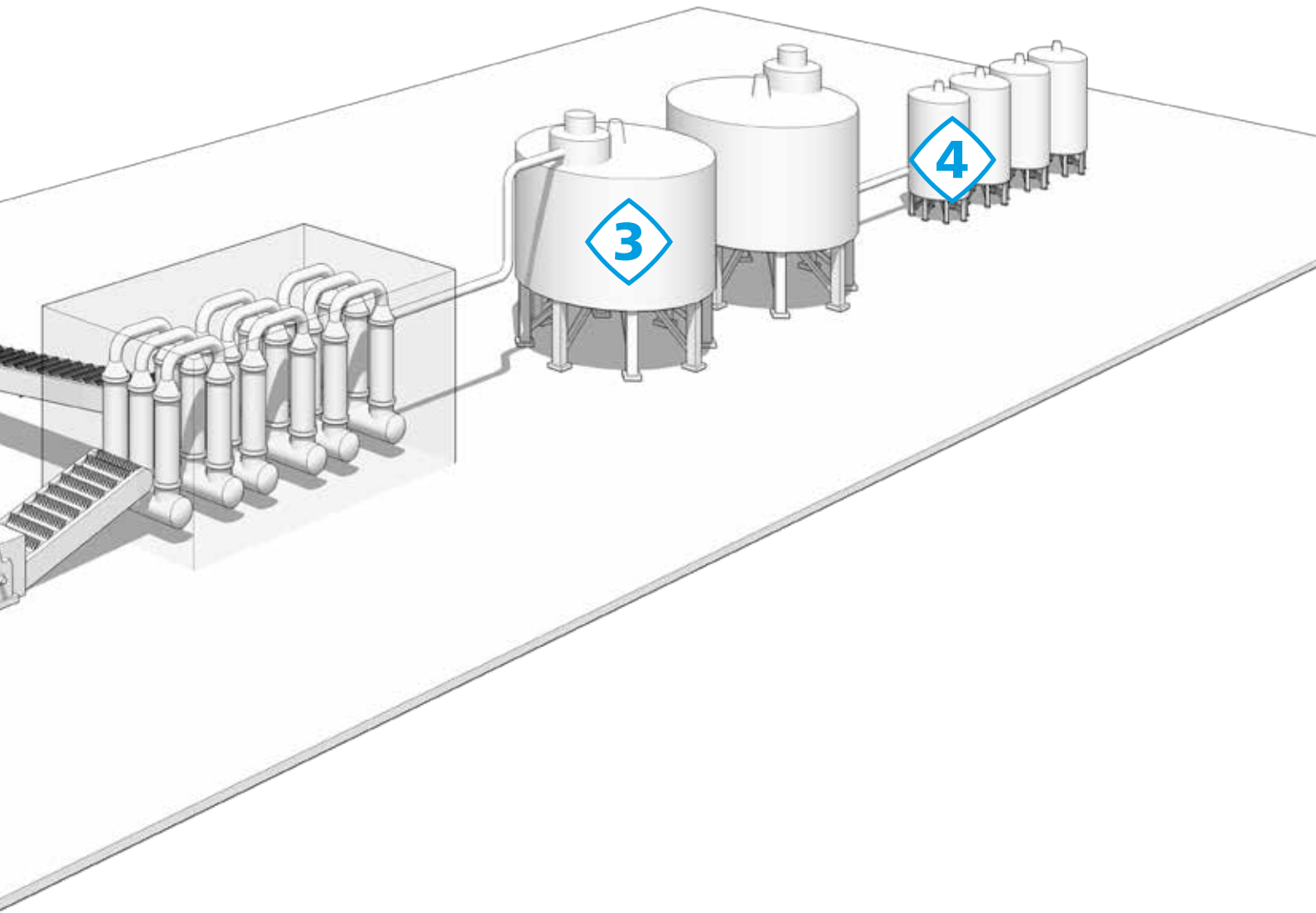
1 CANE CARRIER



2 MILLS

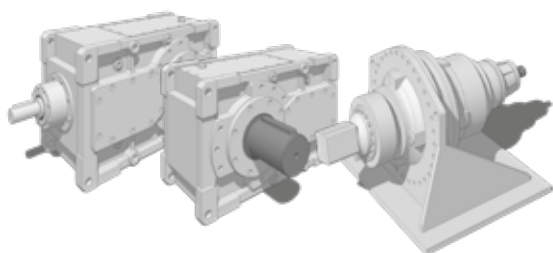
DIFFUSER





3

DECANTER / CLARIFICATION



4

CRYSTALLIZER



Bonfiglioli Heavy Duty Solutions

300M series

Planetary gearmotors



3/H combined series

Planetary / Bevel gearboxes



Size	Nominal torque [Nm]
316M	134 390
317M	207 490
318M	297 550
319	471 190
321	655 740
323	890 310
325	1 286 000
327	1 800 000
329	2 500 000

Size	Nominal torque [Nm]
3/HDO16	134 390
3/HDO17	207 490
3/HDO18	297 550
3/HDO19	471 190
3/HDO21	655 740
3/HDO23	890 310
3/HDO25	1 286 000
3/HDO27	1 800 000
3/HDO29	2 500 000

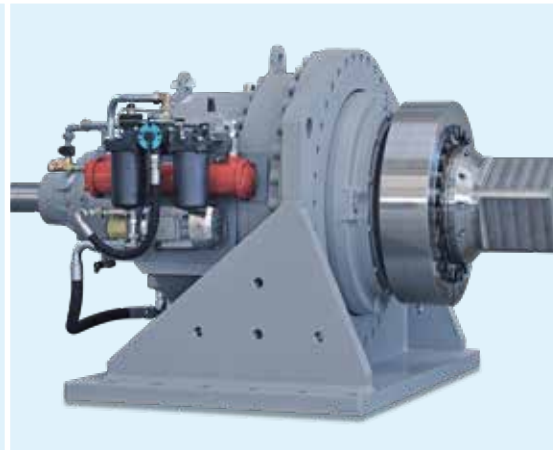
Accessories



OUTPUT SQUARED SHAFT



FLANGE COUPLING



MOUNTING FEET

HD series

Parallel & Bevel gearboxes



Size	Nominal torque [Nm]
100	28 210
110	31 790
120	41 250
125	49 240
130	69 570
140	87 060
150	117 200
160	147 070
170	190 190
180	209 900

Active Cube series

Our solution for Sugar Cane application speed control



Additional benefits:

- Energy saving functions embedded into control algorithm
- Highest power density in the market

Size	Power kW (Rated voltage 400V)
ACU401-51	160
ACU401-53	200
ACU401-55	250
ACU401-57	315
ACU401-59	355
ACU401-61	400
2xACU401-61	800
3xACU401-61	1 200

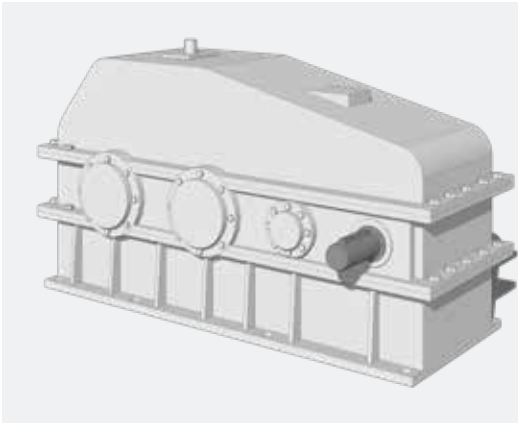


SPECIAL COOLING UNIT ON BOARD



Bonfiglioli inverters are produced at the Bonfiglioli Vectron centre of excellence, located in Krefeld, Germany.

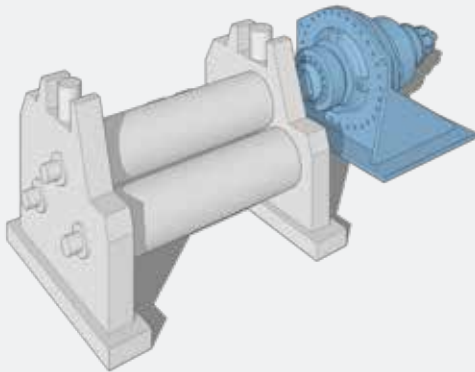
Rolling Mills Current Operating Solution



- A big single parallel shaft gearbox
- Wide footprint
- Significant maintenance activities required

Our Solutions

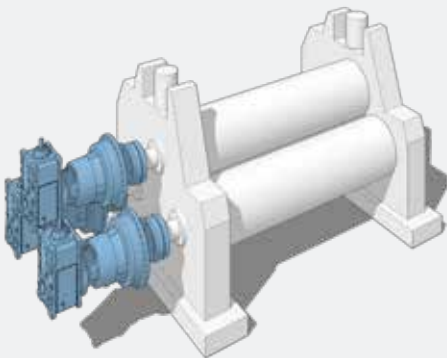
Solution A: Single drive system with planetary gearbox and inverter speed control



Advantages over conventional solutions:

- Reduced footprint
- Reduced maintenance
- Low installation costs
- From 12% to 15% greater efficiency
- Reduced plant downtimes
- Variable speed control by inverters up to 1200 kW (parallel inverter connections)

Solution B: Multi-drive system with planetary or combined planetary/bevel gearboxes and inverter speed and synchronisation control



Advantages over conventional solutions:

- Zero footprint
- Reduced maintenance
- Dramatically low installation costs
- Not more external transmission through open gears for rollers connection
- From 20% to 22% greater efficiency
- Modular design based on standard components that guarantee:
 - Dramatically reduced plant downtimes
 - Reduced spare parts stock
 - Greater autonomy in replacement of the transmission components
- Variable speed control by inverters up to 400 kW (single inverter)
- Individual roller mills speed control and synchronisation with other rollers for an improved milling action.

Rolling Mills Average Operating Efficiency

Gear boxes average efficiency comparison of the three operating systems

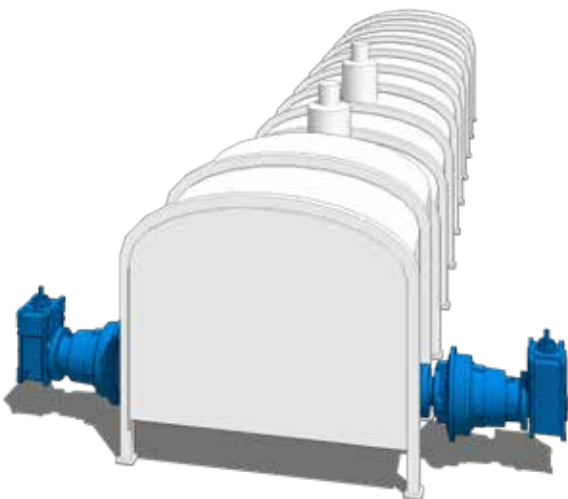
	Conventional Solution	Our Solution (A)	Our Solution (B)
3-phase motor	98%	98%	98%
Gearbox	85%	90%	90%
Coupling	Rope type 95%	Squared type 98%	Direct 0%
Coupling	Squared type 98%	Squared type 98%	Direct 0%
Crown pinion	90%	90%	0
Total efficiency with rope coupling	71%	78%	88%
Total efficiency with squared coupling	73%	78%	88%

Comparison based on installed power of 1000 kW.

- **Conventional Solution:** power actually available to the plant: **710 - 730 kW**
- **Solution A:** power actually available to the plant: **780 kW**
- **Solution B:** power actually available to the plant: **880 kW**

Diffuser Plant

Solution: Double motorised drive shaft with electronic control of torque distribution.



- Greater efficiency than in conventional systems with single, parallel shaft gearbox.
- Significantly smaller footprint and installation costs.
- Shorter repair times in the event of failure.
- Possibility of continuous cycle operation at reduced load using only one gearbox.
- Variable speed control by inverters up to 1200 kW (parallel inverter connections).

300M series

Planetary gearmotors

Size	Nominal torque [Nm]
323	890 310
325	1 286 000
327	1 800 000
329	2 500 000
2x323	1 780 620
2x325	2 572 000
2x327	3 600 000
2x329	5 000 000



LIFTING SCREW DRIVES

Sugar Cane Applications



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



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