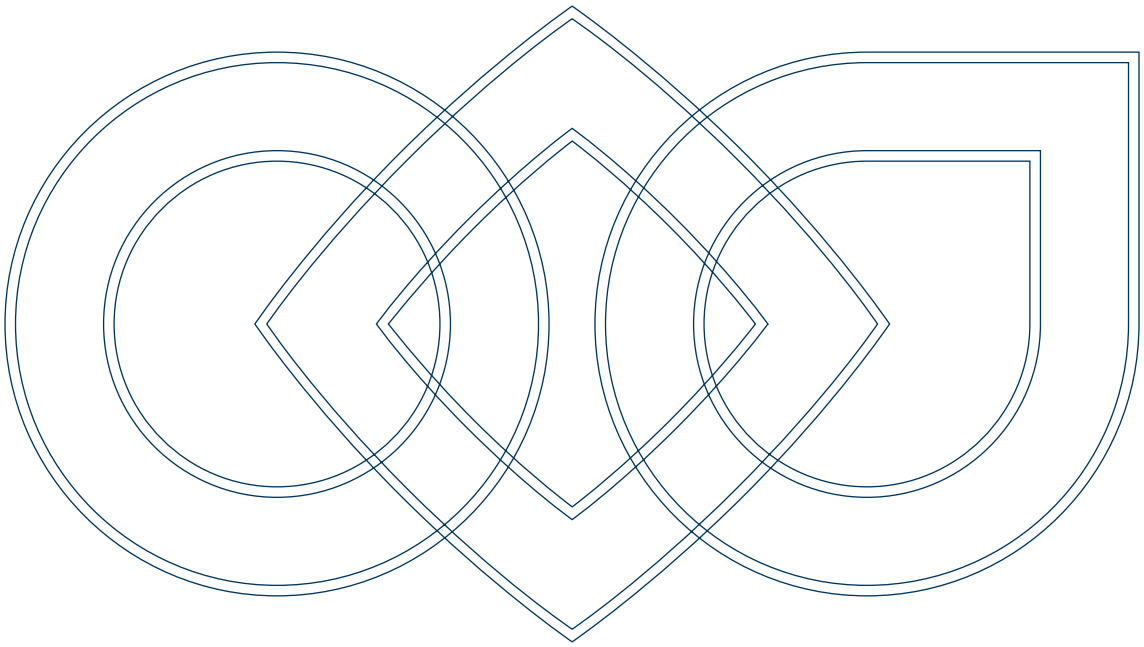
Bonfiglioli

Forever Forward

Wind Solutions

PRODUCT RANGE



Innovative solutions
for renewable energies

For more than 30 years, Bonfiglioli has provided dedicated integrated solutions to the wind industry. The combined expertise in the designing and manufacturing of gearboxes in association with years of experience in application on wind turbines has enabled Bonfiglioli to become a global top player.

One out of every three wind turbines globally uses a Bonfiglioli gearbox.

The result is a complete package dedicated to the wind energy sector which seamlessly enables the control of energy generation, from rotor blade positioning with a pitch drive to nacelle orientation with a yaw drive.

Bonfiglioli has produced a completely integrated inverter solution for yaw drives and is now developing a pitch drive control system as well as re-generator inverters to direct the electricity created by the wind turbine into the power grid.

Working closely with customers to develop tailor-made applications, Bonfiglioli uses its flexibility to deliver reliable, superior performance products, which comply with all worldwide standards. The largest companies around the world use Bonfiglioli Wind Energy Solutions.

1 OUT OF EVERY 3 WIND TURBINES
USES A BONFIGLIOLI GEARBOX

MATCH THE NEEDS OF
ON-SHORE & OFF-SHORE WIND PARKS

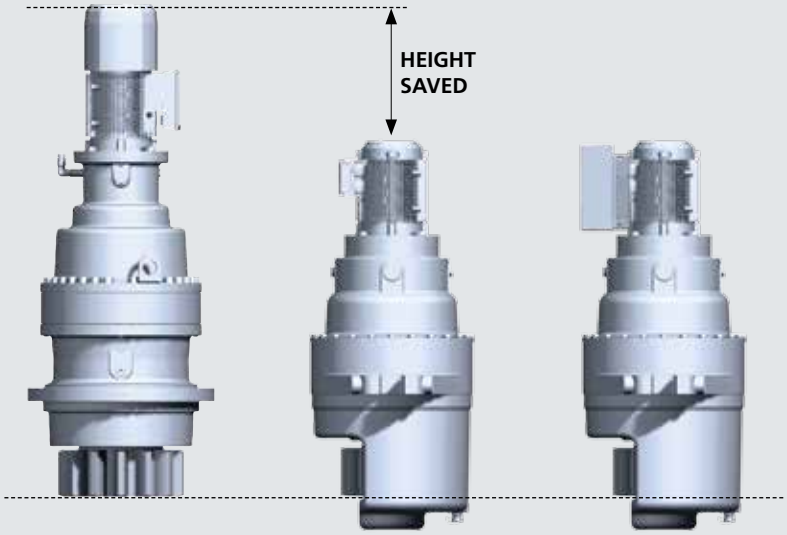
30 YEARS OF COMMITMENT
TO GOING GREEN

Yaw drive 7TW series

7TW series - the solution specifically designed for yaw drive applications.
More compact than existing solutions, this innovative system for nacelle orientation control is now equipped with integrated motor and brake and is inverter ready.
The new design incorporates a special feature for quick installation and setting and grants simpler maintenance over the product lifetime.
The yaw control multistage planetary gearmotor is perfect for wind turbines from 1.5 MW to 3.5 MW, both for onshore and offshore applications.

An Innovative design system:
- Smaller dimensions with the same performance (20% height reduction compared to traditional solution)
- Lighter weight (8% less than traditional solution)
- Design complexity reduction (11% less components than traditional solution)
- Easier installation
- Simplified maintenance also with longer service intervals (10 years)
- Efficiency improved thanks to the design focused on the Wind application profile.

Integrated inverters for maximum efficiency:
- Higher reliability and increased life of mechanics guaranteed by electronic control of torques
- Maintenance prediction, through diagnostics via inverter field bus
- Easier installation and less components at nacelle because no cabinet required
- Energy efficiency improved thanks to vector control of active and reactive power.

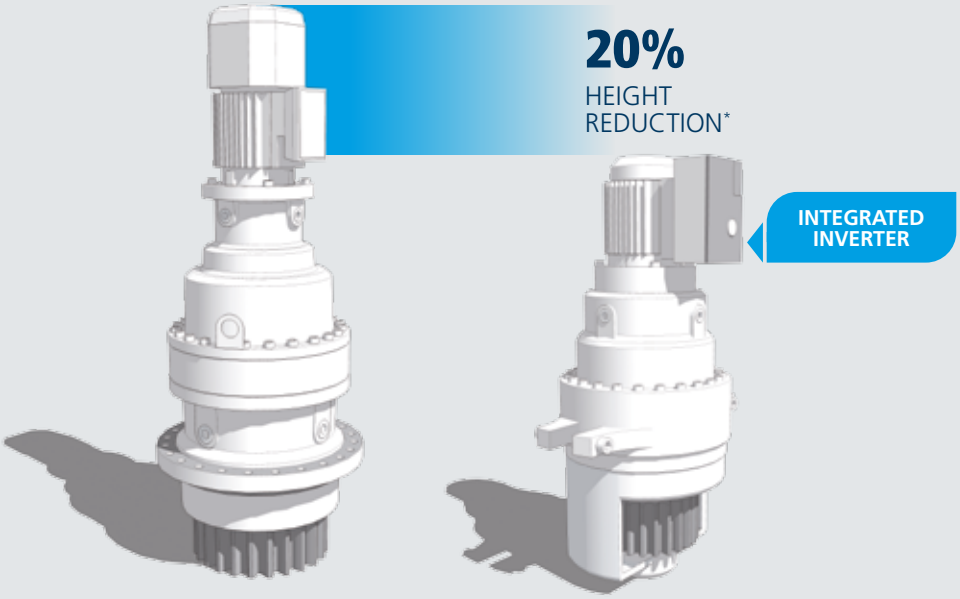


7 TW
standard series

7 TW
compact series

7 TW with optional
integrated inverter

Technical key characteristics:
Series: 7TW
Size: 712 TW
Rated dynamic torque: 50 kNm
Peak static torque: 110 kNm
Reduction ratio: from 600 to 3000
Pinion module: from 16 to 20
Motor size: IEC100 integrated
Parking brake: integrated
Inverter: optionally integrated



STANDARD YAW DRIVE:
3 sections, separate brake;
requires separate inverter

NEW GENERATION YAW DRIVE:
2 sections, integrated brake;
integrated inverter

SMALLER
Integrated AC motor flange and brake decreases height by 20%*

SIMPLER
Less bolted connections and only 2-piece housing 11%* less components

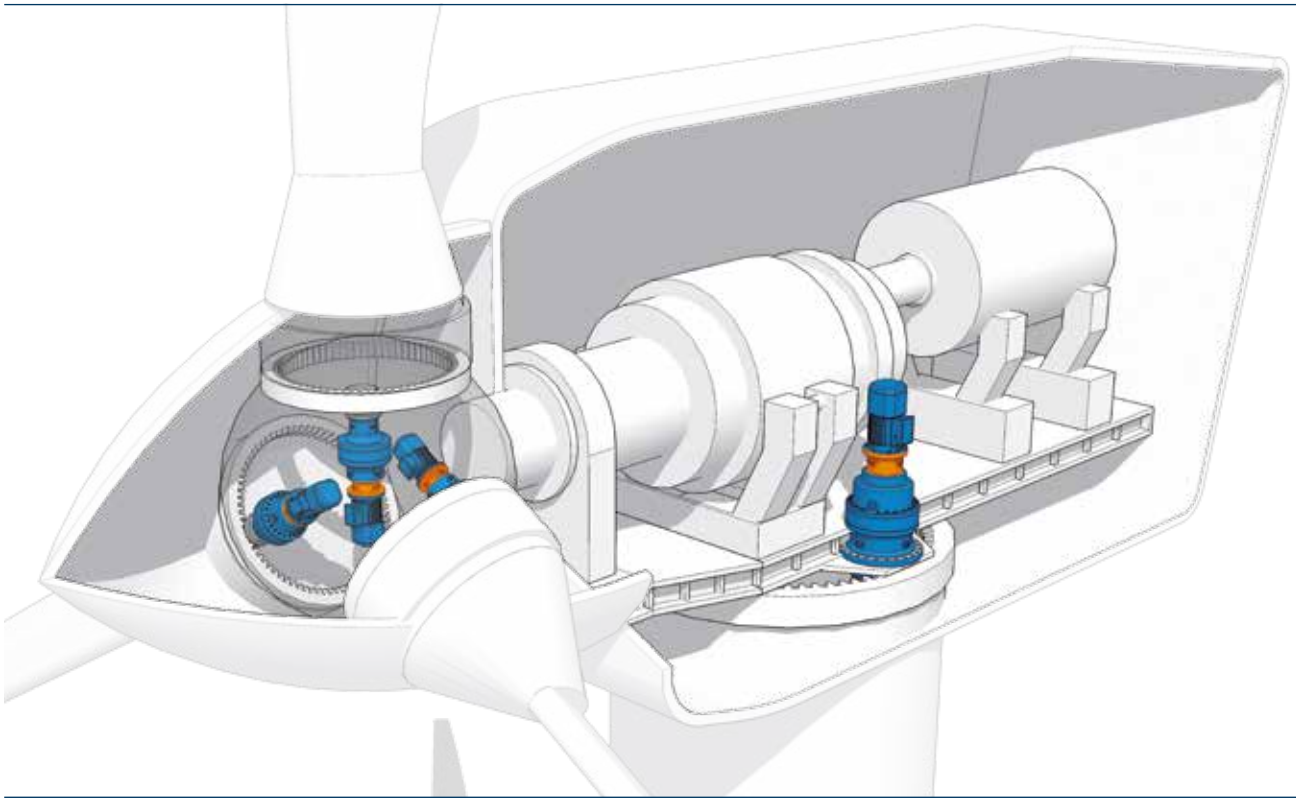
LIGHTER
Total unit weight reduced by 8%*

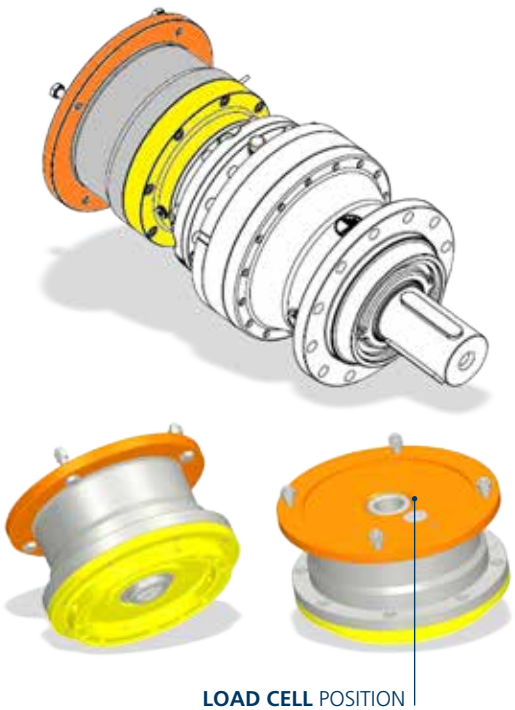
COMPLETE "PLUG AND PLAY" SOLUTION

** Measures vary depending on gearbox size*

Integrated Load Cell

Precise real-time load peak monitoring.





This patented solution integrates the load cell into the gearbox. The output signal from the transmitter can:

- Shut down the e-motor if necessary
- Reduce the input power (e.g. by frequency converter)
- Elaborate the information by customer PLC (e.g. creating working group graphic in real time)

Technical Information

- The Load Cell is located between the e-motor and first stage of transmission
- It can be fixed with all IEC and gear stages just by changing the interface component

Applications

Used in all applications with an e-motor where it is necessary to control and manage the input power, including:

- Yaw Drives
- Pitch Drives

Key Features

- Load cell is integrated inside the gearbox, with an external output cable to monitor gearbox performance
- **Precise** and **quick measurement** of torque
- **Real time** torque monitoring
- **Automatic motor switching**
- **Anti-seize** function

700T series
Yaw and Pitch Drives with Integrated Load Cell.

For all applications of yaw and pitch drives for the monitoring of load peaks, Bonfiglioli offers its customers a solution that is protectively integrated into the gear motor. The integrated load cell quickly and precisely measures torque and enables torque monitoring in real time. The system provides an automatic engine shut-down to protect the drive or reduce the capacity of the frequency converter and provides information to the PLC. The system also has an anti-seize function which prevents blockages.

Rated Torque Range
8000 ... 120000 Nm

Peak Torque Range
5000 ... 300000 Nm

Reduction Ratios
1:600 ... 3000

Key Features
- Located inside the gearbox to measure gearbox performance in real time
- Can be monitored remotely to immediately detect problems or potential failures
- Gives wind farm operators the ability to measure performance of individual components within the nacelle

Gearbox Configuration
- Flange mounted
- Output shaft: with integral pinion (type: F, N, U)
- Rugged design
- High torque capacity
- Output shafts supported by high load capacity bearings

Applicable AC motors
- Compact motors and brake motors M/ME series
- IEC motors and brake motors BN/BE series

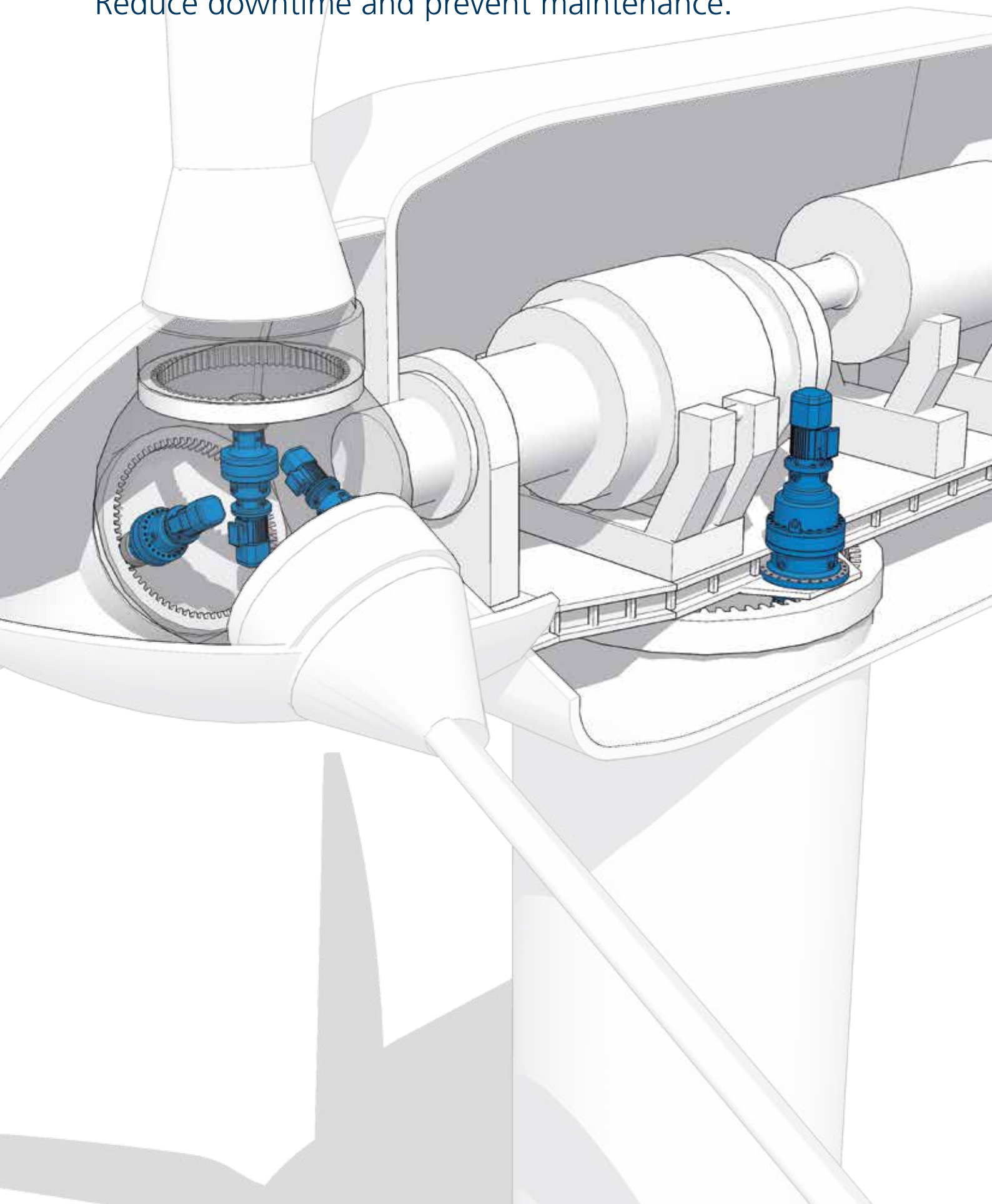
Main Brake Motor Features
DC and AC brake

Main Brake Features
- AC/DC rectifier
- Double disc brake
- Microswitch
- Thermal sensors

The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

Torque Limiter

Reduce downtime and prevent maintenance.



700T series
Yaw and Pitch Drive with Torque Limiter.

For both Yaw and Pitch drive applications, Bonfiglioli has created a torque limiter which significantly reduces downtime in the case of stopping the transmission of wind turbines when peak torque has been reached and also reduces maintenance costs.

Rated Torque Range
8000 ... 120000 Nm

Peak Torque Range
5000 ... 300000 Nm

Reduction Ratios
1:600 ... 3000

Key Features of Torque Limiter
- External to gearbox* for fast and easy replacement - no longer necessary to replace the entire gearbox
- Limits peak of torque to avoid failure
- Shuts down gearbox if torque limit is reached
- Fully interchangeable with older gearboxes - can be included in replacement drives for greater long-term reliability and reduced costs

Gearbox Configuration
- Flange mounted
- Output shaft: with integral pinion (type: F, N, U)
- Rugged design
- High torque capacity
- Output shafts supported by high load capacity bearings

Applicable AC motors
- Compact motors and brake motors M/ME series
- IEC motors and brake motors BN/BE series

Main Brake Motor Features
DC and AC brake

Main Brake Features
- AC/DC rectifier
- Double disc brake
- Microswitch
- Thermal sensors

(*) The torque limiter is located inside an easily removable and replaceable cartridge, which is integrated into a VF 110 worm gear. It is only possible in a right angle solution.

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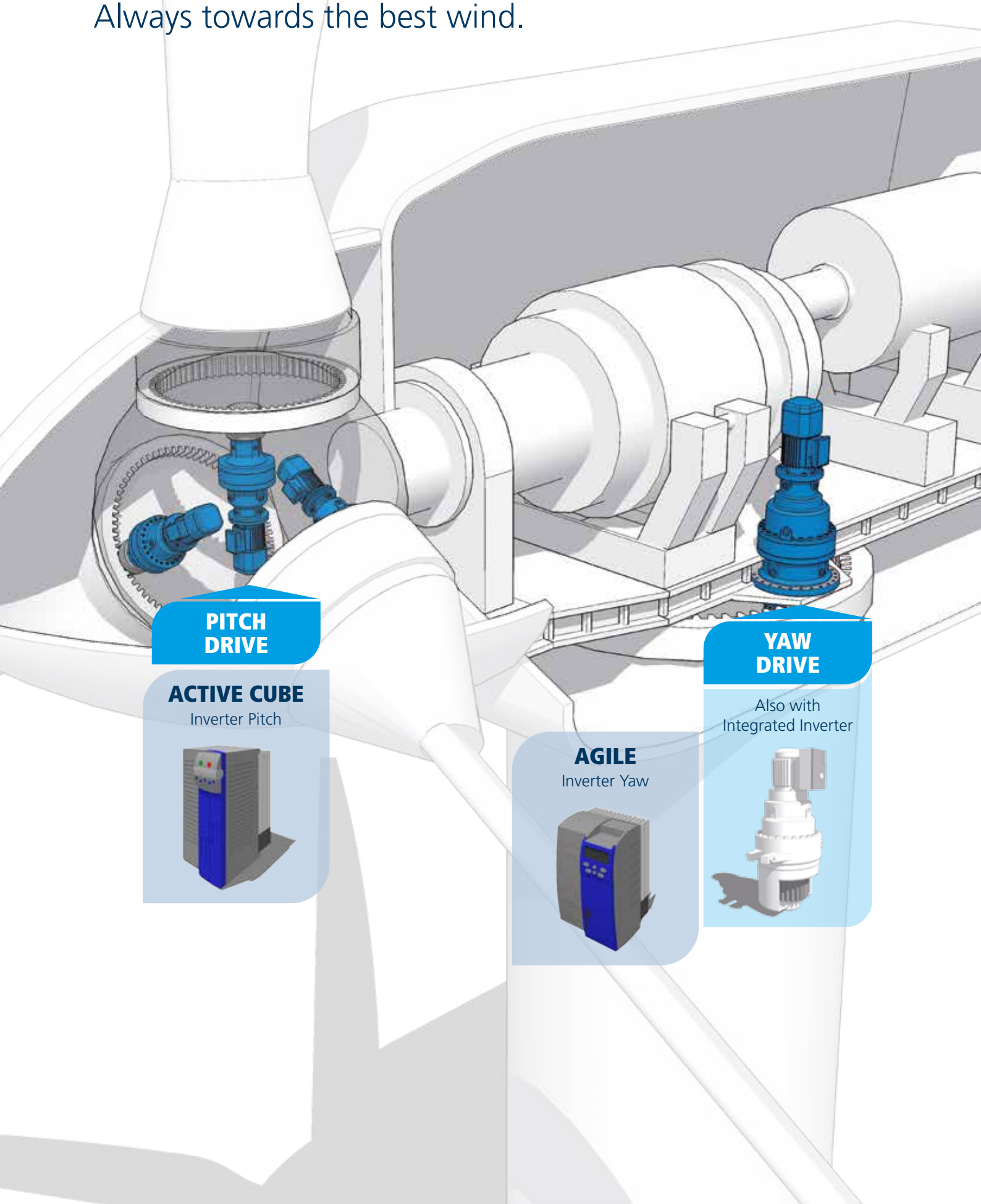
Integrated solutions

Always towards the best wind.



PITCH DRIVE

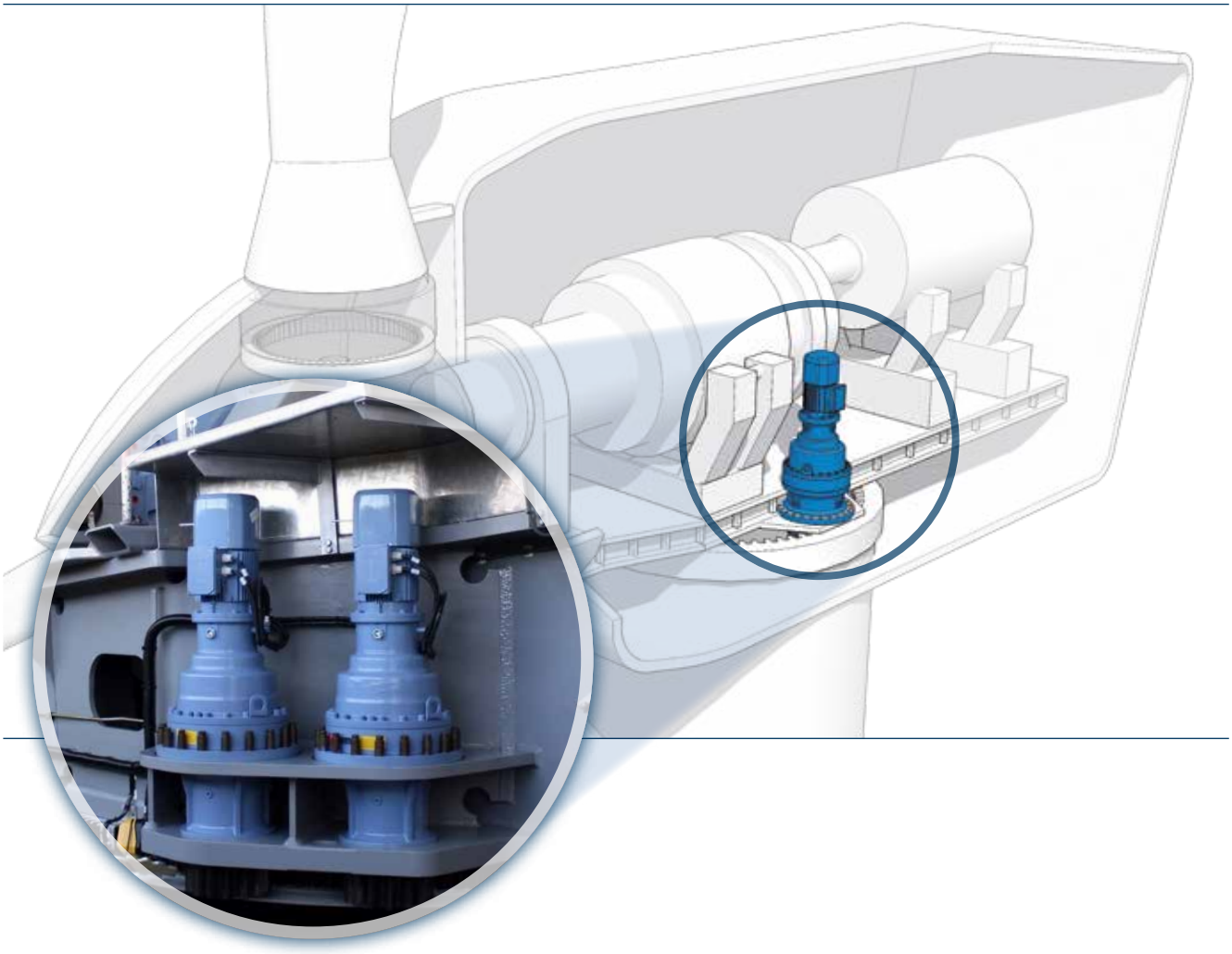
ACTIVE CUBE
Inverter Pitch

AGILE
Inverter Yaw

YAW DRIVE

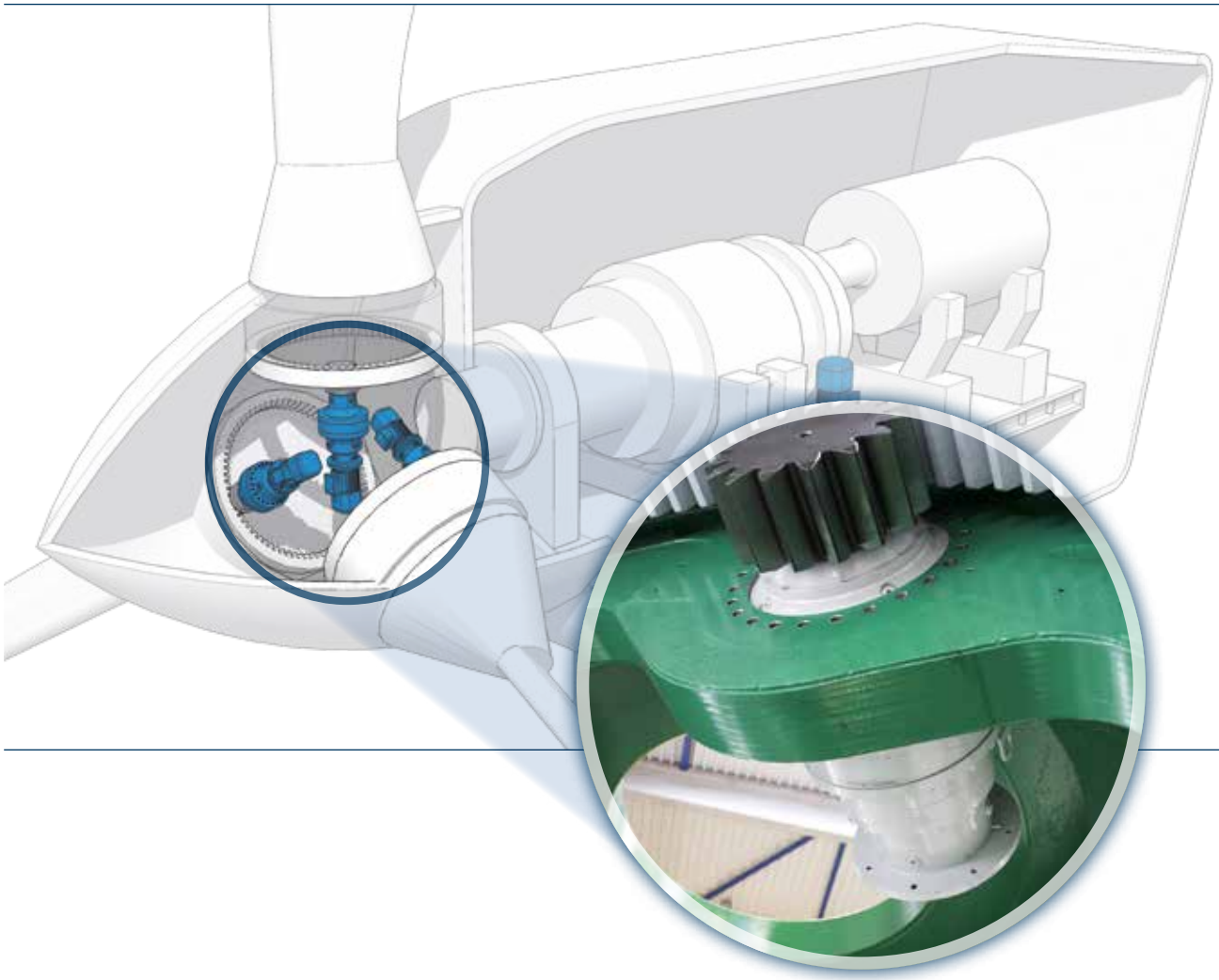
Also with
Integrated Inverter

Yaw Drives



WIND TURBINE SIZE	YAW DRIVE NUMBER	GEARBOX TYPE & MAX STATIC TORQUE	ELECTRIC MOTOR TYPE & POWER	INVERTER TYPE & POWER
[MW]				
up to 1.0	2 ÷ 4	706 T ÷ 709 T 15 ÷ 55 [kNm]	BN 80 ÷ 100 0.75 ÷ 2.2 [kW]	AGL / ACU size 1÷2 0.75 ÷ 2.2 [kW]
1.0 ÷ 1.5	2 ÷ 4	709 T ÷ 712 T 55 ÷ 110 [kNm]	BN 90 ÷112 1.1 ÷ 4.0 [kW]	AGL / ACU size 1÷2 1.1 ÷ 4.0 [kW]
1.5 ÷ 2.0	4 ÷ 6	709 T ÷ 714 T 55 ÷ 150 [kNm]	BN 100 ÷ 132 2.2 ÷ 5.5 [kW]	AGL / ACU size 2÷3 2.2 ÷ 5.5 [kW]
3.0 ÷ 4.0	4 ÷ 8	710 T ÷ 714 T 60 ÷ 150 [kNm]	BN 100 ÷ 132 3.0 ÷ 9.2 [kW]	AGL / ACU size 2÷3 3.0 ÷ 9.2 [kW]
5.0 ÷ 6.0	6 ÷ 8	714 T ÷ 716 T 150 ÷ 250 [kNm]	BN 132 ÷ 160 7.5 ÷ 15.0 [kW]	ACU size 3÷4 7.5 ÷ 15.0 [kW]
7.0 ÷ 8.0	6 ÷ 10	716 T ÷ 718 T 250 ÷ 400 [kNm]	BN 132 ÷ 180 9.2 ÷ 22.0 [kW]	ACU size 3÷5 9.2 ÷ 22.0 [kW]

Pitch Drives



WIND TURBINE SIZE	PITCH DRIVE NUMBER	GEARBOX TYPE & MAX STATIC TORQUE	ELECTRIC MOTOR TYPE & POWER	INVERTER TYPE & POWER
[MW]				
up to 1.0	3	703 T ÷ 706 T 4.5 ÷ 16 [kNm]	BN 90 ÷ 100 1.1 ÷ 3.0 [kW]	ACU size 1÷2 1.1 ÷ 3.0 [kW]
1.0 ÷ 1.5	3	705 T ÷ 707 T 8 ÷ 25 [kNm]	BN 100 ÷132 2.2 ÷ 5.5 [kW]	ACU size 2÷3 2.2 ÷ 5.5 [kW]
1.5 ÷ 2.0	3	706 T ÷ 709 T 16 ÷ 55 [kNm]	BN 100 ÷ 132 3.0 ÷ 7.5 [kW]	ACU size 2÷3 3.0 ÷ 7.5 [kW]
3.0 ÷ 4.0	3	707 T ÷ 711 T 25 ÷ 80 [kNm]	BN 132 ÷ 160 5.5 ÷ 15.0 [kW]	ACU size 3÷4 5.5 ÷ 15.0 [kW]
5.0 ÷ 6.0	3	711 T ÷ 712 T 80 ÷ 110 [kNm]	BN 132 ÷ 180 9.2 ÷ 22.0 [kW]	ACU size 3÷5 9.2 ÷ 22.0 [kW]
7.0 ÷ 8.0	3 ÷ 6	712 T 110 [kNm]	BN 160 ÷ 200 11.0 ÷ 30.0 [kW]	ACU size 4÷5 11.0 ÷ 30.0 [kW]

700T series
Reach the highest level of performance.

Bonfiglioli products are used in the latest state-of-the-art wind turbines to control the necessary functions of pitch and yaw drives systems.
The 700T series planetary speed reducers are used by a number of leading wind turbine manufacturers thanks to their advanced technical features, creating the highest level of performance.

Torque Range
2500 ... 300000 Nm

Gear Ratios
60 ... 3000

Key Features
- Flange mounted
- Output shaft: splined or with integral pinion
- Rugged construction
- High torque capacity
- Output shafts supported by heavy duty bearings

General features
- High transmissible torque
- High radial/thrust load capacity
- High shock resistance and designed for heavy duty
- Wide range of reduction ratios (from 60 up to 3000)
- High efficiency
- Compact dimensions
- Low weight
- Low cost

Standards
- Gears are designed according to ISO 6336
- Modular design
- In line or right angle design
- Different output versions
- Input for electric motor (IEC, NEMA and compact)

Construction features
- There can be from 3 up to 5 reduction stages (all of them with a planetary design), depending upon the total required reduction ratio
- Each stage may have from 3 up to 4 planets (to increase the deliverable torque)
- The gears are made of alloyed steel and are heat treated (case hardening for suns & planets, induction hardening or nitriding for internal toothed rings)
- The planets are supported by roller bearings or full rollers track bearings to obtain an high efficiency during the phases of starting and running
- The output housing is made by nodular cast iron and designed to hold the heavy loads generated during the machine's job

The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

Technical data
Yaw drive

TYPE	NOMINAL TORQUE	PEAK STATIC TORQUE	RANGE OF RATIOS	AVAILABLE PINION MODULE	WEIGHT
	Nm	Nm	1:	m	kg
706 T	9.500	16.000	600-3.000	10 ÷ 14	120
707 T	12.500	25.000	600-3.000	12 ÷ 16	170
709 T	25.000	55.000	600-3.000	12 ÷ 20	300
710 T	30.000	60.000	600-3.000	14 ÷ 20	350
711 T	37.500	80.000	600-3.000	16 ÷ 20	400
712 T	50.000	110.000	600-3.000	16 ÷ 20	550
714 T	70.000	150.000	600-3.000	20 ÷ 24	800
716 T	100.000	250.000	600-3.000	22 ÷ 26	1.000
717 T	120.000	300.000	600-3.000	26 ÷ 30	1.800
718 T	150.000	400.000	600-3.000	30 ÷ 36	2.100

The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

711T4N Series
Gearboxes for 1.0 to 2.0 MW wind turbines

714T4F+BN132 Series
Gearboxes for 2.0 to 4.0 MW wind turbines

716T4U Series
Gearboxes for 5.0 to 8.0 MW wind turbines

Technical data
Pitch drive

TYPE	NOMINAL TORQUE	PEAK STATIC TORQUE	RANGE OF RATIOS	AVAILABLE PINION MODULE	WEIGHT
	Nm	Nm	1:	m	kg
703 T	2.500	4.500	100-250	10 ÷ 12	60
705 T	4.000	8.000	100-250	10 ÷ 12	90
706 T	7.500	16.000	100-250	10 ÷ 14	120
707 T	10.000	25.000	100-250	12 ÷ 16	170
709 T	20.000	55.000	100-250	12 ÷ 20	300
710 T	25.000	60.000	100-250	14 ÷ 20	350
711 T	30.000	80.000	100-250	16 ÷ 20	400
712 T	40.000	110.000	100-250	18 ÷ 20	500

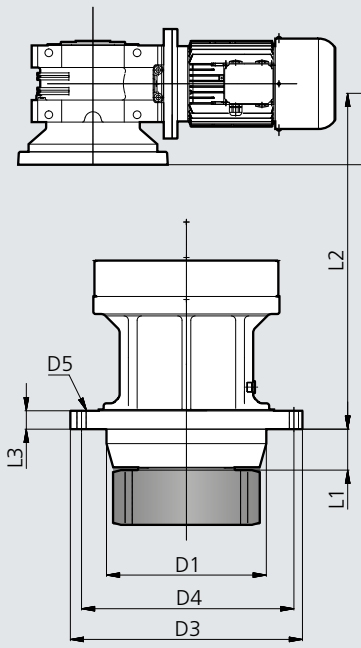
The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

707T3N+BN132 Series
Gearboxes for 1.0 to
2.0 MW wind turbines

707T3N Series
Gearboxes for 1.0 to
2.0 MW wind turbines

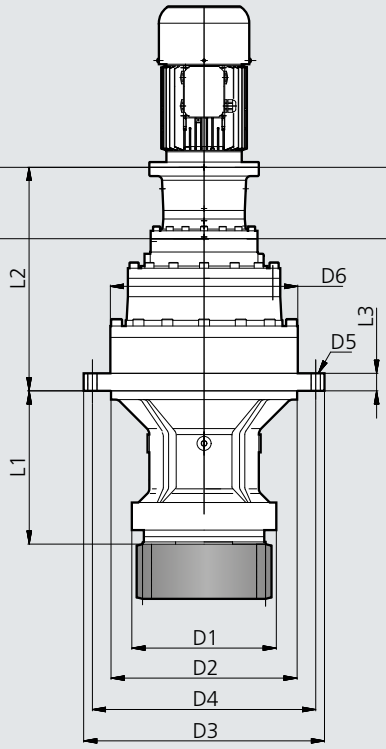
Overall dimensions

Combined version
Worm gearbox - Planetary gearbox



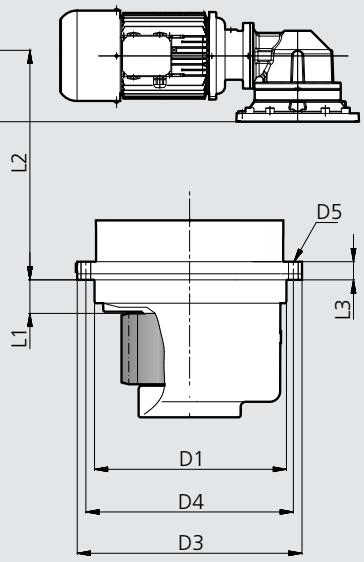
Output version **F** (short)

Inline version
Planetary gearbox



Output version **N** (long)

Right angle version
Planetary gearbox



Output version **U** (pinion supported)

TYPE	VERSION	D1	D2	D3	D4	D5	D6	L1	L2	L3
703T	F	175		275	245	ø 18 n°10	244	41	370	20
705T	F	175		275	245	ø 18 n°10	244	41	400	20
706T	F	250		360	320	ø 18 n°24	292	130	460	35
706T	N	200	250	360	325	ø 17 n°10	292	225	350	25
707T	F	310		410	360	ø 22 n°12	348	70	540	30
707T	N	230	280	348	314	ø 17 n°12	348	300	360	98
709T	F	310		410	360	ø 22 n°12	348	70	540	30
709T	N	230	280	348	314	ø 17 n°24	348	300	400	125
709T	U	340		405	375	ø 17 n°24	348	90	450	40
710T	F	320		410	370	ø 21 n°21	400	75	600	35
710T	N	300	425	500	450	ø 22 n°12	400	360	500	40
710T	U	340		400	370	ø 17 n°24	400	36	550	176
711T	F	390		520	480	ø 17 n°30	428	60	700	35
711T	N	300	425	500	460	ø 22 n°12	428	350	520	40
712T	F	410		490	450	ø 21 n°24	428	125	660	40
712T	N	400	425	520	470	ø 21 n°24	428	318	580	40
712T	U	415		530	480	ø 26 n°16	428	140	500	45
714T	F	420		530	490	ø 22 n°24	490	160	870	40
714T	U	555		645	600	ø 30 n°32	490	97	760	100
716T	F	555		650	600	ø 30 n°32	542	70	900	50
716T	U	555		650	600	ø 30 n°32	542	70	900	50
717T	F	630		740	680	ø 27 n°32	695	112	1250	50
718T	U	750		900	830	ø 32 n°24	695	60	900	100

The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

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

TYPE 4 POLES	POWER kW
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	3.0
BN 112M	4.0
BN 132S	5.5
BN 132MA	7.5
BN 132MB	9.2
BN 160MR	11.0
BN 160L	15.0
BN 180M	18.5
BN 180L	22
BN 200L	30

Other sizes available.

The IEC-normalized BN motors comply with all the applicable international standards, including the EMC and LV Directives.
They are available in the foot and the flange mounting version, the latter in both the IM B5 and the IM B14 configuration.
Single and dual polarity versions are available; AC and DC brake designed to provide fail-safe operation, granting further flexibility to the system. Finally, all BN motors are inverter duty.

Power Range for wind turbine drives
From 0.25 kW up to 30 kW

Frame Sizes
From IEC 71 up to 200

Pole Numbers
4, 6

Mounting Options
Foot IM B3, Flange IM B5 and IM B14

Voltage
230/400 - 400/690 V

Frequency
50 Hz and 60 Hz

Compliance
- 2006/95/CE (LVD) and 2004/108/CE (EMC)
- CSA and UL Approved Design

Inverter Supply
All Frame Sizes

Housing
Cast Aluminium

Degree of protection
IP54 - IP55

Insulation class
CLF - CLH

Main Brake Features
- DC and AC supply
- Adjustable braking torque

Main Options
- PTC thermistor, bimetallic thermostat sensors, KTY sensors
- Forced ventilation unit
- Line Driver and Push-Pull Incremental Encoder
- Heaters
- Splined shaft
- Double disc brake
- Microswitch brake feedback
- AC/DC Rectifier
- Fast engage brake rectifier through electronic control

The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

BE series.
IE2 efficiency class 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 pole version 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.

Power Range (4 pole)
0.75 kW ... 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),
- 2006/95/EC (LVD) and 2004/108/EC (EMC)

Inverter Supply
All Frame Sizes

Housing
Cast Aluminium

Degree of protection
IP54 - IP55

Insulation class
CLF - CLH

Main Brake Features
- DC and AC supply
- Adjustable braking torque

Main Options
- PTC thermistor, bimetallic thermostat sensors, KTY sensors
- Forced ventilation unit
- Line Driver and Push-Pull Incremental Encoder
- Heaters
- Splined shaft
- Double disc brake
- Microswitch brake feedback
- AC/DC Rectifier
- Fast engage brake rectifier through electronic control

TYPE 4 POLES	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

Other sizes available.

The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

Active Cube.
Versatility, promptness, accuracy.

TYPE	POWER kW
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

Other sizes available.

A full series of solution & servo drives, compact and flexible, is suitable to be used in wind turbine's drives where outstanding performance in terms of accuracy and response time are requested, as for example Pitch Drives.

Pitch Drives Power Range
7.5 up to 37kW / 3-Phase 320V...528V / 45Hz...66Hz

Type of Control
Open and closed loop selectable control function:
- Vector speed, torque and position control for induction motor
- Vector speed, torque and position control for brushless motor
- V/f scalar sensor-less control

Type of Motor
- Asynchronous AC induction motor
- Synchronous AC permanent magnets motor

Main Standard Features
- Operation supplied by DC link connection
- Integrated braking chopper
- Short circuit / earth fault protected
- Plug-in and programmable control terminals
- Motor temperature monitoring
- Integrated safety architecture
- External 24VDC supply for control board and electronics
- 6 digital inputs, 1 multi-function input, 1 digital output, 1 multifunction output, 1 relay output

Optional Features
- Assembly available in Feed-Through or Coldplate versions
- Wide operating temperature range (Operation -30 to +50 °C)
- Coated boards against harsh ambient conditions
- Expansion of inputs / outputs, additional encoder or resolver input
- Management up to 2 feedbacks: standard HW encoder interface combined with expansion module for feedback from motors

Optional Communication Modules
RS232, RS485, Profibus-DP, CANopen

Main Software Features
- Motion sequence functionality with 32 blocks
- Four data sets
- Drive and motor status backup
- Self diagnosis
- Integrated PLC functions
- Integrated scope function
- Brake logic control directly from the inverter

The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

Agile. Compactness, user friendliness and reliability to keep your wind turbine drive always under control.

The advanced series of standard sensorless inverters Agile from Bonfiglioli are well suited for applications where easy start up, space saving and downtime prevention are primary needs, as for example Yaw Drives in wind turbines.

Yaw Drives Power Range
1.1kW up to 11kW / 3-Phase 320V...528V / 45Hz...66 Hz

Type of Control
Innovative control dedicated to open loop drives:
- Sensor-less vector speed and torque control for induction motor
- Sensor-less vector speed and torque control for brushless motor
- V/f scalar sensor-less control

Type of Motor
- Asynchronous AC induction motor
- Synchronous AC permanent magnets motor without feedback Group drive possible

Main Standard Features
- DC link connection
- Integrated braking chopper
- Short circuit / earth fault protected
- Plug-in and programmable control terminals
- Integrated safety architecture
- Integrated RS485 Modbus / CANopen / Systembus interfaces
- MMC memory cards for easy and fast start up parameter copy
- 6 digital inputs, 2 configurable A/D multi-function inputs
- 1 configurable I/O port, 1 digital output, 1 configurable A/D/pulse multi-function output, 1 alarm relay, +24VDC output, +10VDC output, +24VDC input

Optional Features
- Fanless version available for smaller ratings
- "Long life" available on request
- Wide operating temperature range (Operation -30 to +50 °C)
- Coated boards against harsh ambient conditions
- Expansion of inputs / outputs

Optional Communication Modules
Profibus-DP, CANopen

Main Software Features
- Four data sets
- Static and dynamic energy saving functions
- Application mask ready to use
- Maintenance integrated assistant
- Drive and motor status backup
- Self diagnosis
- Integrated PLC functions with graphical editor
- Integrated scope function

TYPE	POWER kW
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

Other sizes available.

The indicated data are for reference only; please contact Bonfiglioli for more detailed information.

Integrated Agile.
Next generation mechatronic yaw drives.

New integrated Agile inverters can be mounted directly to the motor and represent a very compact alternative to the traditional yaw system without inverter or with the motor supplied by a standard frequency converter installed in a cabinet.
Using new integrated Agile inverters, the performance of turbine yaw systems is enhanced, and additional benefits in terms of reliability, availability and system cost optimization can be achieved.
This new development particularly matches the concepts offered by 7TW gearmotors, specifically designed for yaw drive applications. More compact than existing solutions, these innovative gearmotors for nacelle orientation control are now equipped with an integrated gearmotor and brake and can include the Agile inverters mounted directly on the motor box.

Power range
1.1 kW up to 11 kW

Power Supply
3-Phase 320V ... 528V / 45Hz ... 66Hz

Type of control
Innovative control dedicated to open loop drives:
- Sensor-less vector speed and torque control for induction motor
- Sensor-less vector speed and torque control for brushless motor
- Sensor-less V/f scalar control

Enclosure
- Protection rating: IP65 (EN60529)
- Material: robust aluminum

Main Standard Features
- Built-in EMC filter for straightforward EMC compliance
- Integrated CANopen / RS485 Modbus / Systembus interfaces
- Integrated brake chopper transistor
- MMC memory cards for easy and fast start up / parameter copying
- Optional communication Modules: Profibus-DP, Ethernet-based field buses
- 6 digital inputs, 2 configurable A/D multi-function inputs, +24VDC input, 1 configurable I/O port
- 1 digital output, 1 configurable A/D/pulse multi-function output, 1 relay, +24VDC output, +10VDC output

Dedicated features for Wind Turbine Yaw Drives
- Fanless
- Long life: use of film capacitors
- Operation temperature range: from -10 up to 50°C (special version on request for colder climates)
- Resistance to harsh ambient conditions (corrosion, high humidity)

Main Software Features
- Integrated Safe-Torque-Off function
- Four data sets
- Drive and motor status backup
- Static and dynamic energy saving functions
- Maintenance integrated assistant
- Integrated PLC functions with graphical editor
- Integrated scope function

Bonfiglioli worldwide presence

Bonfiglioli is located in regions and countries around the world that enable us to provide faster sales and service to customers.
We are around the world, and around the corner.

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Bonfiglioli
Forever Forward

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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