

240/710 BC



Spherical roller bearing for wind turbine main shafts are optimized to handle the varying direction and high thrust loads of wind energy applications, allowing to perform more reliably under typical operating conditions. A modified inner geometry with super-finished functional surfaces makes this possible. Using a one-piece roller-guided cast-iron cage and an enlarged lubrication groove increases robustness.

- Improved performance under wind operating conditions
- Accommodate misalignment
- Up to twice the fatigue life
- Increased robustness for both radial and axial load conditions
- Improved lubrication

Bore type

Cylindrical

Dimensions

d	710 mm	Bore diameter
t _{Δdmp}	-0.075 – 0.0 mm	Deviation limits of mid-range bore diameter
D	1 030 mm	Outside diameter
t _{ΔDmp}	-0.125 – 0.0 mm	Deviation limits of mid-range outside diameter
B	315 mm	Width
t _{ΔBs}	-0.75 – 0.0 mm	Deviation limits of ring width
d ₂	≈ 810 mm	Shoulder diameter of inner ring
D ₁	≈ 931 mm	Shoulder/recess diameter of outer ring
b	61.8 mm	Width of lubrication groove
K	15 mm	Diameter of lubrication hole
r _{1,2}	min. 7.5 mm	Chamfer dimension
	Normal	ISO tolerance class for dimensions

Abutment dimensions

d_a	min. 738 mm	Diameter of shaft abutment
D_a	max. 1 002 mm	Diameter of housing abutment
r_a	max. 6 mm	Radius of fillet

Calculation data

AGA performance class		AGA Explorer
Basic dynamic load rating	C	11 166 kN
Basic static load rating	C_0	22 000 kN
Fatigue load limit	P_u	1 400 kN
Reference speed		20 r/min
Limiting speed		40 r/min
Limiting value	e	0.3
Calculation factor	Y_1	2.3
Calculation factor	Y_2	3.4
Calculation factor	Y_0	2.2

Tolerances of run-out

Range of section height at inner ring of assembled bearing	t_{Kia}	80 μ m
Range of section height at outer ring of assembled bearing	t_{Kea}	160 μ m
ISO tolerance class for geoal tolerances		Normal

Radial internal clearance

Minimum initial clearance	350 μ m
Maximum initial clearance	530 μ m

Tolerances of run-out

GENERAL BEARING SPECIFICATIONS

- Tolerances: Normal, P6, P5,
tapered bore 1:12, tapered bore 1:30
- Radial internal clearance: cylindrical bore, tapered bore

BEARING INTERFACES

- Seat tolerances for standard conditions
- Tolerances and resultant fit

AGA BEARINGS