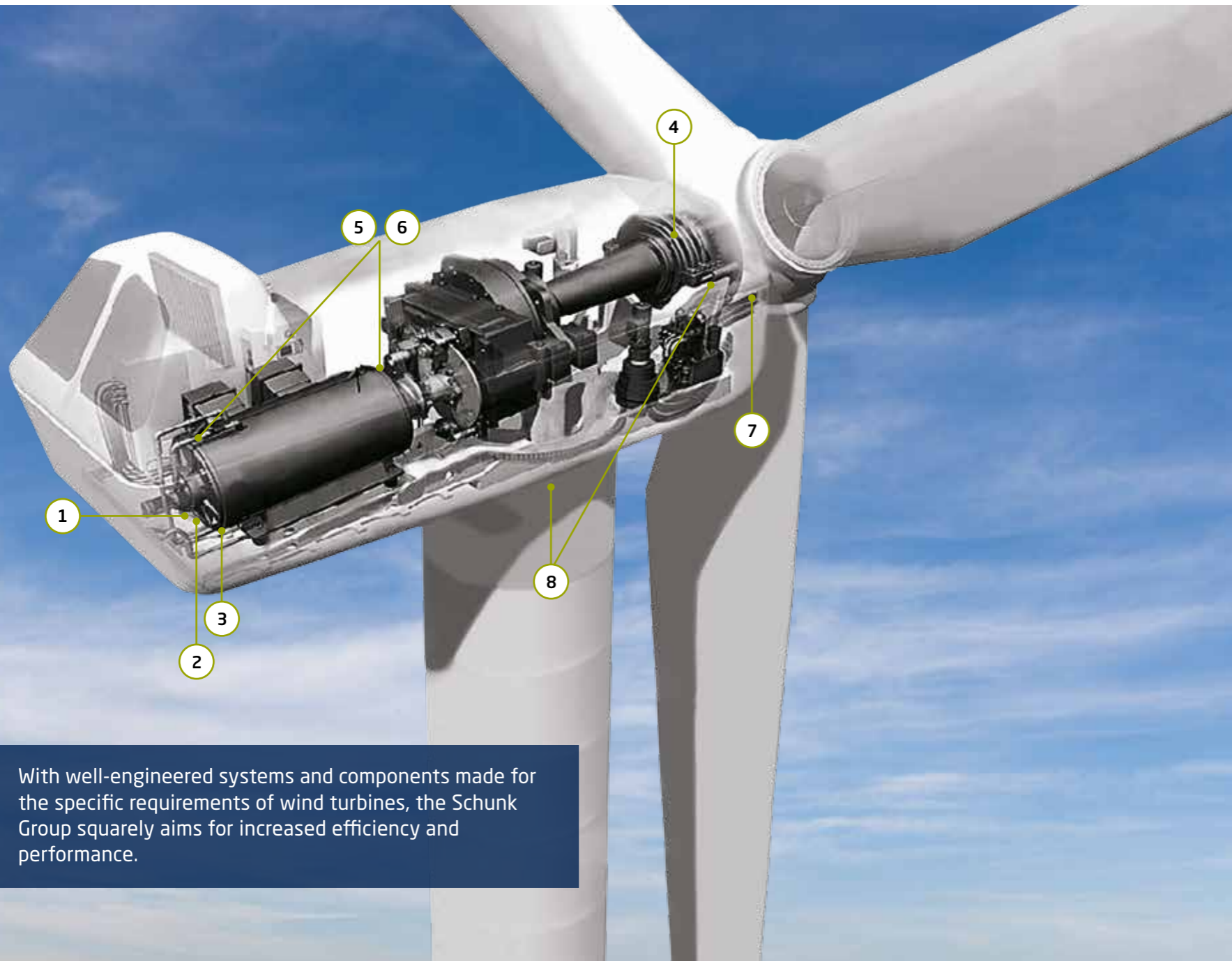




Schunk Products
for Wind Turbines

Are you looking for reliable systems and components for your wind turbines?

From slip ring systems to carbon brushes, brush holders, or brush rockers, all the way to lightning protection systems, shaft grounding systems (also for synchronous generators), bus bars, and flexible power connectors - as your partner we are your one source for everything, innovative and reliable.



With well-engineered systems and components made for the specific requirements of wind turbines, the Schunk Group squarely aims for increased efficiency and performance.



1 | Slip Ring Unit



2 | Brush Holder



3 | Power Brush



4 | Earthing Roller for Lightning Protection and Grounding



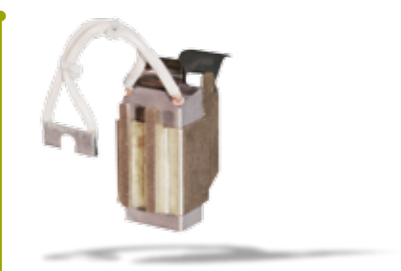
5 | Shaft Grounding Holder



6 | Grounding Brush



7 | Pitch Control



8 | Lightning Protection

Is an experienced and reliable development and production partner important to you? Here we are.

Wind power is one of the most important alternative energy sources. Schunk components play a critical role in the conversion of wind energy to electric power, be it in doubly fed induction generators (dfig) or synchronous generators. We are innovation partners when it comes to power transmission.

Wind generators

Do your wind generators have to transfer high outputs with minimum loss? At the same time are they usually used in the roughest of conditions? Our products can handle it all. Our slip ring systems are setting the bar when it comes to reliability and efficiency: our systems are being used up to an electrical output of 6 MW. Schunk brush rockers, whether mounted fully or partially, minimize your assembly effort significantly.



Power Brushes



Slip Rings up to 2,500 A and more than 3,000 rpm overspeed



Grounding Brushes

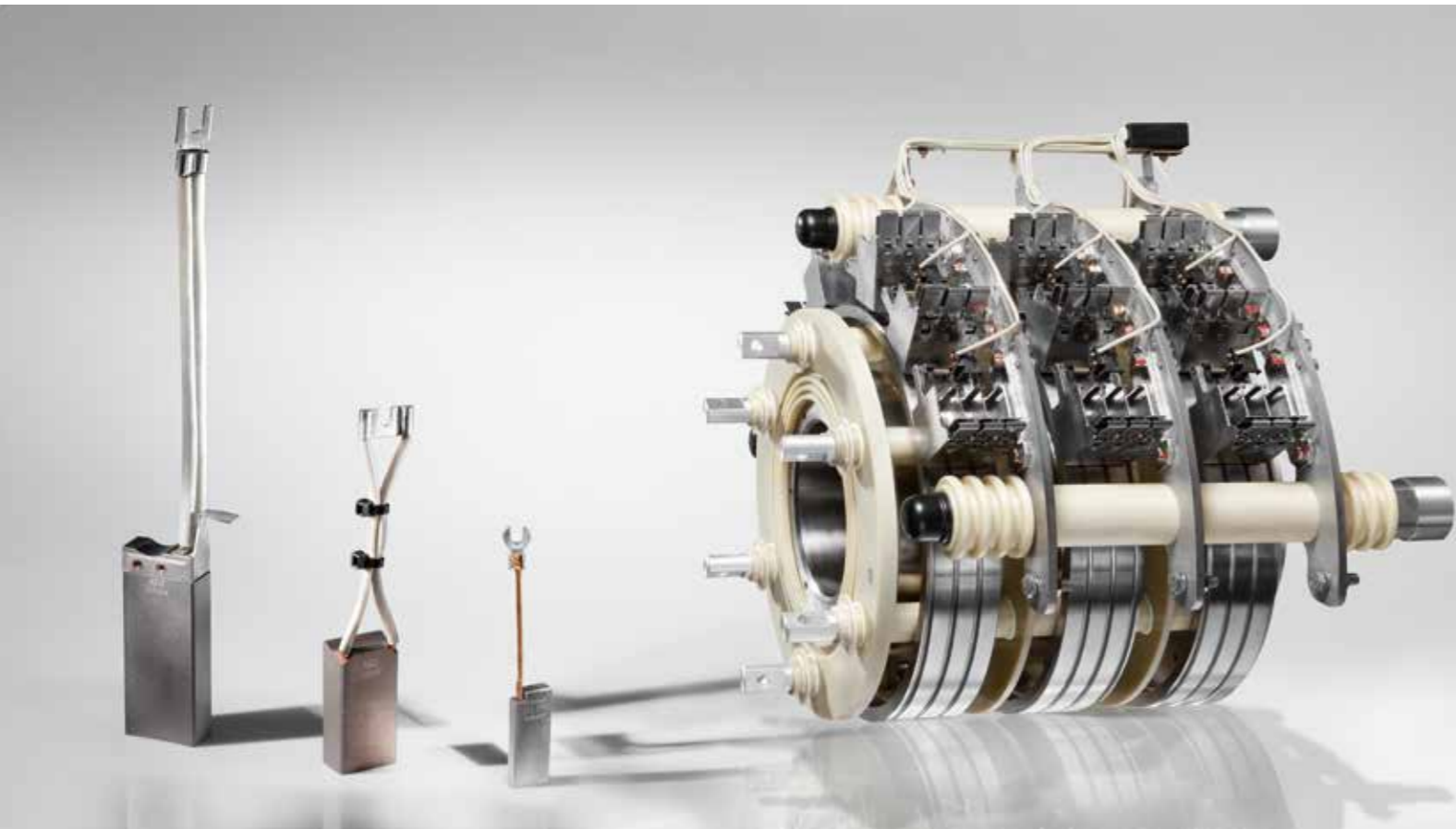


Brush Rockers in customized design for generators



Lightning Protection Brushes





Is optimal power transmission in wind turbines a must for you? It is for Schunk products too.

Your advantage: Schunk products provide for safe operation of wind turbines thanks to custom materials and optimized designs. Their low wear allows for extended maintenance intervals - whether in offshore or onshore systems, at high altitudes, or in extreme climates.

Shaft Grounding

Our grounding systems, with specific materials tailored to the newest converter generation, prevent damage on bearings and gears.

Lightning Protection

Certified by independent institutes, Schunk products such as brush holders and carbon brushes protect wind turbines worldwide from lightning damage.

Schunk also offers patented solutions for grounding and lightning protection of turbines with synchronous generators.

Further products for your wind turbines

In pitch control units with DC motors or in slip ring units for the transmission of power and data, Schunk carbon brushes can always be counted on.

Custom-made flexible current connectors and bus bars round off the Schunk product range.

You want to reduce your costs by having shorter assembly times for synchronous generators? Use Schunk bus bars - we guarantee a high degree of reliability and the prevention of wiring errors.

We can also provide you with solutions which are custom-made and produced in small series.

Wind generators

Grade	Metal content %	Optimal permanent current density		Max. permanent speed*		Remarks
		A/in ²	A/cm ²	ft/s	m/s	
A24X	40	118	18	131	40	Standard grade, low ring wear
A41X	37	118	18	131	40	For low humidity
C72	28	92	14	131	40	For low electrical loads
C80X	50	131	20	115	35	Standard grade suitable for brass, bronze and steel rings
C80Y3	50	131	20	115	35	Modification for high humidity
C80Z2	50	131	20	115	35	Modification for low humidity
S13	60	144	22	115	35	Lowest electrical losses
S13/2K	60	144	22	115	35	Cost-effective solution

Shaft grounding

Grade	Metal content %	Optimal permanent current density		Max. permanent speed*		Remarks
		A/in ²	A/cm ²	ft/s	m/s	
A15	40	-	-	131	40	Excellent film control
A24X	40	-	-	131	40	Standard for 4th ring (steel)
C70	67	-	-	-	-	Low voltage drop, lead free
S13/F19	60/-	-	-	230	70	Sandwich design, standard combination
SI20	5	-	-	131	40	Safe grounding at high frequencies

Lightning protection - our designs are approved up to 150 kA (10/350) μ s - with special spark gap bracket up to 200 kA

Grade	Metal content %	Optimal permanent current density		Max. permanent speed*		Remarks
		A/in ²	A/cm ²	ft/s	m/s	
A20	50	-	-	-	-	Standard grade
C40Z3	75	-	-	-	-	For polluted ambience
E43	-	-	-	-	-	For off-shore application
K14Z3	63	-	-	-	-	Standard grade

Pitch control

Grade	Metal content %	Optimal permanent current density		Max. permanent speed*		Remarks
		A/in ²	A/cm ²	ft/s	m/s	
E46X	-	78	12	164	50	Standard grade
E106	-	78	12	164	50	Improved commutation
S13	60	-	-	115	35	Slip ring units, signal transfer

* On helically grooved rings only

Do you want to be able to quickly and easily find a contact person around the world, when you are on the road, precisely for your product of choice? Our Schunk App can be found in the Play Store/App Store!

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