



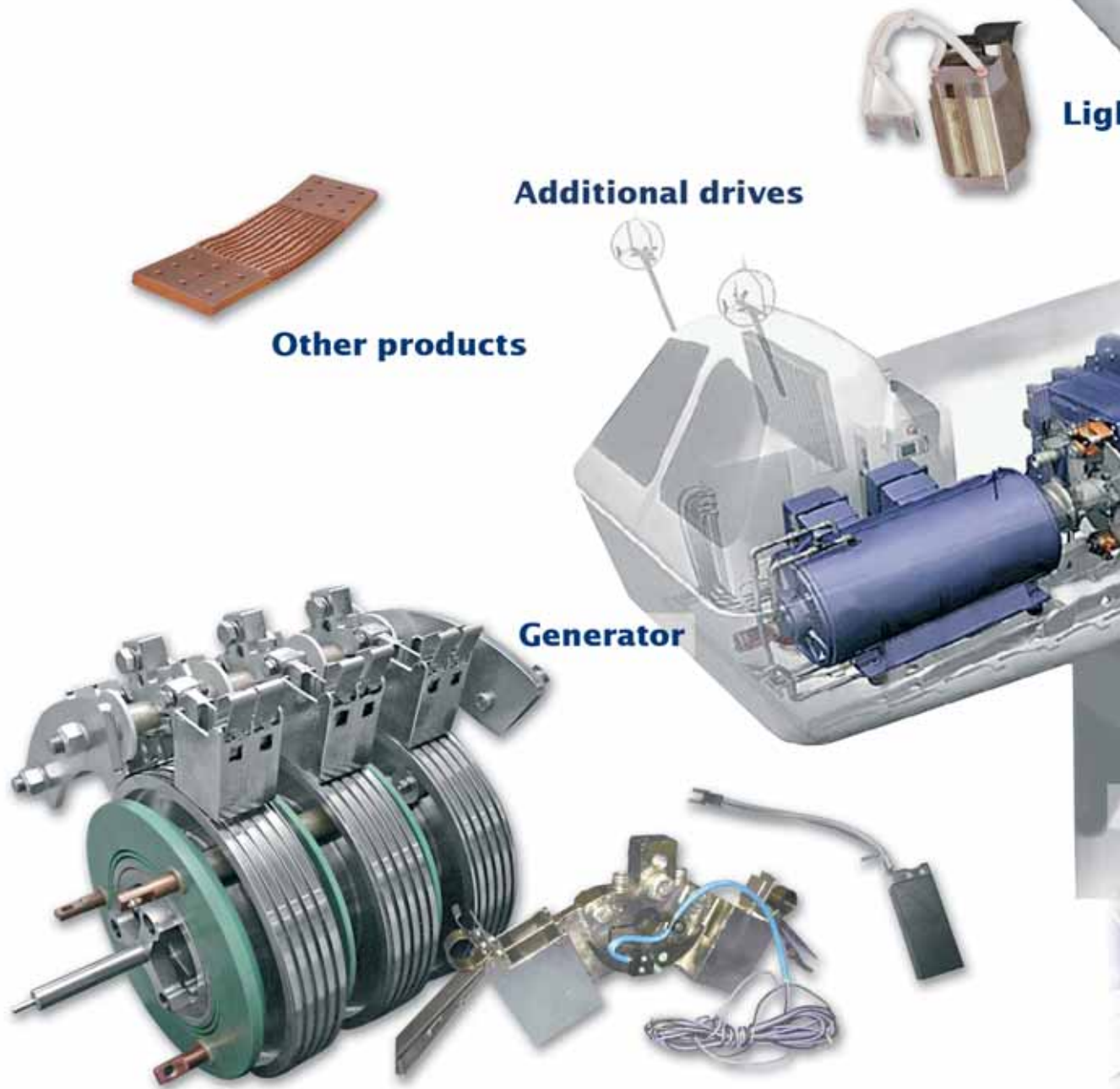
Schunk Products for Wind Turbines



Schunk Kohlenstofftechnik GmbH
Schunk Bahn- und Industrietechnik GmbH



Schunk Products for Wind Turbines



Products for Wind Turbine



Lightning protection

Pitch control

Shaft grounding

Earthing units



**Schunk manufactures
for Wind Turbines**

- Carbon brushes
- Brush holders
- Slip rings
- Flexible current connectors
- Earthing units for synchronous generators

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es



Grade Recommendations – Wind Power

Wind generators

Grade	Metal content %	Opt. perm. current density A/cm ²	Max. permanent speed m/s*	Remarks
C72	28	12	40	For low electrical loads
A24	40	18	40	Low load resistant, ring saving
A24X	40	18	40	Improved brush wear
K14Z3	63	22	35	Low electrical losses
S13	60	22	35	Lowest electrical losses
E43	-	10	50	For carbon/carbon units
A16	85	20	35	Low electrical losses

*On helically grooved rings only.

Shaft grounding

Grade	Metal content %	Opt. perm. current density A/cm ²	Max. permanent speed m/s	Remarks
A15	40	-	30	Excellent film control
S13/F19	60/-	-	30	Standard combination
B24	90	-	30	Excellent film control
C40	75	-	30	Standard grade
B25	90	-	30	Low voltage drop

Lightning protection

Grade	Metal content %	Opt. perm. current density A/cm ²	Max. permanent speed m/s	Remarks
K14Z3	63	-	-	Approved up to 75 kA
B24	90	-	-	Approved up to 75 kA
B25	90	-	-	Approved up to 75 kA

Pitch control

Grade	Metal content %	Opt. perm. current density A/cm ²	Max. permanent speed m/s	Remarks
E46X	-	12	50	Standard grade
E105	-	12	50	Improved commutation

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