

Carbon Brushes

Power transmission in electrical machines for industrial and traction applications

- High reliability for long machine lifetimes
- Continuous improvement due to deep application knowledge and own R&D
- Wide portfolio for all kind of motor types and different operating modes
- High standards: e.g. IATF 16949, ISO 14001



SGL Carbon. We are leaders in the development and manufacture of products based on carbon, graphite, carbon fibers, and fiber-reinforced composites.

Our joint venture SGL GELTER offers high-quality carbon and metal-graphite brushes worldwide – even for challenging applications, for example automotive, traction, industrial, mining, and wind energy. Our combination of in-depth production and material knowledge with short production and delivery times enables us to be a reliable supplier for power transmission in electrical machines.

Our carbon products are notable for their exceptional properties and meet stringent requirements for reliability, robustness, and service life. Our portfolio ranges from carbon brushes, grounding device and brushes holder.

We offer tailored solutions that comply with high quality and environmental standards ISO 9001, ISO 14001 and IATF 16949 and so meet the demanding requirements of industrial and traction motors even in the most demanding conditions.

Carbon brushes for industry, traction and mining motors



↑ Carbon brushes for mining application

Application-specific products for industrial, traction and mining motors:

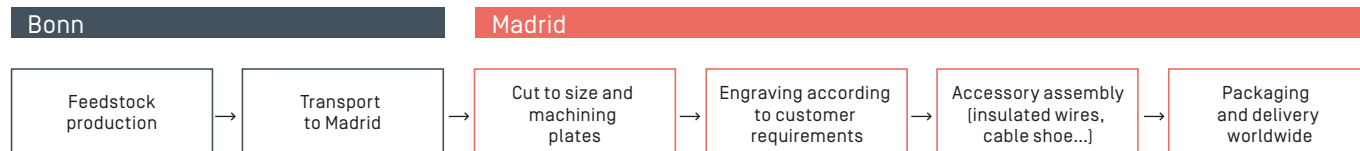
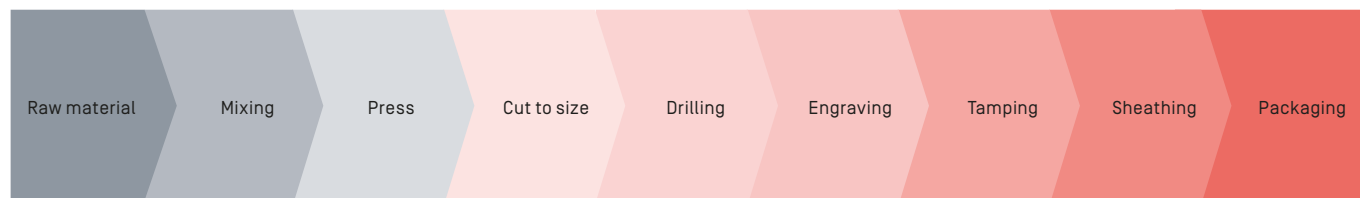
- Grinding and power brushes (traction applications)
- Special brushes for the most demanding conditions (mining applications)
- Silver- and copper-containing carbon brushes (marine environment)
- Products and solutions designed to shapes
- Grinding and brush holders

Carbon brushes for industry, traction and mining application
We have a wide range of grade to be able to offer all kinds of solutions for any type of engine or application.



↑ Carbon brushes for traction application

Manufacturing process



A wide range of graphite grades to meet your special requirements

SGL Carbon has a wide range of carbon and metal-graphite grades to cover all market needs, allows to develop grades tailored to customer requirements. With our state-of-the-art production site in Madrid/Spain, we manufacture high-quality brushes in a short time and supply our customers worldwide.

Characteristics required of our grade for brush material:

- Good commutating ability
- Long life
- Low commutator or slipping wear
- Good overload and underload ability
- Low susceptibility to atmospheric influence
- Sufficient mechanical strength and at the same time adequate elasticity, i.e. cushioning effect

Carbon brushes – technical characteristics and grades

Grade	Resistivity ($\mu\Omega\text{m}$)	Bulk Density (g/cm^3)	Flexural strength (N/mm^2)	Rockwell Hardness HR	Current density (A/cm^2)	Peripheri- cal speed (m/s)	Recommended applications
Electrographite							
RE12	50	1.52	17	85 HR 10/60	12	50	Medium DC machines
RE28	42	1.63	21	70 HR 10/100	12	50	Small and medium DC machines
RE54	16	1.60	28	65 HR 10/60	10	40	Underloaded medium DC machines, slip rings
RE59	49	1.67	24	75 HR 10/150	12	56	DC and AC traction motors
RE60	50	1.67	20	70 HR 10/150	12	56	Large and medium DC machines
RE75	25	1.56	21	58 HR 10/60	12	50	Medium DC motors
RE80	15	1.50	9	30 HR 10/40	10	50	Slip rings with low peripheral speed
RE92	16	1.53	14	55 HR 10/40	12	50	Large and medium DC machines
RE95	17	1.55	14	50 HR 10/40	12	50	Large and medium DC machines
RE98	61	1.41	12	50 HR 10/60	12	60	Large and medium DC machines
RE170	74	1.68	27	92 HR 10/150	10	50	Small DC machines, DC chopper traction motors
E33	57	1.62	22	105 HR 10/100	12	60	AC/DC traction motors
E34	32	1.66	26	81 HR 10/100	12	60	DC traction motors
Graphite grades bound with synthetic resin							
RX91	300	1.37	17	75 HR 10/40	10	40	Small DC motors and three phase commutator machines
Metal graphite							
RC27	14.00	2.40	20	70 HR 10/100	12	40	Metal slip rings, low + high voltage machines, wind power generators
RC42	2.00	2.80	20	80 HR 10/100	10 – 20	40	Metal slip rings, low + high voltage machines, wind power generators
RC53	0.90	3.20	25	78 HR 10/100	12 – 24	35	Metal slip rings, low + high voltage machines, wind power generators
RC54	1.10	3.10	24	70 HR 10/100	12 – 24	35	Slip rings, grounding brushes
RC67	0.40	3.80	35	83 HR 10/60	17	30	Slip rings, grounding brushes
RC73	0.20	4.20	44	85 HR 10/60	18	30	Slip rings, low voltage machines
RC84	0.12	4.85	28	62 HR 10/60	18	25	Slip rings, low voltage machines, earthing brushes, electrical contacts
RC87	0.13	5.30	58	60 HR 10/60	18	25	Slip rings, low voltage machines, earthing brushes, electrical contacts
RC90	0.09	5.30	36	74 HR 10/40	22	25	Earthing brushes and contacts
RC95	0.12	6.20	115	75 HR 10/60	20	25	Low voltage slip rings, crane collectors
RS70	0.80	4.25	30	90 HR 10/60	20	25	Transfer low voltage signals
Hard carbon							
RH67	45	1.62	47	104 HR 10/150	10	40	Crane collectors

» Values are typical values, please contact technical sales for design layout properties.

Our competence center for electrical applications is situated in Madrid, Spain

Wide product variety in our warehouse for an immediate supply and competitive logistic



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02 2020/0.5 E Printed in Germany

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