



# CARBON GRAPHITE

TRADING AND FABRICATING

We have combined 15-over years of experience  
in the carbon graphite production and processing.

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# PT. LANGGENG IMAN MAKMUR

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SINCE 2010

PT. Langgeng Iman Makmur berdiri pada tahun 2010 bergerak khusus dalam bidang trading dan fabrikasi Carbon Graphite.

Perusahaan ini dilengkapi dengan fasilitas pembubutan dukungan teknis dan sumber bahan baku dari produsen terkemuka di dunia untuk membuat hasil produk yang berpresisi dan berkualitas.



Hasil produk antara lain : Carbon Brush, Mechanical Seal, Bushing, Carbon Vane, Segmented Rings, Brush Holder, Carbon Pads dan aplikasi Carbon Graphite lain nya. PT. Langgeng Iman Makmur terus berkomitmen untuk membuat hasil produk yang berpresisi dan sesuai dengan standar Internasional, dan memberikan solusi terbaik melalui product knowledge dan kualitas produk yang sesuai dengan kebutuhan.



# PRODUCTS

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Carbon Brush



Sliding Contact Brush



Automotive Brush



Vaness



Bushing & Valves



Copper Connectors



Carbon Block



Segmented Rings



Slip Ring



Carbon Brush Holder



Spring Constant



Protection System



Carbon Brush Holder



Ring Bushing



Carbon Bushing



Carbon Insert



Mechanical Seal



Seal Rings

# PARTNERS & CLIENTS

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## Schunk Carbon Technology

Schunk Carbon Technology adalah pemimpin global dalam pengembangan, manufaktur, dan aplikasi solusi carbon dan ceramic. Schunk mempunyai ahli Carbon dan hubungan koneksi di 36 negara di dunia, dengan pengetahuan yang mendalam dibidang ini.

Schunk adalah pemasuk produk OEM seperti Bosch, Siemens, ABB, Niehoff, Henrich, dan masih banyak produsen mesin lainnya.



## Mega Schmidhammers

Mega Schmidhammers adalah salah satu perusahaan produsen Carbon Graphite yang mempunyai pengalaman lebih dari 80 tahun yang berfokus pada divisi Electrical Graphite.

Produknya bervariasi spesifikasi untuk : Carbon Brush, Contact Brush, Sliding, Lubricating Brush, Vane, High Current Brushes, dan lain-lain.

Untuk memenuhi kebutuhan spesifikasi mesin diluar dari merek OEM, PT. Langgeng Iman Makmur menyediakan Grade produk dari beberapa negara lainnya namun telah teruji kualitas dan konsistensinya.



Dibawah ini adalah industri-industri di Indonesia yang sudah bekerja sama dengan kami:

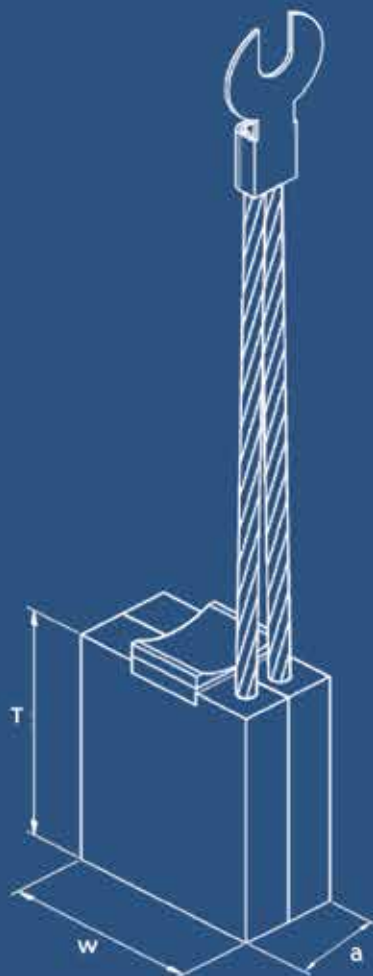
- ▶ General Industries
- ▶ Automotive
- ▶ Transportation
- ▶ Powerplant
- ▶ Petrochemical
- ▶ Shipyard
- ▶ Power Tools
- ▶ Mining
- ▶ Cable
- ▶ Plastic
- ▶ Glass
- ▶ Sugar
- ▶ Cement
- ▶ Steel
- ▶ Plastic
- ▶ dll



# QUALITY CONTROL

Seluruh Carbon yang diproduksi melalui proses Quality Control untuk memastikan sudah mencapai standar ukuran yang di perlukan.

Ukuran yang tepat akan memperpanjang umur carbon dan motor damengurangi pergantian secara berkala.



# SOLUTIONS

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Carbon Graphite adalah materi unik yang sering di pakai di perindustrian, bahkan sering menjadi salah unit terpenting dalam proses manufaktur. Karakternya antara lain :

- ▶ Koefisien gesekan rendah
- ▶ Tahan terhadap keausan
- ▶ Stabil terhadap kimia
- ▶ Stabil dan Tahan suhu tinggi
- ▶ Konduktor panas dan listrik yang baik

Untuk menambah performa, sering Carbon Graphite sering dicampur dengan komponen lain seperti : PTFE, Resin, Antimony, Tungsten, Bronze, Copper, dll.

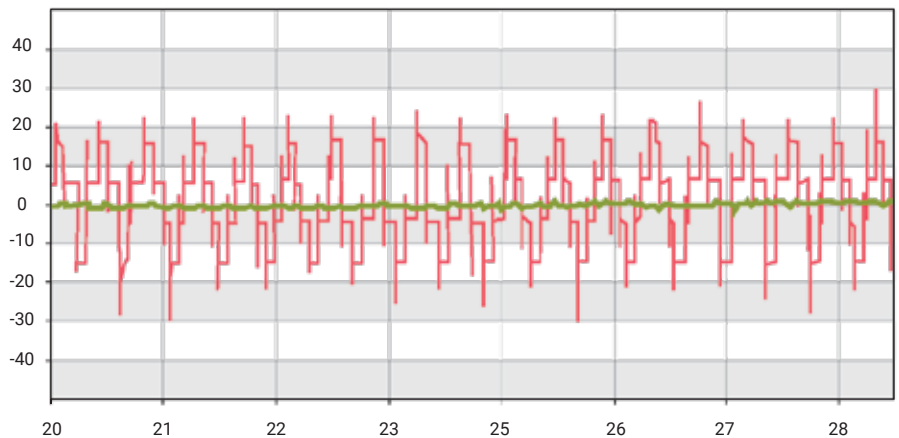
Komposisi campuran ini akan berefek pada lifetime produk; semakin tahan lama dan semakin efisien. PT. Langgeng Iman Makmur berkomitmen untuk memberikan produk yang bernilai dan sesuai dengan aplikasi yang dibutuhkan.



**BEARING PROTECTION SYSTEM**



- ▶ Dukungan internasional, termasuk ahli dari Australia dan Jerman
- ▶ Tersedia berbagai macam produk
- ▶ Variasi karbon dengan kualitas material berstandar Internasional
- ▶ Waktu Penyelesaian yang Cepat
- ▶ Dukungan Teknis Profesional



— Voltage WITHOUT CFG system    — Voltage WITH CFG system

Sistem shaft grounding dirancang untuk grounding as yang berputar pada motor listrik atau generator untuk membantu grounding tegangan listrik berinduksi.

Hal tersebut mencegah kerusakan bearing dan bisa menghemat biaya yang harus dikeluarkan apabila terjadinya kegagalan sistem motor & downtime.

Sistem shaft grounding ini mudah untuk dipasang secara eksternal atau internal karena desain yang ramping dan fleksibel.

## APPLICATION RECOMMEDATIONS

Application	Problems	Grade	Guide-line values for			Remarks
			Permanent current density A/cm <sup>2</sup>	Brush pressure hPa	Speed m/s	
Blower, ventilators	Unbalance by V-Belt, low load	-E101-	4-16	250	40	For difficult commutation
Cement	Dust, high starting currents (rotary kilns)	-E101-	4-16	250	40	Rotary kiln, resistant against variable loads
		-E46X-	5-14	250	40	For extreme starting loads
		-A12S-	12-20	250	30	Open machines, standard grade
		-K14Z3-	12-20	250	30	Closed machines
		-C80X-	12-22	250	30	Standard grade
		-C40Z3-	15-25	250	30	With increased ring temperature
Cranes	Long idle phases, vibrations, difficult commutation, salt water	-E101-	4-16	250	40	Standard grade, at extreme vibration brush pressure up to 350 cN/cm <sup>2</sup>
		-E108-	4-16	250	40	For extreme salt influence
		-E105-	4-16	250	40	For extreme starting load
Data transfer, measuring currents	Low current	-S13-	-	400	20	Standard grade
		-E43-	-	400	30	For carbon slip rings
		-SI10-	-	400	30	Special grade
		-SI20-	-	400	30	Special grade, film regulating
Electric car	Extreme starting and braking current, vibrations	-E105-	5-20	250	40	Excellent commutation
Electroplating	High current, poor ambient conditions	-C20-	15-30	250	30	Standard grade, lead free
		-C40Z3-	10-25	250	30	For lower load
Elevators	Low load, high load at starting and braking	-E49-	5-12	250	30	Standard grade
		-E101-	4-16	250	30	Good commutation
Paper industry	Low load, high humidity, difficult ambient conditions	-E101-	4-16	250	40	Main drives, wet zone
		-E108-	4-16	250	40	At difficult ambient conditions
		-E46X-	4-14	250	40	Good film formation
		-F63-	1-10	250	30	For pumps, low load resistant, max 4 brushes per pole



## APPLICATION RECOMMENDATIONS

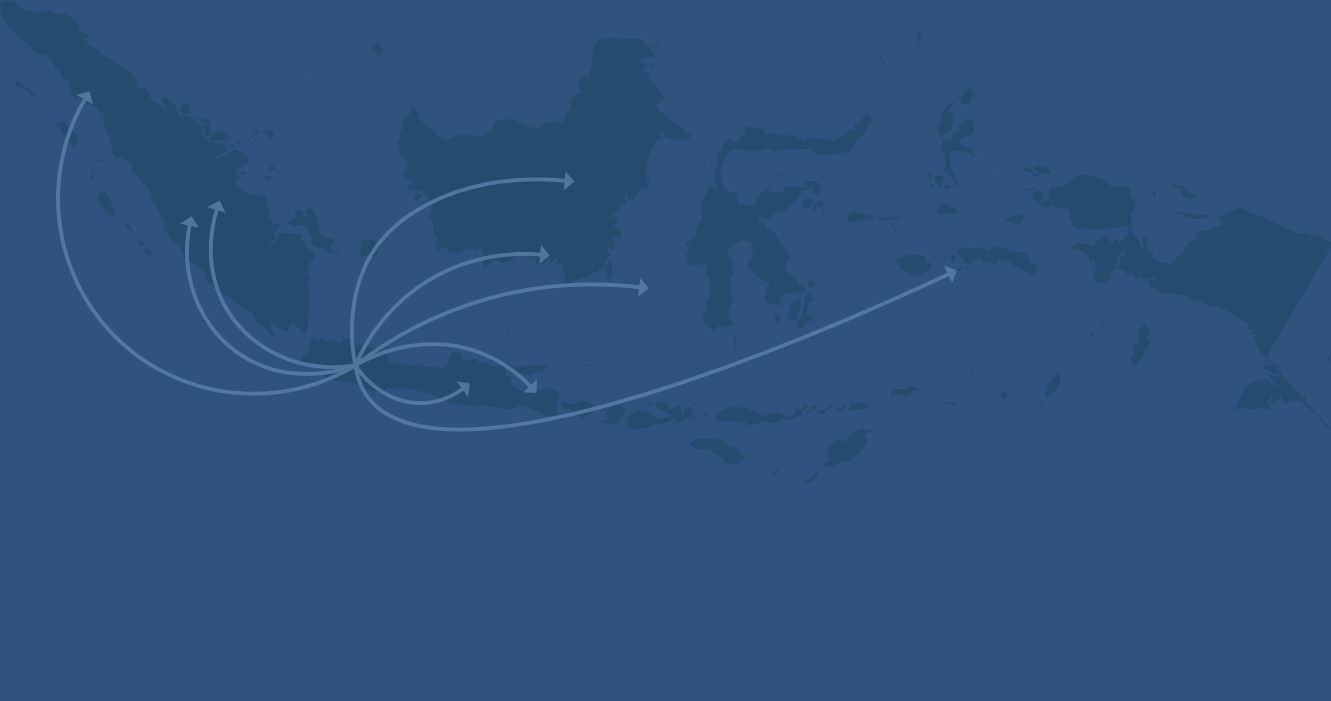
Application	Problems	Grade	Guide-line values for			Remarks
			Permanent current	Brush pressure hPa	Speed m/s	
Power plants (Thermal)	High peripheral speed	-E46F3-	5-12	160	Max. 60	Non-grooved rings
		-E104-	5-14	130	80	Grooved and non-grooved rings
		-HG2634-	3-10	130	95	Grooved rings
		-HG6634-	3-10	130	95	Grooved rings
Press drives	Vibrations, shocks, oil influence	-E101-	4-16	350	40	Good commutation
		-E108-	16	350	40	For heavy oil influence
Printing	Low load, silicone influence	-E49-	5-12	250	30	Standard grade, possibly sandwich design
		-E101-	4-16	250	30	Good commutation
		-E108-	16	250	30	Film regulating properties, in case of silicone influence
Pumps	Long idle phases, peak current, high humidity	-E101-	4-16	250	40	Standard grade
		-F63-	1-10	250	30	Low load resistant, max 4 brushes per pole
Rolling mill, Main drives	Shocks, vibrations, reversing operation, oil influence	-E46-	5-14	200	40	Standard grade, excellent current sharing
		-E46X-	5-14	250	40	Optimised mechanical strength
		-E468-	5-14	200	40	Film regulating
		-E46F3-	4-16	250	40	Slip rings of synchronous motors
		-E101-	4-16	250	40	for difficult commutation, for variable loads
Rolling mill, Auxiliary drives	Shocks, peak load, long idle phases	-E46X-	5-14	250	40	Standard grade, excellent current sharing
		-E101-	4-16	250	40	For difficult commutation
Ropeways, ski lifts	Low load, low humidity	-E101X-	4-16	250	40	Adjusted for low humidity
Shaft grounding	Oil influence, mechanical shocks	-S13/F19-	-	250	30	Sandwich design
		-C40Z3-	-	250	30	Film regulating
		-S11-	-	250	30	Shaft grounding for ships (95% metal content)
Ship drives	Salt water, oil	-E46X-	5-14	250	40	Good filmformation, at low temperatures
		-E49X-	5-12	250	40	Standard grade
		-F49-	2-8	250	30	Good performance with oil influence

## APPLICATION RECOMMEDATIONS

Application	Problems	Grade	Guide-line values for			Remarks
			Permanent current density A/cm <sup>2</sup>	Brush pressure hPa	Speed m/s	
Slip rings	Dust, low humidity	-A12S-	12-20	250	30	Open machines
		-K14Z3-	12-20	250	30	Closed machines
		-C40Z3-	10-25	250	30	At higher ring temperature
		-C80X-	10-22	250	30	Universal grade
		-C20-	15-30	250	30	For high current, lead free
		-C60-	15-30	250	30	Film regulating
		-E468-	4-16	200	60	Film regulating
		-A20-	8-18	250	30	Slip rings of Schrage motors
Storehouses	High starting and braking current, low load	-F61-	1-8	250	30	For driving motor, excellent current sharing at low load
Tacho generators		-S13-	-	250	30	Standard grade
Three phase AC motors, Schrage motors	High transversal current	-E43-	-	250	30	For silver tracks
		-F46-	2-8	250	30	Standard grade
		-F63-	1-10	250	30	Low temperature rise
Vanes		-FU2533-	HR120	210	2.20g/cm <sup>3</sup>	Electrographite Grade
		-FE65-	HR110	110	1.80g/cm <sup>3</sup>	Salt Impregnated
		-EDM-		115	1.78g/cm <sup>3</sup>	Electrographite Grade
		-CK5V-	HR52	75	1.51g/cm <sup>3</sup>	Electrographite Grade
		-CKE-	HR70	100	2.70g/cm <sup>3</sup>	Electrographite Grade
Hot Rollers Bearing		-FE 45-	HR90	80	1.68g/cm <sup>3</sup>	Electrographite Grade
Lubricating Block		-MGB-V3-		≥30	1.78g/cm <sup>3</sup>	Electrographite Grade
Seal Rings		-M106D-	HR75	182	2.20g/cm <sup>3</sup>	Electrographite Grade
		-M106K-	HR90	170	1.67g/cm <sup>3</sup>	Electrographite Grade
		-D104-	12		40	Electrographite Grade
		-D172-	12		72	Electrographite Grade
		-J201-	15		25	Electrographite Grade
		-J204-	15		20	Electrographite Grade
		-J164-	20		20	Electrographite Grade

## APPLICATION RECOMMEDATIONS

Application	Problems	Grade	Guide-line values for			Remarks
			Permanent current density A/cm <sup>2</sup>	Brush pressure hPa	Speed m/s	
Wind Turbines	Hight current, difficult ambient conditions	-A24X-	8-20	250	30	Standard grade
		-C80X-	10-22	250	30	Universal grade
		-S13/F19-	-	250	30	Shaft grounding
		-K14Z3-	-	250	30	Lightning protection
		-E43-	-	250	30	Lightning protection, off shore
		-E46X-	5-14	250	30	DC pitch motors
Wire annealing	Hight current, difficult ambient conditions	-C40Z3-	10-25	250	30	Adjusted for low humidity
		-C20-	15-30	250	30	For high loads, lead free
		-C60-	15-30	250	30	For high loads, film regulating, lead free
Wire industry, bunchers	High demands, difficult ambient conditions	-E43-	5-14	250	30	Power rings
		-SI10-	-	250	30	Data transfer
		-SI20-	-	250	30	Data transfer, film regulating



**PT. LANGGENG IMAN MAKMUR**

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