SCHMIDTHAMMER

Elektrokohle GmbH

The Company

Preface

Despite the long story of a company, many bigger and smaller changes in our company are going on, and opened new impulses, which we try to make the best out of them. A common business image was created, requesting a sense of duty of all employees. It‘s our aim and target to improve also the working conditions of our engaged and motivated employees. Lead idea, leadership and management culture in Schmidthammer Elektrokohle GmbH mean an action of partnership and cooperation. We pay attention to an ethical management without neglecting the individual requirements of our employees.

The Management - Peter Schmidthammer & Uwe Heller

History

Prehistory

80 years Schmidthammer, that is the story of a company, the chronicle of four generations. It's the life and activity of fathers and sons. It's finally also a part of age and industrial history of development.

1918	Foundation of the **Dynamobürstenfabrik Schmidthammer & Magnus** by Leonhard Schmidthammer
1925	Foundation of the **Keystone Carbon Company** in Emporium, St. Marys, USA by Adolf Schmidthammer
1929	Foundation of the **Kohlebürstenfabrik Adolf Schmidthammer** in Germany

The first quarter century 1929-1954

Start 1929	Foundation of the single enterprise **OMEGA** by Adolf Schmidthammer
1929-32	Activities in the domestic and markets abroad
1934-41	Acquirement of larger land and modifications of the buildings
1949	Registration of the new logo **MEGA**

The second century 1955-1979

1.1.1955	Change into a Limited Partnership
1958/59	Construction of the new factory
1968	Acquirement and extension of the Austrian **carbon cutting workshop Heinrich Brandl & Son**, Vienna
1975	Share in **M. Krug S/A**, in Cachoeirinha/Brasil
70ies	Marketing of Keystone Products, USA for the European markets
1979	Splitting into a Limited Partnership (KG) and a Company with Limited Liability (GmbH) **Schmidthammer Elektrokohle GmbH**

1980 until nowadays

The Company **MEGA** in it's ninth decade is now again obliged to face new challenges of the markets in order to obtain maximal efficiency with most economical efforts. This goal can be realized only together with employees and management. The concept of the company for the future is based on a qualified and solid development, and on a permanent improvement of service with new products, better technology and a defined service commitment.
We look forward with trust based on the well approved efficiency and the confidence acquired in many countries globally-wide.

Business activities

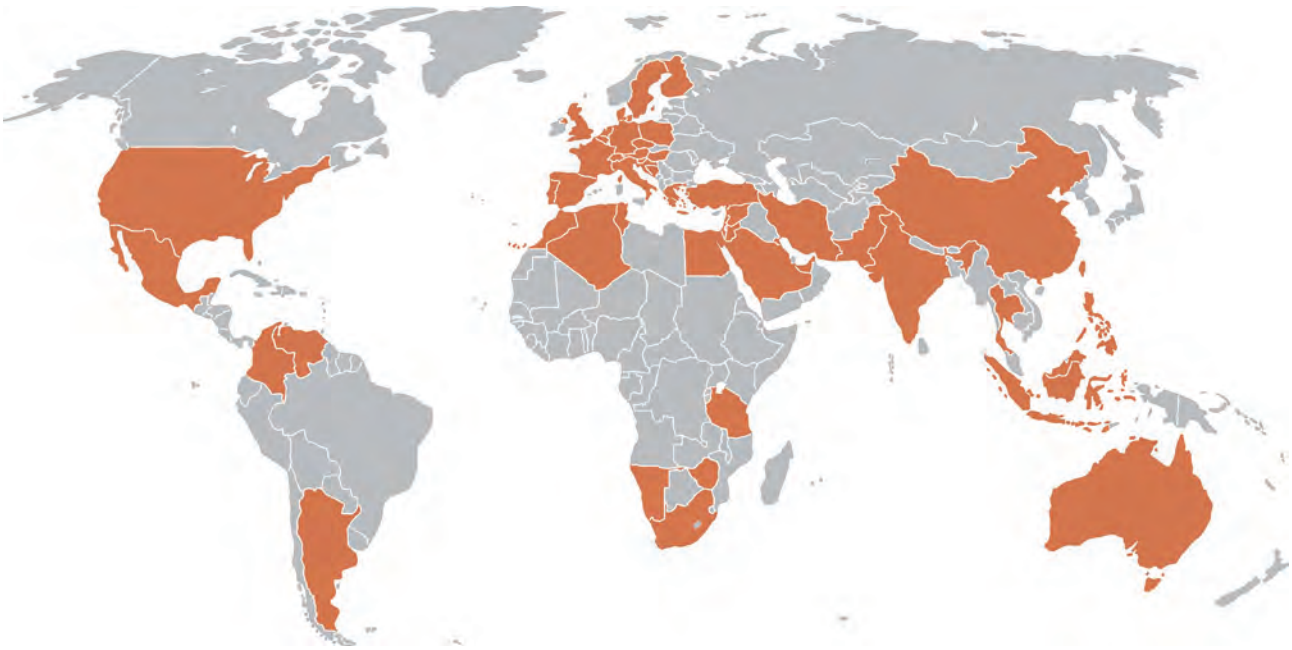
Business activities

To more than 80 countries we supply highly qualified electrographite products under the logo **MEGA**.

Being a specialized producer, we are more than just a supplier of material. We offer optimal solutions for local production, and support our customers with our know-how acquired over many decades.

Our range of production

- Industrial carbon brushes
- High current carbon brushes
- Carbon inserts and sliding contacts
- Carbon contacts and carbon rolls
- Carbon brushes for forklifts
- Automotive carbon brushes
- Midget carbon brushes
- Micro carbon brushes
- Special carbon brushes
- Carbon vanes
- Carbon profiles and carbon bearings
- Graphite lubricating brushes
- Carbon welding rods
- Carbon blocks
- Terminals, special armatures and holders
- Current connectors, flexible copper connections and earthing connectors



Laboratory & practise

Analysis

National and international testing and material analysing systems for determining the quality, the compositions, and the physical characteristics of the carbon brush materials are applied in our laboratories.

Hot Pressing

This process allows the production of highly metal carbon graders with an optimal structure.
Carbon brushes, hot pressed, are especially suitable for high currents and for very high load densities.
We, **MEGA**, are the only European located manufacturers of a such carbon grades which are produced in this special hot pressing process.

PTS Carbon brushes

PTS brushes are carbon brushes, exclusively pressed in moulds to their final dimensions in large series, with and without pigtails. In jargon they are called PTS (pressed to size).
Main grades are of *metal graphite*, *silver graphite*, *bakelite graphite*, and also from *carbon graphite grades*.

Industrial carbon brushes

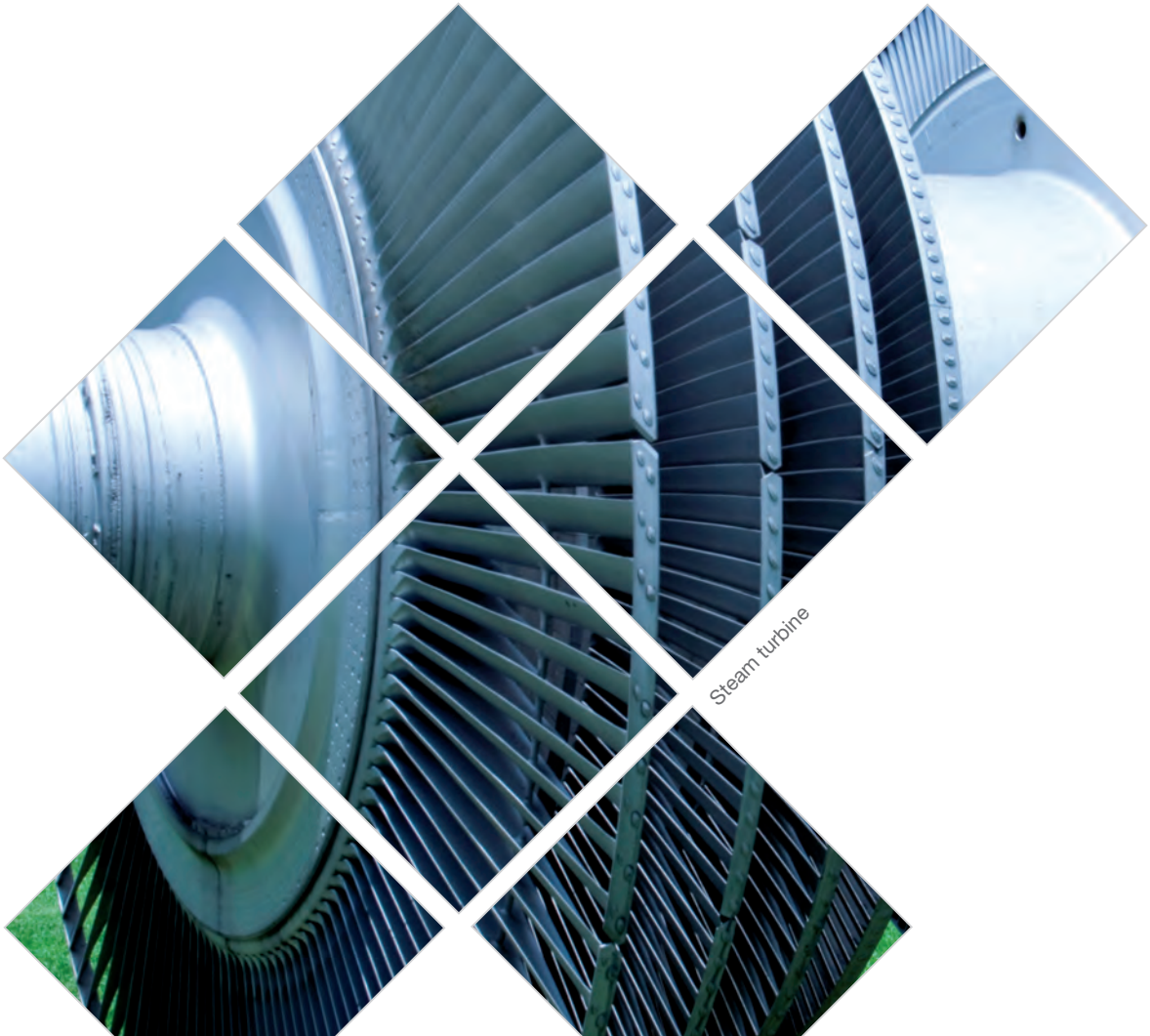
Description of industrial carbon brushes

They have an extensive field of application on big and medium sized commutator machines with high electrical, thermique and mechanical duties. The range includes commutator equipment, slipring rotors and other diversest current transmission systems.

The base is a wide product variety of carbon grades with different compositions. Thus various specific resistances, specific densities, hardness- and load conditions can be achieved. All these parameters obtained, allow an adaption of the carbon grade to the needs of the motor manufacturer and designers. Diversified applications and fields of operation determine the dimensions and shapes of our industrial carbon brushes.

Applications and customers of industrial carbon brushes

- DC and AC motors, generators, three-phaser commutator motors, thyristor-controlled DC-motors, traction motors, variable speed motors, exciting generators, rotor-feed shunt-wound motors, assyncronous motors, series-wound motors
- Trolley buses, mine cars, tramways, steel-cement-paper mills, Schrage systems in the textile and plastic industry
- Steel slip rings in electric power stations, on turbogenerators, hydro-powerstations, wind mill power units
- Power converters of all kind, frequency converters, battery-driven cars, extruders, earthing systems for railway and ships, fork lift trucks, lifts, escalators, cablecars, mine winding units, cranes and lifting systems, pumps
- Carbon grades for higher altitudes
- Carbon brushes specially impregnated for dry atmospheres, supercooled rooms, aircooled motors


Steam turbine

Wind mill power plants

Besides carbon brushes for generators, controlable and various speed motors, so-called earthing brushes of special developed **MEGA** grades are required for wind mills. They guarantee a reliable and economic current transmission in wind mill power.

High current carbon brushes

Description of high current carbon brushes

For high load transmission special carbon grades with a high metal content are required. We recommend our well approved highly metallic graders, which are made in a special hot pressing process, unique in Europe. With these graders admissible loads up to 40 Amps/cm^2 are possible.

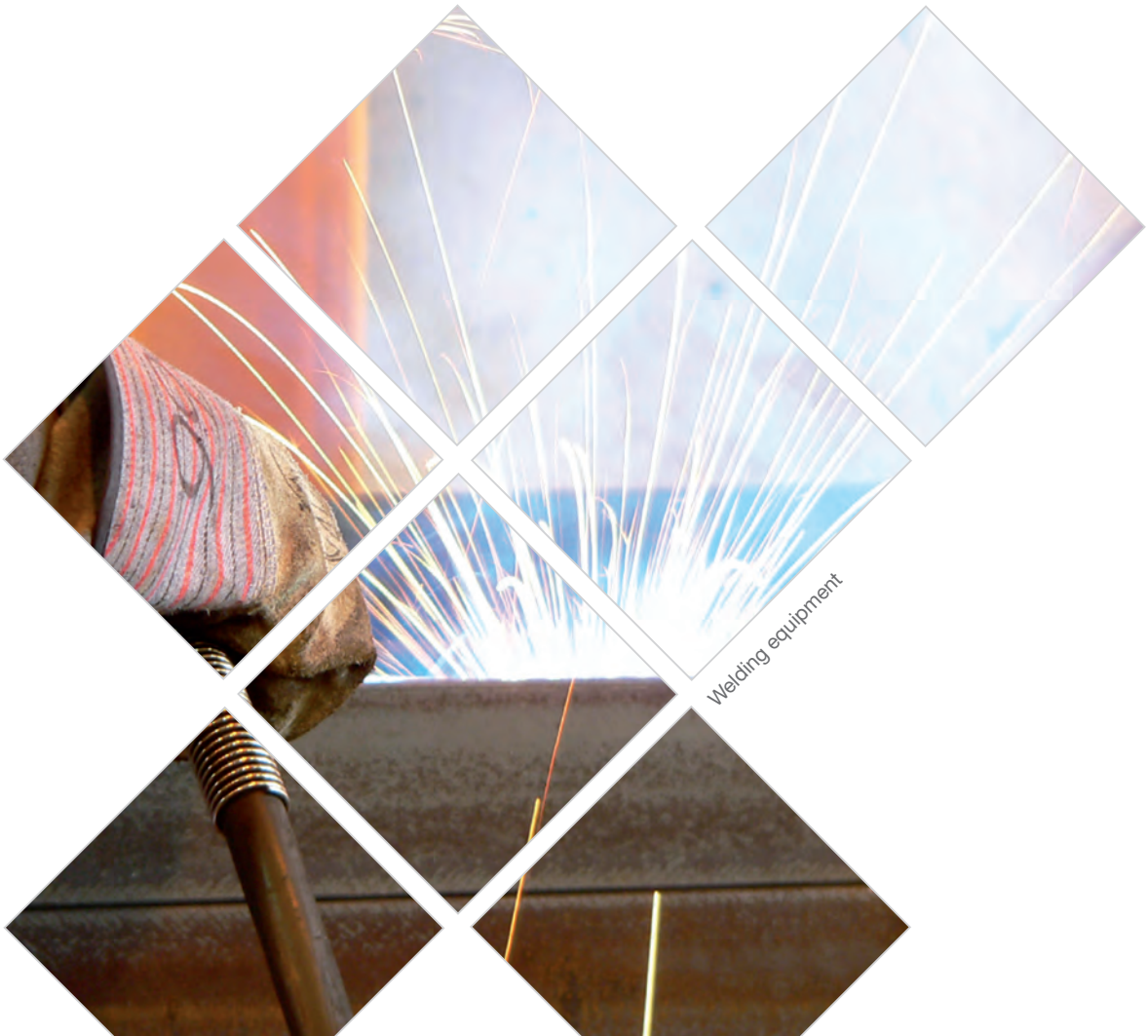
We manufacture high current carbon products with and without holders, as well as complete high load contact systems, including suitable holders and armature.

Our range of products contains standard and special products subject to customers‘ request.

Application of high current carbon brushes

When applying high current carbon brushes in the low voltage range, the contact areas of such brushes must be well dimensioned, in order to keep voltage drops as low as possible, and guaranteeing a good thermal dissipation. We recommend multiple smaller brushes per contact area than only one with big cross section.

- Electroplating equipment for coppering and surface treatment
- Surface refinement of metal sheets in rolling mills
- Electrolytic coating of metals
- Protective coating
- Electrophoretic treatment in the automobile industry and thin-sheet technique
- All high load transmissions annealing systems in the cable industry
- High load transmission in mechanical equipment
- Welding equipments



Double-twist bunching machines

Holders made from brass transmit via carbon brushes the load in double-twist bunching machines. They have been developed for innovative products under highest production security.

Carbon inserts & sliding contacts

Description of carbon inserts and sliding contacts

Many different geometries characterize this range, and ask for numerous carbon grades, partially with metal impregnation. We know the so-called triangular profiles, the block-shaped types, with and without pigtail, smaller, medium and bigger carbon inserts, earthing bruhses, sliding contacts, current collectors (pantographes).

MEGA offers a diversified assortment of suitable and approved carbon grades, as to meet the manifold applications.

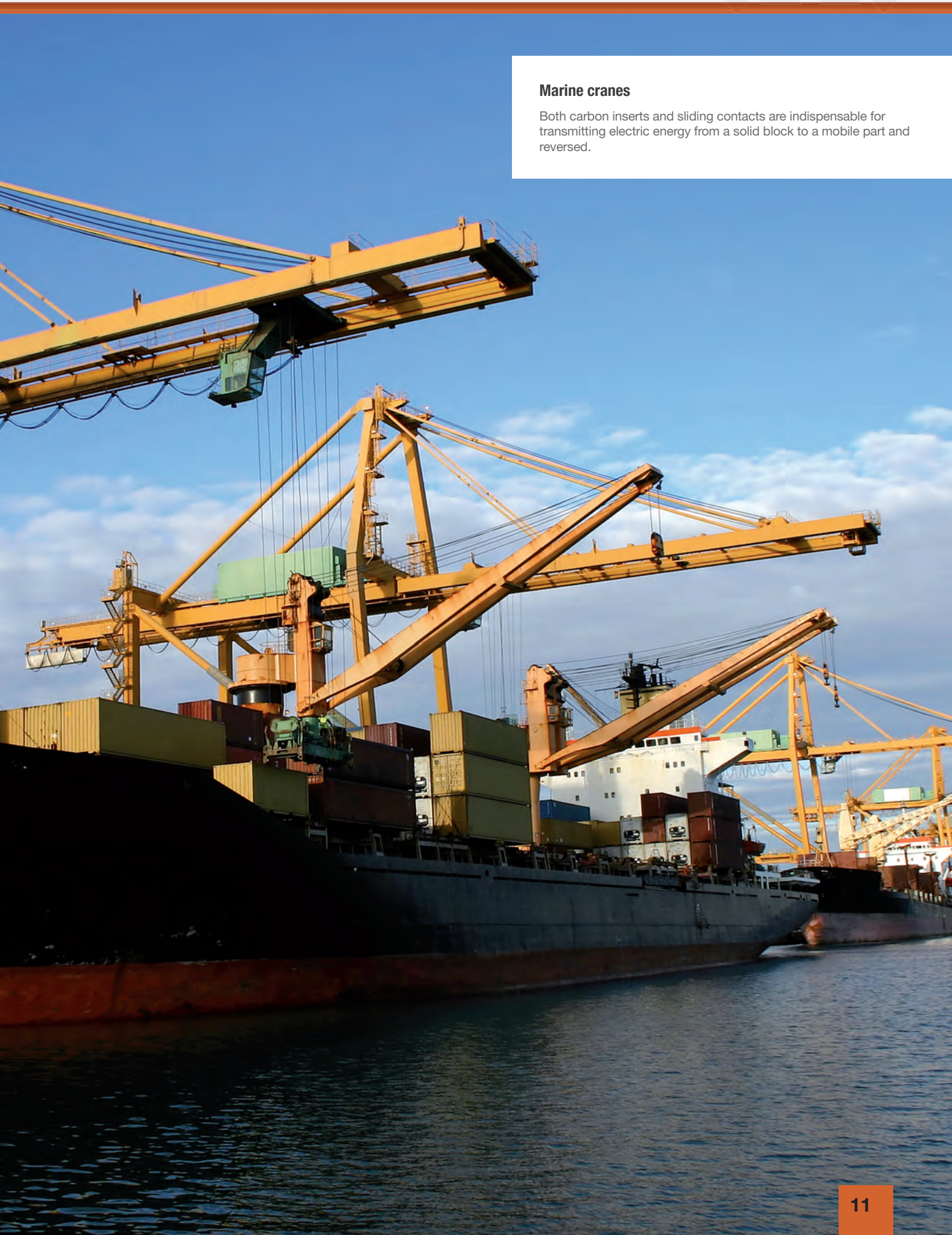
Applications and customers of carbon inserts and sliding contacts

- Cranes, trolley bus, cable cars, metros, mine cars, extraction equipment, earthing contacts for railways and ship-shafts, cable drums

Cable car

Marine cranes

Both carbon inserts and sliding contacts are indispensable for transmitting electric energy from a solid block to a mobile part and reversed.



Current connectors & earthing connectors

Description of our current connectors and earthing connectors

Flat rolled copper connections, earthing connectors and flexible copper connections operate between electrical contacts, and they balance mechanical movements. The flexibility of the connections is influenced by the diameter of the single wires (0,05 to 0,20 mm) as well as by the cross section and the construction of the nettings. Following connections are common: dip-soldered tinned ends, pressed tubes of copper, brass tubes and terminals, as well as specially designed ends of brass and coppersheet.

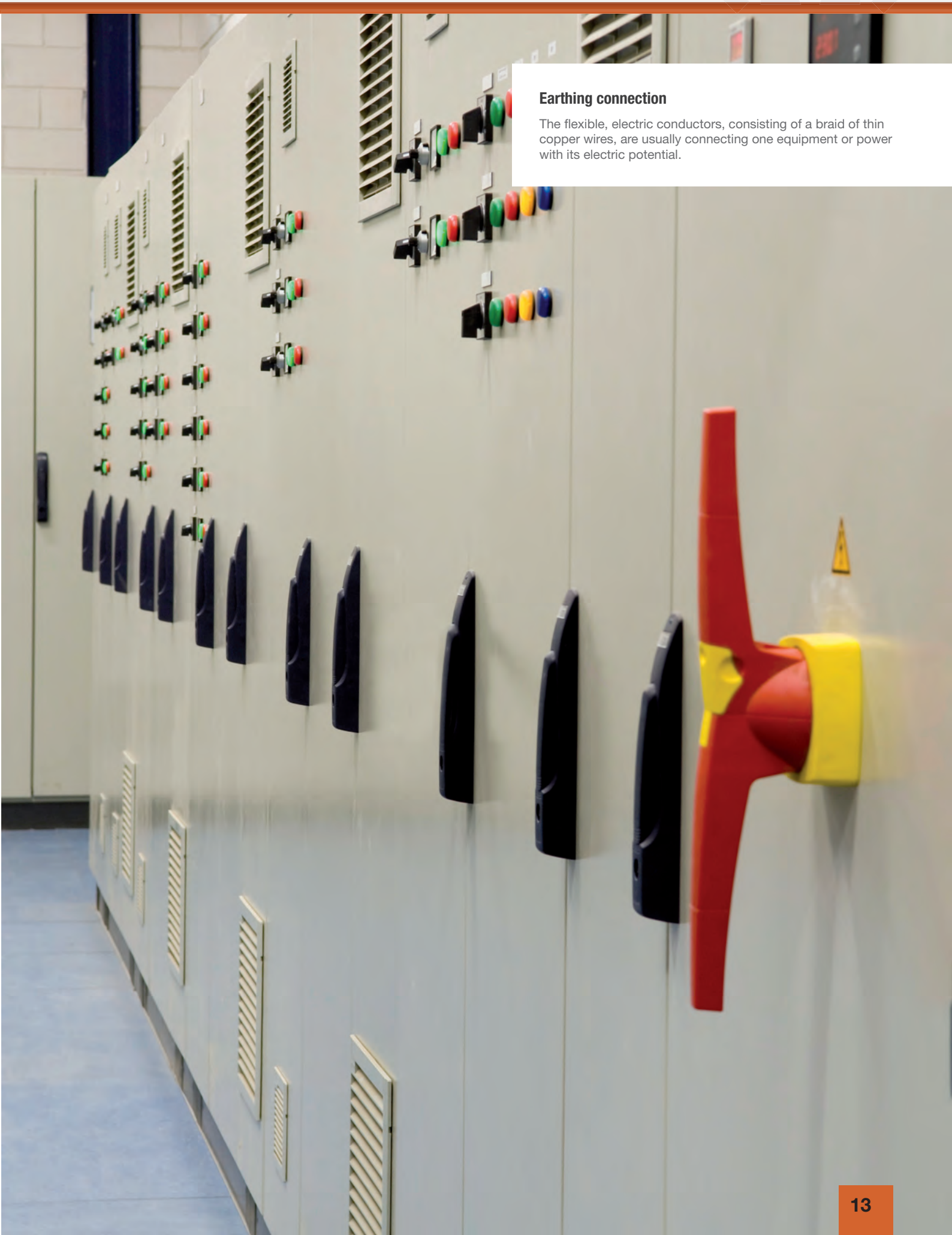
Our standard is made of blank and tinned copper wire. Special versions are either nickel or silver plated.

Round stranded copper connections are working in applications, where a conductive high flexibility for any direction is required. They are either blank or tinned, similar to DIN 46438, with single wires of 0,05 mm to 0,10 mm. The ends can be pressed with copper tubes, or with terminals. For special applications also round shaped pressed connections are possible. All connections can be provided with insulations such as silicon, PVC, or shrinking sleeves.

Characteristics of our current connectors and earthing connectors

We produce flexible copper connections and earthing connectors also in special versions for the diversest applications. The connectors and their production technique will be adapted to its individual application. Our own tool shop enable us to react fast and flexible to customers requests. In cooperation with them we look for and find solutions suitable to solve their connecting problems.

Flexible copper connections



Earthing connection

The flexible, electric conductors, consisting of a braid of thin copper wires, are usually connecting one equipment or power with its electric potential.

Carbon blocks

Description of carbon blocks

MEGA-carbon graphite blocks are exported to all continents. Carbon blocks are the base for a carbon cutting workshop, with many alternatives in shapes and dimensions. Besides the grades listed in the main catalogue we supply further grades for special demands.

Our range of grades covers hard carbon, natural carbon, carbon graphite, resin bonded graphite, electrographite, metal graphite and silver graphite.

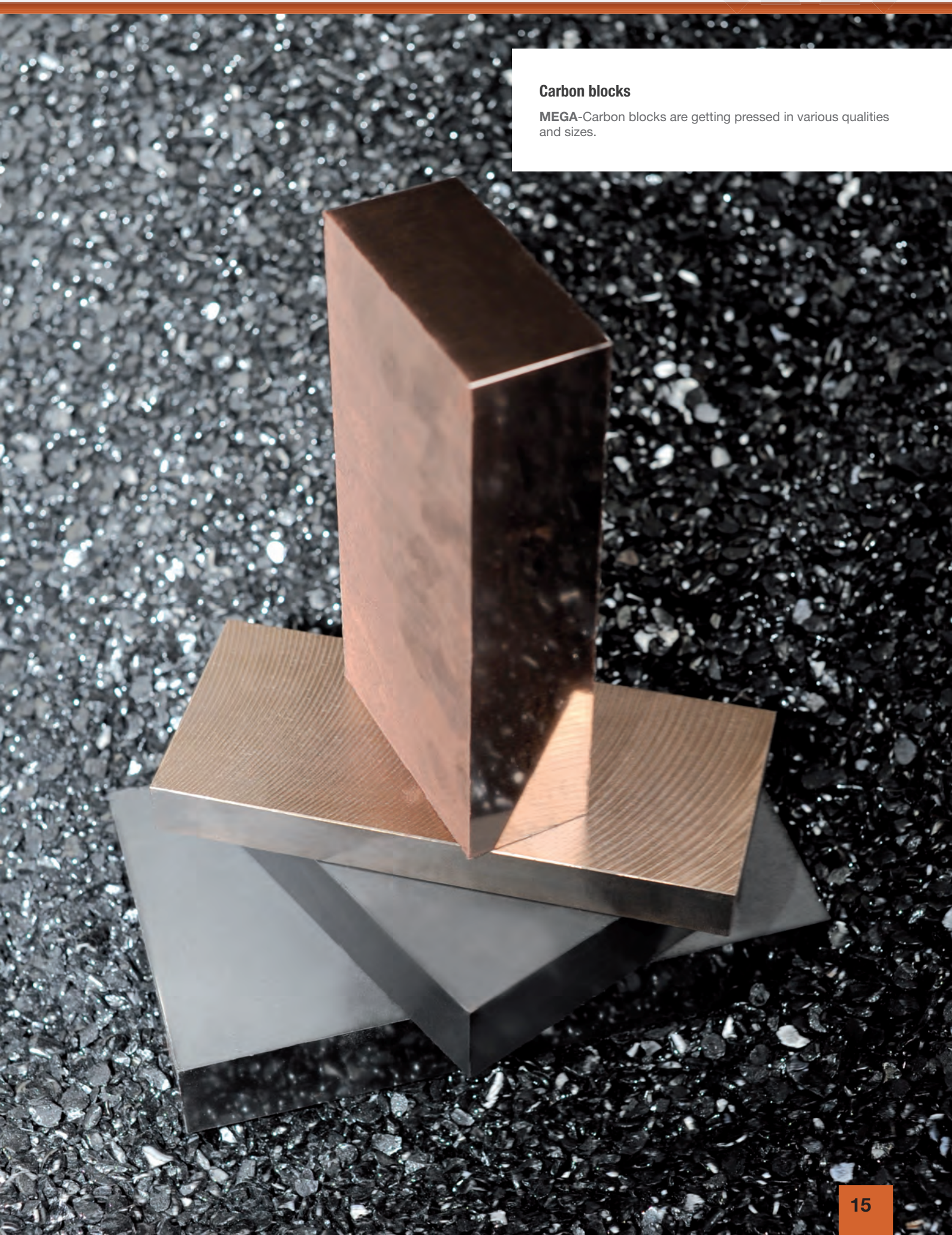
The main shape of blocks comes in rectangular sizes. We supply numerous standard dimensions in variable thicknesses. The parameters shown in our catalogue are to be based on international standards, and permit a direct comparison with our competitors.

Application of carbon blocks

- Carbon blocks are the basic material for the machining and production of carbon graphite products, and carbon brushes of any kind.

Characteristics of carbon blocks

The wide range of carbon block grades offers optimal solutions to the consumers. Various impregnations will influence and may improve the physical characteristics, mainly the hardness parameters, the radio interference, and the lifetime of the carbon product.



Carbon blocks

MEGA-Carbon blocks are getting pressed in various qualities and sizes.

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