SERVICES

TOOLS & DEVICES FOR THE MAINTENANCE OF ELECTRIC MACHINES

PREVENTIVE MAINTENANCE FOR SLIP RINGS AND COMMUTATORS

MERSEN SERVICES

PREVENTION

MAINTENANCE SAVINGS

SAFETY

REGULAR CONTROLS WILL REDUCE THE FREQUENCY OF MAINTENANCE OPERATIONS

MEASURING DEVICES

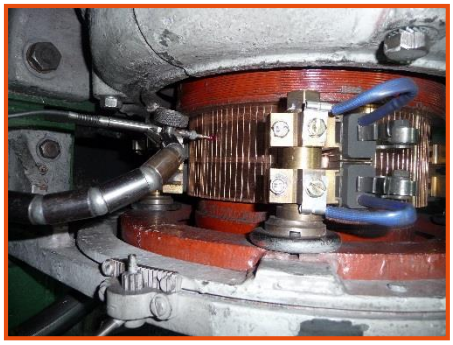
For over 120 years, Mersen has been developing carbon brush grades and manufacturing carbon brushes for electric machines. Our expertise in motors and our experience in industrial maintenance enables us to offer you a global range of solutions adapted to your needs:

- Brush-holders, carbon brushes and slip rings
- A team specialized in on-site technical motor assistance (in-situ machining operations)
- A whole range of tools for the maintenance of slip rings and commutators
- A Technical Customer Assistance Service
- Training on how to maintain electric machines and on commutation knowledge

The devices, tools and accessories presented in this catalog were not only tested in laboratory, but on-site, as well. They have been expertly selected to give you complete satisfaction .

CL-PROFILER PROFILOMETER

It is necessary to regularly check that the deformation of slip rings and commutators (out of round) remains within acceptable limits. The CL-Profiler is easy to use in the field. It will give you a very clear image of this deformation and will enable you to follow the progression of the wear of your electric rotating machinery.



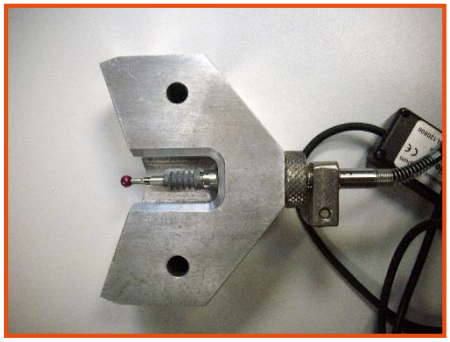
CL-Profiler Profilometer

Reference	Description
90333N	CL-Profiler with magnetic tablet
90328N	CL-Profiler without tablet
90324N	ViRoTi probe
90355N	2.5 mm ruby tip
90340N	5 mm ruby tip (standard)
90341N	8 mm ruby tip
90358N	18 mm ceramic tip
90371N	Magnetic foot
90360N	Analysis software

2.5 mm, 5 mm, 8 mm ruby tips. 18 mm ceramic tip.

DIAMETER

The DiaMeter will enable you to measure the diameter of slip ring assemblies, commutators and rolling stock wheels prior to any potential machining. This is a portable tool, adaptable to the size of your commutators and/or wheels. It uses the same probe as the CL-Profiler as well as an extension to its software.



DiaMeter

Reference	Description
90372N	Tool for 50 to 400 mm diameters
90373N	Tool for 300 to 950 mm diameters
90374N	Customized DiaMeter tool for 50 to 350 mm diameters
90324N	ViRoTi probe

MEASURING DEVICES

CL-DynamoMeter ELECTRONIC DYNAMOMETER

For optimal carbon brush performance, it is necessary to check that pressure springs ensure sufficient contact of the carbon brushes on the rotor.
In addition, these pressures must be the same of all motor brushes to obtain an equal current distribution and therefore balanced carbon brush wear.
To perform these measurements we recommend using the device developed and also used by Mersen's experts.

CL-DynamoMeter electronic Dynamometer

Reference	Description
90316N	CL-DynamoMeter
90321N	CL-DynamoMeter with V-block magnetic foot

The 90349N dynamometer is available upon request.

ROUGHNESS METER

Proper ring or commutator roughness will give carbon brushes the right mechanical seating base and will ensure optimum current transmission.

SJ210M Roughness meter

Reference	Description
90317N	SJ210M roughness meter

ALARM BOX

Commutators and slip rings may get damaged by worn out carbon brushes. The "alarm" carbon brush includes, in addition to its shunt, a thin copper braid, entirely protected by an insulated sleeve. It is located deeper than the carbon brush tamping. When the carbon brush is worn, the alarm shunt comes into contact with the commutator / slip ring (without causing any damage to the sliding surface), the short-circuit triggers the warning light.

Alarm box

Reference	Description
90702N	Brush wear detection alarm box

MEASURING DEVICES

STROBOSCOPE

Out roundness can by easily located and identified with our stroboscope on deformed slip rings or commutators that cause strong brush vibrations

Stroboscope

Reference	Description
90313N	Digital stroboscope
90315N	Spare lamp

TOOLS FOR THE MAINTENANCE OF ELECTRIC MACHINES

GRINDING STONES

The commutator or slip ring of an electric machine must have the right roughness to give the carbon brushes a proper seating base and to ensure satisfactory current transmission.

To achieve this roughness, the commutator or the slip ring must be «ground» after machining with a medium grinding stone such as P/N 90623N. If you wish to grind without dismantling the machine, you could use a grinding stone with a handle. P/N 90602N is ideal for motors up to 15 kW, while P/N 90651N is suitable for motors up to 150 kW. For bigger motors, use P/N 90612N or 90607N, which are larger.

Our grinding stones have four different grain sizes, each adapted to the work to be done. These stones are suitable for copper, bronze and steel.

- Coarse grinding stone (C) : with large grains, it does not erode much and works well for removing large quantities of material.
- Medium grinding stone (M) : with an average grain size which is suitable for removing minor defects, it is recommended for finishing any commutator or slip ring machining. Its grain size is designed to achieve the correct roughness for a proper brush seating base and film deposit.
- Finish grinding stone (F) : with fine grains suitable for commutator cleaning or for achieving the correct roughness on certain types of soft copper. .
- Polish grinding stone (P) : with very fine grains.

Two-grade combination grinding stone

Two-grade combination grinding stones

Reference	Dimensions in mm	Grain
90608N	50x25x200	C/M
90607N	50x25x200	M/F

Grinding stone with adjustable handle

Grinding stones with three-position adjustable handle and thrust knob

Reference	Dimensions in mm	Grain
90612N	50x40x50	M
90611N	50x40x50	F

TOOLS FOR THE MAINTENANCE OF ELECTRIC MACHINES

Single-handle grinding stone

Single-handle grinding stones. The handle is mounted lengthwise.

Reference	Dimensions in mm	Grain
90613N	130x80x50	C
90614N	130x80x50	M

Double-handle grinding stone

Double-handle grinding stones. The two handles are mounted crosswise.

Reference	Dimensions in mm	Grain
90618N	100x200x80	C
90619N	100x200x80	M

Grinding stone for use on lathe

Stone for grinding commutators and rings on lathe

Reference	Dimensions in mm	Grain
90635N	20x20x80	C
90637N	20x20x80	M
90636N	20x20x80	F
90621N	25x40x160	C
90623N	25x40x160	M
90622N	25x40x160	F
90629N	25x40x280	C
90631N	25x40x280	F
90627N	50x50x200	C
90625N	50x50x200	M
90626N	50x50x200	F
90640N	30x30x200	C
90641N	30x30x200	M

Straight-handle grinding stone

Straight-handle grinding stones (two different grades)

Reference	Dimensions in mm	Grain
90601N	10x12x20	M and F
90602N	10x12x20	F and P
90603N	10x12x20	M and C

Pencil-type grinding stone

Pencil-type grinding stones

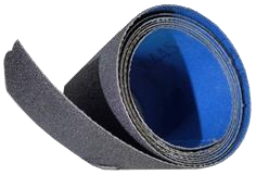
Reference	Dimensions in mm	Grain
90604N	10x15x150	C
90606N	10x15x150	M
90605N	10x15x150	F

Commutator polisher

Commutator polisher with curved plastic handle

Reference	Dimensions in mm	Grain
90651N	8x22x17,5	F/P

TOOLS FOR THE MAINTENANCE OF ELECTRIC MACHINES


Abrasive strip

Abrasive strip for carbon brush seating

This abrasive strip is made for on-site carbon brush seating. It ensures a quick and efficient work, with no abrasive grain erosion

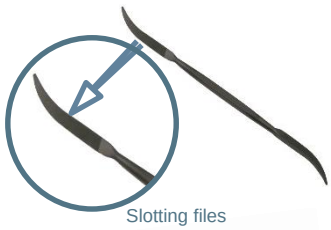
Reference	Description
90206N	Grain 80 abrasive strip, width 9 cm x 10 m


Brush seater

Brush seaters

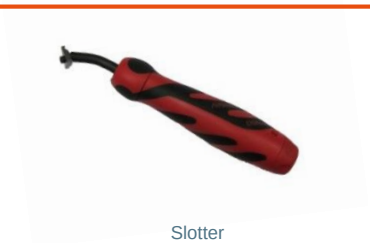
Meant for seating carbon brushes, this material hardly wears the metal. It should not be used intensively except with a dust collection device.

Reference	Dimensions in mm	Grain
90661N	6x6x120	M (Medium)
90662N	6x12x120	M
90663N	10x10x120	H (Hard/Dur)
90664N	10x10x120	M
90665N	12x20x120	H
90666N	15x30x120	H
90667N	15x30x120	M
90668N	15x30x120	S (Tendre/Soft)
90669N	50x25x120	S
90672N	80x50x150	S


Slotting files

Slotting files

Reference	Description
90553N	Slotting file without handle


Slotter

Slotter

Hand tool meant for mica undercutting, burr removal and bar edge chamfering. This steel tool has a cutting edge in “V” and another “U”.

Reference	Description
90554N	Three-side slotter with blade
90555N	Spare blade for 90554N


Flexible abrasive

Flexible abrasives

Fine-grain insulating material, specifically meant for cleaning commutator or slip ring patinas on small machines. It cannot be used as a machining tool.

Reference	Dimensions in mm
90652N	10x12x120
90653N	10x20x120
90655N	15x25x120
90654N	25x50x120
90658N	20x30x200

PATINA WAX

Patina wax

Applied to the commutator after a grinding operation, patina wax contributes to a quick film deposit.

Reference	Description
90213N	Wax stick, 40 mm x 16 mm x 120 mm

PORTABLE MICA UNDERCUTTER

Portable mica undercutter

Portable mica undercutter

- Compressed air angle grinder, with built-in sound-insulating features and adjustable air outlet. Easy to use with depth adjustment and protective cap for offhand grinding up to 60 N. Supplied with a spanner set.
- Power: 75 W, Weight: 180 g, No-load speed: 70,000 rpm
- Couplings: R 1/8, Air consumption: 0,2 m^3/min
- Air pack and connector piece are not included

Reference	Description
90570N	Mica undercutter for 19 mm and 22 mm diameter diamond discs

Ø19 mm diamond disc

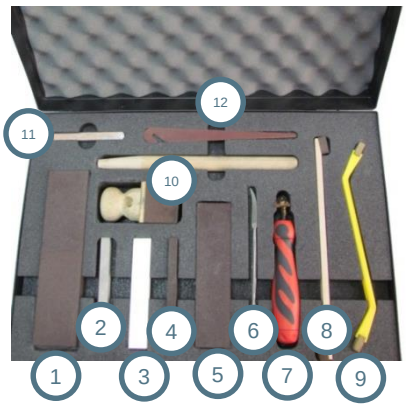
19 mm diameter diamond discs for our 90570N portable mica undercutter

Reference	Thickness	Reference	Thickness
90571N	0.5 mm	90573N	0.8 mm
90572N	0.6 mm	90574N	1 mm

Ø22 mm diamond disc

22 mm diameter diamond discs for our 90570N portable mica undercutter

Reference	Thickness	Reference	Thickness
90575N	0.5 mm	90577N	0.8 mm
90576N	0.6 mm	90578N	1 mm



Maintenance tool case

Maintenance tool case for commutators and rings

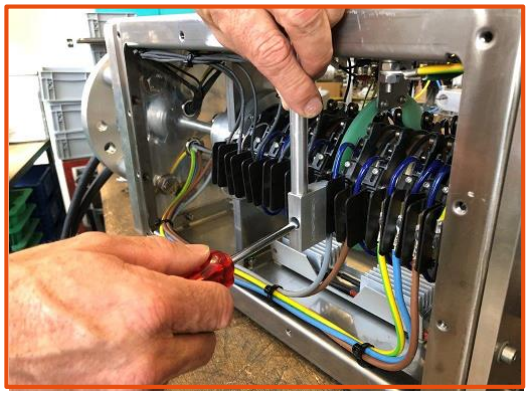
This case includes a set of grinding stones and slotters for all types of commutators and slip rings.

Reference	N°	Description
90205N		Complete carrying case including folllowing tools:
90607N	1	Two-grade combination grinding stone
90655N	2	Flexible abrasive
90665N	3	Brush seater
90605N	4	Pencil-type grinding stone
90623N	5	Stone for grinding commutators and rings on lathe
90553N	6	Slotting file
90554N	7	Slotter
90601N	8	Straight-handle grinding stones
90651N	9	Commutator polisher with curved plastic handle
90612N	10	Adjustable handle grinding stone
90285N	11	Insulating probe
90287N	12	Set of gauges

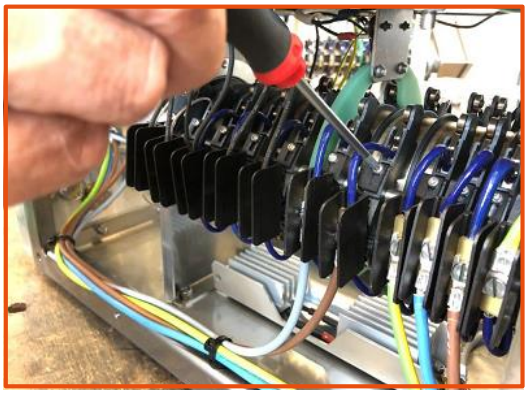
TOOLS FOR THE MAINTENANCE OF CARBON BRUSH SIGNAL & POWER TRANSFER SYSTEMS

KIT OF 3 TOOLS FOR BRUSH-HOLDER REPLACEMENTS AND CARBON BRUSH MAINTENANCE

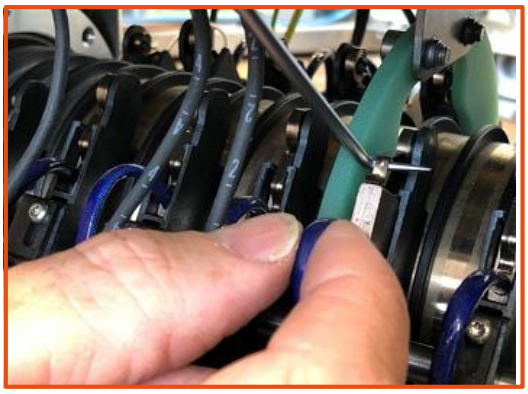
Reference	Description
1606-51908	Kit including the 3 tools



Tool for brush-holder replacement



Tool for brush-holder replacement



Tool for lifting the spring and checking the condition of the brush

- Contact us for more information on our other measurement tools and devices
- Please request our guide on « How to maintain carbon brushes, brush-holders, commutators and slip rings »

Contact: info.ptt@mersen.com