

ZOOM

PATENTED BY MERSEN

CARBON DUST COLLECTION SYSTEMS FOR HYDRO GENERATORS

Designed to prevent short circuits caused by low insulation between active coils and ground



A SMART CONCEPT

- ✓ Requires minimal maintenance
- ✓ Completely integrated and customized with plug & play concept
- ✓ Designed for new, retrofit and refurbished hydro generators (up to 900 MW)
- ✓ Annual preventive maintenance service
- ✓ Monitoring (in option)

A RELIABLE SOLUTION

- ✓ Studies performed by Mersen design offices
- ✓ Selection of high quality materials
- ✓ Tested on our test benches (NF EN 60312)
- ✓ Conformity with international standards (HEPA, CE, UL, CSA)
- ✓ Installation and set up by Mersen experts

BETTER HYDRO GENERATOR EFFICIENCY

- ✓ Over 90 % of carbon brush is suctioned at its source, avoiding dust dispersion all over the machine
- ✓ Higher reliability for continuous power production

INCREASED HYDRO GENERATOR RUNNING TIME

- ✓ Reduction of cleaning maintenance

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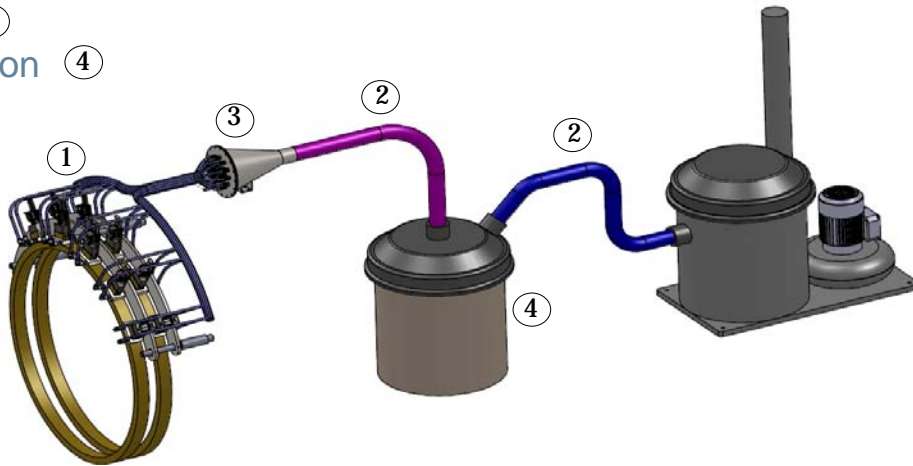
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WORKING PRINCIPLE

Our Carbon Dust Collection Systems are composed of:

- Brush-holders equipped with patented special design collection shoe ①
- Dedicated flexible or/and rigid vacuum tubing with different diameters ②
- Manifolds ③
- Vacuum station ④



If oil vapor is present, it will seriously affect the performances of the carbon dust collection system.

Industrial
Vacuum
Unit

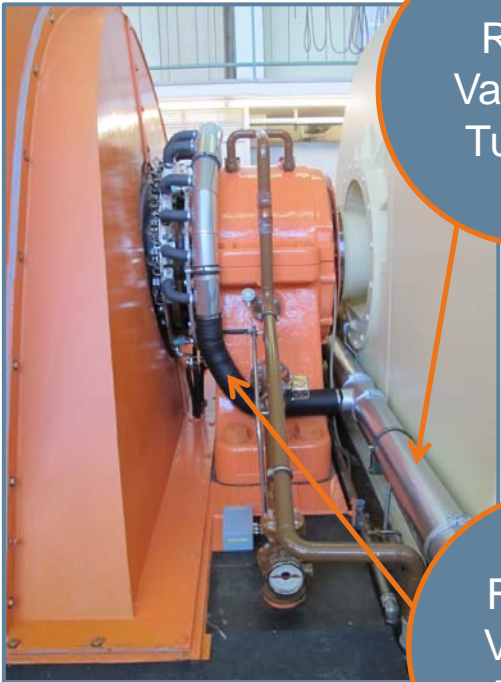
- Duty cycle: 24/7
- Operating temperature: -10 to 40°C (14 to 104°F)
- Low noise level (< 85 dB)
- Removable filter with manual / electrical unclogging
- Removable dust tank



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Rigid Vacuum Tubing

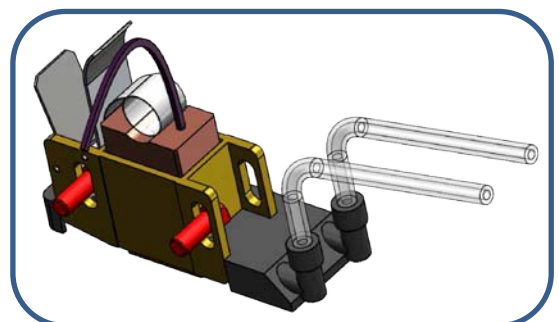
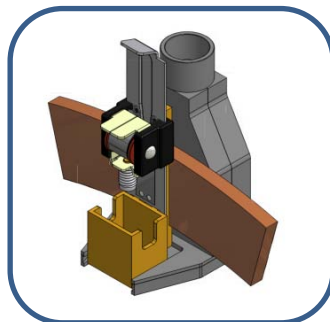
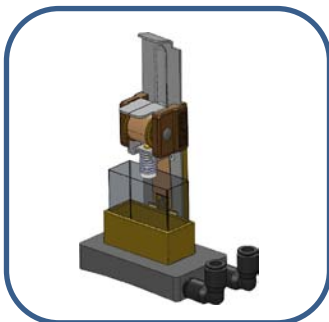
Flexible Vacuum Tubing

- Totally modular concept
- Stainless steel or galvanized steel
- Aluminum for elbow and coupling
- High abrasion resistance
- Insulated from shaft

- Operating temperature: -40 to 100°C (-40 to 212°F)
- Antistatic material
- Silicon-free, conform with standards
- Flexibility and exceptional mechanical resistance
- High abrasion resistance
- Not flammable
- High Insulated electrical resistance (tested under 10 kV)
- Quick and easy installation

Dust Suction Shoe

- Operating temperature: -40 to 100°C (-40 to 212°F)
- Antistatic material
- Exceptional mechanical resistance: 70 MPa
- High Insulated electrical resistance



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Totally integrated into the hydro generator, Mersen's Carbon Dust Collection Systems contain considerable benefits:

- ✓ Proper air suction calculation to collect carbon dust without causing any depression inside the hydro generator
- ✓ No influence on carbon brush and slip ring temperatures
- ✓ Long life time of components (> 3 years)
- ✓ Quick change of components in case of replacement with plug and play concept
- ✓ Completely independent for carbon brush replacement (standard access)
- ✓ Monitoring in option:
 - Electrical set up with hydro generator running (stop & go)
 - Alarm in case of depression loss
 - Alarm in case of carbon brush wear

References: over 50 units already installed



A GLOBAL PLAYER

Mersen is a Global Expert in electrical specialties and graphite-based materials.

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