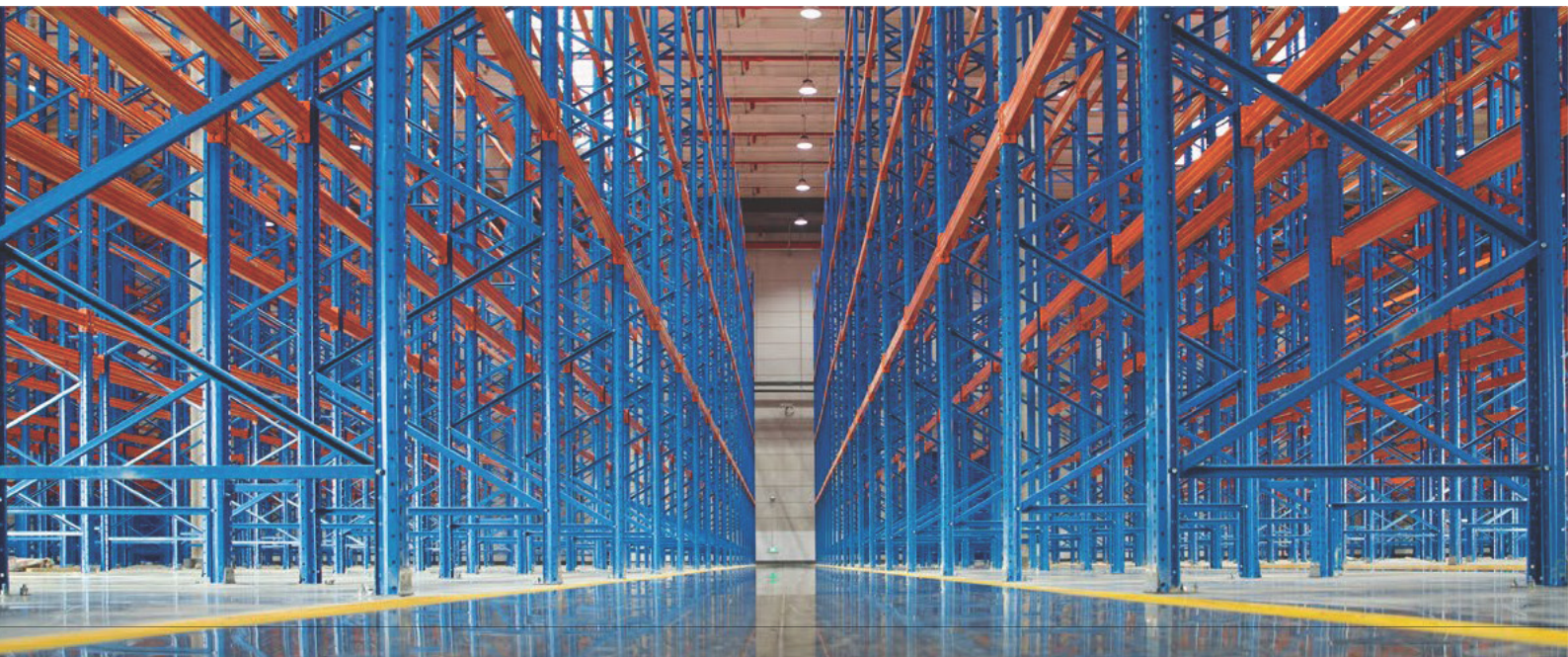
CEDIMA



UFF LASER SYSTEM

Automated precision milling of ultra-flat industrial floors

- FASTER
- SMARTER
- FULLY AUTOMATIC

CEDIMA

INDUSTRY 4.0 READY

LASER CAMEL

the heart of the UFF system

Complete solution

Ultraflat New Concept

for the construction of ultra-flat industrial floors from a single source:

LASER CAMEL

-

fully automated high-precision milling

WOLF MAX

-

effective dust management with remote-controlled vacuum

DBS-GRINDING MACHINES

-

improving surface quality

METZGER/ MCGUIRE FILLERS

-

ultra-fast repair of any floor defects

DRS-FLOOR CONCRETE TREATMENTS

-

surface hardening and sealing

DRAGONFLY

-

Surface measurement and quality control

INDUSTRY 4.0 READY

LASER-GUIDED PRECISION:
LASER CAMEL mills the floor exactly to a defined reference plane instead of following existing unevenness

MAXIMUM FLATNESS:
Accuracy up to **±1 mm over a length of 50 meters** – ideal for high-bay warehouses, VNA narrow aisles and other automated logistics facilities

HIGH PRODUCTIVITY:
350–400 m² daily output with 5 mm removal rate

EFFICIENT PROCESS: :
Fine milling structure - only one grinding pass is necessary for post-processing

RELIABLE TECHNOLOGY:
Fully gear-driven concept for minimal maintenance and maximum operational reliability

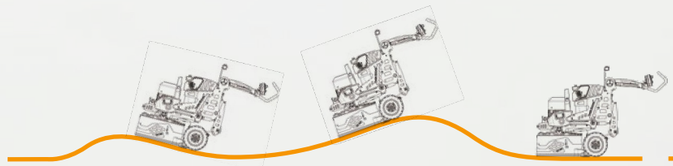
VERSATILE APPLICATION:
Precise processing of levels, ramps and transition areas of VNA surfaces as well as for highly effective surface preparation and aggregate exposure

COMPLIANT WITH STANDARDS:
Meets international standards such as **EN 15620, DIN 15185 VDMA, ACI F-min and TR34**

With this new high-precision milling technology the **Dr. Schulze Group** presents solution for automated high-bay warehouses, logistics centers, data centers and other modern production facilities precisely bringing existing or new installed industrial floors to a new reference level - quickly, reproducibly and without costly new construction. The core of the UFF system is the laser-controlled, high-performance floor milling machine **LASER CAMEL.**

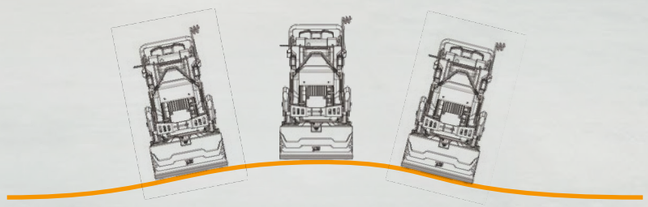
Active leading instead of following

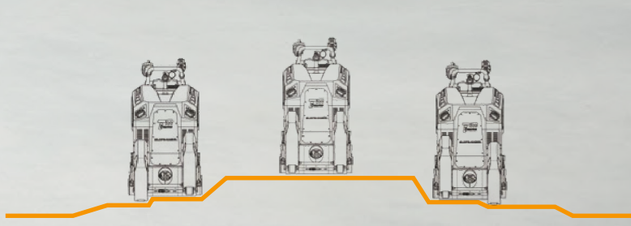
precision on a new level



Unlike conventional milling and grinding methods, which follow the existing floor profile and reproduce existing unevenness, **LASER CAMEL** uses intelligent sensors and precise laser control and orients itself to a defined reference plane and mills the floor precisely to this target level, regardless of any bumps, dips or waves.

The machine's travel path is also controlled by the laser with an **accuracy of up to 3 mm** – ideal for narrow aisle warehouses and for traffic lanes processing. **Ramps, slopes and transition areas of VNA surfaces** can also be processed precisely and uniformly thanks to automatic tilt control system.



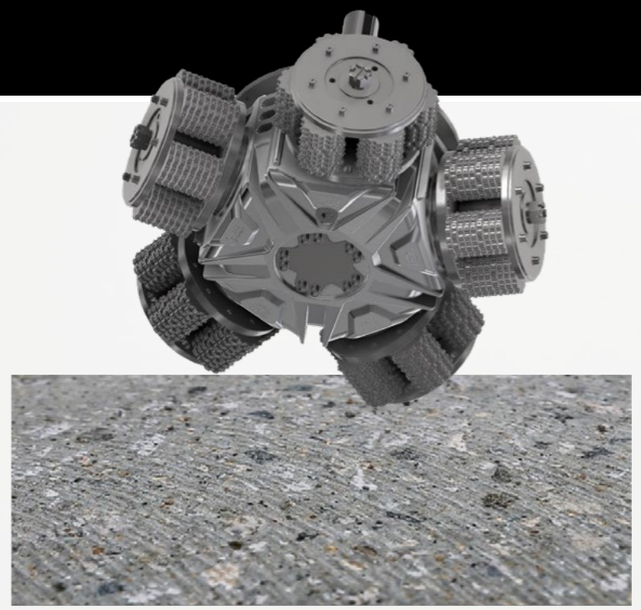


SLOPE CAMEL

Optimal solution for surface preparation

LASER CAMEL

Innovation and Robustness



MAXIMUM PERFORMANCE AT MINIMUM RUNNING COSTS

The **LASER CAMEL** is fully **gear-driven** and therefore requires less maintenance, is durable and reliable even in continuous industrial use. The milling depth can be adjusted in very fine increments of **0.25 mm** up to a **maximum working depth of 25 mm.** The resulting fine milled surface requires only a single subsequent grinding pass with, for example, diamond grit #40.

SLOPE CAMEL differs from **LASER CAMEL** in that it does not have the **LLS system** (laser-controlled milling depth adjustment), making this machine a universal solution for effective and extremely fast surface preparation. The **SSS system** (automatic tilt control of the milling head) keeps the milling head of the machine in a precisely horizontal position any time, ensuring a previously unattainable level of evenness of the processed floor.

INTELLIGENT SENSORS AND LASER CONTROL:

The **LASER CAMEL** features extensive sensor technology and control systems, which almost completely automate the operation of the machine and reduce the operator's influence to a minimum.

Therefore **SLOPE CAMEL** can completely replace conventional machines for surface preparation in the most applications.

LLS (LASER LEVEL SYSTEM) LASER-CONTROLLED ADJUSTMENT OF THE MILLING DEPTH:

The machine's integrated laser receiver gets the signal from the laser transmitter and continuously and automatically adjusts the milling depth for ensuring, that the preset required floor height is always achieved, regardless of the starting height. Simultaneous control of multiple machines with a single laser transmitter is also possible.

SCS (SLOPE CONTROL SYSTEM) ACTIVE REGULATION OF THE MILLING HEAD ANGLE:

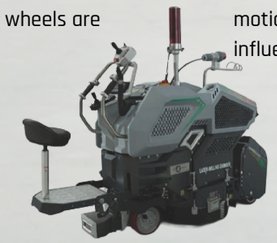
Thanks to active and nearly stepless regulation of the milling head tilt angle, any slightly inclined floors and transition areas of VNA surfaces with an angle of up to 4° can be processed fully automatically. The machine automatically maintains the preset tilt angle.

SSS (SLOPE SENSOR SYSTEM) AUTOMATIC TILT CONTROL OF THE MILLING HEAD:

Another intelligent control system keeps the machine's milling head in a precisely horizontal position any time, regardless of the unevenness of the ground, on which the machine wheels are currently located.

LTGS (LASER TRACK GUIDANCE SYSTEM) LASER-GUIDED WALKING TRACK GUIDANCE:

The intelligent laser guidance system LTGS guides **LASER CAMEL** along the laser beam with a deviation of less than 3 mm – ideal for processing of defined motion (VNA) areas while minimizing operator influence.



	LASER CAMEL	SLOPE CAMEL
Laser-controlled milling depth adjustment LLS	⊕	⊖
Automatic tilt control of the milling head SSS	⊕	⊕
Active regulation of the milling head angle SCS	⊕	⊕
Laser-guided walking track guidance LTGS	⊕	⊕

LASER CAMEL & SLOPE CAMEL

intelligent | powerful | cost effective

A multifunctional high-resolution LED display ensures intuitive machine operation and full control over a wide range of functions and operating parameters.

SLOPE CAMEL and LASER CAMEL guarantee for your construction site:

- **350–400 m² daily output** at 5 mm removal rate
- Significantly reduced project durations and fewer interruptions of the building use
- Reduced staffing demand due to high automation level
- Minimal post-processing required due to fine surface pattern
- Maximum reliability and minimal maintenance thanks to gear drive technology
- Fast transport and installation thanks to compact dimensions and a weight of under 1200 kg
- Minimal dust handling effort thanks to dry milling
- **LASER CAMEL:**
  Special operating mode without laser control for effective surface preparation and aggregate exposure
- **SLOPE CAMEL:**
  Ultra-fast surface preparation and improved surface flatness thanks to the SSS system

Our contracting customers take advantage from the high degree of process automation, its extreme precision, short project durations and significantly reduced overall costs – and ultimately from the satisfied customers with industrial floors meeting increased demands of industry automation.

Advantages of surface preparation with SLOPE CAMEL or LASER CAMEL compared to:

Floor milling machines

+ Smaller surface damages
+ Excellent flatness after just one pass
+ Less post-processing required

Shot blasters

+ Significantly higher removal rate
+ Insensitive to the substrate condition
+ Significantly improves the evenness of the surface

Grinding machines

+ Significantly higher productivity and material removal rates
+ One milling tool for any surface
+ Optimal structure for further coating

	LASER CAMEL	SLOPE CAMEL
Motor	18,5 kW	18,5 kW
Electrical connection	400 V; 32₁ - 40 A; 50 Hz	400 V; 32₁ - 40 A; 50 Hz
Battery voltage	24 V	24 V
Working width	640 mm	640 mm
Max. milling depth	25 mm	25 mm
Milling head speed	180-260 min^{-1}	180-260 min^{-1}
Milling drum speed	1100-1600 min^{-1}	1100-1600 min^{-1}
Number of milling drums	4 or 5	5
Ø hose connection	150 mm	150 mm
Length	1980 mm	1980 mm
Width	796 mm	796 mm
Height	1408 mm	1408 mm
Weight	1170 kg	1160 kg
Price	on request	on request

₁ At a maximum milling depth of 5-10 mm (depending on the floor material)

WOLF MAX

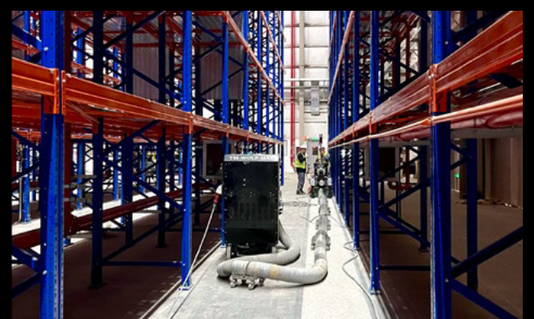
Dust management on a new level

For ensuring the continuous operation **LASER CAMEL** is combined with the self-propelled, high-performance **WOLF MAX** dust extraction system, equipped with a radio remote control. This enables comfortable and fatigue-free operation of the entire machine package by a single operator.

LASER CAMEL + WOLF MAX as a system

The innovative WOLF MAX dust extraction system guarantees uninterrupted operation and is characterized by the following main features:

- High suction capacity of up to 1,620 m³ /h, optimized for use with **LASER CAMEL**
- Variable frequency controlled suction turbine for various energy-efficient applications
- Radio remote control for convenient operation with only one operator
- Integrated feed drive system with stepless speed control
- 24-volt battery for easy transport without a power supply
- Automatic computer-controlled filter cleaning system with integrated air compressor
- 8 high-performance cartridge filters with antistatic coating
- Slim design optimized for VNA narrow aisle warehouses



Technical Specifications

Motor	7,5 kW
Electrical connection	400 V; 20 A; 50 Hz
Air flow	0 - 1620 m3/h
Battery voltage	24 V
Filter design	8 cartridge filters
Filter class	H14 (99,95%)
Ø hose connection	150 mm
Dust container volume	185 liters
Length	1655 mm
Width	930 mm
Height	1525 mm
Weight	575 kg
Price	on request

DRAGONFLY

Intelligent surface measurement

The **DRAGONFLY Floor Profiler** is a highly precise measuring system that objectively, reproducibly and in accordance with standards assesses the flatness of industrial floors.

Thanks to sensitive sensors on its four wheels, **DRAGONFLY** continuously detects surface height differences while driving over the floor. Based on this measurement data, the internationally established parameters **FF (Floor Flatness/ short-wave flatness)** and **FL (Floor Levelness/long-wave flatness)** are calculated. These values describe both: the short-wave flatness of the floor – relevant for ride comfort, vibrations and wear on transport systems – and the long-wave flatness, which is particularly crucial for high-bay warehouses and conveyor technology.

DRAGONFLY with optional laser for absolute height measurement

Optionally **DRAGONFLY** can be equipped with a second laser system, which is used to measure the absolute floor height. This can be used to create 3D surface profiles or to calculate the removed volume.

The assessment is performed statistically across numerous measuring points (measurement field), thus providing a reliable indication of the flatness of the entire surface. Digital data acquisition ensures transparent results and clear documentation, making it ideal for both internal quality control and final inspections.

Floor Profiler DRAGONFLY:

- Applicable to both VNA (narrow aisle) and FM (free movement) areas
- LTGS (Laser Track Guidance System) – Laser-guided walking track guidance
- Entire remote control and evaluation via mobile app
- Accuracy for VNA: 0.01 mm (via sensors in the wheels)
- Accuracy for free areas: 1 mm (via the optional laser for absolute height measuring)
- Provides direct evaluation according to TR34 (DM1 and DM2) and ACI F-min as well as values for evaluations according to EN15620, DIN15185 VDMA

Technical Specifications

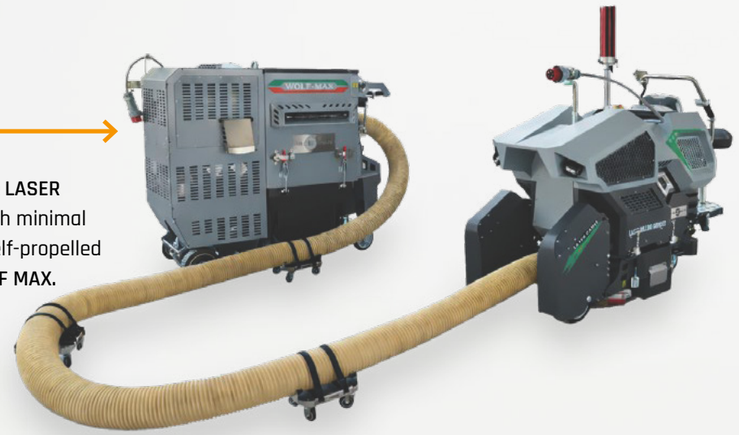
Measurement accuracy VNA	0,01 mm
Measurement accuracy free area	1,0 mm
Distance front wheel/rear wheel	1600 - 2100 mm
Distance left/right wheel	880 - 1850 mm
Driving speed	10,5 – 15,7 m/min
Maximum distance to the lasertransmitter	150 m
Maximum operating time without charging	5 hours
Maximum charging time	45 minutes
Weight (without laser)	≈ 16 kg
Price	on request

UFF LASER SYSTEM

The most effective way to ultra-flat industrial floor

Step 1

The automatic high-performance milling machine **LASER CAMEL** brings the floor to the required height with minimal tolerances being used in combination with the self-propelled and radio-controlled dust extraction system **WOLF MAX.**



Step 2

Gear-driven **DRS floor grinding machines** improve the surface quality of the floor to the required stage. The fine milling pattern of the **LASER CAMEL** can usually be completely removed in one pass using diamond grit #40.

The **DBS-820** floor grinding machines series are suitable for VNA narrow aisle warehouses, while our **DBS-1520-8H** is ideally suited for wide aisles and open areas.

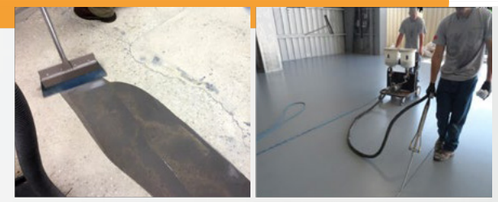
DBS-820-4H

DBS-1520-8H

Visit us online:
www.cedima.com

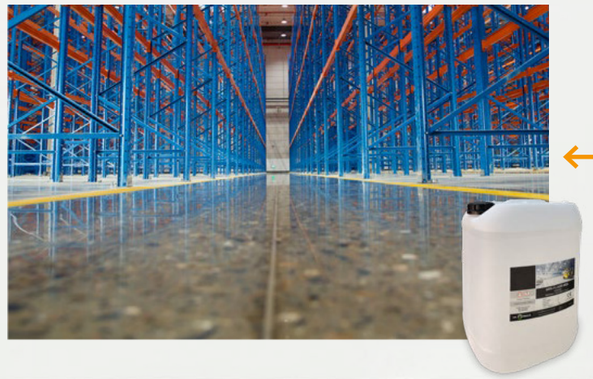
Step 3

Existing floor defects can be permanently and colorfast repaired in a very short time using the innovative and fast-curing **Metzger/McGuire** materials.
We also offer optimal solutions for repairing or new filling of heavily stressed expansion joints.



We offer the **Metzger/McGuire** products exclusively in Europe and their main advantages can be summarized as follows:

- Products are usually dry and grindable after 10-15 minutes
- Heavy load traffic permitted after 30-60 minutes
- No cutting is required when repairing small cracks
- Expansion joints can be executed flush with the surface without chamfering enabling continuity of the floor
- Most products are available in over 70 colors

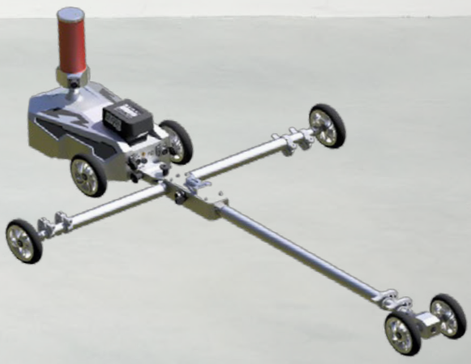


Step 4

Processing with our lithium-based **DRS-FLOOR concrete treatments** not only makes the concrete surface harder and therefore more wear-resistant, but also permanently protects it against contaminants and stains. At the same time, cleaning efforts are significantly reduced.

Step 5

Throughout the entire process, the intelligent and laser-controlled **Floor Profiler DRAGONFLY** can be used to measure the floor and check its tolerances.



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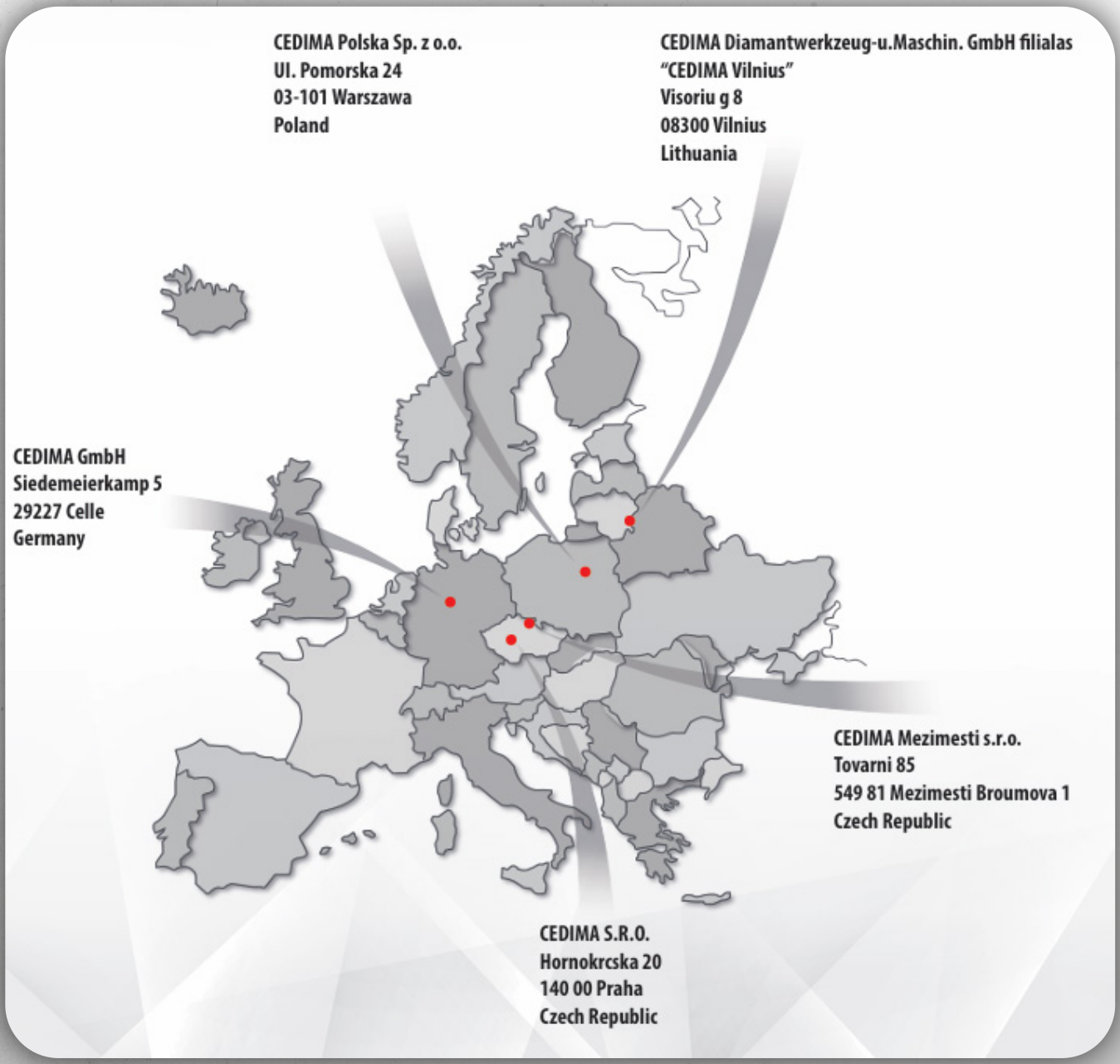

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