

TURN-KEY COMPACT SYSTEM FOR LASER-BEAM CLEANING

The cleanCELL is a highly efficient production cell with modular automation technology.

The laser-safe machine permits highly precise and reproducible component surface processing. The solid steel frame construction keeps the cleanCELL on track undeterred even at a high dynamic.

Thanks to the platform strategy in three width classes, complete, very economic automation machines can be implemented for surface processing. The dimensions can be chosen modularly so that small parts as well as – when using the largest series – work

areas of up to 1,500 x 700 mm can be processed. The generous front doors permit comfortable loading of complete workpiece carriers.

Basic equipment

- Solid steel basic frame in compact build
- Servo drives and controllers with Siemens technology
- 3-axis linear portal with optional expansion axes in H-portal arrangement
- Touch screen and keyboard operation
- PC-based graphical control software cleanSTUDIO
- Laser-safe housing with manually opening front door
- Application-specific integrated extraction nozzles and pipes
- Integrated air conditioned control cabinet for taking up the control technology and the laser system



Modular laser machine cleanCELL with optional automatic door

cleanCELL – available in three sizes

TECHNICAL DATA



Generous work space with H-portal



cleanCELL-portal with shareMOTION-optic for efficient adhesive pre-treatment

Overview of technical data

	cleanCELL 1170	cleanCELL 2220	cleanCELL 3220
Dimensions of the basic body of the machine with manual front door, without attachments (width x length x height) [mm ³]	835 x 1.700 x 2.215	1.435 x 2.200 x 2.215	2.035 x 2.200 x 2.215
Weight (without laser) approx.	900 kg	1.200 kg	1.450 kg
Laser equipment	Low Power	Low, Mid or High Power	Low, Mid or High Power
Axes	Spindle, H-Portal	Spindle or optional linear motor, H-Portal	Spindel or optional linear motor, H-Portal
Number of axes, max.	4	5	6
Nominal movement area of the portal (without axes) [mm ³]	400 x 200 x 225	800 x 540 x 300	1.400 x 540 x 300
Accessible work space [mm ³]*	580 x 360 x 225	910 x 710 x 280	1.510 x 710 x 280
Maximum movement speeds of the 3 portal axes [mm/s]	300 / 300 / 200	350 / 400 / 250	400 / 450 / 350
Acceleration [m/s ²]	> 1,5	> 1,5	> 1,5
Positioning accuracy +/- [µm] at 20 °C	250 / 150 / 150	350 / 360 / 200	450 / 360 / 250
Repeat accuracy +/- [µm] at 20 °C	20 µm	20 µm	30 µm

* When equipping with Stamp 10 optic, 90° infeed and f= 254 mm focal width, as well as vertical beam direction. Depending on the optic equipment and focal width, the work areas may deviate.

Usable optics

Generally, all automatically usable optics with 1D- and 2D-scanners from the cleanLASER-range can also be integrated in the cleanCELL; the following are optimal:

- Stamp series (2D-scanner)
- Optics of the MOTION series for single- or bilateral vertical processing or tube inside processing

ONE COMPACT SYSTEM – DIVERSE USES

Solid, dust-protected linear axis systems with ball circulation spindle, powered by high-performance Siemens servo drives with absolute value encoders, secure optional positioning precision and longevity. All cleanCELLs are designed for unlimited 3-shift operation.

Setup and loading

The machine can be comfortably loaded manually or automatically from the front. Alternatively, customer-specific lateral opening of the shield is possible.

This permits loading and cycling through with a single or double transport belt or loading with alternating drawers for main-time-parallel processing.

Advantage:

- Maximum efficiency and direct linking of the cleaning tasks at maximum possible utilization

Many expansion options of the machine, from the pneumatic person safe front door to the equipment with up to 6 other axes to software expansion with a complete NC function, including CAD- CAM-interfaces, are only some of the customization and configuration options of the cleanCELL offer.



cleanCELL – operator-friendly and diverse

Options and variants

- Pneumatic front door
- Automatic loading by gripper/robot loading
- Also suitable as once-through system for belt transfer systems
- Expansion to up to 6 axes
- Process monitoring
- Integration of other process technology such as adhesive dosage
- Expansion of the control on PLC or NC basis
- Water cooling
- Height adjustment
- Execution according to individual customer-specific technical specifications

cleanCELL – as flexible as your wishes!

SOFTWARE AND APPLICATIONS

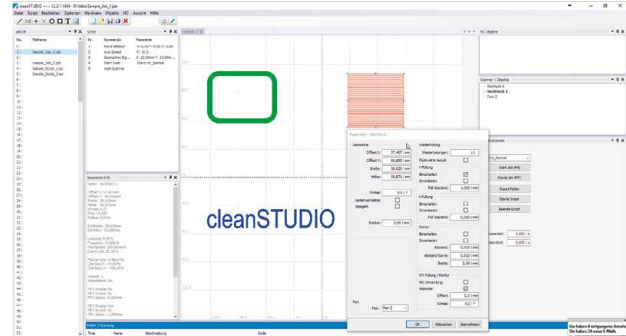
Control, Software and Programming

The cleanCELL machine is controlled by its integrated laser and control software.

The graphics-based control software cleanSTUDIO is operated via the touch screen or the keyboard and coordinates not only the laser parameters, and the movement of the linear portal, but also the synchronous movement control of the laser scanner system.

The intuitive efficient operator use per system can be learned very quickly graphically or using sequential script commands as required.

Software Highlights



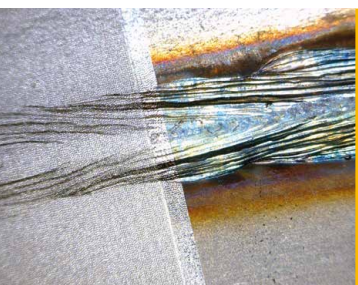
- Multitasking software for axis, laser and scanner control
- Axis control based on script commands or automatically by virtual symbol fields
- Processing template available graphically based or flexibly generated by DXF import
- Free parameter settings of the processing objects
- Automatic monitoring of area limits and laser functions
- Plain text information on the screen
- Available in more than 10 languages

Applications

- Adhesive pre-treatment
- Welding pre- and post-treatment
- Partial paint stripping and delamination
- Surface modification

cleanCELL in use

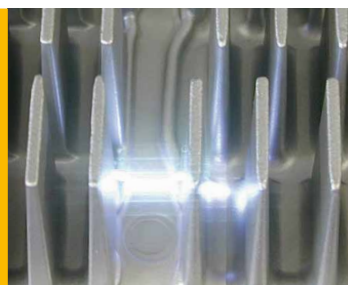
- Precise, reproducible results
- Easy to operate
- Highly efficient



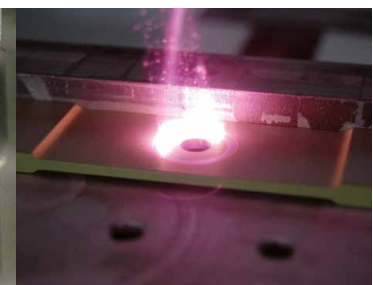
Welding after-treatment before-after



Surface modification of brake discs



Adhesion pre-treatment of aluminum



Partial paint stripping replaces masking processes