

#### Working Principle of Laser Cleaning

Absorption: The laser beam is directed onto the impurities or coatings present on the surface to be cleaned. The laser energy is absorbed, converting into thermal energy.

Evaporation/Combustion: The rapid increase in temperature caused by the absorbed energy leads to the evaporation or combustion of the contaminants, separating them from the surface.

### Application

Welding Pre-treatments Welding Post-treatments Metal Oxide Removal Metal Rust Removal Coating Removal

#### Main Advantages of Laser Cleaning

**Chemical-free:** Continuous laser cleaning eliminates the need for chemical solvents, minimizing environmental and health hazards.

**High efficiency and speed:** Laser technology allows for fast and efficient cleaning, enhancing overall productivity.

**Non-contact cleaning:** Laser cleaning is a non-contact process, significantly reducing the risk of surface damage or scratching.

**Enhanced controllability:** Laser cleaning parameters can be adjusted to accommodate various materials and cleaning requirements.

**Versatility:** Continuous laser cleaning can remove a wide range of contaminants, coatings, or paints from different materials.

**Consumable-free:** As the cleaning method only uses a laser beam to vaporize the layer to be removed, there are literally no consumables with it.

Smaller size for easy mobility

Fast and easy to replace lens

#### Cleaning efficiency reference

ТҮРЕ	THCIKNESS	SPEED	WIDTH	EFFCIENCY
Oxidation	≤20µm	50mm/s	150mm	15m²/h
Rust	≤120µm	50mm/s	150mm	4m²/h
Paint and coating	≤100µm	50mm/s	150mm	6m²/h
Oxidation	≤20μm	50mm/s	300mm	20m²/h
Rust	≤120µm	50mm/s	300mm	5m²/h
Paint and coating	≤100µm	50mm/s	300mm	8m²/h
Oxidation	≤20μm	50mm/s	300mm	30m²/h
Rust	≤120µm	50mm/s	300mm	14m²/h
Paint and coating	≤100µm	50mm/s	300mm	9m²/h
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### Max Cleaning Width:300mm Dust Protection Dual Safety Mechanism Design

Very low operating costs

#### Easy to use with friendly interface

# **Cleaning Cases**







# **Cleaning Width**



### Scanning frequency Scan width Peak power Duty cycle

Frequency

## **Focus Lens Replacement**



Loosen the screws and take out the lens drawer



Replace with new lens

## Scanning

frequency Scan width 0

Peak power 0

Duty cycle

Frequency End point

#### **Safety Warning**

- Protective Eyewear: Always wear appropriate laser safety goggles or glasses specifically designed for the wavelength of the laser being used. This will protect your eyes from the powerful laser beam. ٠
- Skin Protection: Avoid direct exposure of the laser beam to your skin. The laser beam can cause burns or other injuries. Wear protective clothing, such as long sleeves and gloves, if necessary.
- Proper Ventilation: Ensure that the working area is well-ventilated to avoid inhaling hazardous fumes or smoke produced during the cleaning process. Use extraction systems or work in a well-ventilated room.
- Fire Hazards: Laser cleaning can generate sparks, especially when removing coatings from flammable materials. Keep flammable materials away from the cleaning area and have appropriate fire extinguishing equipment nearby.
- Laser Beam Path: Be cautious of the laser beam path and avoid pointing the laser towards reflective surfaces or people. Reflective surfaces can redirect the beam and cause unintended exposure. ٠
- Training and Certification: Only operate a handheld laser cleaning machine if you have received proper training and certification on laser safety procedures. Understand the machine's operation and safety features before use. ٠
- Maintenance and Inspection: Regularly inspect the machine for any signs of damage or malfunction. Do not attempt repairs unless you are gualified to do so. A professional technician for maintenance or repairs is necessary.

# **Intuitive System**



