

TECHNICAL DESCRIPTION

GTV CladdOn
Compact laser control with powder feed unit



CladdOn

General description

The compact GTV laser control with integrated powder feed unit „CladdOn“ was developed for the fast and efficient entry into laser cladding. In addition, it is possible to integrate the GTV „CladdOn“ unit into existing GTV thermal spraying systems. In the standard version, the system can be used as a powder feeder and control unit for various laser sources and thus offers a wide range of expansion possibilities. The process visualization and control is carried out via a Siemens touch screen and a fold-out keyboard integrated in the front panel. However, the actual operation of the system is carried out via solid push-buttons. All relevant process parameters (for example laser power, gas, water and powder flows) can be read or adjusted in the operator menu. Furthermore, a recipe memory and an optional process data acquisition are integrated in the control unit. The compact design on wheels allows a flexible use of the system.

Basic configuration

- Control unit for various laser sources (interface for LDF and LDM already prepared, including transfer of Laserline operating software)
- Possibility for process data acquisition
- Process visualization for powder feed and laser control
- Powder feed unit with two integrated 1.5 l powder hoppers
- Melt pool monitoring and nozzle adjustment via CCD optics camera
- Dome tilt camera for cabin monitoring
- PC for camera image recording and 24"-screen (attached to control unit)
- Control possibility for GTV LPowC camera system for laser power control
- Control possibility for heat exchanger and cooling water monitoring
- Safety monitoring with emergency stop function
- Combination with different powder nozzles / internal coating heads possible

Interfaces

- Profinet interface for the control of different laser sources (LDF and LDM)
- Interface for the control and monitoring of various laser optics
- Interface for filter remote control
- Interface for remote control of coolers
- Interface for handshake-handling (robot and axis system)
- Interface for monitoring and recording cameras
- Interface for door safety switch
- Interface for emergency-stop link

Options / AddOns

- Integration of the system into existing thermal spraying equipment (adaptation of torch and workpiece handling as well as laser-safe upgrade of the existing booth)
- Heating jackets and level sensors for powder hoppers as well as powder flow monitoring
- Laser power control system GTV LPowC (Laser Power Control) including protective glass monitoring
- Process visualization with menus for component-specific handling movements (e.g. surface / cylinder, stringer bead / pendulum movement, etc.)
- Possibility for process data transfer as well as data processing in component-specific protocols
- VPN router for remote diagnostic

Technical data	
Dimensions	Height: 2,000 mm Width: 1,100 mm Depth: 800 mm
Weight	Approx. 200 kg
Powder feed unit	
2 pcs. 1.5 l powder hoppers with laser setup	
0.3 l / 5.5 l powder hoppers, integrated heating jackets or level sensors are available on request	
Gas control cabinet	
Carrier gas lines	e.g. 2 x 15 l/min Ar / He
Process gas control lines	e.g. 1 x 50 l/min Ar / He
Compressed air control line(s) for component cooling and dust protection of laser sources	
Control cabinet	
Siemens CPU S7 1500	
PLC E/A modules	
24 V power supply	
Emergency stop Pnoz relay	
Interface plugs mounted laterally	
Water control unit	
Laser source and powder nozzle cooling	water flow meter, input and output temperature sensors
Optics cooling	water flow meter, input and output temperature sensors