SCA3D 3D Spray Control & Monitoring

INNOVATION

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Thermal spraying is a well-established technique for depositing top-quality coatings on small components as well as on surfaces of complex, demanding geometry. Nevertheless, a reliable process requires a continuous monitoring of the spatial location and orientation of the particle jet. Currently the deposition of spray spot samples as well as the determination of the robot start reference are carried out manually. This procedure is inaccurate, non-reproducible and time-consuming.

The innovative 3D Spray Control & Monitoring equipment (SCM 3D) is fully automated. It allows a detailed online scanning of the particle jet, an accurate calculation of the robot start reference and a simultaneous online monitoring of the spray process.

Features of the SCM 3D:

- online scanning of the luminous particle jet
- spatial determination of the particle jet vector (x, y, z, α , β)
- calculation of correction factors for robot start reference
- determination of the spray spot maximum
- flexible communication tool for data exchange with robot
- process monitoring, applying the patented 2M PFI technology
- acquisition time for a complete cycle: measurement <-> correction <-> monitoring: ~ 30 seconds

Application:

- HVOF/ HVAF process
- Plasma Spraying

Technical characteristics:

Complete system:

- industrial panel computer with touch screen
- SCM software for calculation of the jet orientation
- robot start reference correction
- 2 robust PFI-s cameras for harsh environment
- PFI software (full licensed version)
- complete accessories kit

Resolution:

- measuring volume: up to 250mm x 180mm x 180mm
- accuracy of position determination x, y, z: up to 250µm
- accuracy of angle determination α , β : up to 0.2°

Power rating:

- 100-240V AC, 50-60Hz

