MP-50
APS/HVOF Thermal Spray System

INTRODUCTION

The MP-50 represents the latest generation Multi-Process Thermal Spray System and is based on the successful HV-50 (HVOF) and AP-50 (Plasma) models, of which more than 200 systems are operational worldwide. The MP-50 offers unsurpassed process control and thermal spray operation flexibility and is one of the most reliable coatings systems available on the market today.

The MP-50 has been developed to meet the increasing customer demands for better process control, system flexibility, safety features and the unnecessary duplication of system peripherals while simultaneously offering truly outstanding value.

The MP-50 is built to the highest technology standards to ensure optimum system performance and, therefore, maximum coating quality and reproducibility. The MP-50 is capable of controlling plasma and HVOF processes.

The MP-50 is built to meet the highest safety standards. Besides several self-diagnostics functions and safety sensors that are implemented in the system, additional safety features for all system subcomponents can be installed and interlocked with the control unit.
The MP-50 is designed according to FST’s design concept: **ADVANCED SIMPLICITY**. This concept represents a vision of a system capable of performing in accordance with the latest requirements, using the State-of-the-Art technology, but designed in such a way that system reliability (up-time) is maximized, while maintenance is minimized and its operation and use simplified.

The MP-50 utilizes the latest technology, such as high end mass flow controllers and a plasma rectifier that allows remote access. The system reliability is outstanding because of the use of first class components and the system’s proven design. The operator software has been optimized for easy operation and gives the operator an easy and clear overview of the ongoing spray process. The system allows full integration with a robot system but can also be operated as a complete stand-alone system.

The MP-50 is a fully closed loop controlled system using high accurate mass flow controllers suitable for all the process carrier gases and liquid fuel (Ethanol or Kerosene). All subcomponents of the MP-50 are controlled by two Siemens PLC modules. The design of the MP-50 incorporates a modular set-up with separate gas module and jam boxes for each spray processes. Together with the sophisticated control system, this significantly enhances the safety, stability and reliability of the entire system.

The MP-50 can be fully integrated with the combined handling system consisting of a 6th axis robot and an indexing/positioning and tilting turntable. The integration assures efficiency and a reproducible coating of different and complex parts, in a completely automated set-up. Furthermore, the MP-50 system can control and monitor all auxiliary equipment foreseen in FST’s scope of supply.

The MP-50 control module has an integrated modem to enable ‘remote diagnostics’ via an internet connection. This facilitates FST remote access to the MP-50 PLC for failure analyses, system errors, troubleshooting or even software updates. This considerably reduces emergency response time and thus minimizes downtime.
The Main Features of the MP-50 are:

- Unique splitting ability that enables the possibility to split the MP-50 system at a later stage into two separate systems (HVOF and Plasma). Separated systems can run the processes independently from each other.
- Modular construction enables future expansion of a mono-process system into a fully integrated thermal spraying center as user demands change.
- Closed loop mass flow controllers for all process gases including carrier gas and coflow controllers for all liquid fuels.
- Improved remote diagnostics minimizing the system failure analyzing efforts, through the use of eWon technology.
- Multiple gun technology; can handle most plasma and HVOF spray guns
- Designed to be fully integrated with FST powder feeding systems
- The process controller is PLC based providing maximum reliability
- High resolution 15” Touch Screen control panel provides clear and user friendly access to process control parameters and monitoring functions
- All process control parameters are closed loop for maximum coating consistency
- The MP-50 controls all system peripheral or auxiliary components, such as heat exchangers, dust collectors, etc.
- Fully compliant with all relevant CE directives.

The following MP-50 system configurations are available:

- MP-50-APS With F4 and/or F1 plasma gun (standard configuration) or mini-gun, 3MB, 7MB, 9MB, SG-100.
- The MP-50 APS is equipped with the efficient iPS-80 or iPS-50 (80KW or 50 KW) secondary chopped inverter power supply.
- MP-50-HVOF with eGun, JP5000 gun, Jet-Kote or DJ guns.
- MP-50-APS/HVOF Dual process system combined in one unit. Peripheral equipment such as powder feeders or heat exchangers can be shared.

For more detailed info on the APS System, HVOF System and Software see SprayTech:

- 01.30.175 HV-50 HVOF Thermal Spray System
- 01.30.185 AP-50 APS Thermal Spray System
- 01.30.190 50 series software
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