

Product Data Sheet

UniCoat Plasma

Control console for Plasma Spray with touch-screen user interface and comprehensive process control.

The Metco UniCoat™ Control Console for plasma spray monitors and controls all aspects of the plasma spray process through its touch-screen user interface. As the central processing console of a plasma spray system, it interfaces with all other components within the system to ensure outstanding process results and unmatched quality and reliability.

UniCoat delivers on the essential need to repeatedly produce high quality coatings in production. Customers also appreciate the additional features UniCoat offers of simple operation, fast data collection, information overview and the extensive variety of user-selectable plasma guns that can be chosen for operation. UniCoat is equipped with a powerful processor that ensures the highest accuracy of plasma process parameters and mass flow controlled gas rates. Multilingual user menus, real-time data collection, storage of spray parameters and built-in safety alarms and routines are standard features.

UniCoat is a proven product with a successful record in mass production spray environments that meets customer demand for an efficient, state-of-the-art plasma control console with outstanding value and reliability.

1 General Description

The UniCoat control console for plasma spraying, as the central component of a complete Metco coating system, is designed to accommodate a full range of plasma spray guns, powder feeders, mass flow controlled process gas management systems and power supplies. The design of UniCoat is such that it can also interface with many peripheral devices such as water chillers, workpiece manipulators, spray gun manipulators and exhaust systems. For both standardized systems and systems customized for special customer requirements, UniCoat supports complete flexibility in the choice of system components.



UniCoat Plasma Spray Control Console

The UniCoat control console contains all electrical components, including the processing computer and necessary safety systems. The powerful process computer monitors the entire process in real time, while capturing and displaying real-time process data and error messages on-screen. Real-time process control is provided by the built-in PLC (programmable logic controller).

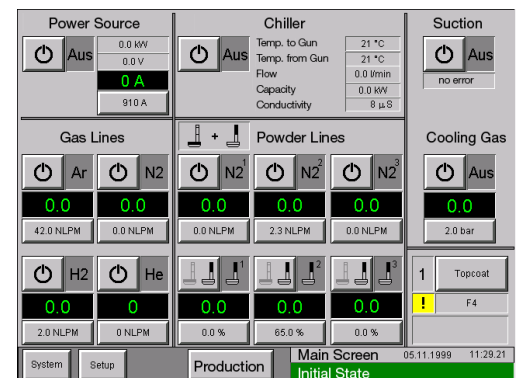
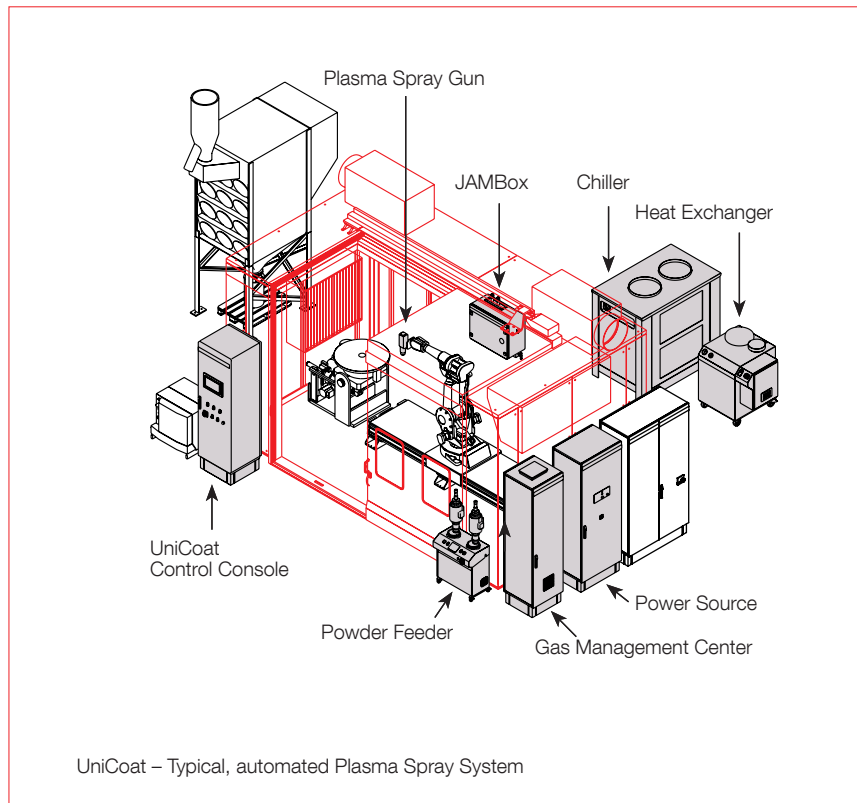
Furthermore, input of recipe parameters is simple and problem-free, and recipes can be safely stored on two compact flash cards. Reports are sent to the printer over an Ethernet connection.

A 10.4 in. high-color touch-screen monitor is mounted on the upper part of the controller front door. The object-oriented user interface simplifies and expedites entry of coating

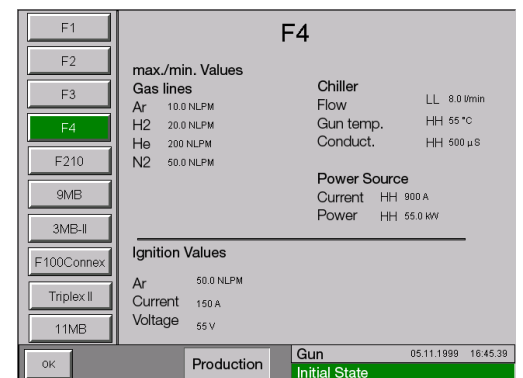
spray parameter values. Previously stored spray parameters are easily accessed at any time.

The following menu languages are freely selectable by the operator:

- German
 - English
 - Swedish
 - Dutch
 - French
 - Italian
- Spanish
 - Russian
 - Polish
 - Japanese
 - Chinese



UniCoat Touchscreen Operation – Main Screen



UniCoat Touchscreen Operation – Gun Selection



UniCoat Touchscreen Operation – Trending

2 Features and Benefits

The UniCoat control console distinguishes itself through the following outstanding features:

- Built-in, backlight high-color 10.4 in. TFT touch-screen monitor with screen saver and brightness controlled by the software.
- User-friendly touch screen entry of spray parameters.
- Real-time process control with a PLC and an industrial PC.
- Closed-loop regulation of process parameters.
- Built-in diagnostics for rapid determination of faults and errors.
- Controls and monitors up to 4 process gases, 4 carrier gas lines, 2 air lines for workpiece cooling (Air Jet and Silvent) and gun cooling water flow (inlet and outlet gun water temperature, water conductivity).
- Trending software registers up to 6 actual process parameters values with integrated time scale zoom function. Maximum time frame is 3 h; data storage occurs on compact flash card.
- Modular design simplifies installation, maintenance and future upgrades.

3 Options and Accessories

Report printing: Prints the actual and the nominal value of each recipe spray parameter. Printing is either triggered after these values are established or it is triggered by the standard or handling interface. Printer activation is done in the system set-up. Reports can only be printed, saving is not possible.

Signal column: Visual and acoustical indication of the system's various states from a distance. For more information please refer to the corresponding data sheet.

Fire detection: Connects a customer's device for fire detection. A potential-free contact is required.

External gas alarm: Connects a customer's device for gas leak monitoring. Two potential-free contacts are required.

Lock recipes: A key switch to lock the following functions on the recipe page: protect, clear, rename and save new recipe. Existing recipes can always be loaded.

- Automated control of the plasma via current control or voltage (secondary gas) control.
- Storage and recall of up to 100 plasma recipes on a compact flash card maximizes coating repeatability.
- Digital data bus interface to the Gas Management Center, JAMBox, power supply and handling equipment.
- Built-in Ethernet printer interface.
- Standard interface to remotely control start/stop of plasma, powder flow and workpiece cooling (hard-wired).
- Built-in wiring for exhaust unit and water chiller.
- Gas monitoring computer with 2 hydrogen sensors for detection of gas leaks.
- Automatic plasma gun ignition sequence extends nozzle and electrode life.
- Counters for number of gun ignitions, gun operating hours and system operating hours.
- Dual powder feeder capability allows application of bond and top coats in a single setup.
- Accommodates all current Metco standard plasma spray guns.
- Fully CE conformant.

Handling Interface: The UniCoat control console is equipped with a handling interface for connection to a linear traverse, a robot with a turntable or to other manipulators. Thus, a complete coating system can be configured. Several options are available depending on the type of peripheral components to be used.

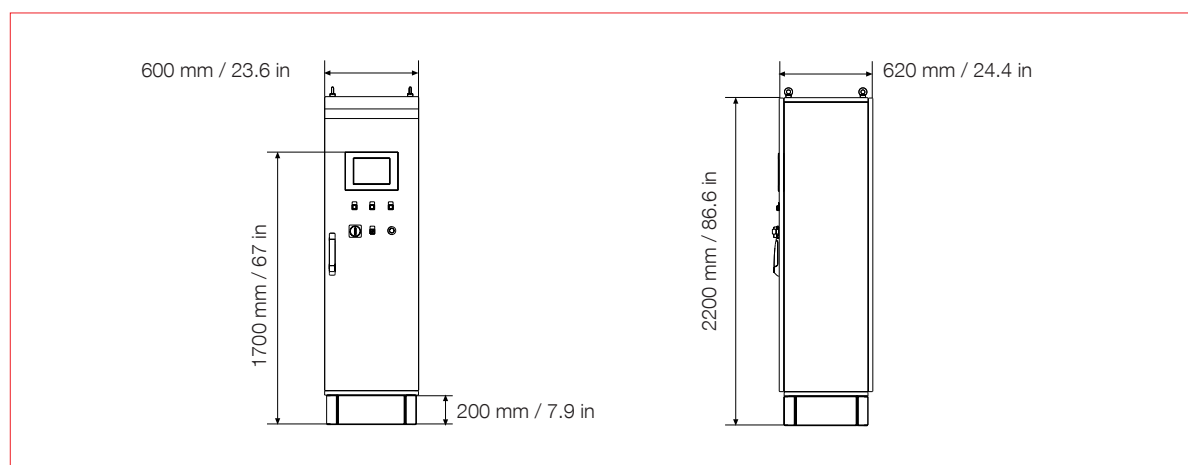
Other Accessories: Accessory packages are available to meet a variety of customer requirements. These include optional language packages, additional process gases (nitrogen, helium), a modification option for the use of nitrogen carrier gas, cooling water conductivity measurement kit, special operating voltages and operating software upgrades.

Additional Options: UniCoat can be configured to operate a system consisting of a one-cathode plasma gun as well as a three-cathode plasma gun; for example a system with a F4-MB and a TriplexPro-200.*

* requires the switch-box SU-T1030

4 Technical Data

4.1 Dimensions



4.2 Specifications

Operation

Processor	SLC 5/03 CPU 1747-L532
Monitor	Micro Panel TFT LCD 10.4 in, 65536 Colors
Resolution	640 x 480 Pixel
Memory	2 x Compact Flash Card

Power Supply

Voltage	230 V
Frequency	50 Hz
Power consumption	1.2 kW

Range of gas flow regulation^a

Argon	2.0 to 100.0 or 4.0 to 200.0 NLPM	4.2 to 212 or 8.4 to 432 SCFH
Hydrogen	0.4 to 20.0 NLPM	8.4 to 42.4 SCFH
Helium	1.0 to 50.0 or 4.0 to 200.0 NLPM	2.1 to 106 or 8.4 to 432 SCFH
Nitrogen	1.0 to 50.0 or 2.0 to 100.0 NLPM	2.1 to 106 or 4.2 to 212 SCFH

Casing

Protection	IP 54 (IEC 60529)
------------	-------------------

Weight

	200 kg	441 lb
--	--------	--------

Environment

Temperature	+10 to +40 °C	+50 to +104 °F
Humidity	<75 %, non-condensing	

Compatibility

Plasma gun	all standard current Oerlikon Metco plasma guns
Powder feeder	Twin-120 A, Single-120 A, Single 220-A, 9MPE-CL20 ^b

^a depending on the system configuration

^b 9MP series powder feeder cannot be operated simultaneously with Twin or Single type powder feeders