

## Product Data Sheet

### Metco 6P-II Series Thermospray Guns

**The Metco™ 6P-II thermospray guns for combustion powder spray have been designed for demanding, high-volume production performance and consistent coating results.**

Metco 6P-II spray guns can be used to apply coatings to solve many surface problems including machine element repairs, dimensional restoration, corrosion protection, abrasives and wear resistance.

The Metco 6P-II series comprises a family of combustion powder flame spray guns, and customers can choose from machine-mount or hand-held models. Models appropriate for use with Metco 6C series semi-automated or MultiCoat™ automated controllers or those appropriate for manually controlled process gases are available.

Economical to operate, the Metco 6P-II series guns have high spray rates with low gas consumption and high deposit efficiencies can be achieved. These guns are also simple to learn to operate and maintain.

The Metco 6P-II gun series is suitable for all purpose use in that it can apply a wide range of coating materials such as self-fluxing alloys, ceramics, self-bonding materials and conventional materials such as steels, stainless steels, bronze, aluminum and nickel alloys. Oerlikon Metco has a large portfolio of materials appropriate for use with Metco 6P-II gun series and the combustion powder spray process.



## 1 General Description

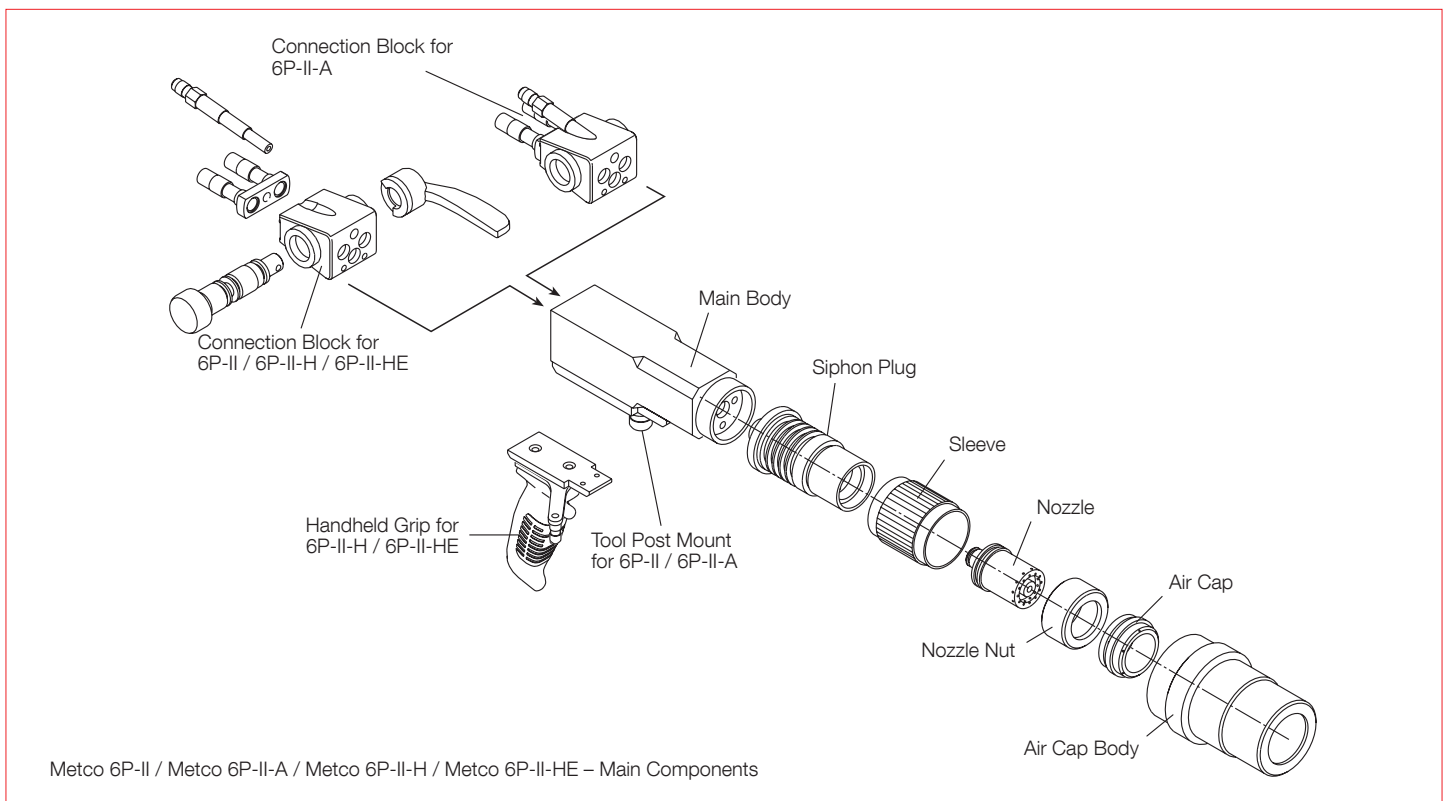
Oerlikon Metco offers four models of the 6P-II gun, each designed for a specific production environment:

Included Features		6P-II	6P-II-A	6P-II-H	6P-II-HE
Controller compatibility	Manual gas control system	●		●	●
	MultiCoat automated or 6C series semi-automated controller		●		
Machine-mount with tool post		●	●		
Handheld with 'pistol grip' handle including an onboard trigger for start/stop of powder flow from the powder feeder and powder feed vibrator (with required cables)			1	●	●
Interface to 9MP series or 5MPE powder feeder	Via trigger mounted on gun handle	●	1	●	●
On-board actuator valve for process gas start / stop		●	1	●	●
CE-conformant		●	●		2

1 Control of process gases and powder feeder operation is automated by the Oerlikon Metco controller  
 2 Requires use of SHA Safety Handle Assembly

The Metco 6P-II can be used with either acetylene or hydrogen as the fuel gas. Hydrogen is recommended when spraying finer powder materials. A siphon plug system mixes the fuel and oxygen gases in precise volumetric proportions at the gun to provide consistent operation and prevents the possibility of backfire. Two siphon plugs are provided – a standard plug used with the majority of spray materials and a second designed for high spray rate operations with ceramic and self-bonding materials. Most of the consumable parts are identical throughout the family, including nozzles, siphon

plugs, o-rings and air caps. Air caps supplied with the gun appropriately shape the flame for different applications. The standard air cap, used for most coatings, provides divergent gun cooling air that will not interfere with the flame or spray stream. A reversible air cap can be used to create a parallel air flow to cool the workpiece or as a convergent pinch air flow for use with fine materials, to increase the spray efficiency of certain materials, such as carbides, or to obtain cleaner, brighter coatings produced from selffluxing alloys.



## 2 Features and Benefits

- Rugged design: built for long service life with limited maintenance
- Simple operation: requires minimal operator training
- Wide range of coating materials: can be used for a variety of surfacing applications, including ceramic materials
- Choice of fuel gas: allows spray operations to choose between acetylene and hydrogen
- High spray rates and deposit efficiencies: applies coatings quickly and economically
- Light weight and well-balanced: at approximately 1.8 kg (4 lb; without hoses or mounting fixtures) with hand-held models having a comfortable 'pistol grip' handle design, and machine-mount models that can be used with smaller, less costly robots and traverses
- Smooth, gravimetric powder feed: guns may be used in any position, even upside down, with consistent results
- Simple powder feed and vibrator start / stop: via powder feed trigger on hand-held models 6P-II-H and 6P-II-HE, and via a remote cable on the model 6P-II
- On-board gas valve: for simple process gas flow start and stop on models 6P-II, 6P-II-H and 6P-II-HE
- Automated operation: via integration of the 6P-II-A gun with MultiCoat™, Metco 6C or Metco 6CE systems
- Mounting stud: for machine mounted operation
- O-ring seals between nozzle and siphon plug: ensures safe and reliable operation without the risk of backfire and simplifies gun maintenance
- Choice of air caps: optimizes cooling during spray operations for a variety of coatings
- Simple maintenance and hardware changeover: the nozzle and siphon plug assemblies can be easily removed and replaced without additional tools

## 3 Accessories and Options

Oerlikon Metco offers a variety of options that allow configuration of the Metco 6P-II gun series for use in a wide number of coating applications and to suit specific production requirements. These include hoses, nozzles, siphon plugs, metering valves and air caps. Customers should choose the correct parts for their specific coating application and spray requirements.

**Air Jet Assembly:** If additional workpiece cooling is required or if denser, harder coatings are desirable, the 6P330 Air Jet Assembly is available. Designed to be attached to the front of the Metco 6P-II gun, it injects high velocity air into the spray stream. Adjustable cooling tubes can be focused towards any part of the spray stream or directly onto the workpiece. The Air Jet Assembly is also useful to remove dust on

the workpiece during spraying and should always be used when spraying ceramic materials to accelerate the molten ceramic particles, thus forming a denser coating.

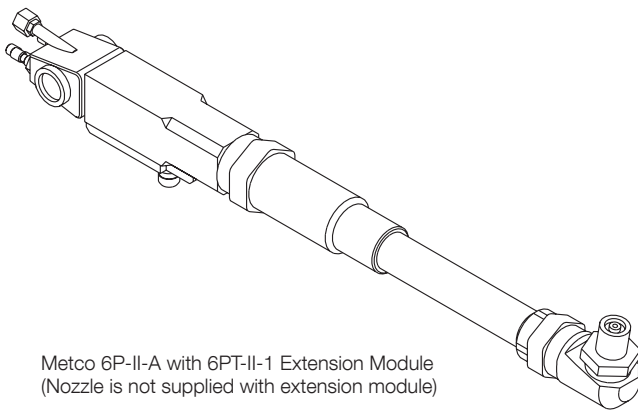
**Extension Modules:** Extension modules for the 6P-II gun permit coating of interior bore diameters and surfaces, and are available in two standard lengths:

Metco 6PT-II-1            305 mm (1 ft) long

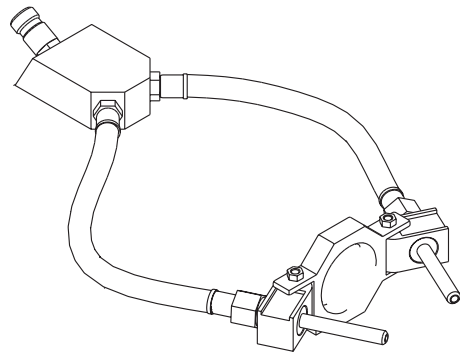
Metco 6PT-II-2            610 mm (2 ft) long

Please refer to the Metco 6PT-II Extension Module Product Data Sheet for additional information.

For a complete list of optional parts and spare parts, please refer to the parts lists section of the reference manual.



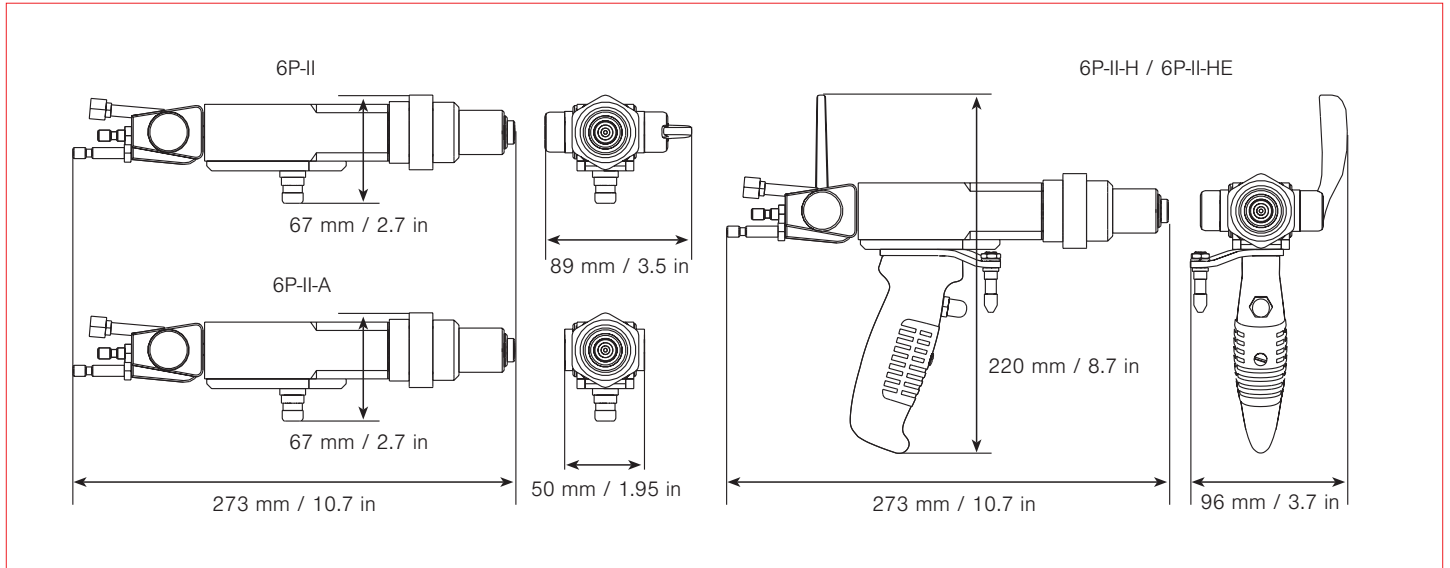
Metco 6P-II-A with 6PT-II-1 Extension Module  
(Nozzle is not supplied with extension module)



Metco 6P-II-H with 6P 330 Air Jet

## 4 Technical Data

### 4.1 Dimensions



### 4.2 Specifications

#### Weight

Approx. without hoses	1.8 kg	4 lb
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#### Process gases consumption <sup>a</sup>

Acetylene	20 to 34 NLPM	45 to 85 SCFH
Hydrogen	108 to 170 NLPM	240 to 375 SCFH
Oxygen	20 to 45 NLPM	45 to 100 SCFH
Compressed air	0.85 m <sup>3</sup> /min at 4.5 bar	30 ft <sup>3</sup> /min at 65 psi

#### Air requirements <sup>b</sup>

Standard air cap	0.69 to 1 bar	10 to 15 psi
Pinch air cap	0.35 bar	5 psi
Cooling air cap <sup>a</sup>	0.69 to 1.38 bar	10 to 20 psi
Air jet assembly <sup>a</sup>	3.5 to 6.2 bar	50 to 90 psi

<sup>a</sup> Dependant on specific coating application, gun hardware and coating material applied

<sup>b</sup> Clean, dry and oil-free

Information is subject to change without prior notice.