

Product Data Sheet

Metco 16E Series Wire Combustion Guns

The Metco™ 16E series Combustion Wire Spray Gun combines trouble-free operation with highly reliable coating results. With built-in flexibility and options, the 16E series can be used in a wide number of spray applications. This is a proven product, used by thousands of customers worldwide, and well-known for its rugged dependability.

The Oerlikon Metco 16E series are all-purpose combustion wire flame spray guns that are durable and built to provide years of daily use with low maintenance.

Incorporating decades of Oerlikon Metco experience and know-how in combustion wire spray gun design, the 16E is lightweight and balanced, with a comfortable grip for hand-held operations, yet it is rugged in construction and easily maintained and serviced.

The standard 16E gun is configured for use with hard wires, such as nickel, molybdenum, harder aluminum alloys and iron based wires.



16E / 16E-H / 16E-P / 16E-HT Wire Combustion Gun

Combustion wire spray systems using the 16E gun are an excellent choice for machine element applications, non-critical surface restoration, corrosion coatings, bond coats, sliding wear applications requiring self-lubricating coatings and on-site work such as bridges, water towers and marine applications.

For coating applications employing softer wires, such as babbitt, tin and zinc based materials, the 16E-H is available. A 16E can be readily converted into a 16E-H for spraying softer wires, using the optionally available high speed turbine shaft, countershaft gear, nozzles and air caps. For on-site applications requiring the spraying of Aluminum, Zinc and Zinc-Aluminum coatings at high spray rates/high throughput, the 16E-HT gun is configured for operation with propylene and propane fuel gases and long hoses.

The 16E is equipped with a safety trigger that safely shuts off the gun should it slip from the operator's hand making the 16E the safest wire combustion gun available in the market.

1 General Description

Operation of the 16E is simple and starts by pushing the metallizing wire through the gun, igniting the fuel gas and activating the quick-action wire grip to feed the wire into the flame. It stops by simply pushing the wire grip control.

The unique siphon plug and universal gas head design allows the 16E to produce high spray rates with minimal gas consumption. The design is also very resistant to backfire.

The 16E gun is supplied with standard drive rolls and gears, which are suitable for use with "hard" wires. The 16E-H and 16E-HT guns, configured to spray soft wires, come equipped with a special non-load air cap as well as high speed turbine shaft and countershaft gears.

All 16E and 16E-H guns are factory-configured for acetylene as the fuel gas, while the 16E-P gun is configured for use with propane and the 16E-HT for propylene and propane fuel gases. However, using optional hardware, the 16E universal gas head design can be adapted to use other fuel gases, such as acetylene, hydrogen, propane, natural gas, MAPP or MPS.

The 16E series guns are shipped equipped to use 3.175 mm (1/8 in) diameter wires. Using optional hardware, the 16E gun can be configured to feed all standard wires diameters, from as small as 0.813 mm (20 gauge) up to 4.76 mm (3/16 in).

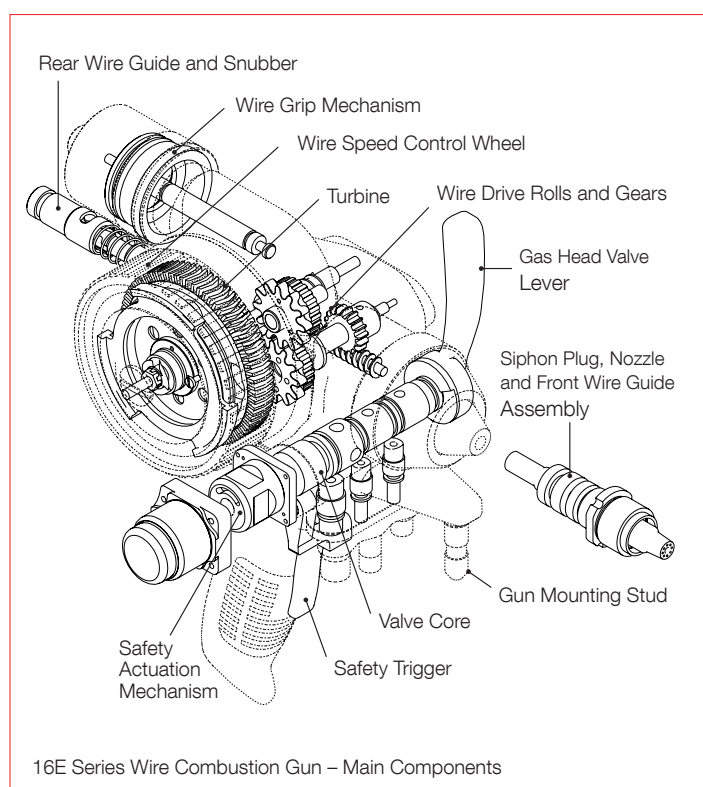
Metco 16E guns should always be used with Metco gas and air control equipment.

Oerlikon Metco offers a large portfolio of wire materials optimized for the combustion wire spray process. Use of these materials will provide the best results.

1.1 Available Models

| Model | Fuel Gas ^a | Speed | Wire Type |
|--------|-----------------------|----------|---------------|
| 16E | Acetylene | Standard | Hard wires |
| 16E-H | Acetylene | High | Soft wires |
| 16E-HT | Propylene/Propane | High | Al, Zn, Zn-Al |
| 16E-P | Propane | Standard | Hard wires |

^a As equipped at factory. Optional hardware available for different gases.



2 Features and Benefits

Effective

- Mounting stud: for machine mounted operation.
- Rugged, built-in wire snubber: prevents wire from accidentally being pulled out of the gun.
- Flexible hardware choices that allow the gun to be configured for use with hard and soft wires in a variety of diameters.
- Choice of fuel gases to suit plant operational requirements and economics.
- Thumb-operated wire feed control provides simple wire feed start and stop.
- Wire drive feeds wire reliably, consistently and uniformly, regardless of fluctuations in air pressure..
- Metric threading: all standard nuts, screws and mating parts are supplied with metric threads, facilitating replacement where metric is used as the standard system of measurement.

Efficient

- Rugged design is built for long service life with limited maintenance.
- Gas head valve handle allows simple and quick set up of spray gas pressures and flows prior to gun ignition.
- O-ring seals between nozzle and siphon plug ensure safe and reliable operation and simplify gun maintenance.
- Simple maintenance and hardware changeover: the nozzle, siphon plug and front wire guide assemblies can be easily removed and replaced as a complete unit.
- Simple operation requires minimal operator training.

Environmental

- Light weight design for hand-held operation at approximately 2.5 kg (5.5 lbs).
- Safety handle reduces risk of injuries.

Economical

- Low maintenance design reduces operating costs
- Long gear life: designed with large, rugged gears coupled with circulating gear lubricant pump.
- Unique universal gas head produces high spray rates with low gas consumption and is resistant to backfire.

3 Options and Accessories

Oerlikon Metco offers a variety of options to configure the 16E gun for use in a wide number of coating applications and to suit specific production requirements. These include drive rolls, gears, hoses, nozzles, siphon plugs and wire guides. Air caps are available to achieve various spray patterns and angles. A complete list of optional parts and spare parts can be found in the parts lists section of the reference manual.

Extension Modules

Extension modules for the 16E series guns permit coating of interior bore diameters and surfaces. Modules are available in 0° and 45° spray configurations.

They are available in four lengths:

| | | |
|--------------------|----------|------|
| 5XT-6 ^a | 152.5 mm | 6 in |
| 3XT-1 | 305 mm | 1 ft |
| 3XT-2 | 610 mm | 2 ft |
| 3XT-3 | 915 mm | 3 ft |

^a used with acetylene only

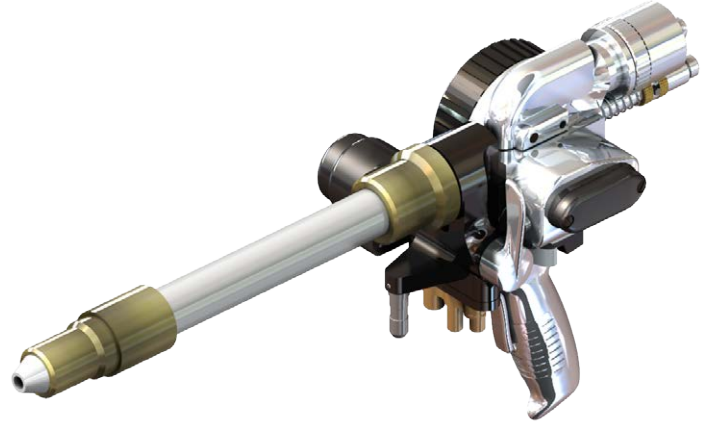
Hose Packages

Hose packages are available for acetylene or propane gas use, various lengths, and color-coded as illustrated for CE and non-CE use.

Please refer to the 5XT / 3XT Extension Module Product Data Sheet for additional information.

14EWGM Wire Grip Mechanism

Converts wire grip from pneumatic to a lever action mechanical grip. This is often preferred for very soft wires.



16E shown with 3XT-1 Extension Module in 0° configuration

A hose package should be ordered with the 16E gun; please refer to the illustration below.

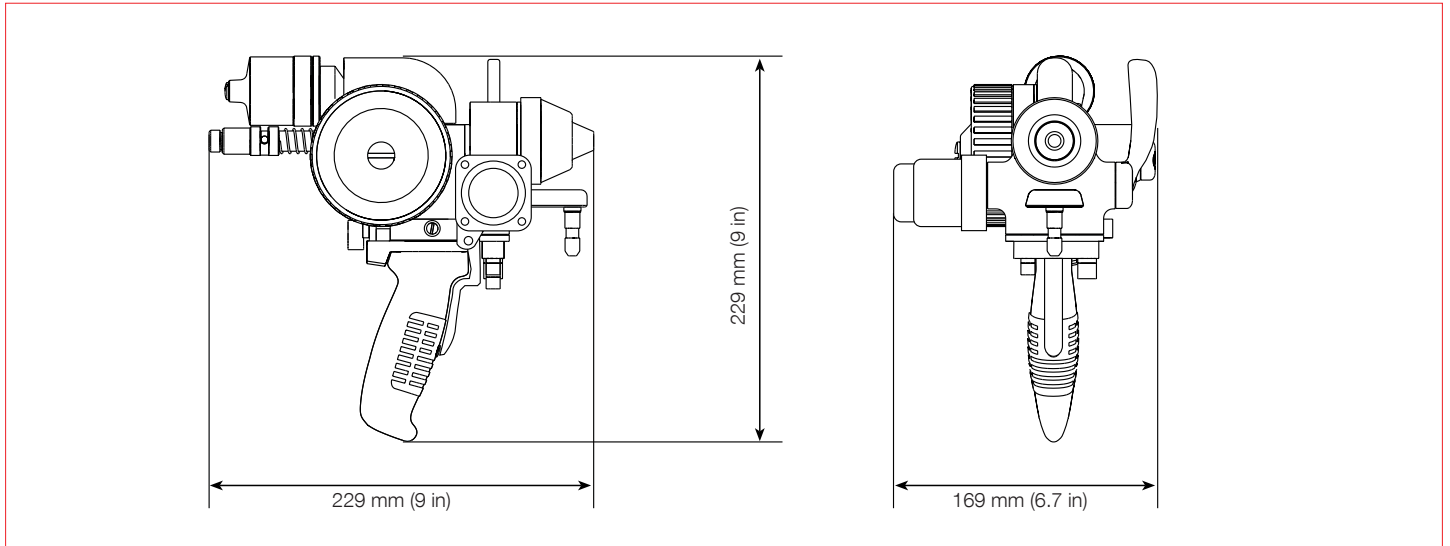
| Hose Package | Supply to Flowmeter | | | | | | Flowmeter to 16E Gun | | | | Additional Hose Extension for 16E-HT Gun | | | | |
|--------------|---------------------|-----|------|------|------|-----|----------------------|------|------|------|--|-----------|----------|----------------|----------------|
| | 8H | 9H | 8HEX | 9HEX | 2AF5 | HA | 6H | 7H | 6HEX | 7HEX | DJF 10CTO | DJF 20CTO | PB 30CTO | 11HEX 51292CTO | 11HEX 51287CTO |
| Air | | | | | | ● ● | ● | ● | ● | ● | | | ● | | |
| Fuel | ● | ● | ● ● | ● ● | | | ● ● | ● ● | ● ● | ● ● | ● | | | ● | |
| Oxygen | ● ● | ● ● | ● ● | ● ● | | | | | ● ● | ● ● | | ● | | | ● |
| Length | | | | | | | | | | | Length to be specified by customer up to 38 m (125 ft) | | | | |
| m | 1.2 | 4.6 | 1.2 | 4.6 | 1.2 | 7.6 | 4.6 | 10.7 | 4.6 | 10.7 | | | | | |
| ft | 4 | 15 | 4 | 15 | 4 | 25 | 15 | 35 | 15 | 35 | | | | | |
| CE | | | ◆ | ◆ | ◆ | ◆ | | | ◆ | ◆ | | | | ◆ | ◆ |

Packages contain 1 each of the specified hoses. 2AF5 and HA air hoses can be used with CE or non-CE systems.

- air hose
- oxygen hose
- fuel hose: acetylene (only)
- fuel hose: acetylene, propane or propylene
- fuel hose: propane or propylene (only)
- twin oxygen and fuel hose (hoses are joined)

4 Technical Data

4.1 Dimensions



4.2 Specifications

Coating Materials

| | | |
|------------------|--------------------------------------|--|
| Wire Sizes | 0.813 to 4.73 mm (standard: 3.2 mm) | 20 gauge to 3/16 in (standard: 1/8 in) |
| Wire Composition | Any Oerlikon Metco hard or soft wire | |

Weight

| | | |
|-------------|--------|---------|
| Approximate | 2.5 kg | 5.5 lbs |
|-------------|--------|---------|

Process Gases

| | | |
|----------------|---|-----------------------------------|
| Fuel gas | Acetylene, Propane, Propylene, Hydrogen, MPS, MAPP or Methane (Natural Gas) | |
| Oxygen | | |
| Compressed Air | 0.85 m ³ /min at 4.5 bar | 30 ft ³ /min at 65 psi |

Noise Levels ^a

| | |
|---------------------|---------|
| Acetylene | 114 dBA |
| Propane, MPS | 118 dBA |
| Acetylene, non-load | 125 dBA |

^a Proper ear protection should be worn at all times

Information is subject to change without prior notice.