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Product Data Sheet
Metco ECO ARC 350 Electric Arc Spray System

The Metco™ ECO ARC 350 Electric Arc Spray System is a compact unit for applying high quality, corrosion protection coatings of zinc, zinc-aluminum, aluminum and aluminum-magnesium.

The ECO ARC 350 system is rugged, having been proven in the harshest of on-site environments, such as the Norwegian off-shore industry. Aluminum-magnesium coatings applied using the ECO ARC 350 system surpass the tough Norwegian coating specifications by more than 70 %.

ECO ARC 350 meets CE standards and is recommended to apply on-site corrosion protection coatings for applications such as:

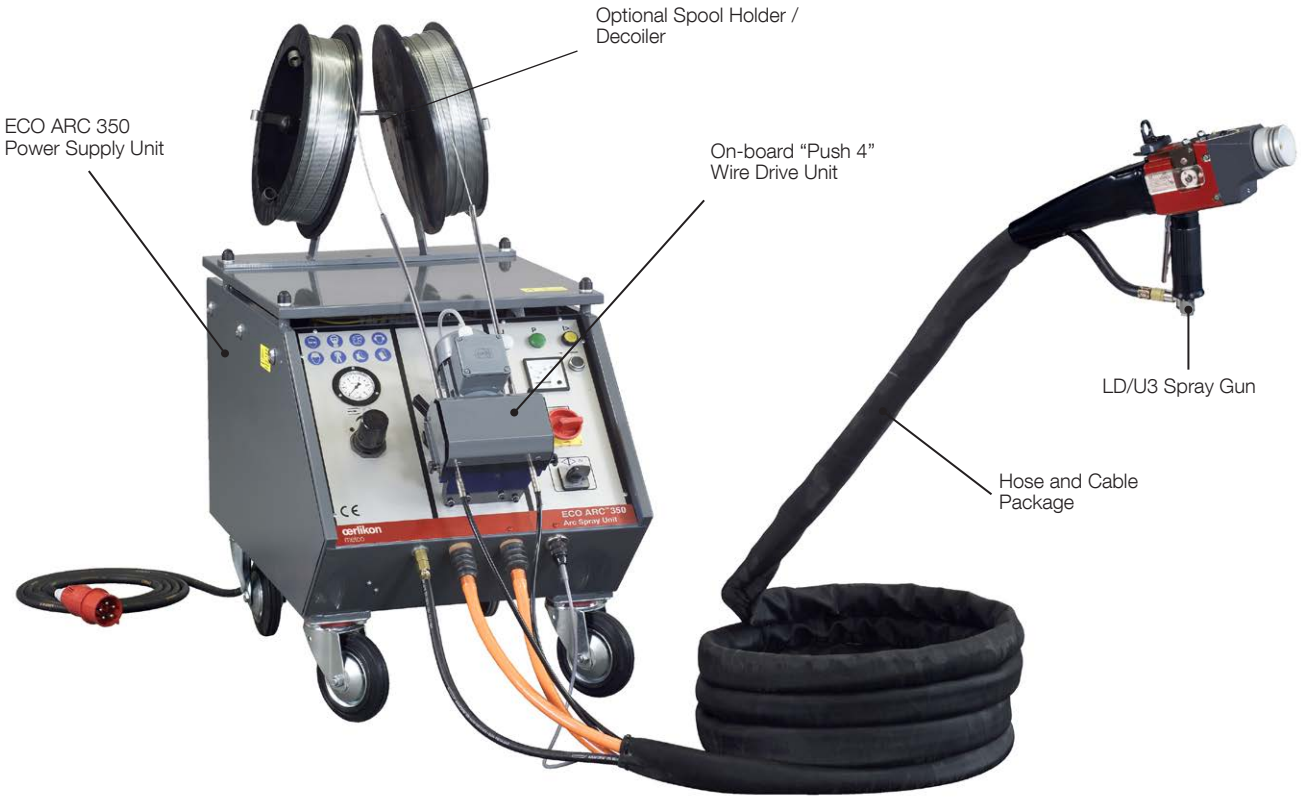
- Off-shore structures
- Marine structures
- Tanks for gas and fuel storage farms
- Steel structures
- Steel-reinforced concrete structures

1 Description

The ECO ARC 350 Electric Arc Spray System comes equipped with all hoses and cables, and is composed of four modules:

- ECO ARC 350 Power Supply with on-board Push 4 Wire Drive Unit
- Hand-held LD/U3 Spray Gun with integrated operator safety handle
- 10 m (32.8 ft) Hose and Cable Package, including insulated wire guides
- Drum or Spool Holder / Decoiler (both optional)

The wheeled system can also be used in shop and is easily moved from place to place.



1.1 ECO ARC 350 Power Supply

The ECO ARC 350 power supply is designed to be easily maneuvered, whether used on-site or in the shop because of its low height and large wheels. The unit has been specifically engineered to meet the requirements of the electric arc thermal spray process, delivering the system-rated arc current of 350 A at 100 % duty cycle. PLC (programmable logic control) ensures accuracy and and repeatability of the system settings.

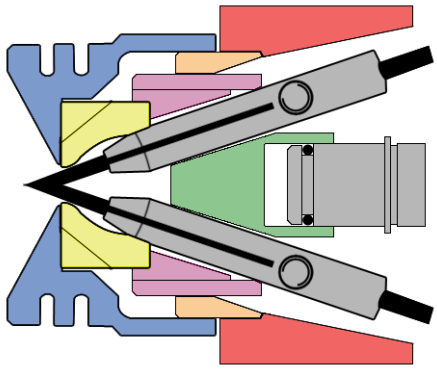
All control elements and displays are clearly arranged on the front panel, which is inclined at 45° for easy viewing by the operator. The hose an cable connections are positioned at a 45° decline, to reduce stress and prevent damage to the fittings or power supply. The on-board wire drive unit employs a push-type motor to reliably transport the coating wire feedstock material to the spray gun.

The internal electrical control elements are well-protected from the environment and spray dust. Convection cooling prevents spray dust getting into the power supply, decreasing the possibility of electrical shorts from metallic dust contamination. The power supply and the push motor are protected against overloading, overheating and air pressure drops.

1.2 LD/U3 Spray Gun

The LD/U3 Wire Spray Gun is lightweight and designed for safety. Ergonomically designed and weighing only 3 kg (6.6 lb), it is equipped with an integrated safety handle to prevent injury to the operator or others if the gun is dropped.

The gun has low wear part requirements and is designed for long spray campaigns with very low maintenance.



Closed-nozzle system with slit contact tips

Easily accessible buttons on the top of the spray gun allow the operator to instantly start and stop the spray process. A powerful air motor built into the gun augments the feed of wires from the “Push 4” Wire Drive Unit mounted on the power supply unit.

The LD/U3 is equipped with a closed-nozzle system and an air cap that produces very fine spray particles, which result in smooth coatings with extremely low porosity. The low surface roughness can reduce follow-on paint over-coatings by as much as 40 %.

2 Features and Benefits

Effective

- Applies high-quality corrosion protection coatings of zinc, zinc-aluminum, aluminum and aluminum-magnesium.
- Configured for use on-site or in shop.
- Applied coatings are low porosity and smooth with high bond strength.
- Power supply operates at 350 A, 100 % duty cycle, without overheating or overloading.

Efficient

- Simple to use and maintain.
- Easy to read front panel display.
- PLC control for precision and repeatability.
- Hand-held, lightweight gun for long spray campaigns.
- Accessible buttons on gun for quick start / stop of the spray process.

Economical

- Fan-free, convection-cooled power supply prevents contamination from overspray dust.
- Low wear part requirement with long-lasting contact tips
- Low coating surface roughness reduces paint top-coat requirements by up to 40 %.

Environmental

- Ergonomic gun design for operator comfort.
- Safety handle for increased operator safety.

3 Options and Accessories

Metco supplies a number of options for the ECO ARC 350 Electric Arc Spray System, including options for different spray patterns, hose lengths and spool types. Please contact your Oerlikon Metco Sales Representative for more information.

Spool Holder / Decoiler: All customers should choose an appropriate drum or spool holder / decoiler. This option holds the wire in place and ensures smooth guidance through the wire feed system. Available for hasp-style spools, dorn-style spools or drums.

Optional 8 m (26.2 ft) Hose Package: Shorter hose package replaces standard 10 m hose package.

Optional 15 m (63.8 ft) Hose Package: Longer hose package replaces standard 10 m hose package.

3.1 Kits

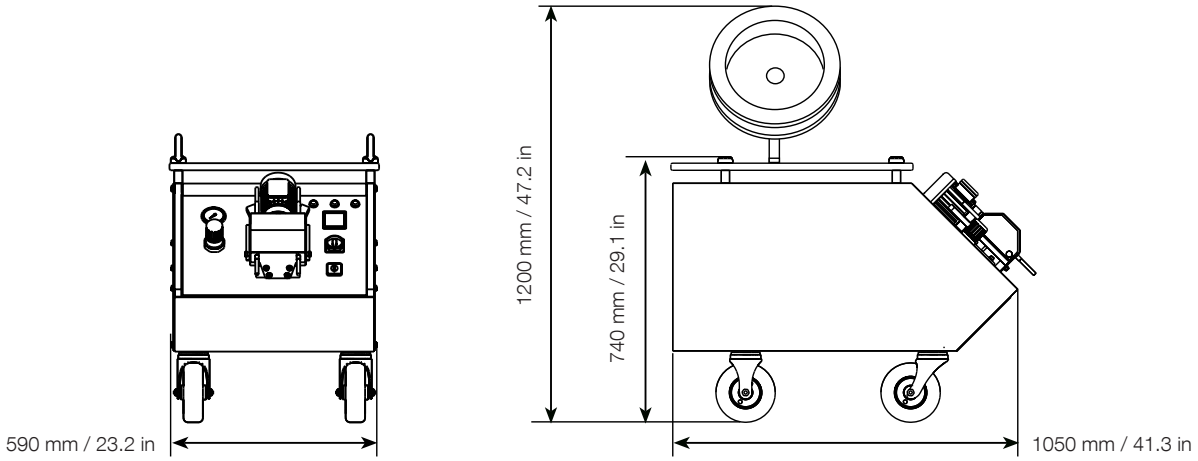
The Metco ECO ARC 350 Arc Spray System is versatile, and can be used with different types of wires using optional kits.

Kit	Gun	Item Number	Wire Type	Wire Size[d]
Soft Wire Spray Kit 1 [a, b, e]	LD/U3	1063580	Zinc, 85Zn/15Al, 95Al/5Mg	2.3 mm (11 AWG), 2.5 mm
Soft Wire Spray Kit 1 [a, b, c, e]	ECO CORR	1063581	Zinc, 85Zn/15Al, 95Al/5Mg	2.3 mm (11 AWG), 2.5 mm
Soft Wire Spray Kit 2 [a, e]	LD/U3	1063582	Aluminum	2.3 mm (11 AWG), 2.5 mm
Soft Wire Spray Kit 2 [a, c, e]	ECO CORR	1063583	Aluminum	2.3 mm (11 AWG), 2.5 mm
Soft Wire Spares Kit [f]	LD/U3	1077935	Zinc, 85Zn/15Al, 95Al/5Mg	2.3 mm (11 AWG), 2.5 mm
Aluminum Wire Spares Kit [f]	LD/U3	1077936	Aluminum	2.3 mm (11 AWG), 2.5 mm

[a] Consists of one (1) air cap, two (2) contact tips, two (2) gun drive rollers, two (2) pair “Push 4” drive and pressure rollers, two (2) pair wire guide tubes for use with 10 m hose package.
[b] Standard spray kit shipped with the gun.
[c] Contains an additional pair of wire guide tubes for the air motor to gun, 1.2 m hose package.
[d] Use of 2.3 mm wire requires modification of the PLC program (via memory stick). Spray capacity is reduced to 290 A with a zinc melting capacity of 29 kg/h (64 lb/h).
[e] Spray Kits are only available for current owners of the ECO CORR gun.
[f] Consists of one (1) air cap, contact tips [four (4) for Item 1077935; sixteen (16) for Item 1077936], two (2) pair “Push 4” drive and pressure roller replacement rings.

4 Technical Data

4.1 Dimensions



4.2 Specifications

Power supply				
Weight (without spool holder)	202 kg 445 lb	198 kg 437 lb	198 kg 437 lb	198 kg 437 lb
Electrical requirements	230 V	400 V, 50/60 Hz	415 V, 50/60 Hz	460 V, 50/60 Hz
Primary current	< 38 A	< 23 A	< 22 A	< 21 A
Fuse	50 A	35 A	35 A	35 A
Nominal power	< 14 kVA			
Secondary current	350 A			
Voltage	22 to 34 V			
Open circuit voltage	26 to 39 V			
Duty cycle (at full amperage)	100 %			
Cooling	Ambient air – convection			
Wire Drive Unit	**Push 4**			
Power (nominal)	0.09 kW			
Speed control type	Fixed			
Wire feed	2 slip rolls per wire			
Spray Gun	**LD/U3**			
Weight (with air motor)	3 kg	6.6 lb		
Nozzle system	Closed nozzle system			
Air Requirements				
Supply pressure (max.)	10 bar	145 psi		
Atomizer air	1250 NLPM @ 4 bar	2853 SCFH @ 58 psi		
Air motor air	450 NLPM @ 5 bar	1027 SCFH @ 72.5 psi		
Air purity	Filtered, dry, oil-free, in accordance with DIN ISO 8573 Class 1			
Inlet temperature (max.)	25 °C	77 °F		
Hose and Cable Set				
Standard				
Length	10 m	32.8 ft		
Weight	15.6 kg	34.4 lb		
Optional				
Length	8 m / 15 m	26.2 ft / 49.2 ft		
Weight	15.6 kg / 28.9 kg	34.4 lb / 63.8 lb		
Wire Materials				
Compatibility	All solid anti-corrosion (Zn, Zn/Al and Al/Mg) electric arc wires available from Oerlikon Metco in appropriate wire sizes			
Wire diameters	2.3 mm, 2.5 mm	11 AWG, 0.098 in		
Spray rates (2.5 mm wire)				
Zn	35 kg/h	77.2 lb/h		
85Zn 15Al	31 kg/h	68.3 lb/h		
Al	10.5 kg/h	23.1 lb/h		
95Al 5Mg	9.8 kg/h	21.6 lb/h		

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