

Metallisation

Thermal spray equipment and consumables



Equipment Specification

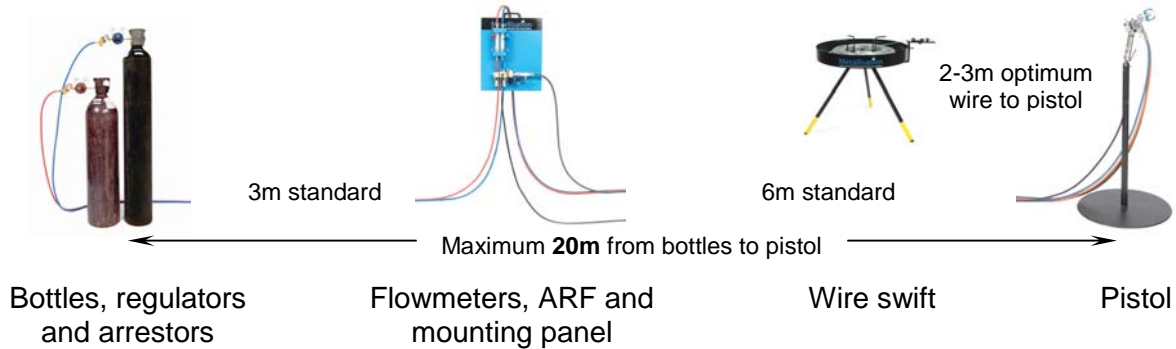
MK61 Flame Spray System

TYPICAL SYSTEM CONFIGURATIONS

Pictured below is a range of typical system configurations. Variations of these configurations may be possible. Contact Metallisation to discuss your specific application requirements.

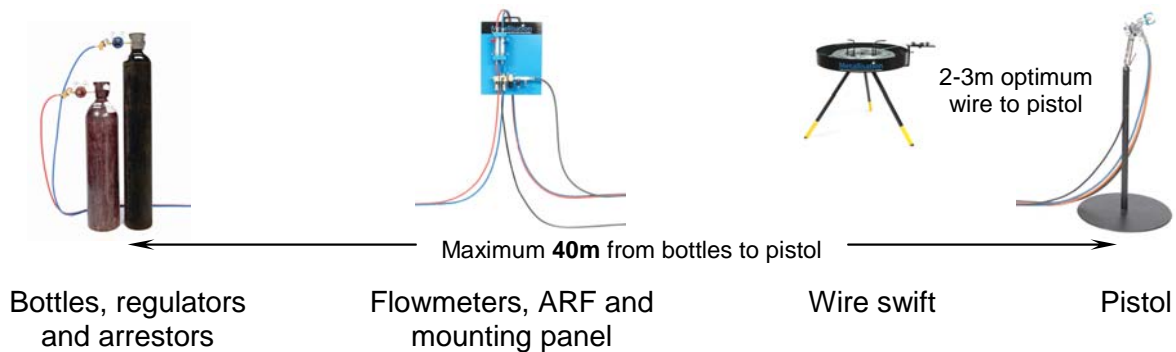
STANDARD COIL DISPENSE CONFIGURATION

Most commonly used for spraying materials from coils



NON-STANDARD EXTENDED SUPPLIES CONFIGURATION

For hard to reach areas, longer supplies options are possible using larger diameter hoses. Contact Metallisation to confirm your application requirements / system possibilities.



INTRODUCTION

The following specification covers the entire standard range of MK61 flamespray system. For the specific offer, please refer to the attached quotation and cross reference the part numbers for each piece of equipment.

The Metallisation MK61 is an oxygen-acetylene fuelled flamespray system, primarily for spraying engineering coatings of steels, bronzes, copper and importantly, Molybdenum. The lightweight, robust pistol offers the possibility to reclaim damaged parts for small to medium sized applications. Molybdenum can also be sprayed with the MK61 as a soft bond coat through to a very hard, wear resistant coating. The MK61 system can be used for anti-corrosion coatings where propane is not readily available.

New in 2008 is a smaller, more compact mounting panel and Air Regulator Filter (ARF) unit.

Safety: The equipment quoted will produce levels of noise and dust that will require safety measures to be taken by those using the equipment. It will use pressurised air and will also use flammable gases. Careful consideration should also be given to the positioning of this equipment. It is the responsibility of the user to ensure that all appropriate measures are taken to ensure safe operation in accordance with local requirements. Metallisation will be pleased to advise as appropriate.

BENEFITS

- ✦ Stop/start version allows operator to stop spraying and leave the flame lit (e.g., whilst inspecting or moving the work piece)
- ✦ Wire sizes 1.5mm to 4.76mm (3/16") to suit many application and coating requirements
- ✦ Variable wire speed control for optimum coatings
- ✦ Suitable for Engineering wires, steels, copper and bronzes plus anti-corrosion materials.
- ✦ Two stage air cap gives optimal setting for lighting and spraying
- ✦ Rugged construction combined with light-weight and balance for ease of handling
- ✦ Hanging hook for temporary storage or connection to spring balance
- ✦ Variety of hose lengths to suit each application
- ✦ Flow meters for optimal setting of parameters and fault finding
- ✦ Flow meters include large pointers for ease of checking from a distance
- ✦ Air Regulator and Filter (A.R.F.) unit supplies motor air, nozzle air and breathing air pack supply from one inlet.
- ✦ Variety of wire dispense methods and packaging available

MK61 PISTOL

Part No.	Description
GAS61-1.5MM	MK61 flamespray pistol for 1.5mm wires
GAS61-2MM	MK61 flamespray pistol for 2mm wires
GAS61-3MM	MK61 flamespray pistol for 3mm wires
GAS61-1/8	MK61 flamespray pistol for 1/8" wires
GAS61-1/8(2)	MK61 flamespray pistol for 1/8" wires (2 Motors)
GAS61-3/16	MK61 flamespray pistol for 3/16" wires



Version shown is a 1/8" stop/start pistol without a spreader. If a spreader is required on 1/8" and 3/16" systems, this must be requested at the time of order.

TECHNICAL OVERVIEW

- ✦ Primarily for spraying engineering coatings (steel, copper and molybdenum)
- ✦ Flame produced by burning acetylene and oxygen gases
- ✦ Most commonly used variant is 1/8" stop start pistol as it maximises spray rate whilst giving the benefits of being able to stop and start spraying and keep the main flame alight
- ✦ Wire drive via high torque, positive displacement air motor that also doubles as the handle
- ✦ A 2-motor variant of 1/8" pistol is offered to enable optimum bond and hard coatings of Molybdenum to be applied.

Technical data

Description	Characteristics
Weight – at a held height of 1.2 M	3.18 Kgs – inc hoses
Width	95mm
Length	257mm
Height	286mm
Compressed air usage	50 m³/hr @ 5.5 bar
Oxygen	1.19-2.56 m³/hr @ 1.5-2.2 bar
Acetylene	0.57-1.14 m³/hr @ 1.03 bar

Typical performance figures for the MK61 pistol

Material	Wire Diameter	Throughput kg/hr	Coverage m ² /kg/100μ
Metallisation Wire 99E Molybdenum	1/8"	0.7 (Bond Coat) 2.5 (Hard Coat)	1.02
Metallisation Wire 30E/35E/45E/55E/ 57E/60E/65E/80E Steels	1/8"	4.0 – 4.5	0.91-1.1
Metallisation Wire 05E Copper	1/8"	5.9	0.91
Metallisation Wire 10E and 15E Bronzes	1/8"	5.7	0.91-1.1
Metallisation Wire 02E Zinc	1/8"	15.9	0.91
Metallisation Wire 01E Aluminium	1/8"	3.2	3.57

The gas and oxygen pressure and consumption figures shown cover the full range of possible nozzle assemblies which could be used. These range from 1.6mm fine spray with the lowest consumption to 3/16" standard with the highest consumption and pressures.

Throughput is assumed to be independent of wire diameter. All data provided is an approximation and is offered as guidance only as performance can vary depending on application and parameters.

TOOLKIT



Appropriate hand tools are supplied with the Flame spray pistol along with an operating manual and pistol case

HOSES

GENERAL SPECIFICATION

Red	Tubing to EN 559:2003 for Acetylene
Blue	Tubing to EN 559:2003 for Oxygen
Black	Tubing to EN 2398 for Compressed Air

HOSES FROM REGULATORS TO FLOWMETERS

Part No.	Description
21141	Acetylene regulator - flowmeter hose x 3m (red hose)
21223	Oxygen regulator - flowmeter hose x 3m (blue hose)



Part number 21223
Oxygen hose – 3m



Part number 21141
Acetylene hose (red) – 3m

Technical overview

- Supplied with fittings appropriate to connect to all Metallisation supplied flamespray equipment
- Non-standard lengths are available on request

HOSES FROM FLOWMETERS TO PISTOL

Part No.	Description
21182	Flamespray acetylene hose x 6m
21502	Flamespray oxygen hose x 6m
21503	Flamespray nozzle air hose x 6m
21504	Flamespray drive motor air hose x 6m



Part number 21182
Acetylene hose – 6m



Part number 21502
Oxygen hose – 6m



Part number 21504
Motor air hose – 6m



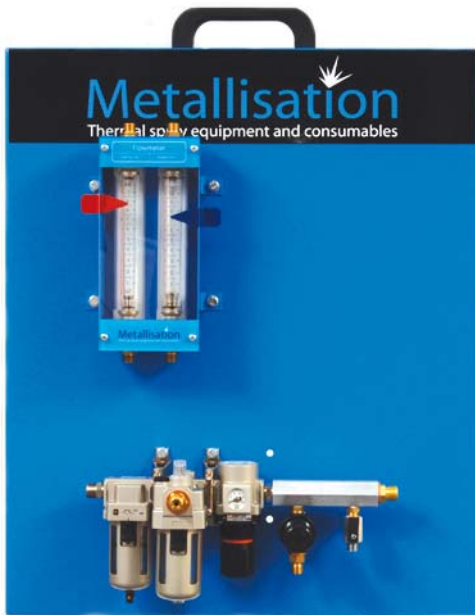
Part number: 21503
Nozzle air hose – 6m

Technical overview

- Supplied with fittings appropriate to connect to all Metallisation supplied flamespray equipment
- Acetylene and oxygen hoses fitted with safety check valves to prevent back-feeding of gases.
- Non-standard lengths are available on request

FLOWMETERS AND MOUNTING PANEL

Part No.	Description
26900A	Flamespray mounting panel
21129	Flamespray flowmeter (wire)



Part number 26900A
Flamespray mounting panel
(Shown with standard ancillaries fitted)



Part number 21129
Flowmeter for wire systems

TECHNICAL OVERVIEW

- ✦ Use with Metallisation regulators to ensure correct mixture of acetylene and oxygen is fed to the pistol to give the optimum flame the material sprayed
- ✦ Mounted in protective steel and Perspex case to provide protection in industrial environments
- ✦ Standard left hand threads for fuel gas (Acetylene) to avoid incorrect connection
- ✦ Large floats, indicators and scale divisions offer good visibility at a distance
- ✦ Used as primary diagnosis tool for fault finding
- ✦ Flamespray mounting panel (pictured) offers a convenient method of mounting all the required ancillaries (quoted and supplied separately)

REGULATORS

Part No.	Description
21238	Flamespray acetylene regulator
21236	Flamespray oxygen regulator



Part number: 21238
Acetylene regulator



Part number: 21236
Oxygen regulator

TECHNICAL OVERVIEW

- High flow regulators with minimal restriction offer reliability of operation and more repeatable lighting of the pistol through optimised gas flow rates.
- Used together with Metallisation flowmeters and flame arrestors
- Complies with BS5741 and IS02503 standards

FLAME ARRESTORS

Part No.	Description
21123	Flame arrestor, oxygen
21122A	Flame arrestor, propane/acetylene



Part number: 21123
Flame arrestor, oxygen



Part number: 21122A
Flame arrestor, propane/acetylene

TECHNICAL OVERVIEW

- Use together with Metallisation regulators and hoses with check valves for maximum safety
- Mount to the regulator
- Sintered metal flame arrestor quenches the flame front resulting from a flashback.
- Pressure relief valve safely vents excess pressure and fumes
- Pressure sensitive cut-off valve, incorporating a tamper-proof reset mechanism, prevents the re-ignition of unburnt gases after a flashback.

AIR REGULATION AND FILTRATION UNIT

Part No.	Description
21222A	Air regulation and filtration unit



Part number: 21222A
Air regulation and filtration unit (ARF)

TECHNICAL OVERVIEW

- ✦ The ARF unit is made up of a filter bowl, lubricator, regulator
- ✦ High flow and regulation characteristics suitable for flame spray applications
- ✦ A single supply feeds 3 outlets for drive motor, nozzle and breathing air
- ✦ Drive motor supply is lubricated to protect motor from corrosion
- ✦ Nozzle air is unlubricated to ensure clean, uncontaminated coatings
- ✦ Breathing air supply is also unlubricated (this will need to go through additional filtration as supplied with air fed helmets).
- ✦ Snap-lock facility on regulator and lubricator to prevent accidental changes to settings
- ✦ Strainer on lubricator ensures clean oil in the fog generator
- ✦ All service parts can be changed without disconnecting hoses for ease of cleaning and maintenance
- ✦ Filter bowls have large filter elements for minimum pressure drop
- ✦ Filter bowls have sight glasses to prompt the operator to clean bowls

WIRE DISPENSE

WIRE SWIFT

Part No.	Description
24750A	Wire Swift – Wire Dispenser/Straightener



Technical overview

- ✦ Tripod base giving stability and strength and ball race thrust bearing for continued free rotation with adjustable brake preventing over-run of wires
- ✦ Easily adjusted wire retention arms which may be used for dispensing from coils or removed for dispensing from MIG or LAYER reels
- ✦ Ability to carry wire coils of diameters from 10" (250mm) - 30" (750mm) inside diameter
- ✦ Provision for a wire straightener for stiff materials such as 1/8" steels etc

WIRE DISPENSING CONES

Part No.	Description
21252	Wire Dispensing Cones – variable position



Technical overview:

The Metallisation wire dispensing cone offers the ability to conveniently dispense anti-corrosion wires from production packs (drums). The wire is neatly guided to a dispense point, then over the pulley to give a free passage of wire from the drum to pistol. Benefits include:

- ✦ Fitted Pulley to ensure a smooth wire feed to the pistol.
- ✦ Variable position clamp assembly allows the clamp to be rotated to give the smoothest wire transfer path from the drum to the pistol.

NOTES

Metallisation

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