FLAME SPRAY GUN SELECTION GUIDE

Choose the best Flame Spray Gun for your needs!

PNEUMATIC DRIVEN MOTOR — **ELECTRIC DRIVEN MOTOR**

EZ-Jet
Plug and spray: without gas control panel, very easy to set, dedicated for 3,17 mm (1/8 in) wire diameter.

Z-Jet
Sprays all wires with a low melting points, different nozzle diameters0

Top Jet
Versatile gun with optimal torque for all wires thanks to its unique gearbox

Master Jet® 3/3S
Spray all materials including ceramics and carbide
3S : includes a Smart Safety Switch

Master Jet® Auto IV
Full process control affordable, integrated installation with production data

Fast motor (0.8 - 8 m/min)
Slow motor (0.35 - 3.4 m/min)

		WIRES					
		3.17 mm (1/8'')	1.5 - 4 mm (1/16'' - 5/32'')	1.5 - 3.17mm (1/16''-1/8'')	3.17 - 5mm (1/8''-13/64'')	1.5 - 5 mm (1/16'' - 13/64'')	
Soft wires	Zn / Al / Zn-Al						
	Tin / Babbitt (antifriction)						
Hard wires	Cu / Bronze / Brass						
	Ni Based / Stainless Steel						
	Molybdenum						

		FLEXICORDS	4.75 mm (3/16'')
RocDur Series	w/o Carbide : 29 / 37 / 40 / 44 / 62 with Carbide : 6728 / 6740 / 6750		
Bond Coat Series	NiCrAlY, NiChrome		
Carbide Series	ChromKarb, HardKarb		
Ceramic Series	Pure Alumina, Blue Corundum, Black Corundum, Titania, BlackSorb, Iron Oxide, Spinel, Magnesium Zirconate		
Ceramic Supra Series	Alumina Supra, Ti-Elite, Ti-Tex, AZ Supra, Chromia Supra, Spinel Supra, Zirmag Supra		
Special Alloys Series	Corec 6		

		ROKIDE RODS	6.35 & 4.75 mm (1/4'' & 3/16'')
Chrome Oxide	C / MBC / TC		
Aluminum Oxide	A / HPA		
Zirconium Oxide	Rokide EZ		
Bond Coat	Nichrome		

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Z-JET

LIGHTWEIGHT ROBUST HANDY

METALLISATION: EFFECTIVE ANTI-CORROSION SOLUTION

SAINT-GOBAIN COATING SOLUTIONS

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Z-JET

Metallisation provides an effective passive and galvanic protection, even in the most aggressive environments !

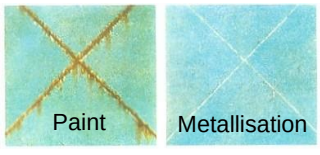
The Metallisation Process (Thermal Spray)

Metallisation (Thermal Spray) is the best choice for the production of anti-corrosion coatings by galvanic protection: With Zinc, Aluminum and ZnAl alloy

The layers obtained by spraying a molten metal have a high adhesion and resistance to shocks and scratches. Thanks to its reliability and ease of operation, the Z-JET is ideal for all your metallisation work

More RELIABLE than paint

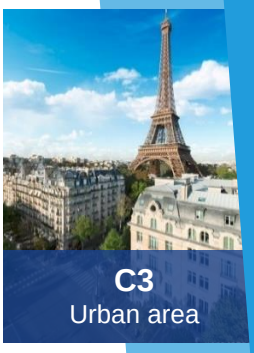
- ✓ Metallisation provides 4 to 5 times longer lifetime thanks to its passive AND galvanic protection
- ✓ Very strong resistance to shocks and scratches
- ✓ No drying time required



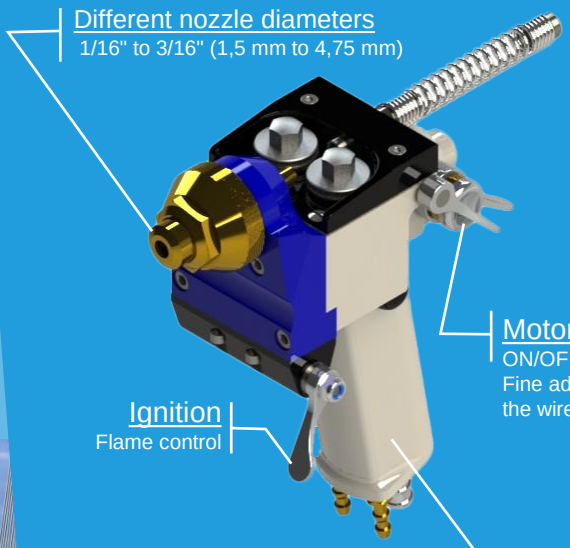
Metallisation resists/endures impacts and scratches. Its galvanic protection against corrosion offers a lifetime 4 to 5 times longer than paint

More FLEXIBLE than galvanisation

- ✓ After cutting, welding or any other modification, protect your metallic workpiece where you need
- ✓ No size or shape limits
- ✓ Offers a better adhesion than paint



*Sources : ISO 2063-1:2019 (E) ; ISO 2063-2:2017 (E) ; ISO 12944-2



Weight: 2 Kg

Lightweight, **robust** and **easy to handle,** the Z-JET is ideal for metallic surfaces of all shapes and sizes

Zn Al ZnAl$_{15}$ The Z-JET is able to spray **all wires** with a low melting points

No drying or cooling time required

TSA With **Thermal Spray Aluminum (TSA),** all metal structures can be protected in marine and coastal areas

The quality of a metallic coating offers an **excellent support for a paint finish**

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TOP JET

THERMAL SPRAY GUN

LIGHTNESS AND VERSATILITY FOR ALL METALLIC MATERIALS

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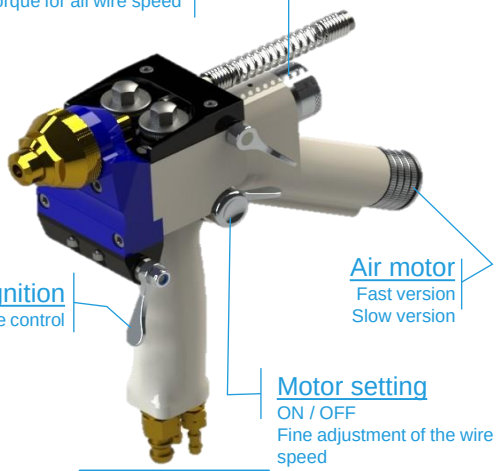
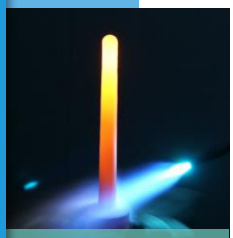
TOP JET

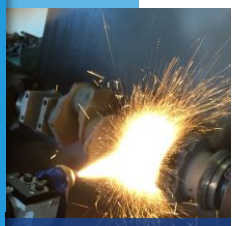


2,5 Kg

Applications



Spray & Fuse



Repair

Anticorrosion
C1-C5 CX Im

High wear

Advantages

Lightweight and robust, the TOP-JET is ideal for metallic surfaces of all shapes and sizes

Interchangeable **air motor**:
fast version for low melting point materials;
slow version for high melting point fusion

Quick switching from one material to another: wires Ø1.5 to 5 mm & Flexicord

No overheating, **no deformation of the workpiece**

No drying or **cooling** time of the coating

The quality of a metallic coating offers an **excellent support for a paint finish**

Do not limit yourself with Top-Jet flame spray equipment! Spray all types of metallic wires and even metallic Flexicords thanks to its pneumatic motor covering a wide range of speeds

- ✓ A solution for multiple applications
- ✓ High quality metal coatings
- ✓ Materials for spray & fuse
- ✓ Reliable and high-performance equipment, even on site
- ✓ Flame spray manufacturer since 1920

Metallic Wires

Copper & Nickel alloys, Steels, Molybdenum Aluminium, Tin, Antifriction, Zinc, Steels, Alloys (Copper, Nickel, Zinc/Aluminium)

Flexicords

NiCrAlY bond coat, NiChrome bond coat, RocDur (for spray & fuse application, hardness from 27 to 65 HRC)

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EZ-JET

The **ANTI-CORROSION** high performance solution

LIGHT HEAVY DUTY HANDY

***METALLIZATION** has never been so simple*

SAINT-GOBAIN COATING SOLUTIONS

SAINT-GOBAIN

EZ-JET

Metallization provides efficient passive and galvanic protection, even in the most aggressive environments!

Metallization process

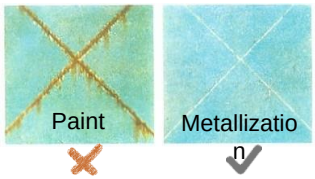
The Metallization process is the technique of choice for making Anti-corrosion deposits by galvanic protection: addition of Zinc, Aluminium or ZnAl alloy.

The EZ-JET is the ideal tool to carry out your work on Structural Steel, Ironwork and Iron Repair.

- Designed for professionals of all sizes
- Low investment and control of your anti-corrosion costs
- Very easy to use

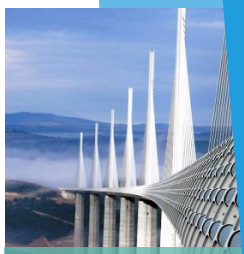
More DURABLE than Paint

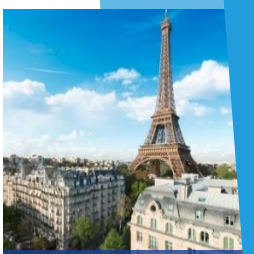
- ✓ The metallization offers 4 to 5 times longer life thanks to its passive AND galvanic protection.
- ✓ Very high impact and scratch resistance
- ✓ No drying time required

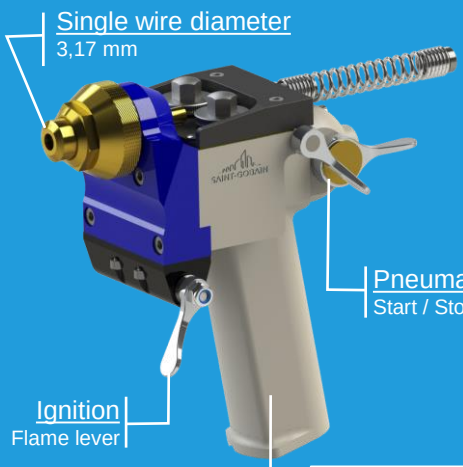


More FLEXIBLE than hot-dip galvanization

- ✓ After cutting, welding or any other modification, protect your metal parts where you need.
- ✓ No size or shape limits
- ✓ Better paint adhesion







Weight : 1,9 Kg

Very easy to use:
Unique setting, pneumatic motor, single wire diameter

Light, heavy duty, handy,
The EZ-JET is ideal for metal surfaces of any shape or length.

Zn Al $ZnAl_{15}$

The EZ-Jet can spray any type of wire that has a low melting point.

No drying or cooling period

TSA

Protect all metal structures in marine and coastal environments with Thermal Spray Aluminum (TSA)

The quality of a metallized coating offers an excellent support for a paint finishing

*Sources : ISO 2063-1:2019 (E) ; ISO 2063-2:2017 (E) ; ISO 12944-2

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MASTER JET 3

WHEN ONE FLAME SPRAY GUN IS ALL YOU NEED!

COATING SOLUTIONS

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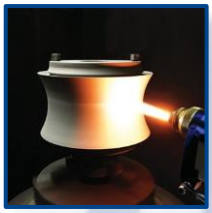
MASTER JET 3

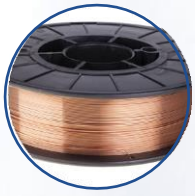
UNIQUE MULTI-PURPOSE WORKHORSE TOOL

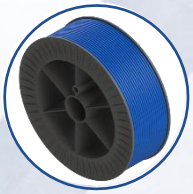
- Competitive thermal spray solution
- Coating quality very close to Plasma & HVOF
- Low investment
- Quick & easy to switch to another type of consumable
- Suitable for on-site or in house jobs : Lightweight, user-friendly, safe




ONE GUN. ALL MATERIALS

- With the Master Jet 3 all traditional thermal spray materials can be sprayed: Metals, ceramics, carbides
- Axial feeding of material, be it metal wires, our Flexicords or Rokide® rods, ensures the highest quality coatings obtained by flame spraying





A BROAD RANGE OF APPLICATIONS

The versatility of the Master Jet 3 makes it the solution to a variety of surface engineering challenges in applications such as: anti-corrosion, sliding bearings seat, pump shafts and valves, molten metal contact, capstans, thermal barrier, extrusion dies...


All your spray parameters at a glance

The Master Jet 3 is the best in class flame spray gun

OPTIMIZED DESIGN

Very compact:

233 x 87 x 192 mm - 8,77 x 3,42 x 7,55 in

1,8 kg - 4 lbs

WIDE RANGE OF SPEED AND HIGH POWER

Brushless motor for long life expectancy Integrated closed-loop wire speed sensor for real speed displaying - 0,07 to 7 m/min

2,77 to 275 in/min

ALL MATERIALS

Wires - 1,5 to 5 mm (1/16 to 3/16 in)

All Flexicords

All Rokide® rods

COATING SOLUTIONS

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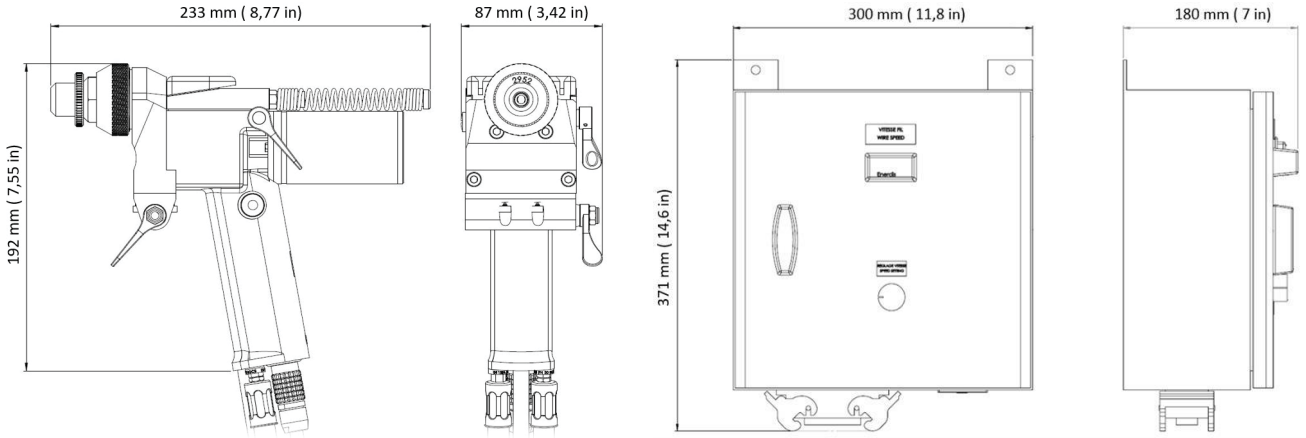
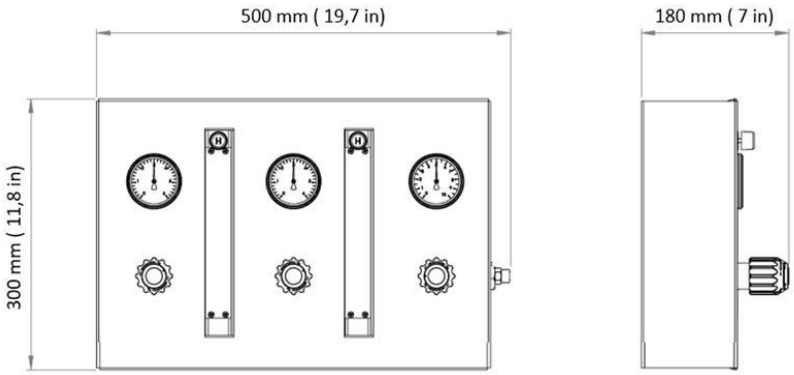
Master Jet 3 – Control unit	
Material feeding speed display - Potentiometer for material feeding adjustment – Emergency stop	
Temperature	-20 ... +55 °C (atmospheric)
Electrical supply	110/240 VAC - 50/60 Hz – 150 W max
Weight	6,7 kg – 14,7 lbs

Master Jet 3 – Gas control panel	
Stainless steel frame - 3 gases Oxygen + Fuel gas (Acetylene or Propane) + Compressed air – 3x pressure regulators – 3x gauges – 2x ball flowmeters (oxygen + fuel gas)	
Weight	9 kg – 19,8 lbs

Master Jet 3 - Gun	
Acetylene or propane fuel gas compatible – Wire, Flexicord and Rokide rods material compatible – from 1,5 to 5 mm (1/16 in to 13/64 in) diameter. Powerful and accurate brushless electric motor with integrated speed sensor – Efortless operator's hand sensor – Multifunction press button – Feed roll pressure adjustment.	
Material feeding speed range (closed loop speed control)	0,07 to 7 m/min – 2,75 – 275 in/min
Weight	1,8 kg – 4 lbs

Master Jet 3 – Hose package
10 m length - Crimping of hoses and flashback arrestors/non return valve according to EN 1256 – ISO 3821





MASTER 3S JET

SMART SAFETY SWITCH

COATING SOLUTIONS

SAINT-GOBAIN

MASTER JET 3S

SMART SAFETY SWITCH

- Diagnostic available to the operator for safer operations and guidance
- Optical sensor that detects the presence of a hand or a robot mount: efortless use
- Cuts all supplies (gases + material) only in emergency situations
- One of the lightest guns that is intuitive and ergonomic
- Hand switching does not cause interruption

A BROAD RANGE OF APPLICATIONS

The versatility of the Master Jet 3s makes it the solution to a variety of surface engineering challenges in applications such as: anti-corrosion, sliding bearings, pump shafts and valves, molten metal contact, capstans, thermal barrier, extrusion dies...

- **Pressure control**
- **Fuel gas flow sensor**
- **All your spray parameters at a glance**

The Master Jet 3s is the best in class flame spray gun

OPTIMIZED DESIGN

Very compact:

233 x 87 x 192 mm - 8,77 x 3,42 x 7,55 in

1,8 kg - 4 lbs

POWERFUL FEEDING

Brushless motor for long life expectancy

Integrated closed-loop wire speed sensor for real speed displaying - 0,07 to 7 m/min 2,77 to 275 in/min

PROPANE OR ACETYLENE

Wires

- 1,5 to 5 mm
- 1/16 to 3/16 in All Flexicords

All Rokide® rods

THE HEART OF THE 3s TECHNOLOGY

Optical sensor which detects your hand effortlessly.

COATING SOLUTIONS

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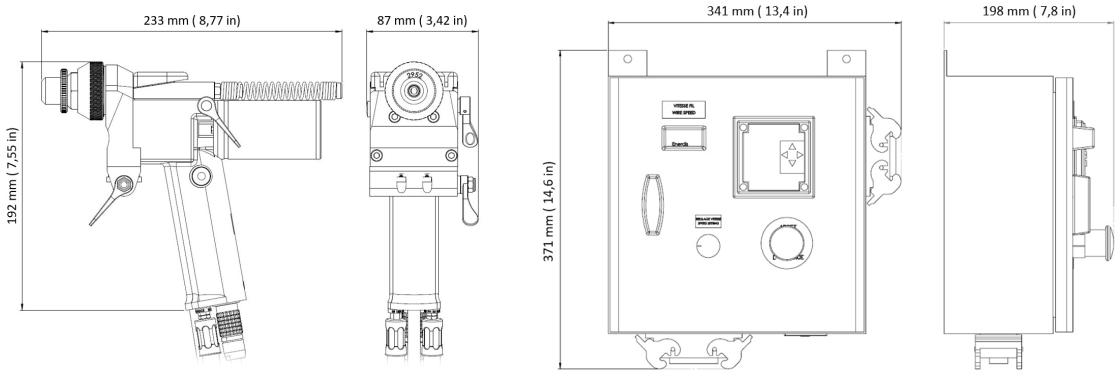
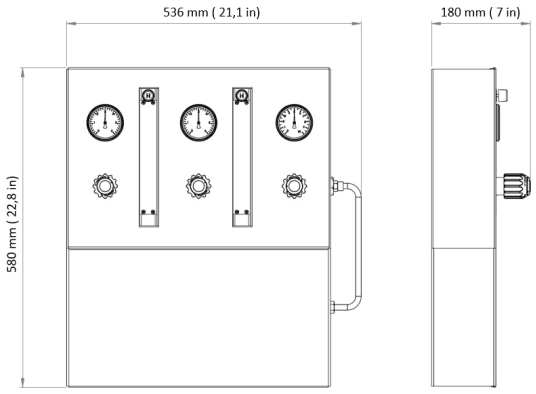
Master Jet 3s – Control unit	
Siemens PLC with LCD screen display - Material feeding speed display - Potentiometer for material feeding adjustment – Emergency stop	
LCD screen functions	Displays equipment state information (Supplies pressure missing, gas lever open, material feeding, in spraying, loose of the hand operator signal, electric motor fault, emergency fault…) White, orange, and red backlighting of the screen for state of the equipment highlighting at distance.
Temperature	-20 ... +55 °C (atmospheric)
Electrical supply	110/240 VAC - 50/60 Hz – 150 W max
Weight	6,7 kg – 14,7 lbs

Master Jet 3s – Gas control panel	
Stainless steel frame - 3 gases Oxygen + Fuel gas (Acetylene or Propane) + Compressed air – 3x pressure regulators – 3x gauges – 2x ball flowmeters (oxygen + fuel gas) – 3x pressure switches – Fuel gas flow sensor – 3x solenoid valves	
Monitoring of the supplies pressure	-20 ... +55 °C (atmospheric)
Weight	9 kg – 19,8 lbs

Master Jet 3s - Gun	
Acetylene or propane fuel gas compatible – Wire, Flexicord and Rokide rods material compatible – from 1,5 to 5 mm (1/16 in to 13/64 in) diameter. Powerful and accurate brushless electric motor with integrated speed sensor – Efortless operator's hand sensor – Multifunction press button – Feed roll pressure adjustment.	
Material feeding speed range (closed loop speed control)	0,07 to 7 m/min – 2,75 – 275 in/min
Multifunction press button	Reset de installation, start/stop the material feeding, purging of the gases. Integrated LED indicator for material feeding quick feedback.
Weight	1,8 kg – 4 lbs

Master Jet 3s – Hose package
10 m length - Crimping of hoses and flashback arrestors/non return valve according to EN 1256 – ISO 3821





MASTER JET AUTO IV

Full Process Control Affordable

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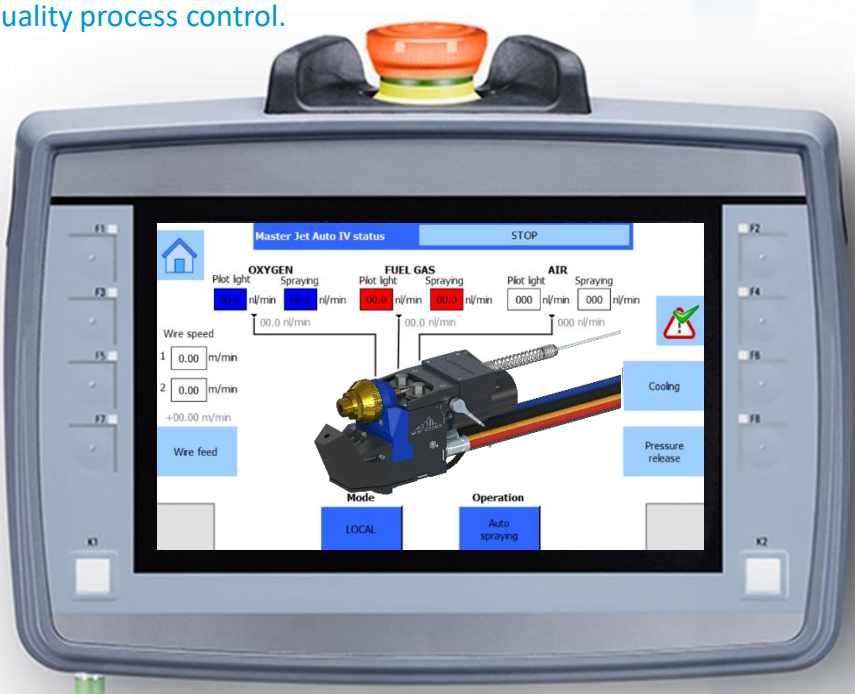
MASTER JET AUTO IV

USER FRIENDLY MOBILE TOUCH SCREEN DISPLAY

The mobile touch screen is *ergonomic* and intuitive allowing efficient use. Different functions, such as diagnosis, registering of recipes, and 3 level of users login, show a significant help in your workshop management and quality process control.



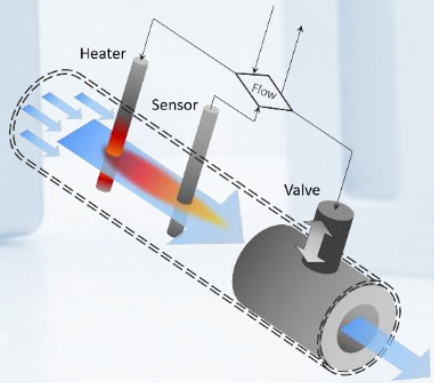
PRODUCTION DATA

You are able to extract data of your production through a USB port:

- Oxygen flow (slpm)
- Fuel gas flow (slpm)
- Air flow (slpm)
- Wire speed (m/min)

ACCURACY, CONSISTENCY

Accurate and consistent, thermal mass flowmeter controllers guarantee flame characteristics and particle sizes always identical, piece after piece, production after production.



PRODUCTIVITY INCREASE

The new « wire boost » function, the insensitivity to gas pressures variations, the efficiency of ignitions, and self monitoring reduce variation and improve productivity.

Electronics

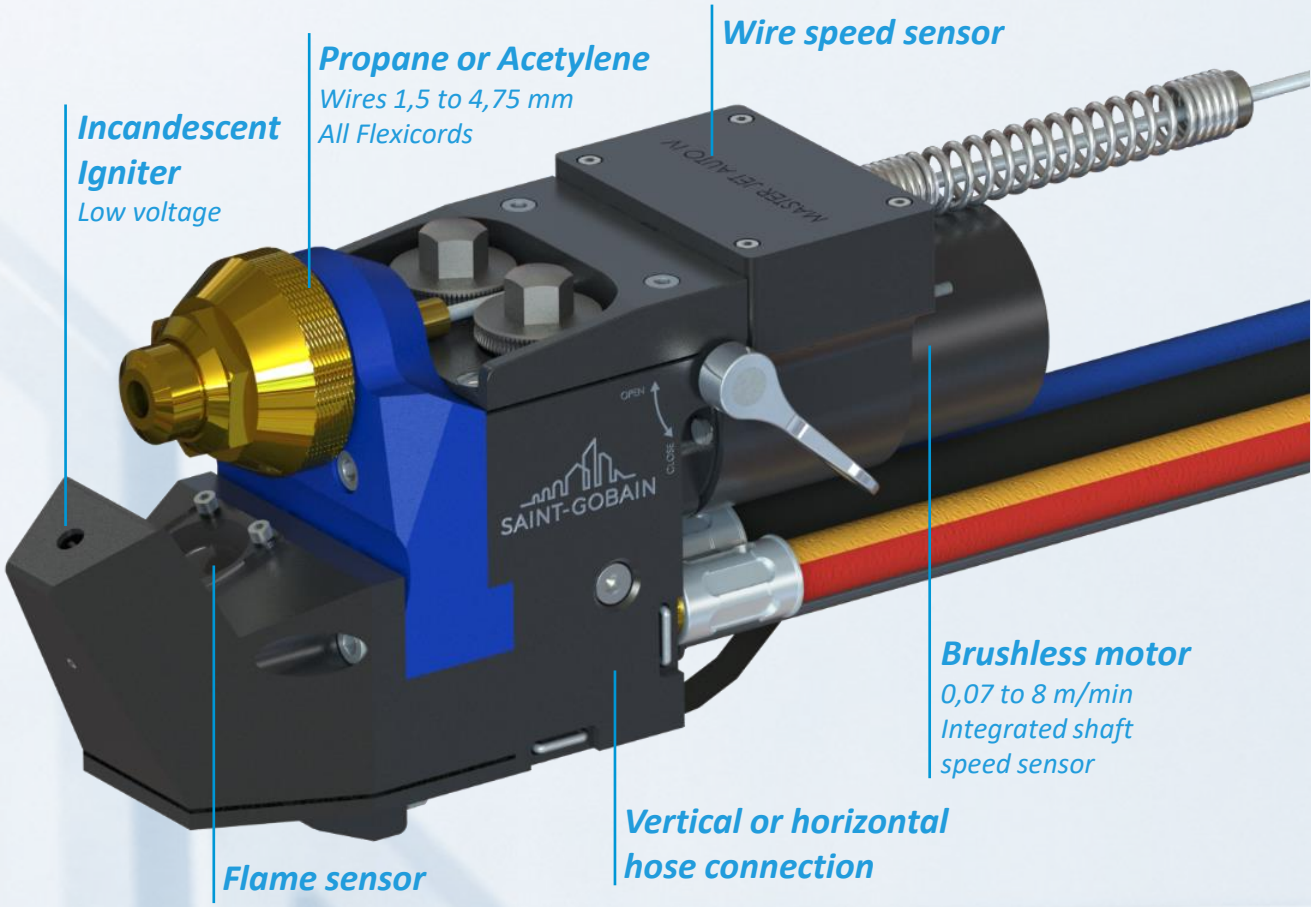
Automotive

Steel forming

With the goal of improving the productivity and the versatility, Saint-Gobain designed the MASTER JET® AUTO IV.
Simple and unique at the same time, the MASTER JET® AUTO IV reaches very high level of supervision. Using the MASTER JET® AUTO IV will give you a very high level of control and a safe operation of your flame spray process .
Thanks to the MASTER JET® AUTO IV you also have less process parameters to control so there is LESS RISK OF PROCESS DRIFT !!!

INTEGRATED INSTALLATION = TIME SAVING

The Master Jet® Auto IV is designed to work on its own. It can be driven either manually or through your production process, therefore leaving more time to your operator for other actions.
Due to its high level of automation, it guarantees you a safe use with its flame and wire speed sensors. The Master Jet® Auto IV will automatically stop if there is any abnormal situation, such as the end of the wire, pressure supplies too low or gas tank getting empty.



OPTIMIZED DESIGN, FLEXIBLE

The MASTER JET® AUTO IV gun is very compact, only 240 x 94 x 125 mm and 2,5 Kg. It is delivered with a modular bracket to be fixed on a robot at different positions and angles. It is also possible to connect the hose package in a horizontal or vertical position according you needs.


Galvanized tubes


Paper

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Master Jet Auto IV - Touch screen display		
Siemens Mobile touch screen display – LCD TFT 7''- IP65 – 248 x 195 x 89 mm - 8 function keys + 2 illuminated buttons (START & STOP) - Integrated Emergency Stop (1,3 Kg) Wall-mounting bracket included (1 Kg)		
Length of the cable between control unit and screen	5m (other lengths upon request)	
Touch screen display operating conditions	Temperature	0 ... +45 °C (atmospheric)
	Relative humidity	10 ... 90%, without condensation
Functions		
User control	3 levels of access with password (Operator, Technician, Maintenance)	
Registration of spray parameters	Up to 99 recipes	
Recording of process data	Yes – can be extracted by USB key	
Remote control	Must be wired by the customer (connector included) : ignition, stand-by, spraying, stop, cooling of nozzles, wire boost (2nd wire speed).	
Communication with external systems (robot, X-Y axis manipulator, …)	Must be wired by the customer (connector included) : Emergency stop, torch default, spraying, selection 1st or 2nd wire advancement speed (WIRE BOOST).	
Access to set the sequences for ignition, spraying, stand-by and stop (time delay)		
Automatic flame detection, automatic ignition by incandescent igniter, ignition test, cleaning of the fluid circuits, cooling of nozzles, page to control state of input and output, cleaning of the igniter…		
Monitoring (alarms)		
Minimum flow rates for each gas	1 lower limit and 1 upper limit (%)	
Minimum pressure for each gas	1 lower limit Oxygen, Gas, Air	
Minimum wire advancement speed	2 lower limits and 1 upper limit (%)	

Master Jet Auto IV - Control unit					
Size (LxWxH)	1200 x 400 x 1100 mm (on 6 wheels)				
Weight	130 Kg				
Gas control unit (right side)					
Fluid circuits in stainless steel and brass					
Mass flow controller					
Oxygen	Up to 95 slpm at 4 Bar				
Acetylene*	or	Propane*	Up to 31 slpm at 1,4 Bar	or	Up to 20 slpm at 3 Bar
Air	Up to 640 slpm at 6 Bar				
Flow rates accuracy (mass flow controller)	+/- 2% of full scale				
Consistency of flow rates	> +/- 0.2% of full scale				
Flow rates unit	slpm				
Filter for each gas line	Pressure switch for each gas line		Gauge pressure for each gas line		
Gas leak detection IP67 for the fuel gas					
Electrical control unit (left side)					
Voltage supply	Single phase 220-240 V 50/60 Hz (110 V 50/60 Hz upon request)				
Consumption (full installation)	6 A max				
Motor electronic control board	Up to 36 VDC up to 5 A				
PLC	Siemens S7-1200				

Master Jet Auto IV - Gun	
Material feeding speed range (closed loop speed control)	0 to 8 m/min
Control of open/close feed rolls	Inductive sensor
Flame sensor to detect the presence of the flame - Automatic ignition with ceramic igniter (incandescent) - Control the material feed rate continuously and the presence of the material (during spraying) - Robot mounting bracket included - Vertical or horizontal hoses connections possible	
Weight	2,5 Kg
Size (LxWxH)	125 x 94 x 240 mm

Master Jet Auto IV – hose package
Length of the hose package: 10 m
Crimping of hoses according to EN 1256 – ISO 3821
Flashback arrestors and non-return valves according to EN 1256 – ISO 3821
Solenoid valves on oxygen and fuel gas (1.5 m behind the Master Jet Auto IV gun)

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