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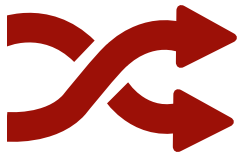
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IMPACT SPRAY SYSTEM EvoCSII

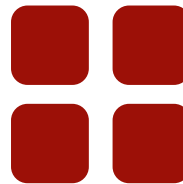
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Key facts:

- Increased nominal pressures of the individual system components
- Impact Gun 5/8 EvoCSII → 50 bar / 800 °C
- Impact Gun 6/11 EvoCSII → switchable 50 bar / 1100 °C and 60 bar / 1000 °C
- Impact EC-GM-Unit EvoCSII → 100 bar
- Impact Powder Feeder EvoCSII → 60 bar or 80 bar
- Impact PH-Unit EvoCSII → 100 bar
- Process gas nitrogen or helium (or a mixture of both)



2 Guns for
parallel operation



4 Powder Feeders
for parallel operation

The latest cold spray system from Impact Innovations is called Impact Spray System EvoCSII. All developments and experiences of the last ten years were used as the basis to design a perfectly coordinated plug and play solution. Impact Innovations achieved to offer customers consistently high quality for single part and series production based on a durable but also maintenance-friendly system architecture through intelligent process control.

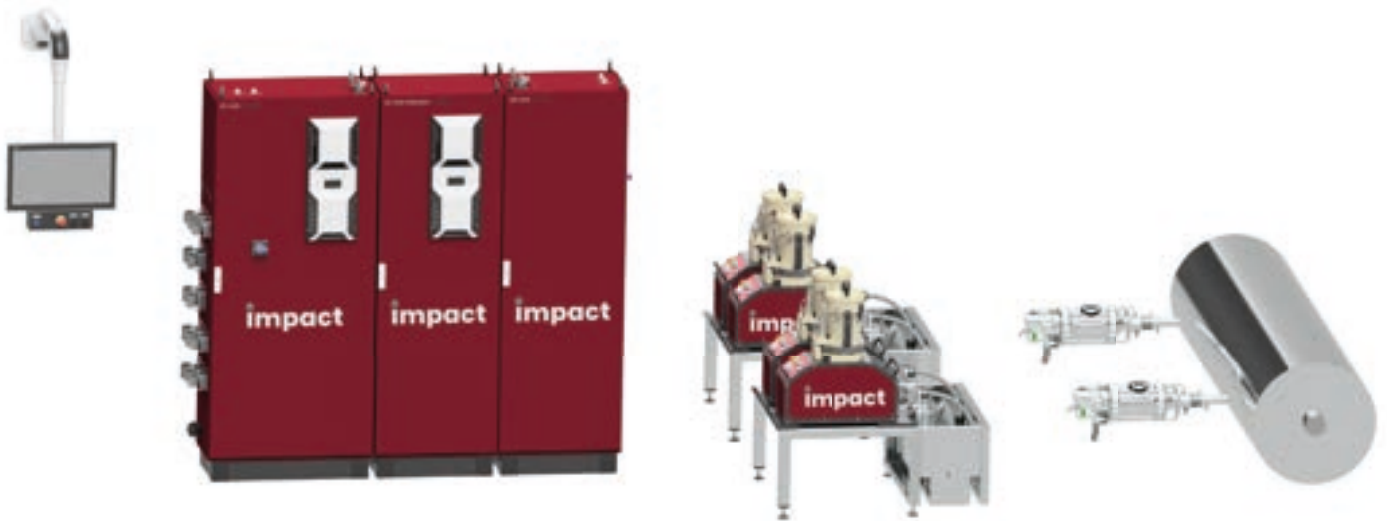
Due to the parallel operation of up to four Powder Feeders, the new Impact Spray System EvoCSII is great for serial production.

It is also possible to operate two Guns in parallel for double-sided coating or simply higher capacity. Thanks to a higher number of sensors, data recording and an integration in higher-level control, the process reliability increased significantly.

In addition, the Impact Spray System EvoCSII has a modular system structure, which can also be expanded as required at a later point in time. Furthermore, the necessary interfaces for future developments have already been integrated.

Benefits of the Impact Spray System EvoCSII:

- Compatibility of all existing accessories
- Generation and recording of all process data for quality assurance and documentation
- Open interface for integration in a higher-level controller
- Completely new software architecture, with a simplified and intuitive operating concept



Impact Spray System EvoCSII setup with four Powder Feeders and two Guns operating in parallel

IMPACT EC-GM-UNIT EvoCSII

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Key facts:

- Interfaces for integration in a higher-level control or safety system
- Generation and recording of all process data
- Separation of electrical and gas control unit
- Intuitive and simplified operating concept
- Modular design



The Impact EC-GM-Unit EvoCSII is the main control unit of the Impact Spray System EvoCSII. Operation takes place via a touch display, which is optionally available with a support arm or a pedestal. A self-regulating control cabinet cooling ensures the necessary temperature control of the EC-Unit EvoCSII and the EC-Unit-Extension EvoCSII.

The EC-Unit EvoCSII serves as an electrical interface to all components. Thanks to the complete integration of all components, they can be controlled and monitored from a central control panel. All process data are permanently captured and recorded.

The GM-Unit EvoCSII is the gas control unit of the Impact Spray System EvoCSII. It is responsible for regulating all process, carrier and control gases.

The EC-Unit-Extension EvoCSII is the optional electrical extension of the EC-Unit EvoCSII, which creates space for the control of the Impact PH-Unit EvoCSII and future system components.

Various accessories are available as an option. Such as an energy meter, a 100 A or 160 A transformer and the option of an uninterruptible control voltage supply. External interfaces such as a field bus gateway or potential free contacts are also available. In order to be able to provide help quickly if there are problems with the system, there is the option of remote maintenance.

Technical data

Compatibility	Impact Spray System EvoCSII	
Operating pressure	max. 100 bar	
Nominal - capacity	61 kW	
Nominal - voltage	400 V / 480 V / 3 Ph AC	
Input frequency	50 - 60 Hz	
Backup	max. 160 A	
Process gas	N2	He
Flow rate	Max. 175 m³/h i.S.	Max. 260 m³/h i.S.
Input pressure	70 - 100 bar	40 - 100 bar
Flow rate compressed air	max. 2.2 m³/h i.S.	
Input pressure compressed air	5.5 - 8 bar	
Carrier gas	N2	
Number of carrier gas line	1 - 4	
Dimension EC-Unit EvoCSII	889 x 460 x 1990 mm	
Weight EC-Unit EvoCSII	240 kg	
Dimension EC-Unit-Extension EvoCSII	601 x 460 x 1955 mm	
Weight EC-Unit-Extension EvoCSII	210 kg	
Dimension GM-Unit EvoCSII	653 x 425 x 1990 mm	
Weight GM-Unit EvoCSII	200 kg	
Operating temperature	5 - 50 °C	
Controle cable length display	5 - 20 m	
Sound pressure in 1 m distance	70 dB(A)	

GAS SUPPLY CONTROL PANEL - N2

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Key facts:

- Pressure regulation 0 - 100 bar
- Stable pressure at high gas flow
- Easy installation between gas supply unit and Impact EC-GM-Unit EvoCSII
- Disconnection from the supply network for maintenance work



The Gas Supply Control Panel - N2 is a pressure reducing unit which can connect any nitrogen gas supply system to the Impact-EC-GM-Unit EvoCSII. The component is designed for the control of a maximum inlet pressure of up to 200 bar. The two-stage pressure control includes two dome pressure reducer and ensures

stable process conditions. The outlet pressure can be regulated between 0-100 bar. In order to protect the following Impact spray system, a safety valve against excessively high pressures and a filter element against contamination are installed.

Technical data

Compatibility	Impact Spray System EvoCSII
Process gas	N2
Max. inlet pressure	200 bar
Outlet control range	0 - 100 bar
Safety valve	100 bar
Filter element	40 µm
Length	836 mm
Width	363 mm
Height	187 mm
Weight	37 kg

GAS SUPPLY CONTROL PANEL - He

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Key facts:

- Pressure regulation 0 - 100 bar
- Stable pressure at high gas flow
- Easy installation between gas supply unit and Impact EC-GM-Unit EvoCSII
- Disconnection from the supply network for maintenance work



The Gas Supply Control Panel - He is a pressure reducing unit which can connect any helium gas supply system to the Impact-EC-GM-Unit EvoCSII. The component is designed for the control of a maximum inlet pressure of up to 200 bar. The pressure control includes a dome pressure reducer and ensures stable process

conditions. The outlet pressure can be regulated between 0-100 bar. In order to protect the following impact spray system, a safety valve against excessively high pressures and a filter element against contamination are installed.

Technical data

Compatibility	Impact Spray System EvoCSII
Process gas	He
Max. inlet pressure	200 bar
Outlet control range	0 - 100 bar
Safety valve	100 bar
Filter element	40 µm
Length	617 mm
Width	363 mm
Height	187 mm
Weight	22 kg

IMPACT GUN 5/8 EvoCSII

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Key facts:

- Process gas pressure up to 50 bar
- Process gas temperature up to 800 °C
- Integrated heating with max. 34 kW heating capacity
- Compact and lightweight construction
- Air and water cooling of the nozzle possible



The Impact Gun 5/8 EvoCSII can reach a pressure of 50 bar and a process temperature of up to 800 °C. This makes it ideal for processing easily deformable materials. Due to the compact and lightweight design, it is also possible to coat components that are difficult to access. It is also equipped with an operating hours counter to enable conclusions to be drawn about the duration of use.

Process gas in the form of nitrogen or helium is heated inside the Impact Gun 5/8 EvoCSII.

This is done via an integrated heating filament through which an electric current flows. The process gas is heated while it is flowing through and then accelerated in a Laval nozzle. Powder particles are then injected into the gas flow and also accelerated. The Impact Gun EvoCSII is fully integrated into the control unit Impact EC-GM-Unit EvoCSII, which means that all relevant parameters can be called up and recorded at any time.

Technical data		
Compatibility	Impact Spray System EvoCSII	
Heating capacity	max. 34 kW	
Nominal - voltage	400 V / 480 V / 3 Ph AC	
Nominal – current consumption	60 A	
Process gas	N2	He
Max. pressure	50 bar	
Adjustment range pressure	5 - 50 bar*	
Max. heating temperature	800 °C	
Adjustment range temperature	50 - 800 °C*	
Heating capacity regulation	stepless	
Sound pressure in 1m distance	120 dB(A)	
Length (without nozzle)	621 mm	
Width	201 mm	
Height	223 mm	
Weight	21.5 kg	
Pressure vessel capacity	2.2 l	
Safety value pressure setting	52 bar	
Operating temperature	5 - 50 °C	
Cable and hose length	7 - 18 m	

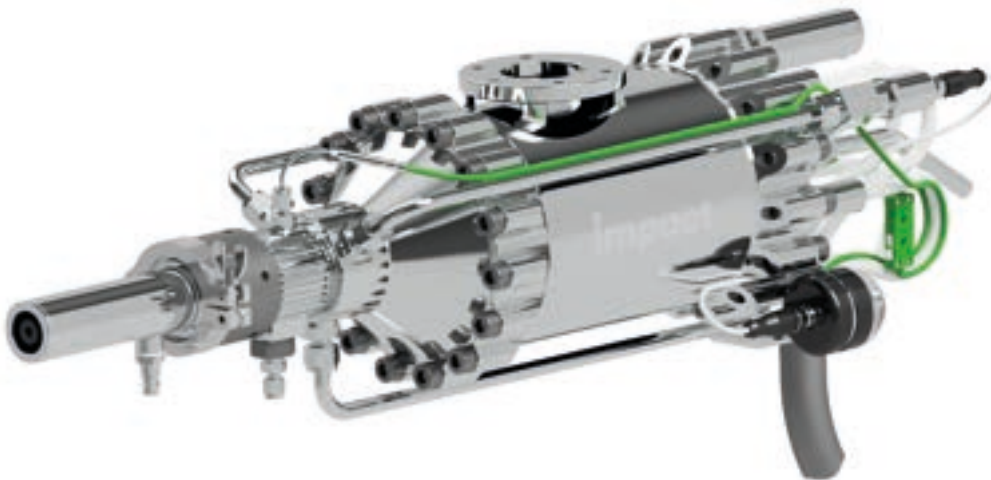
*If helium is used as the process gas, the maximum process parameter are different.

IMPACT GUN 6/11 EvoCSII

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Key facts:

- Suitable for the entire range of cold gas spraying
- Process gas pressure up to 60 bar
- Process gas temperature up to 1100 °C
- Integrated heating with max. 44 kW heating capacity
- Air and water cooling of the nozzle possible



The Impact Gun 6/11 EvoCSII can reach a pressure of 60 bar and a process temperature of up to 1100 °C. This makes it suitable for the entire range of cold gas spraying applications. It is also equipped with an operating hours counter to enable conclusions to be drawn about the duration of use.

Process gas in the form of nitrogen or helium is heated inside the Impact Gun 6/11 EvoCSII. This is done via an integrated heating fila-

ment through which an electric current flows. The process gas is heated while it is flowing through and then accelerated in a Laval nozzle. Powder particles are then injected into the gas flow and also accelerated. The Impact Gun 6/11 EvoCSII is fully integrated into the control unit Impact EC-GM-Unit EvoCSII, which means that all relevant parameters can be called up and recorded at any time.

Technical data		
Compatibility	Impact Spray System EvoCSII	
Heating capacity	max. 44 kW	
Nominal - voltage	400 V / 480 V / 3 Ph AC	
Nominal – current consumption	64 A	
Process gas	N2	He
Max. pressure	60 bar	
Adjustment range pressure	5 - 60 bar*	
Max. heating temperature	1100 °C at 50 bar / 1000 °C at 60 bar	
Adjustment range temperature	50 - 1100 °C*	
Heating capacity regulation	stepless	
Sound pressure in 1m distance	125 dB(A)	
Length (without nozzle)	625 mm	
Width	205 mm	
Height	223 mm	
Weight	27 kg	
Pressure vessel capacity	2.4 l	
Safety value pressure setting	62 bar	
Operating temperature	5 - 50 °C	
Cable and hose length	7 - 18 m	

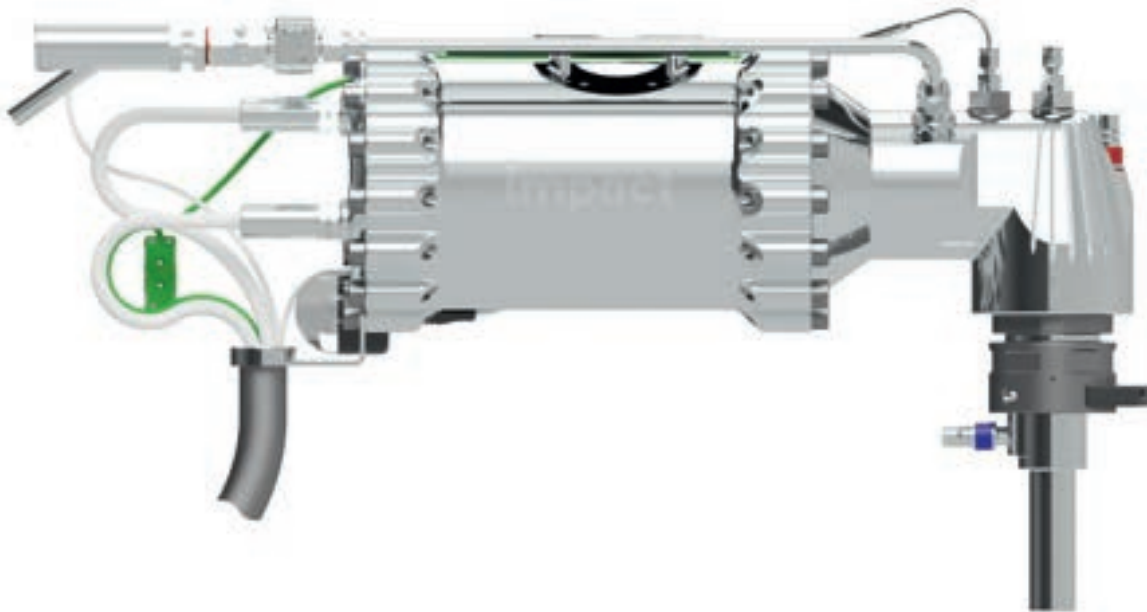
*If helium is used as the process gas, the maximum process parameter are different.

IMPACT GUN 6/11 AH EvoCSII

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Key facts:

- Suitable for the entire range of cold gas spraying
- Process gas pressure up to 60 bar
- Process gas temperature up to 1100 °C
- Integrated heating with a maximum heating capacity of 44 kW
- Water cooling of prechamber and injector possible
- Water cooling jacket for nozzle included



The Impact Gun 6/11 AH EvoCSII is a gun type that has been newly developed from scratch for the Impact Spray System EvoCSII, with which it is 100% compatible. Due to the axial injection of the powder into the process gas, it is not the powder jet that is deflected, as is the case with our other gun models, but the process gas. The Impact Gun 6/11 AH EvoCSII is able to introduce the metal powder centrally in the prechamber area with particular precision. The axial injection of the metal powder is particularly advantageous for

very fine and temperature-sensitive materials, as the risk of powder adhesion in the prechamber area and in the nozzle is greatly reduced. This new model of the gun can optionally be equipped with a water-cooled injector and an also optional water-cooled prechamber. In combination with the optimized water cooling of the nozzle, a constant temperature distribution in the entire front area of the gun is guaranteed. The heat input into the powder is additionally increased by the optional prechamber extension.

Technical data		
Compatibility	Impact Spray System EvoCSII	
Heating capacity	max. 44 kW	
Nominal - voltage	400 V / 480 V / 3 Ph AC	
Nominal – current consumption	64 A	
Process gas	N2	He
Max. pressure	60 bar	
Adjustment range pressure	5 - 60 bar*	
Max. heating temperature	1100 °C at 50 bar / 1000 °C at 60 bar	
Adjustment range temperature	50 - 1100 °C*	
Heating capacity regulation	stepless	
Sound pressure in 1m distance	125 dB(A)	
Length (without nozzle)	213 mm	
Width	190 mm	
Height	660 mm	
Weight	32.5 kg	
Pressure vessel capacity	2.4 l	
Safety value pressure setting	62 bar	
Operating temperature	5 - 50 °C	
Cable and hose length	7 - 18 m	

*If helium is used as the process gas, the maximum process parameter are different.

IMPACT WATER COOLING EvoCSII

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Key facts:

- Adjustable cooling temperature
- Less nozzle wear
- Avoiding nozzle clogging
- More consistent coating result
- Fully integrated in the control system



Due to the higher thermal capacity of the water, the Impact Water Cooling EvoCSII has a significantly stronger cooling capacity than the air cooling included in the standard scope of the Impact Spray System. This results in more constant coating parameters entailing even more consistent coating results.

By cooling the nozzle, it is kept at a consistently low temperature. Low nozzle temperature results in less wear, tear and lower risk of nozzle clogging.

An integrated tank heating means that the

temperature inside the tank can be continuously regulated. As the Impact Water Cooling EvoCSII is fully integrated into the system, desired values can be conveniently entered on the Impact Control Panel.

The stepless temperature control is achieved through the independent modulation of the cooling capacity. Furthermore, there is no need for additional connection lines, as all supply is provided by the control unit Impact EC-GM-Unit EvoCSII.

Technical data

Compatibility	Impact Spray System EvoCSII
Cooling capacity	12 kW
Volume flow medium circle	Max. 22 l/min
Temperature adjustment range	8 - 20 °C
Cooling capacity regulation	stepless
Sound pressure in 1m distance	< 70 dB(A)
Protection class	IP 54
Nominal – voltage	400 V / 3 Ph AC 440 - 480 V / 3 Ph AC
Control voltage	24 V DC
Nominal – power consumption at 400 V and 50 Hz	10.53 kW
Nominal – current consumption at 400 V and 50 Hz	16.1 A
Nominal – power consumption at 440 V – 480 V and 60 Hz	10.53 kW
Nominal – current consumption at 440 V – 480 V and 60 Hz	15.7 A
Length	1052 mm
Width	979 mm
Height	1863 mm
Empty weight	367 kg
Tank content	220 l
Primary medium	Water (distilled) Water (distilled) with glycol
Ambient temperature	- 15 °C to 40 °C
Cable length	1 - 20 m
Hose length	7 - 20 m

INJECTOR COOLING UNIT

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Quick-change mechanism

With the help of the quick-change mechanism, fast and easy dismantling and assembly of the quick lock water cooling jacket to the quick lock nut is possible. The new type of nozzle clamping avoids tension on the nozzle. In addition, the nozzle is secured against accidental fall out during dismantling by adhering to the special sealing ring.

By cooling the nozzle, it is kept at a constant low temperature. The lower the nozzle temperature, the lower the wear and tear and also the risk of nozzle clogging. The Impact Water Cooling EvoCSII has a significantly higher



cooling capacity than the air cooling included in the standard scope. This results in more constant coating parameters, involving a consistent coating outcome.

Seal system

Shrinking on the nozzle is no longer necessary with the new developed seal system, preventing possible seal or nozzle damage.

Cooling effect

Because of the optimized water guidance, the nozzle is cooled more evenly and effectively over the entire length. This reduces the risk of nozzle clogging. The increased cooling also reduces nozzle wear.

Dimensions

By revisioning the design, the nozzle cooling has become more compact. Now it is possible to better coat components that are difficult to access.

Water connections

The inclined arrangement of the water connections enables a tight hose routing on the gun. Also, the position of the connections can be variably adjusted. Color codings of the water connections reduce the risk of incorrect installation.

Technical data

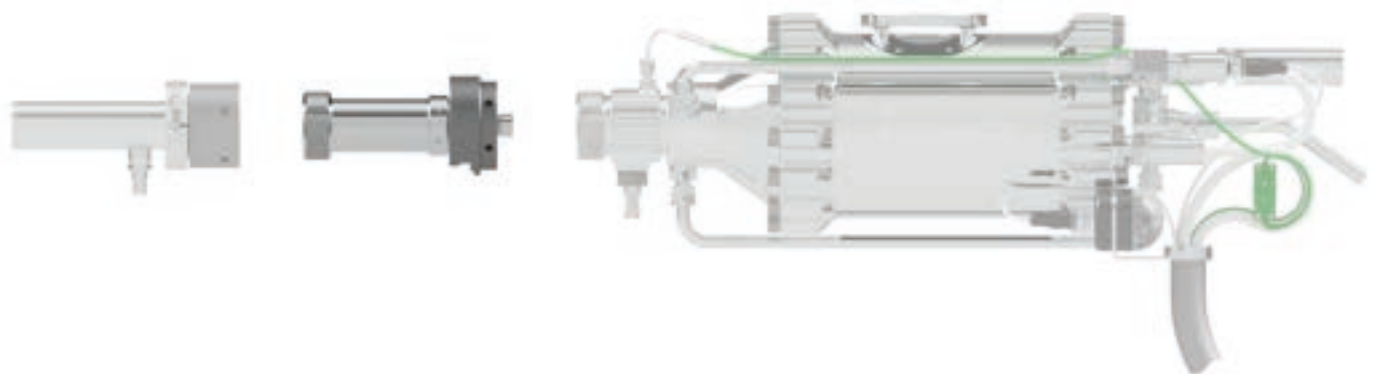
Volume flow cooling circuit	Max. 22 l/min		
Nozzle length	109.7 mm (OUT2)	160.8 mm (OUT1 / OUT5)	210.8mm (OUT3 / OUT4)
Cooling power	2.9 kW	4.4 kW	4.3 kW
weight (without nozzle)	1.6 kg	1.7 kg	1.8 kg
Length	130 mm	180 mm	230 mm
Width	86 mm		
Height	118 mm		
Hose length	3 - 20 m		
Cooling medium	Water (distilled) Water (distilled) with glycol		
Ambient temperature	5 - 50 °C		
Leakage control	weekly		
Compatibility	Impact Water Cooling 5/11		Impact Water Cooling EvoCSII

PRECHAMBER EXTENSION KIT

10108.00.0.00

Key facts:

- Higher heat input into the powder
- Standard lengths: 100 mm, 135 mm, 170 mm
- Compatible with all versions of the Impact Gun*
- Adaption of the component length on request



The Prechamber Extension Kit is an accessory for the Impact Gun and is used to extend the distance between the powder injection and the smallest cross-section of the laval nozzle. This component has a direct influence on the residence time of the powder in the high temperature area of the Impact Gun. As a result, the single powder particles can absorb more

heat and can be deformed easier when they hit the surface.

The Prechamber Extension Kit is compatible with all versions of the Impact Gun* as well as to the Central Injector Kit. It can be used at maximum gas pressure and maximum temperature.

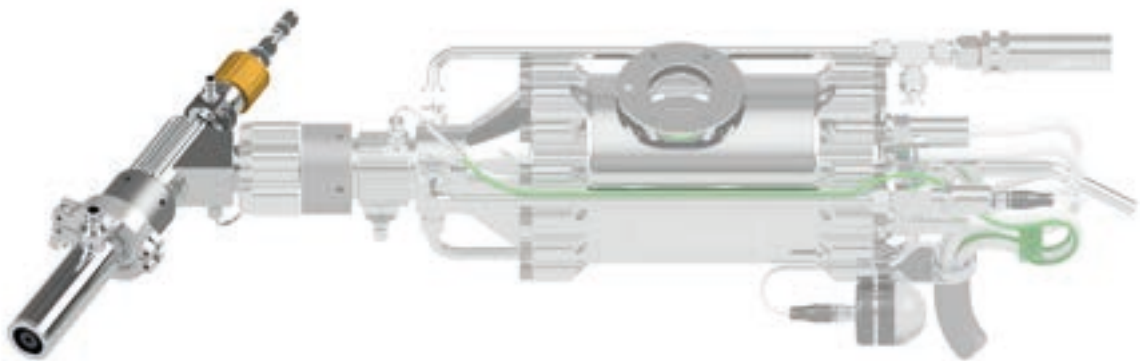
*Except for the Impact Gun 6/11 AH EvoCSII 10017.00.0.00, a specially adapted variant is available as an option.

CENTRAL INJECTOR KIT

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Key facts:

- Central injection of the powder
- Adjustable position of the powder injector
- Low risk of powder adhesion
- Compatible with all versions of the Impact Gun



The Central Injector Kit is an accessory for the Impact Gun. It enables a central powder injection into the convergent section of the laval nozzle. The optimized injection reduces the risk of powder adhesion for very fine and particularly temperature-sensitive powders, which increases the cost-effectiveness of the process. Depending on the requirements, the position of the powder injector can be changed mechanically.

An air-cooled powder injector is optionally available, which tends less to nozzle clogging due to its lower injector temperature. The component can be operated with maximum gas pressure and a maximum process temperature of 850 °C. It is also compatible with all versions of the Impact Gun.

COOLED POWDER INJECTOR

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Key facts:

- Central/axial injection of powder into the convergent section of the Laval nozzle
- Adaption to Central Injector Kit
- Cooling with compressed air
- Individual length
- Prevents injector clogging



The Cooled Powder Injector is an accessory part for the Central Injector Kit. It is connected to the Central Injector Kit and cools the injector tube with compressed air. This is useful for soft materials, which tend to stick to the injector. This assembly can be customized to individual length.

PORTABLE ADAPTOR FOR CENTRAL INJECTOR KIT

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Key facts:

- Flexible handling of the Central Injector Kit
- Compatible with all versions of the Impact Gun
- Hot gas hose length 2 m, 4 m
- Max. process temperature 600 °C
- Max. process pressure 45 bar



The Portable Adaptor for Central Injector Kit is an accessory for the Impact Gun. It can only be used in conjunction with the Central Injector Kit. Due to the separation of the Central Injector Kit and the Impact Gun a more flexible handling is possible. With the help of a compact manipulator system, the Central Injector Kit can reach areas of a component that are difficult to access.

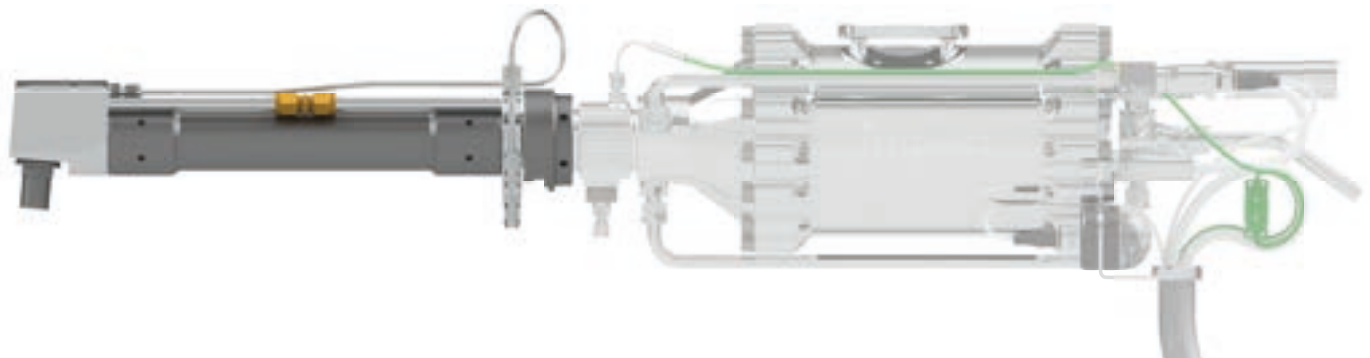
The length of the hot gas hose is 2 m and can be extended to 4 m optionally. The maximum process temperature of the Portable Adapter for Central Injector Kit is 600 °C and the maximum process pressure is 45 bar. Aside from that it is compatible with all variants of the Impact Gun.

ID COATING DEVICE

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Key facts:

- Minimum coating diameter Ø84 mm
- Water cooled spray head and nozzle
- Central and axial injection of powder into the laval nozzle
- Standard device length 350 mm
- Customized device length upon request



The ID Coating Device is a versatile accessory for coating internal diameters with maximum gas pressure and maximum temperature. This component is compatible with all versions of the Impact Gun, except of the Impact Gun 5/8, the Impact Gun 5/8 EvoCSII and the Impact Gun 6/11 AH EvoCSII.

The intelligent design guarantees intensive co-

oling of the spray head and the laval nozzle. This improves the hardware life as well as the cost-effectiveness of the process. The ID Coating Device must always be operated in conjunction with a water cooling system.

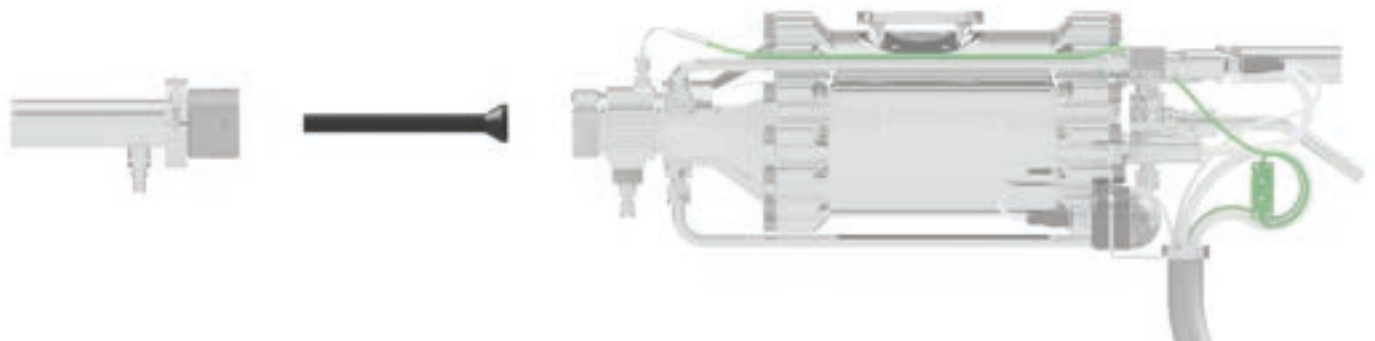
Internal diameter applications of cold spray coatings are used in aerospace, automotive and general engineering applications.

INJECTOR - OUT1 (SiC)

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Key facts:

- Universal nozzle for all types of powder
- Compatible with all versions of the Impact Gun
- Combination with various accessories possible
- Silicon carbide (SiC) nozzle



The nozzle Injector - OUT1 is an universal nozzle for all types of powders. Operation in conjunction with air or water cooling is recommended. This greatly reduces wear and tear and the risk of nozzle clogging.

The nozzle Injector - OUT1 is compatible with all versions of the Impact Gun. It can also be used in combination with various accessories.

The SiC - nozzle, with a low surface roughness on the inner contour, is extremely resistant to clogging and is therefore mainly suitable for softer materials.

Expansion ratio: 5.6

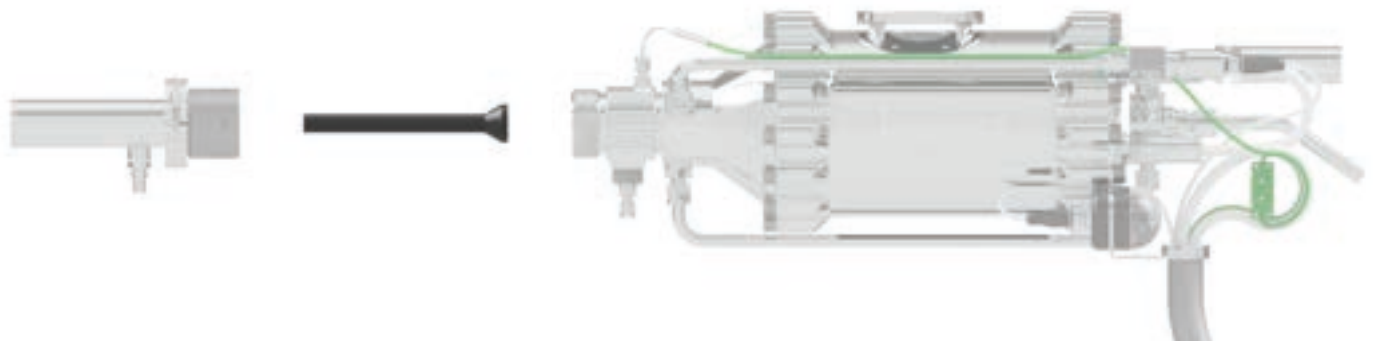
Total length: 160.0 mm

INJECTOR - OUT1 (WC)

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Key facts:

- Universal nozzle for all types of powder
- Compatible with all versions of the Impact Gun
- Combination with various accessories possible
- Tungsten carbide (WC) nozzle



The nozzle Injector - OUT1 is an universal nozzle for all types of powders. Operation in conjunction with air or water cooling is recommended. This greatly reduces wear and tear and the risk of nozzle clogging.

The nozzle Injector - OUT1 is compatible with all versions of the Impact Gun. It can also be used in combination with various accessories.

The WC - nozzle has a high wear resistance and is suitable for very hard materials.

Expansion ratio: 5.6

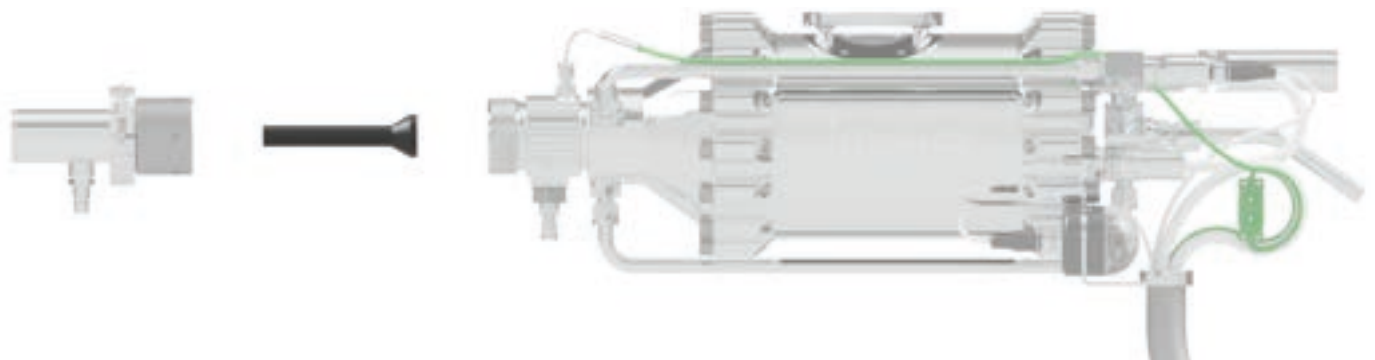
Total length: 160.0 mm

INJECTOR - OUT2 (SiC)

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Key facts:

- Less trend to nozzle clogging
- Compatible with all versions of the Impact Gun
- Combination with various accessories possible
- Silicon carbide (SiC) nozzle



The nozzle Injector - OUT2 is a shortened nozzle with a higher expansion rate. Operation in conjunction with air or water cooling is recommended. This greatly reduces wear and tear and the risk of nozzle clogging.

The nozzle Injector - OUT2 is compatible with all versions of the Impact Gun. It can also be used in combination with various accessories.

The SiC - nozzle, with low surface roughness on the inner contour, is extremely resistant to clogging and is suitable for nickel-based superalloys such as Inconel.

Expansion ratio: 10.0

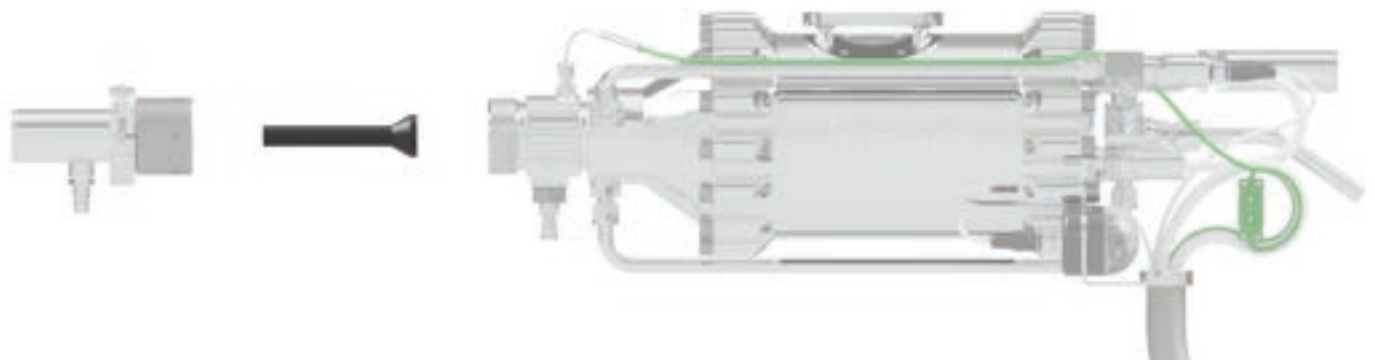
Total length: 109.7 mm

INJECTOR - OUT2 (WC)

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Key facts:

- Less trend to nozzle clogging
- Compatible with all versions of the Impact Gun
- Combination with various accessories possible
- Tungsten carbide (WC) nozzle



The nozzle Injector - OUT2 is a shortened nozzle with a higher expansion rate. Operation in conjunction with air or water cooling is recommended. This greatly reduces wear and tear and the risk of nozzle clogging.

The nozzle Injector - OUT2 is compatible with all versions of the Impact Gun. It can also be used in combination with various accessories.

The WC - nozzle has a high wear resistance and is suitable for very hard materials.

Expansion ratio: 10.0

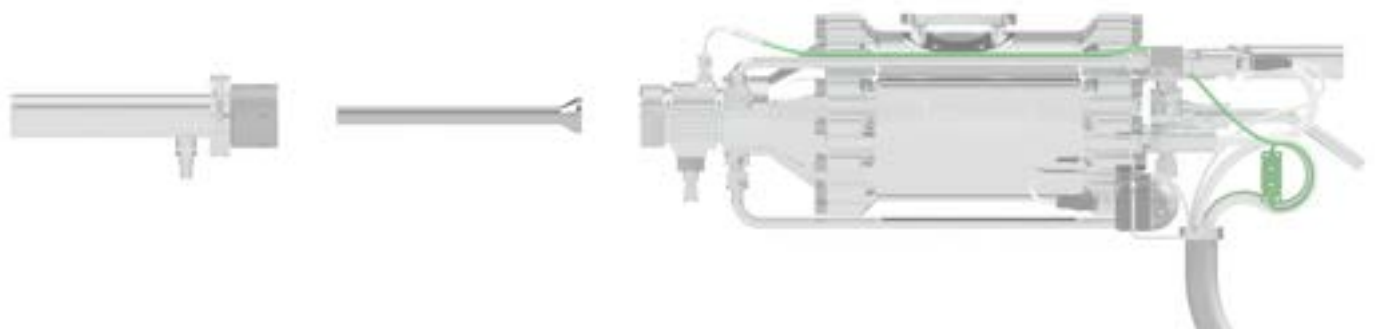
Total length: 109.7 mm

INJECTOR - OUT3

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Key facts:

- Specifically designed for spraying aluminium and aluminium alloys
- Nozzle core made of high-performance polymer
- Significant reduction in nozzle clogging risk
- Compatible with all variants of Impact Gun
- Suitable with various accessories



The Injector – OUT3 nozzle has been specifically developed for spraying aluminum alloys. Operation in combination with water cooling is recommended to significantly reduce the risk of nozzle clogging. The Injector – OUT3 is compatible with all variants of the Impact Gun and can also be combined with various additional components. Due to its polymer inner contour, the nozzle offers high resistance to clogging when spraying aluminum (Al 99.7, Al 99.99) and aluminum alloys (Al 7050, Al 7075, Al 6061). This enables long spraying durations with high

deposition rates – without nozzle clogging. Spraying of Al2024 is not recommended, as the melting range of the alloy is close to the nozzle working temperature and may lead to the polymer liner damage. The nozzle is designed for a maximum process gas temperature of 500 °C / 932 °F.

Expansion Ratio: 13.72

Overall Length: 210.8 mm

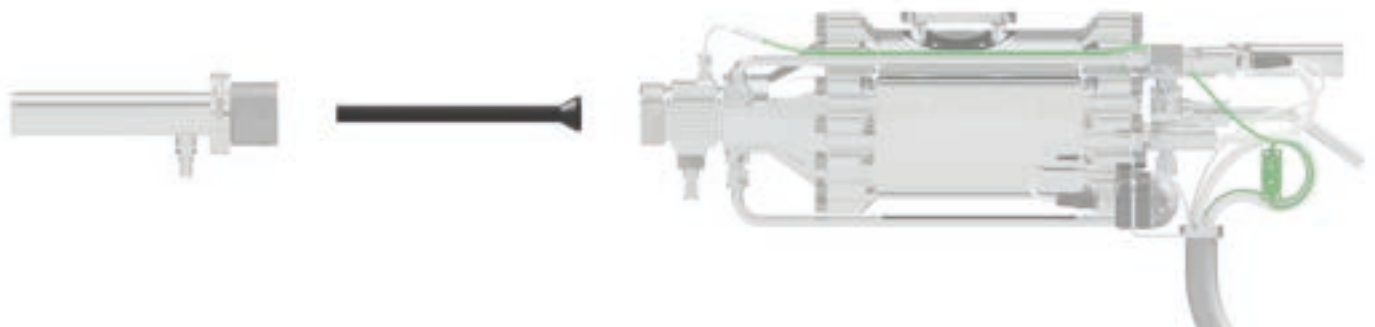
Material: Polymer + Stainless Steel

INJECTOR - OUT4 (SiC)

10205.00.0.01

Key facts:

- Higher particle velocity
- Compatible with all versions of Impact Gun
- Combination with various accessories possible
- Silicon carbide (SiC) nozzle



The nozzle Injector - OUT4 is an extended nozzle, especially for higher particle speeds. Operation in conjunction with air or water cooling is recommended. This greatly reduces wear and tear and the risk of nozzle clogging. The nozzle Injector - OUT4 is compatible with all versions of the Impact Gun. It can also be used in combination with various accessories.

The SiC - nozzle, with low surface roughness on the inner contour, is extremely resistant to clogging and is therefore mainly suitable for softer materials.

Expansion ratio: 7.6

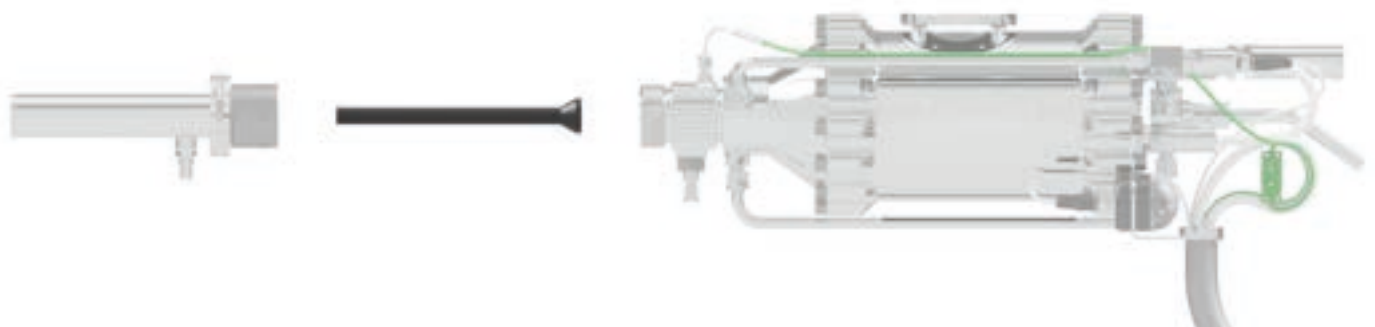
Total length: 210.8 mm

INJECTOR - OUT4 (WC)

10205.00.0.02

Key facts:

- Higher particle velocity
- Compatible with all versions of Impact Gun
- Combination with various accessories possible
- Tungsten carbide (WC) nozzle



The nozzle Injector - OUT4 is an extended nozzle, especially for higher particle speeds. Operation in conjunction with air or water cooling is recommended. This greatly reduces wear and tear and the risk of nozzle clogging. The nozzle Injector - OUT4 is compatible with all versions of the Impact Gun. It can also be used in combination with various accessories.

The WC - nozzle has a high wear resistance and is suitable for very hard materials.

Expansion ratio: 7.6

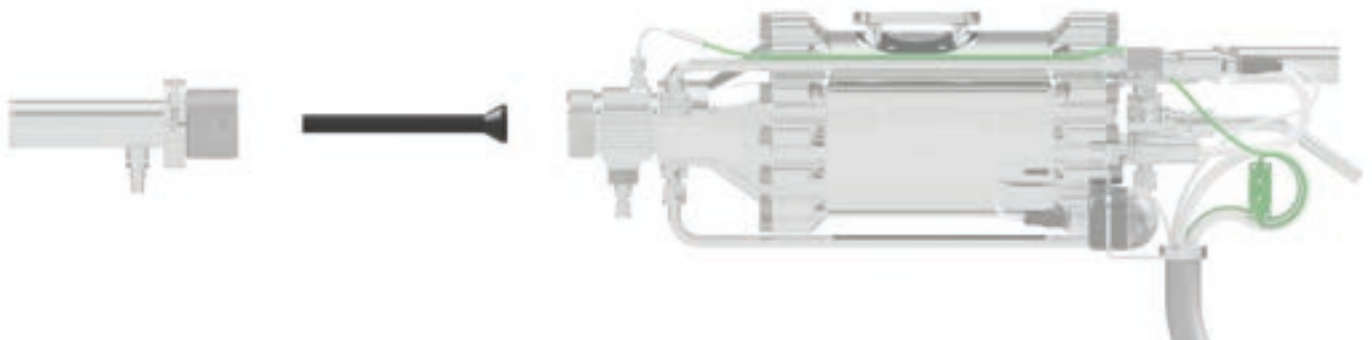
Total length: 210.8 mm

INJECTOR - OUT5 (SiC)

10206.00.0.01

Key facts:

- Higher helium parameters possible
- Lower helium consumption
- Compatible with all versions of Impact Gun
- Combination with various accessories possible
- Silicon carbide (SiC) nozzle



The nozzle Injector - OUT5 is a nozzle that is specially designed for the use of helium as process gas. Thanks to the smaller nozzle throat, the helium consumption is up to 30% lower and higher process parameters can be reached. Operation in conjunction with air or water cooling is recommended. This greatly reduces wear and tear and the risk of nozzle clogging.

The nozzle Injector - OUT5 is compatible with all versions of the Impact Gun. It can also be used in combination with various accessories.

The SiC - nozzle, with low surface roughness on the inner contour, is extremely resistant to clogging and is therefore mainly suitable for softer materials.

Expansion ratio: 5.6

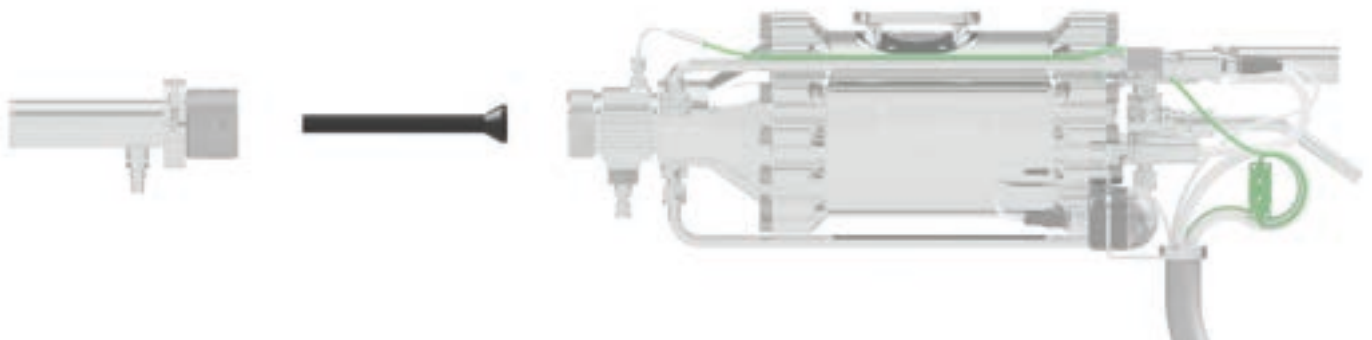
Total length: 160.0 mm

INJECTOR - OUT5 (WC)

10206.00.0.02

Key facts:

- Higher helium parameters possible
- Lower helium consumption
- Compatible with all versions of Impact Gun
- Combination with various accessories possible
- Tungsten carbide (WC) nozzle



The nozzle Injector - OUT5 is a nozzle that is specially designed for the use of helium as process gas. Thanks to the smaller nozzle throat, the helium consumption is up to 30% lower and higher process parameters can be reached. Operation in conjunction with air or water cooling is recommended. This greatly reduces wear and tear and the risk of nozzle clogging.

The nozzle Injector - OUT5 is compatible with all versions of the Impact Gun. It can also be used in combination with various accessories.

The WC - nozzle has a high wear resistance and is suitable for very hard materials.

Expansion ratio: 5.6

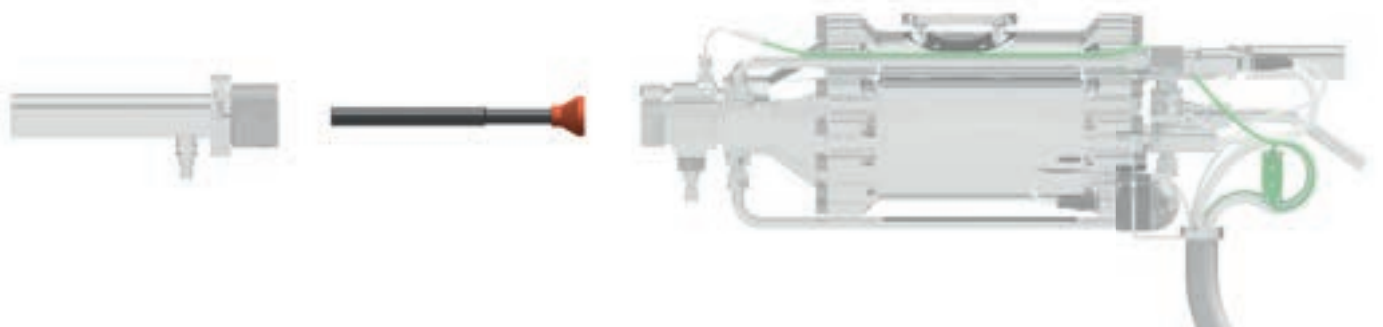
Total length: 160.0 mm

INJECTOR - OUT7

10213.00.0.00

Key facts:

- Successor to the proven OUT3 nozzle
- For pure aluminum and aluminum alloys
- Copper inlet for improved cooling
- Advanced polymer design with optimized geometry for reduced stress cracking
- Compatible with all Impact Gun variants and various add-on components



The Injector Nozzle - OUT7 is the optimized further development of the OUT3 and was specifically designed for spraying aluminum and aluminum alloys. A modified geometry and improved cooling at the inlet and in the throat area ensure higher thermal stability and reduced stress on the polymer core - stress cracks occur less frequently. The Injector Nozzle - OUT7 is compatible with all variants of the Impact Gun and is ideally suited for repair applications and use in the aerospace sector. In addition, it can be used with various optional components.

The material combination of copper and high-performance polymer ensures thermal stability and high clogging resistance - especially with aluminum (Al 99.7, Al 99.99) and aluminum alloys (Al 7050, Al 7075, Al 6061). Spraying Al 2024 is not recommended, as the melting range of this alloy is close to the operating temperature of the nozzle, which may cause damage to the polymer casing.

Maximum process gas temperature: 550 °C | 1022 °F

Expansion ratio: 13.7

Total length: 191.2 mm

Material: Copper + High-performance polymer

INJECTOR - IN2 (SiC)

10207.00.0.01

Key facts:

- Minimum coating diameter Ø107 mm
- High particle velocity
- Silicon carbide (SiC) nozzle



The nozzle Injector - IN2 is designed for the ID Coating Device and is suitable for bores with a minimum diameter of Ø107 mm. Due to the length of the nozzle, a high particle velocity is reached.

Operation is only possible in conjunction with water cooling. This greatly reduces wear and tear and the risk of nozzle clogging.

The SiC - nozzle, with a low surface roughness on the inner contour, is extremely resistant to clogging and is therefore mainly suitable for softer materials.

Expansion ratio: 12.5

Total length: 78.0 mm

INJECTOR - IN2 (WC)

10207.00.0.02

Key facts:

- Minimum coating diameter Ø107 mm
- High particle velocity
- Tungsten carbide (WC) nozzle



The nozzle Injector - IN2 is designed for the ID Coating Device and is suitable for bores with a minimum diameter of Ø107 mm. Due to the length of the nozzle, a high particle velocity is reached.

Operation is only possible in conjunction with water cooling. This greatly reduces wear and tear and the risk of nozzle clogging.

The WC - nozzle has a high wear resistance and is suitable for very hard materials.

Expansion ratio: 12.5

Total length: 78.0 mm

INJECTOR - IN3 (SiC)

10208.00.0.01

Key facts:

- Minimum coating diameter Ø84 mm
- Silicon carbide (SiC) nozzle



The nozzle Injector - IN3 is designed for the ID Coating Device and is suitable for bores with a minimum diameter of Ø84 mm. Operation is only possible in conjunction with water cooling. This greatly reduces wear and tear and the risk of nozzle clogging.

The SiC - nozzle, with a low surface roughness on the inner contour, is extremely resistant to clogging and is therefore mainly suitable for softer materials.

Expansion ratio: 12.5

Total length: 55.0 mm

INJECTOR - IN3 (WC)

10208.00.0.02

Key facts:

- Minimum coating diameter Ø84 mm
- Tungsten carbide (WC) nozzle



The nozzle Injector - IN3 is designed for the ID Coating Device and is suitable for bores with a minimum diameter of Ø84 mm. Operation is only possible in conjunction with water cooling. This greatly reduces wear and tear and the risk of nozzle clogging.

The WC - nozzle has a high wear resistance and is suitable for very hard materials.

Expansion ratio: 12.5

Total length: 55.0 mm

IMPACT POWDER FEEDER EvoCSII

10008.00.0.00

Key facts:

- Uniform conveyance of the powder
- Fully integrated in the control system
- Conveyor discs can be exchanged
- Delivery pressure up to 80 bar
- Convenient changing and cleaning of the powder container



The Impact Powder Feeder EvoCSII conveys the powder particles evenly through a powder pipe to the Impact Gun with the help of the carrier gas.

The basic body of the Impact Powder Feeder EvoCSII is designed for an operating pressure of up to 100 bar. The vessel and the conveyor unit are available in two different versions. On the one hand in 60 bar and on the other hand in 80 bar operating pressure, whereby the respective variants are protected against incorrect installation with a code. An adjustable vibrator is used to transfer poorly flowing powder to the conveyor unit. The vibrations loosen up the powder, which provides a better flow.

A conveyor disc is included as standard in the scope of delivery. Additional conveyor disks can be purchased depending on the powder properties.

The Impact Powder Feeder EvoCSII is fully integrated into the control unit Impact EC-GM-Unit EvoCSII, so that all relevant parameters can be called up and recorded at any time.

For removal and cleaning, the powder vessel including the conveyor unit can be easily removed from the Impact Powder Feeder EvoCSII and can be replaced immediately with another. This avoids long downtimes and the process can be continued quickly. The cleaning and replacement of wearing parts is very user-friendly thanks to the well thought-out design. In addition, it is equipped with an operating hours counter, which allows conclusions to be drawn about the duration of use.

Technical data			
Compatibility	Impact Spray System EvoCSII		
Process gas	N2		
Variants	60 bar		80 bar
Pressure vessel capacity	3.2 l		2.4 l
Length	657 mm		
Width	265 mm		
Height	685 mm		693 mm
Weight	49 kg		51 kg
Conveyor discs	10002.03.0.08	10002.03.0.09	10002.03.0.10
Number of holes	120	240	492
Hole diameter	3 mm	1.5 mm	1.5 mm
Hole volume	2.968 cm ³	1.424 cm ³	3.043 cm ³
Rotational speed conveyor disc	0 - 14 min ⁻¹		
Nominal - capacity	90 W		
Nominal - voltage	24 V DC		
Nominal - consumption	6 A		
Operating temperature	5 - 50 °C		
Powder pipe length	3 m		
Cable and hose length	1 - 20 m		

IMPACT PH-UNIT EvoCSII

10007.00.0.00

Key facts:

- Increased mechanical properties
- Higher deposition efficiency
- Improved powder properties
- More extensive parameter configuration
- More even heating of the particles



With the help of the Impact PH-Unit EvoCSII powder preheater developed by Impact Innovations, the temperature of the carrier gas can be increased significantly. This also increases the temperature of the powder to be processed after the Impact Powder Feeder EvoCSII up to the Impact Gun.

Due to the higher injection temperature of the powder-gas mixture, there are even more options for improving the layer properties, depending on the material. This makes it possible to

create an even more variable configuration of the process parameters in order to achieve an optimal layer structure.

Because of the increased powder temperature, the mechanical properties can be improved. For example, the deformability of the individual particles can be increased, which among other things can improve the deposition efficiency.

In addition, the porosity of the layers of some materials can be reduced.

Technical data

Compatibility	Impact Spray System 5/11	Impact Spray System EvoCSII
Heating capacity	3 kW	
Powder pipe variant	thermally insulated (3 m) electrically heated (4 m)	
Heating capacity powder pipe	950 W	
Max. powder pipe heating temperature	350 °C	
Carrier gas	N2	
Max. pressure	100 bar	
Max. heating temperature	400 °C	
Setting range temperature	50 - 400 °C	
Heating capacity regulation	stepless	
Length	560 mm	
Width	349 mm	
Height	307 mm	
Weight	23 kg	
Operating temperature	5 - 50 °C	
Cable length	1 - 20 m	

IMPACT PF-STATION EvoCSII

10011.00.0.00

Key facts:

- Operation of up to four powder feeders simultaneously
- Ergonomic working height
- Variable placement of the connections
- Safe storage of the powder feeder
- Reduced noise emissions thanks to a central ventilation line



The Impact PF-Station EvoCSII offers space for up to four Impact Powder Feeder EvoCSII. Depending on your needs, you can choose between two and four parking spaces. The two parking spaces can easily be expanded to four parking spaces. An X-connector enables four Impact Powder Feeder EvoCSII to be used at the same time. If an Impact Powder Feeder EvoCSII has to be serviced, the emergency stop circuit can be closed with the blind plate supplied. Therefore it is possible, depending on the existing configuration, to continue the process with an Impact Powder Feeder EvoCSII less. Each parking space is anchored in the

system with a permanently assigned number in order to avoid mix-ups.

Equipping the Impact PF-Station EvoCSII is easy and safe thanks to the guidance of the legs. The Impact Powder Feeder EvoCSII is placed in the elongated hole guides and can then easily slide towards the pipe connections. The working posture is much more ergonomic due to the height of the Impact PF-Station EvoCSII, since the Impact Powder Feeder EvoCSII is accessible in an upright position. In order to reduce noise emissions, the ventilation can simply be routed into the soundproofed spray booth.

Technical data

Compatibility			Impact Spray System EvoCSII
Variants	1 - 2 PF		3 - 4 PF
Weight	54 kg		80 kg
Length	1032 mm		1694 mm
Width		893 mm	
Height		510 mm	

POWDER SWAP CONTAINER (60 BAR)

10008.00.0.00-1.1

Key facts:

- Fast and easy exchange
- Cleaning and powder changing on separate location
- Variable use through free assignment
- Productivity increase



The Powder Swap Container 60 bar is an accessory for the Impact Powder Feeder EvoCSII. With the help of it, the efficiency of the Impact Spray System can be increased once again. If powder has to be refilled, this can be done in advance with the additional container. This reduces the waiting time to just changing the container, which is only a few seconds thanks to the locking bolts. This results in higher productivity because unnecessary downtimes are avoided.

Furthermore, refilling and cleaning can take place in a separate location during the process. Because the Powder Swap Container 60 bar is not directly assigned to a powder feeder, it can be used variably.

The assembly includes the following components:

- 10002.05.0.00 Cap complete
- 10008.03.0.00 Conveyor unit complete
- 10008.04.0.00 Powder vessel complete

Technical data

Compatibility	Impact Spray System EvoCSII
Operating medium	N2
Max. operating pressure	62 bar
Safety valve	62 bar
Pressure vessel volume	3.2 l
Ambient temperature	5 - 50 °C
Length	258 mm
Width	240 mm
Height	404 mm
Weight	23 kg

POWDER SWAP CONTAINER (80 BAR)

10008.00.0.00-2.1

Key facts:

- Fast and easy exchange
- Cleaning and powder changing on separate location
- Variable use through free assignment
- Productivity increase



The Powder Swap Container 80 bar is an accessory for the Impact Powder Feeder EvoCSII. With the help of it, the efficiency of the Impact Spray System can be increased once again. If powder has to be refilled, this can be done in advance with the additional container. This reduces the waiting time to just changing the container, which is only a few seconds thanks to the locking bolts. This results in higher productivity because unnecessary downtimes are avoided.

Furthermore, refilling and cleaning can take place in a separate location during the process. Because the Powder Swap Container 80 bar is not directly assigned to a powder feeder, it can be used variably.

The assembly includes the following components:

- 10002.05.0.00 Cap complete
- 10008.05.0.00 Conveyor unit complete
- 10008.06.0.00 Powder vessel complete

Technical data

Compatibility	Impact Spray System EvoCSII
Operating medium	N2
Max. operating pressure	82 bar
Safety valve	82 bar
Pressure vessel volume	2.4 l
Ambient temperature	5 - 50 °C
Length	260 mm
Width	240 mm
Height	412 mm
Weight	25 kg

CONVEYOR DISC (Ø3 x 120)

10002.03.0.08

Key facts:

- Flexible operating range
- 120 holes
- Volume: 2.968 cm³



The Conveyor Disc 10002.03.0.08 is a standard disc for all versions of the Impact Powder Feeders. This Conveyor Disc is recommended for a variety of powders, but especially for powders with poor flowability. Replacing the Conveyor Disc is quick and easy.

In order to influence the powder feed rate, the following factors must be considered:

- Volume of Conveyor Disc
(number and design of holes)
- Rotating speed of the Conveyor Disc
- Flowability and apparent density of the powder

CONVEYOR DISC (Ø1,5 x 240)

10002.03.0.09

Key facts:

- Quick and easy replacement
- Ideal for low and precise powder feedrates
- 240 holes
- Volume: 1.424 cm³



The Conveyor Disc 10002.03.0.09 is an optional disc for all versions of the Impact Powder Feeders. The use of this Conveyor Disc is recommended when low and precise powder feed rates are required. Replacing the Conveyor Disc is quick and easy.

In order to influence the powder feed rate, the following factors must be considered:

- Volume of Conveyor Disc
(number and design of holes)
- Rotating speed of the Conveyor Disc
- Flowability and apparent density of the powder

CONVEYOR DISC (Ø1,5 x 492)

10002.03.0.10

Key facts:

- Quick and easy replacement
- Ideal for powders with good flowability
- Homogeneous feed rate and uniform coating
- 492 holes
- Volume: 3.043 cm³



The Conveyor Disc 10002.03.0.10 is an optional disc for all versions of the Impact Powder Feeders. This Conveyor Disc is recommended when using powders with good flowability. Due to the design of the Conveyor Disc, the powder feed rate is more homogeneous and the deposited coating is very uniform. Replacing the Conveyor Disc is quick and easy.

In order to influence the powder feed rate, the following factors must be considered:

- Volume of Conveyor Disc (number and design of holes)
- Rotating speed of the Conveyor Disc
- Flowability and apparent density of the powder

MIXING CHAMBER KIT

10104.00.0.00

Key facts:

- Connection between two Impact Powder Feeders and the Impact Gun
- Spraying two powders with different properties
- Spraying with a double feed rate
- Simple installation



The Mixing Chamber Kit is designed for simultaneous or parallel operation of two Impact Powder Feeders connected to the Impact Gun.

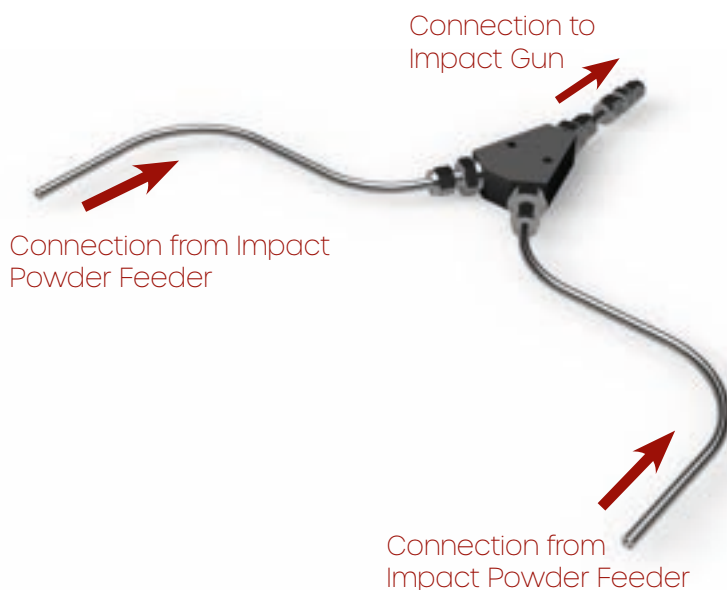
The device has similar benefits like the Y - Piece Kit (10106.00.0.00) but additionally ensures proper mixing of two different powders before being injected into the Laval nozzle. Especially when powders of different specific

weight and / or apparent density will be used, the Mixing Chamber Kit is an advanced tool. It is designed to be operated at maximum gas pressure and temperature.

Y - PIECE KIT 10106.00.0.00

Key facts:

- Connection between two Impact Powder Feeders and the Impact Gun
- Allows filling up one Impact Powder Feeder while process is still running
- Spray two different powders one after another
- Spraying with a double feed rate
- Simple to install between the Impact Powder Feeder and the Impact Gun
- Useful for grit blasting and preventive nozzle cleaning



The Y - Piece Kit is designed for simultaneous or parallel operation of two Impact Powder Feeders connect to the Impact Gun.

The device has a lot of characteristics and is perfect for the serial production. To refill the Impact Powder Feeder, it is not necessary to shut down the system. Another advantage is that you can double the feed rate when two Powder Feeders are adapted to the system. It is also possible to spray one powder and switch to another, during the operation of the system.

It is designed to be operated at maximum gas pressure and temperature.

HALL FLOWMETER KIT

10101.00.0.00

Key facts:

- The flowability of the powder can be ascertained quickly and precisely
- Different batches of powders can be compared
- A minimum of 10 measurements should be performed
- All components are safely stored in a handy suitcase



The Hall Flowmeter Kit (DIN EN ISO 4490) can ascertain the flowability of a powder quickly and precisely by determining the mobility of the powder particles in relation to each other. The measured value is expressed by the time required for 50 grams of metal powder to flow through a calibrated funnel.

The Hall Flowmeter Kit is stored in a suitcase that includes:

- Scale
- Stopwatch
- Measuring cup
- Comparative sand
- Description

SCOTT VOLUMETER KIT

10102.00.0.00

Key facts:

- The test sample should have at least 100 cm³ in order to prepare a minimum of three individual samples
- The feed rate can be determined theoretically
- All components are safely stored in a handy suitcase



The Scott Volumeter Kit is designed to determine apparent density of the different powders as per DIN ISO 3923. Due to the different apparent density small deviations in particle size and structure can be detected.

The results of the measurements help to find out the powder feed rates.

The Scott Volumeter Kit is stored in a suitcase that also includes:

- Scale
- Measuring cup
- Description