ROBOTICS

RB1000i

Connected Atomizer - Optimize and secure paint quality and uptime

The Connected Atomizer is the first connected, sensor-equipped, robotic paint atomizer that allows real-time smart diagnostics by providing an environmentally friendly system turnkey solution for increasing uptime and ensuring zero quality defects.

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01 Comparison with conventional model
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02 BOC function: BOC (Bell cup Outside Cleaning) function, which automatically flushes the rim back of the bell cup
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03 SFC function: SFC (SA nozzle Face Cleaning) function, which automatically flushes the SA nozzle surface that has the small air discharge holes

The RB1000i increases transfer efficiency by 10%[01], reduces paint loss inside atomizer during color changes by 75%, and reduces compressed air consumption by 20%, in total to save customers cost.

Digitally enabled paint atomizer
The Connected Atomizer is the first connected, sensor-equipped, robotic paint atomizer allows for real-time smart diagnostics and precise paint control to optimize painting quality. This new level of digitalization supports robot users' transition towards the factory of the future. By monitoring the condition of key atomizer components such as bell cups, air motors, and shaping air ring, as well as variables such as acceleration, pressure, vibration and temperature, the painting transfer efficiency can be boosted by up to 10%. This also eliminates the need for costly downtime for repainting or touchups.

First-in-class in terms of performance
This paint atomizer increases transfer efficiency by 10%, reduces internal atomizer waste during color changes by 75%, and reduces compressed air consumption by 20% which can collectively save millions of dollars.

The atomizer adapts the SA (shaping air) nozzle with the super pattern control function in which the range of the effective pattern width is wider than before. This function results in minimizing over spray by controlling the dual shaping airs individually and switching to the optimum pattern width for the shape of the object being painted.

Contribution to improving paint line operation rate
The atomizer also adopted both the conventional BOC function[02] and the SFC function[03]. These functions make possible to automatically clean the inside of the bell cup and at the same time automatically clean the rim back of the bell cup and the SA nozzle surface that has the small air discharge holes. The automated production line does not require to stop temporarily in order to remove dirt adhered near the air discharge holes, which contributes to the reduction of maintenance time and to the improvement of the paint line operation rate.

Features
Cost reduction[01]
- Transfer efficiency: +10%
- Color change loss inside atomizer: -75%
- Required bearing air pressure: 6 bar
- Air consumption: -20%
- Ease of maintenance
- Robust air motor with longer life time
- Modular design, common parts across different variants
- Weight: -17%
- Ex certification: Zone 1

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01 The weight differs depending on the specification
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02 These are the values when the flow rate is 400 cc/min. For other conditions or details, please contact ABB
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03 The maximum flow rate differs depending on paint viscosity or built-in paint tube
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04 These are general values and do not necessarily guarantee quality
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05 The sensor is optional
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06 A reader of the RFID tags is optional

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Technical information

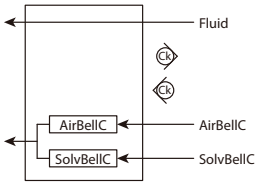
Specifications		
RB1000i		
Bell cup		ø70 (BOC), ø40 (BOC)
Shaping air nozzle		
Function		• Super pattern control function • SA nozzle face clenaning (SFC) function
Effective spray pattern Width	ø70	250~500 mm
	ø40	60~400 mm
High voltage		
Charging method		Internal charge
Voltage applied		Max. -90 kV
HV current		Max. 150 µA
Set rotation speed		Max. 60,000 rpm
Weight [01]		Approx. 8.8~9.0 kg
Total air consumption [02]	ø70	695~1565 Nl/min
Paint Flow rate [03 04]	ø70	100~1000 cc/min
Sensor [05]		• Vibration sensor • Gyroscope • Temperature sensor
RFID tag [06]		• Bell cup • SA nozzle • Air bearing motor

Paint solution			
	SSD type	SAD type	S2K type
Automobile			
Exterior	x	x	x
Interior	x	x	x
Bumper	x	x	x
Part	x	x	x
General Industry			
Large	x	x	x
Small	x	x	x

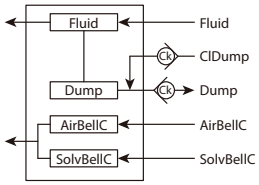
Paint type			
	SSD type	SAD type	S2K type
Primer paint	x	x	x
Base paint	x	x	x
Clear paint	x	x	x
Solventborne			
1K paint	x	x	-
2K paint	x	-	x
Waterborne (non-electrostatic type only)			
1K paint	x	x	-
2K paint	x	-	x

Valve configurations

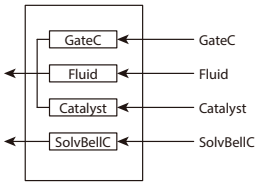
SSD type



SAD type

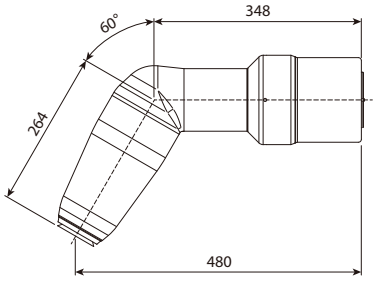


S2K type



Dimensions

RB1000i



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