



**Compact package for high-speed rotation atomization:
The modular TOPFINISH Bell 2 system sets new standards and makes coating with high-speed rotation easier than ever. For excellent results with an innovative air guide ring.**

- Excellent atomization with maximum transfer efficiency
- Combination of high-speed rotation atomizer TOPFINISH Bell 2 and control unit WACON Spray as an attractive overall package
- Modular concept enables individual adaptation to a wide range of applications and coating systems
- Meets the highest safety standards with global certification
- Low operating costs & minimal maintenance





TF RobotBell 2
High-speed rotation atomizer for robot applications

WACON Spray
Modular control system for integration
into a wide variety of coating systems



The TF Bell 2 system: Compact, powerful and easy to integrate

High-speed rotation atomization easier than ever: With the modular system solution consisting of the high-speed rotation atomizer TF Bell 2 and the WACON Spray control unit. Perfectly coordinated components combine to create a powerful overall package that significantly simplifies many tasks related to setting, monitoring and maintaining the coating system.

Operation is so intuitive that you can concentrate on achieving excellent results – whether you are an experienced user or a newcomer to high-speed rotation technology. Thanks to its modular concept, the TF Bell 2 system can be easily integrated into a wide variety of coating systems and adapted to any coating requirement.

Processable materials

- Solvent-based 1K/2K paints
- Water-based 1K/2K paints
- UV coatings
- Micro anti-corrosion coatings (e.g. zinc flake)
- Low to high viscosity materials



TOPFINISH Bell 2 system



TF Bell 2S

High-speed rotation atomizer for linear axes, reciprocators and fixed installations



WAMOD and WACAS function modules

Individual setup for each installation

Advantages of the TF Bell 2 at a glance

- Extremely high transfer efficiency of up to 90%
- Excellent spray pattern with particularly fine atomization
- Compact systems thanks to integrated high-voltage cascade
- Service-friendly design for easy installation, maintenance and cleaning
- Flexible integration into individual coating systems
- Large selection of air guide rings, bell plates and nozzles

Advantages of WACON Spray at a glance

- Central control of relevant bell parameters
- Intuitive touchscreen operation
- Flexible integration into individual coating systems (modular concept with basic device and expansion modules)
- Customizable range of functions for both beginners and experienced high-end users
- Various interfaces to external control systems can be selected
- Control of up to four bells



Typical areas of application of high-speed rotation atomization

- Automotive components (e.g. plastic and metal parts for exterior and interior use, wheels)
- Components for agricultural & construction machinery
- Plastic components
- Wood (e.g. furniture, window frames, kitchen fittings)
- Glass (e.g. bottles, cosmetic products)

TF Bell 2: Precision meets performance

The high-speed rotation atomizer sets standards in quality and efficiency. With high-quality components, innovative design, a large selection of accessories and flexible configuration options, it is the ideal choice for excellent surface results in the top finishing sector. Whether complex geometries or high cycle rates – the TF Bell 2 masters every challenge in automatic liquid coating.

Unique efficiency

The TF Bell 2 has a very low air and material consumption. Depending on the material, flow rate and workpiece, a transfer efficiency of up to 90% can be achieved at a very high working speed.



Bell plate: 30 mm, 50 mm, 70 mm (not shown)

Air guide rings: 30 mm, 50 mm, 70 mm

Easy cleaning

The air guide ring can be dismantled, making it very easy to clean the air outlet slots. The one-piece design of the bell plate also makes cleaning easier and prevents paint deposits inside the bell – for reliable coating processes.

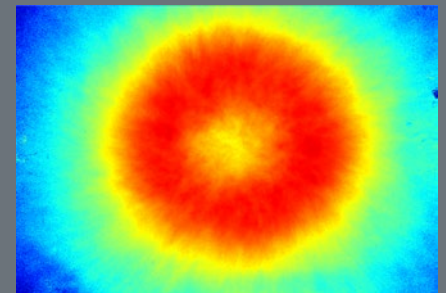
Excellent spray pattern with precise adjustment

The innovative design of the air deflector rings with slit-like air outlet slots ensures particularly even air distribution. The result is a homogeneous spray pattern with excellent surface quality.

Depending on the shape and size of the workpiece and the type of material, the appropriate bell cup size and serration can be selected. This results in a spray pattern range from 80 to 800 mm. The spray jet width can be adjusted extremely precisely.



Dynamic spray pattern



Static spray pattern

Compact design thanks to integrated cascade

With 8 watts, the integrated high-voltage cascade offers sufficient power for all common solvent applications as well as for water-based applications with small paint kitchens (up to approx. 60 liters). Alternatively, an external cascade can be used for applications with higher performance requirements (such as water-based applications with larger paint kitchens or larger systems, e.g. in wheel coating).

TOPFINISH Bell 2



Wide range of applications

Different production environments place changing demands on the coating system. Thanks to its modular concept, the TF Bell 2 can be easily adapted to changing conditions:

- TF RobotBell 2: For robot applications
- TF Bell 2S: For linear axes, reciprocators or fixed installations

The gun adapter makes it easy to switch from bell to airspray gun – ideal for flexible production environments. All material and air hoses can be used for both types of application.

Configurations without high voltage are also possible, e.g. for the use of highly viscous materials.

Color change within a few seconds

The TF Bell 2 is equipped with a modular, expandable valve block. This means that a second color can already be supplied and used immediately after flushing the first color circuit. Color changes between two colors are therefore possible within a few seconds. This saves an enormous amount of time, reduces the consumption of flushing agent and enables high cycle rates even with changing coating materials.

Long service life thanks to robust valves

Needle valves can be used for all standard paint materials. Diaphragm valves are used in particular for abrasive materials and are especially suitable for light- or moisture-sensitive substances due to their hermetic seal. The valves are extremely durable, even in harsh operating environments. Thanks to the small valve size, the atomizer is very compact and maneuverable. This means that even difficult areas on complex workpieces can be reached effortlessly.

Service-friendly design for easy installation and maintenance

The specially developed quick-change system makes installation and maintenance particularly easy: Thanks to the innovative strain relief, hoses and cables can be replaced quickly and easily without having to disassemble the atomizer. Bell cups, nozzles and valves are also easy to change.



WACON Spray: Modular control platform for maximum flexibility

Whether beginner or professional: With the WACON Spray control unit, the TF Bell 2 is particularly easy to operate and ready for use in next to no time, without any prior programming. The control concept has a modular design so that it can be flexibly adapted to a wide range of coating systems and requirements.

Wide range of configuration options

The control system consists of several components that can be individually coordinated depending on requirements.



The modular design with mounting brackets and two interchangeable housing fronts enables flexible mounting options.

WACON Spray

- Stand-alone device with touchscreen operation
- 19-inch rack mounting or desktop installation
- Fieldbus connection
- Supports up to 2 WAMOD plug-in modules

WACON Extension

- Extension without operating elements
- 19-inch rack mounting or desktop installation
- Connection to WACON Spray via Modbus RTU
- Supports up to 2 WAMOD plug-in modules

By changing the front and side panel, the connections can be arranged at the rear (WACON Spray Rear) or at the side (WACON Spray Side). This way, you always have optimum access to the controls and connections in any installation situation.

WAMOD plug-in modules

The system has a modular structure. With the available function modules, WACON Spray can be configured to fit the system perfectly. Only the components currently required are installed – changes can be made at any time without any problems.



WAMOD hvrs

- Plug-in module for WACON Spray or WACON Extension
- Control of high voltage and rotation speed

WAMOD afc2

- Plug-in module for WACON Spray or WACON Extension
- 2-channel volume flow air control

WACAS function modules

- Stand-alone modules for direct connection to a higher-level system control (PLC)
- Cost-effective solution without own HMI
- Compact dimensions, suitable for mounting in robot arms
- Integrated control loops ensure reliable operation (simple control via setpoint specification, via Modbus RTU or Ethernet IP (additional module))

WACAS hvrs

- Control of high voltage and rotation speed

WACAS afc3

- 3-channel volume flow air control
- Channel 3 can optionally be used as a proportional valve with pressure control

WACON Spray



Scalable system sizes for up to four bells

Up to four bells can be controlled simultaneously via WACON Spray. Only additional function modules (WACAS & WAMOD) are required for this. The entire system is operated centrally via WACON Spray.



Intuitive control of all relevant parameters

All relevant bell parameters (including turbine speed, bearing air, high voltage, shaping airs, material pressure) are controlled centrally via an intuitive touchscreen with a 7-inch display. Parameter settings can be easily saved and recalled via the recipe management – ideal for both series processes and frequently changing applications.

Modular design for flexible configuration

WACON Spray can be configured to suit a wide range of coating systems:

- Stand-alone solution with touchscreen function modules
- Remote-controlled by higher-level control system, e.g. PLC or robot control
- Fully integrated in PLC or robot control (without operating elements, only WACAS function modules)
- Basic or extended functions for different requirements in terms of process reliability and convenience (entry-level to high-end users)

Wide range of connection options

- WAGNER bus
- Digital/analog interfaces (freely configurable)
- PROFINET fieldbus

Adaptable to a wide range of coating requirements

The control unit can be configured for different operating modes: Voltage- or current-controlled high-voltage control, with or without high-voltage/electrostatic control of a material pressure regulator in conjunction with a diaphragm pump or pressure tank.

Quick adjustment of the turbine speed

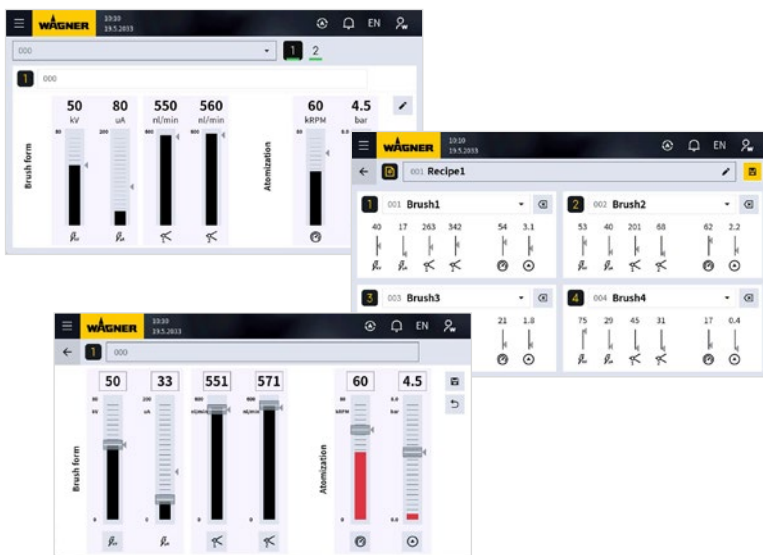
The closed control loop with active brake control enables the desired speed to be set precisely and very quickly, even under load changes or when different speeds are required for coating a workpiece. This ensures a precise spray pattern and high process stability.

Volume flow-based air control for maximum process reliability

WACON Spray uses innovative volumetric flow control instead of conventional pressure control to adjust the shaping airs. The results, which can be reproduced at any time, enable recipes to be transferred between different systems or when the system is converted.

Safe operation

The control unit meets the highest safety standards at PL-d level and reliably prevents sparking during the coating process.



TF Bell 1

The high-speed rotation atomizer variants with internal charging are equally suitable as all-round devices for water-based and solvent-based paints.

TF RobotBell 1

Mounting on robots



Typical areas of application

- Automotive industry (e.g. interior & exterior components, rims)
- Components for agricultural & construction machinery
- Plastic components
- Furniture, window frames
- Bicycles
- Glass
- Other general industrial applications



Processable materials

- Solvent-based 1K/2K paints
- Sol-gel materials
- UV coatings
- Water-based 1K/2K paints
- Micro anti-corrosion coatings

TF Bell 1S

Mounting on reciprocators and linear axes



Special advantages

- Proven and robust high-speed rotation atomizer for a wide range of applications
- Particularly low air consumption
- Option to install a mixer for 2K applications
- Two completely separate flush and drain circuits for the use of two different flushing agents
- Associated control cabinet RBC 1E offers comprehensive functions including safety-relevant releases

High efficiency

Depending on the material, flow rate and workpiece, a transfer efficiency of over 80% can be achieved. An air duct that diverts exhaust air to the rear further optimizes the coating result.

Wide range of applications

Large selection of bell plates to match the workpiece and material used. The bell head of the TF RobotBell 1 can be easily replaced with an airspray gun adapter. This makes it possible to switch quickly between airspray and bell applications.

Fast color change

Various valve blocks, selectable with one or two valves, together with an integrated drain valve, enable a quick color change within just five seconds. Manual flushing is not necessary.

Optimal control

Combination with the RBC 1E control unit: Switching of all bell-relevant parameters including high voltage and speed. Control of the valves and all safety-relevant functions in accordance with standards. Voltage- or current-controlled operation possible. Optionally with external control.

Other high-speed rotation atomizers

TF Bell ECH: Special solution for water-based paints

The high-speed rotation atomizers with external charge (ECH) have been specially developed for demanding coatings with water-based paints.

TF Bell 1S ECH

Mounting on reciprocators and linear axes



TF RobotBell 1 ECH

Mounting on robots



Special advantages

Ideal solution for water-based paints

The high voltage emitted via the electrode ring ionizes the ambient air in such a way that the sprayed material is charged. The grounded workpiece is electrostatically coated. External charging significantly reduces the system costs for water-based applications.

Flexible use

Thanks to the modular concept, the high-speed rotation atomizers can also be converted to a version with internal charging for use with solvent-based paints in just a few minutes. Materials with higher viscosity can also be processed well.

Typical areas of application

- Interior & exterior components of automobiles
- Wood
- Metal
- Glass
- General industrial applications



Bell plate 60 mm



Bell plate 28 mm

Variants

Preconfigured WACON Spray plug & play units

Order number	Description	WACON 19" device	HMI	WAMOD plug-in module	External WACAS cassette module	Analog / digital / I/Os	Modbus RTU	PROFINET	External 24V power supply	Connections	HV regulation	Speed control	Control channels for shaping air
WACON control units													
2474517	WACON Spray Rear basic unit	●	●			●	●			rear			
2474521	WACON Spray Rear Profinet basic unit	●	●			●	●	●		rear			
2474528	WACON Spray Side Profinet basic unit	●	●			●	●	●		side			
2470945	WACON Spray Rear hvrs afc2	●	●			●	●			rear	1	1	2
2474518	WACON Spray Rear hvrs	●	●			●	●			rear	1	1	
2474520	WACON Spray Rear hvrs hvrs	●	●			●	●			rear	2	2	
2474522	WACON Spray Rear Profinet hvrs	●	●			●	●	●		rear	1	1	
2474523	WACON Spray Rear Profinet hvrs afc2	●	●			●	●	●		rear	1	1	2
2474524	WACON Spray Rear Profinet hvrs hvrs	●	●			●	●	●		rear	1	1	
2474525	WACON Spray Side hvrs	●	●			●	●			side	1	1	
2474526	WACON Spray Side hvrs afc2	●	●			●	●			side	1	1	2
2474527	WACON Spray Side hvrs hvrs	●	●			●	●			side	1	1	
2474529	WACON Spray Side Profinet hvrs	●	●			●	●	●		side	2	2	
2474530	WACON Spray Side Profinet hvrs afc2	●	●			●	●	●		side	1	1	2
2474531	WACON Spray Side Profinet hvrs hvrs	●	●			●	●	●		side	2	2	
2474513	WACON Extension hvrs afc2	●				●	●			rear	1	1	2
2474514	WACON Extension hvrs hvrs	●				●	●			rear	2	2	
Function modules													
2465058	WAMOD hvrs			●			●				1	1	
2465064	WAMOD afc2			●			●						2
2465078	WACAS hvrs				●		●		●		1	1	
2465216	WACAS afc3				●		●		●				3

● = Included in the configuration

High-speed rotation atomization

Technical data

Overview of high-speed rotation atomizers

	TF Bell 2S	TF RobotBell 2	TF Bell 1S	TF RobotBell 1	TF Bell 1S ECH	TF RobotBell 1 ECH
Use in	Reciprocators / linear axes	Robot applications	Reciprocators / linear axes	Robot applications	Reciprocators / linear axes	Robot applications
Charging	Internal				External	
Cascade	Internal (8 W) Optional: External / without HV		External			
Max. voltage	80 kV (internal cascade) 100 kV (external cascade)		100 kV	70 / 100 kV	80 kV	
Control unit	WACON Spray WACAS		RBC 1E			
Shaft bearing	Air bearing					
Drive air pressure	0 - 8 bar					
Brake air pressure	0 - 6 bar					
Steering air pressure	0.2 - 4.5 bar					
Material pressure	Typical 0.5 - 2.0 bar Max. 8 bar					
Bearing air pressure	5.5 bar					
Max. material temperature	+ 50 °C					
Ambient temperature	0 °C to + 40 °C					
Temperature turbine air	+ 15 °C to + 50 °C					
Nozzle size	∅ 0.5 / 0.8 / 1.1 / 1.4 / 1.7 mm		∅ 0.8 / 1.1 / 1.4 / 1.7 mm			
Bell plate	30 / 50 / 70 mm Smooth, straight or cross-serrated // Consistal / titanium				28 / 43 / 60 mm Smooth, straight or cross-serrated // Titanium	
Air deflector rings	30 / 50 / 70 mm				28 / 43 / 60 mm	
Spray jet diameter	approx. 70 - 800 mm					
Flow rate	25 - 800 ml					
Valve block / number of colors	1 / 2				1	
Gun adapter	●	●	●	●		
Cable for speed measurement	Electrical cable		Fiber optic cable			
Hose quick-change system	●	●				
Certification	ATEX Zone 1, Div I Class 1*		ATEX zone 2			
Weight	5.1 kg (1 color)	5.4 kg (1 color)	4 kg (1 color)	5.4 kg (1 color)	7.4 kg	8.2 kg
Order number configurator	9500677	9500677	2373517	2373517	2421053	2421053

● = Standard range of functions

*Certification for internal cascade for solvent-based materials in progress

Configuration room

TOPFINISH Bell 2

	Options
Bell type	0 degree 60 degree
Number of colors	1 2
Valve type	Needle Diaphragm
Dump valve	Yes No
Main valve	Yes No
Internal flush	Yes No

	Options
Speed monitoring (SM)	with SM (0 degree) with SM (60 degree) without SM
Cascade	internal external without cascade
Bell plate diameter	30 mm 50 mm 70 mm
Serration bell disk	smooth straight cross-serrated
Bell plate material	Aluminum Titanium
Nozzle size	0.5 0.8 1.1 1.4 1.7 mm



Configure your individual solution:
With the WAGNER configurator at
<https://wagner365.com>



go.wagner-group.com/bell2