

ROBOTICS

FeatherDuster

Cleaner automation



Traditionally, purpose built “tack-off” machines have handled the painstaking task of removing dust and dirt particles from a vehicle before it is painted on an assembly line. ABB’s FeatherDuster system replaces these one-dimensional machines with an unheard of level of precision, control and flexibility by combining a standard ABB robot with an advanced rotating feather and vacuum tool to suck particles from the surface of the vehicle.

Easy programming and control

The FeatherDuster is controlled through ABB’s simple, familiar and time-tested user interface. Via the FlexPendant attached to the IRC5 Controller, users can program the entire cleaning cycle without the need for any additional software tools. In addition, PC-based virtual programming and simulation with ABB’s RobotStudio software saves time and allows fast path generation, simple setup, and robust backup/restore at a click of the mouse.

Reliable performance with high-quality production

Unique 3D control of the duster head in complete synchronization with the movement of the conveyor leads to more precise and thorough cleaning. FeatherDuster can follow the contours of the car’s shape and conduct cleaning in a more efficient manner.

The FeatherDuster system advances vehicle paint lines by replacing purpose-built “tack off” machines with robotic technology that is incredibly flexible and built on well-established standards to achieve higher quality, efficiency and ease of use.

The system’s rotating feathers clean dust from the surface, which is then sucked from the feathers by a vacuum. With each rotation, the feathers are de-ionized to release the dust and prepare for another pass over the vehicle surface.

A compact, flexible and efficient solution

The robotic cleaning system has a much smaller footprint than traditional solutions and fits any station layout making it simple and quick to integrate into new or existing paint lines. The FeatherDuster system has fewer rollers and a lower vacuum requirement than purpose-built tack-off machines, meaning it consumes less energy and further adds to your company’s bottom line.

Smart investment

ABB offers a cost-effective solution that is scalable with 2 or 3 robots based on the required conveyor speed. The system can also be easily reprogrammed as new models of all sizes are introduced to the line, without the need for specialists. Because it relies on well-established and time-tested robotic technology, FeatherDuster has incredible uptime and reliability. When it does need servicing, replacement parts are easy to come by and can be delivered very quickly to ensure a minimum of down time.

Key figures	
Weight	140 kg
Roller speed	10 - 90 rpm
Roller power	0.37 kW
Exhausting air	10 m ³ /min @ 1000 Pa per roller
Compressed air supply	1.5 m ³ /min @ 3.5 bar per robot Exhausting air 10 m ³ /min at 1000 Pa
Downdraft air velocity	0.3 m/s (± 0.05)
Humidity	60 - 70%
Temperature	20 - 25 °C
Convey system	Swing tolerance ≤ 25 mm

Features and benefits

- Compact design; very small factory floor footprint
- Low investment cost and high energy efficiency
- Precise and flexible movement for effective cleaning
- High reliability (MTBF > 50,000 h), easy maintenance
- Modular design and convenient/fast installation
- Easy programming and control with familiar, time-tested tools

IRB 6700 robot FeatherDuster

- 01 Ostrich roller
- 02 Ionization unit
- 03 Exhaust system
- 04 Process cabinet
- 05 Robot cabinet

