



# ATN

## ATN – Partner to the automotive industry in the application technology

As a specialist for application technology, ATN stands for quality, dependability and innovation. Our know-how is based on over 20 years of experience in the application technology with a focus on the automotive industry. In this industry, ATN works in the car body production, paint shop and final assembly supplying individual systems, integrated systems and complete cells. Our customers can choose

between several systems depending on the material, the project scope and the overall process. We have branches in Spain, United States, Brazil and China to guaranty timely responses, local contact personnel and our proven ATN-quality. Additionally, ATN offers a 24 hour spare parts emergency service.

## Utilization of application technology in the automotive industry

- AUTOMOTIVE**
- anti-flutter gluing
  - hem flange bonding
  - structural bonding
  - hybrid bonding systems
  - sealant applications
  - seam sealer
  - underbody application
  - car body foaming
  - 2K-applications
  - quarter glass gluing
  - moonroof and window glue systems
  - DVD-gluing (roof reinforcement)
  - tub gluing for spare tires, antennas and batteries
  - miscellaneous parts
  - endless door sealing
  - VIN scribe (Vehicle Identification Number)

- SOLAR**
- frame gluing
  - junction box gluing
  - junction box sealing
  - brick gluing
- GLOBAL INDUSTRIES**
- 1K-applications for round and profile beads
  - 2K-applications for round and profile beads
  - flat stream applications
- CLEANING AND ACTIVATION**
- cleaning of surfaces with wet-chemical cleaners
  - application of adhesives
  - application of activators
- PUR-FOAMING**
- soft foam
  - rigid foam
  - integral foam

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 ISO 9001

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## Application solution for the cleaning and activation of surfaces

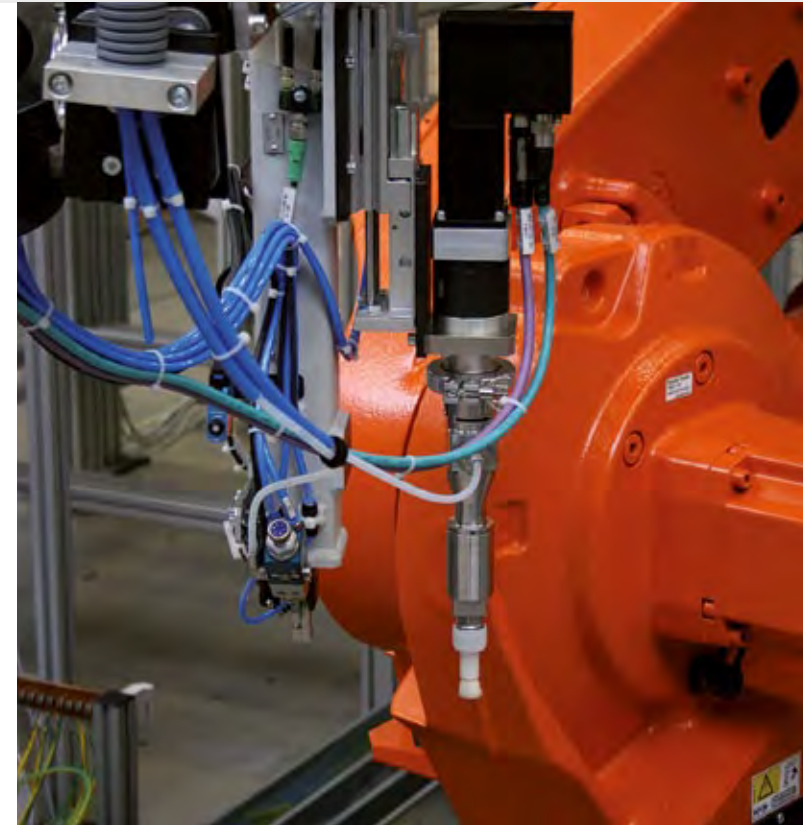
The pre-treatment of surfaces before the application of adhesives is necessary to achieve an ideal bond between two elements and the adhesive. This process is divided into cleaning and activation of the surface.

During the cleaning, contaminations such as dust and grease are removed from the surface. This process mainly utilizes wet-chemical cleaners, primarily alcohol and ketone. In recent years, cleaning by gas-based plasma increased. However, there are limits to the application of this process.

Surface activation creates a surface with specific qualities. In an ideal case, surface activation creates countless functional groups with which the adhesive can react. This process usually requires a bonding agent.

Similar to the cleaning, this process utilizes wet-chemical systems. Alternatives are gas-based plasma, flame impingement or the SaCo-process. Important here is the group of activators, which integrates both functions. It is used to reactivate a surface previously treated with a bonding agent to clean and activate after a period of time. This process utilizes the Wipe-On/Wipe-Off concept.

ATN offers several application solutions for cleaning and activating surfaces with a wet-chemical process and all other proven and tested products, which are used in the automotive industry as well as other industries. Since they are developed as Plug&Play systems, these components can be modified to customer specifications and can be integrated in any automated production process. ATN also offers complete automated concepts for implementation.



### Processable materials with ATN equipment:

- heptane
- isopropanol
- solvent borne bonding agents
- solvent borne bonding agents with grime additives
- bonding agents on a water basis
- activators

## Application process

There are three separate techniques when it comes to the application of a cleaner, primer or activator. The selection is made based on the element, the surface and the processed material. Additional concerns such as safety and health regulations as well as fire prevention during application play a role in the decision making process.

### SPRAYING

- suitable for uneven and rough surfaces
- spraying with a spray head
- wide area of application
- free of wear and tear
- risk of overspray

### FELTING

- application with a soaked felt piece
- felt wears and needs to be replaced
- also suitable for wiping after spray application
- limited application area
- crisp and clean application

### BRUSHING

- suitable for even and smooth surfaces
- application with a soaked brush
- brush deteriorates and needs to be replaced
- limited application area
- crisp and clean application

## DISPENSER ESP

### Features and advantages

- continuous application – refilling piston is not necessary
- precise dosing with repeatability of over 99 %
- volumetric discharge
- gentle and pulsation-free dispensing
- speed electronically controlled
- residue-free design
- spot and bead applications without material accumulations at start and stop
- anti-dripping mechanism
- maintenance friendly
- valve free
- independent from viscosity tolerances
- flexible application angles due to cavity pump system
- stainless steel finish
- heating (optional)

### Processable product specifications

- from low to medium viscosity
- highly filled materials
- abrasive materials
- shear sensitive materials
- aggressive materials

### General technical data

inlet pressure	0–20 bar
doser pressure max.	0–40 bar
temperature	0–80 °C
revolution speed max.	200 U/min-1

### Technical data

<b>DISPENSER ESP 30</b>	
dosing volume	0.15 ml/min-1
volume flow	1.0–30 ml/min-1
dosing minimum	0.01 ml

<b>DISPENSER ESP 80</b>	
dosing volume	0.4 ml/min-1
volume flow	2.5–80 ml/min-1
dosing min.	0.02 ml

### Function extension for the dispenser

- brush
- felt
- monitoring (brush, felt)
- circulation connector

## SPRAY HEAD

The spray head doses and applies the materials. High-pressure spray material is delivered to the spray head and then the control piston is operated by compressed air.

First, it opens the spray air valve and, with a minor delay, the material nozzle. After the application, the material spray head is shut first and then the spray air valve to avoid leakage of the material nozzle. The spray material is pulverized via compressed air.

### Technical data

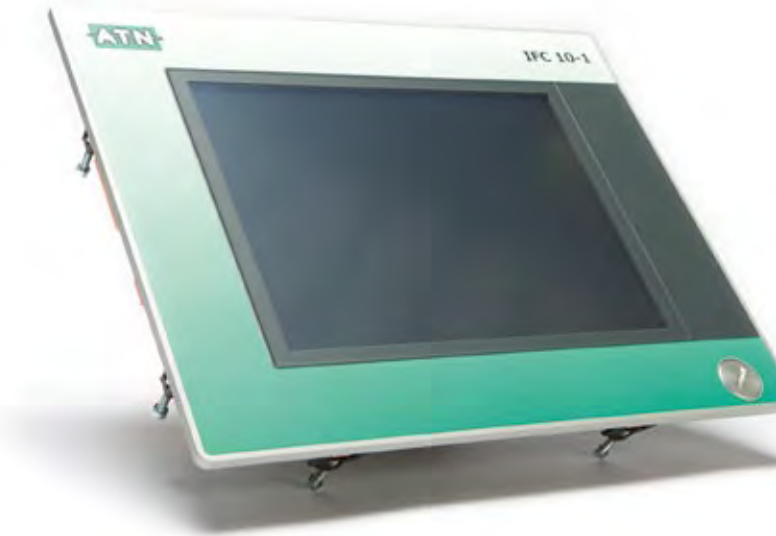
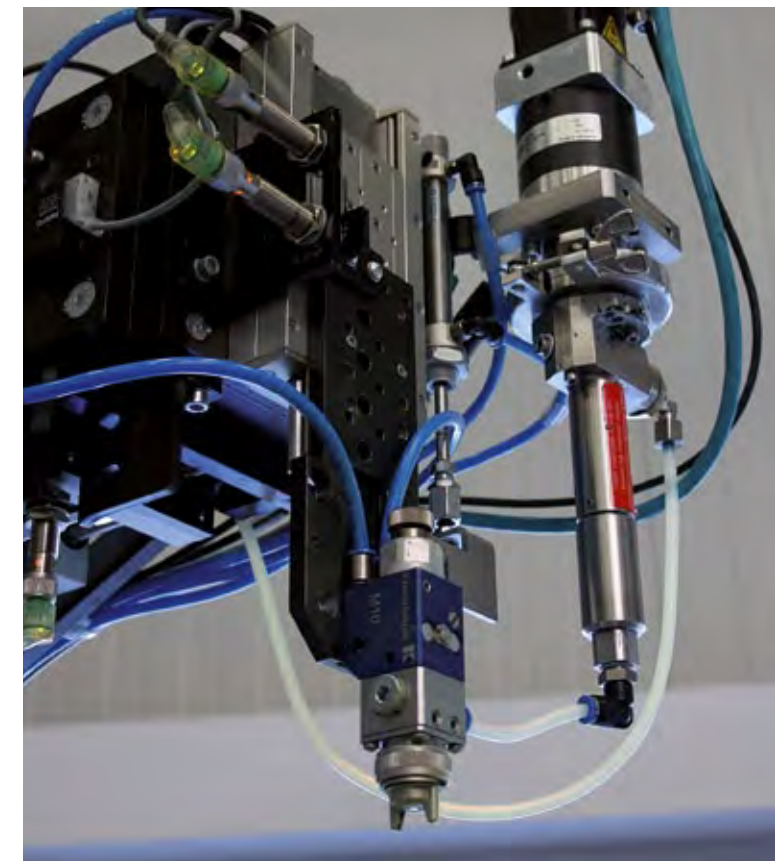
material pressure max.	12 bar
atomizer pressure max.	8 bar
weight	380 g

### Adjustable factors

- selection of air and material nozzle
- atomizer
- material pressure
- needle travel

### Materials used for spray head

head	stainless steel or black-oxide coated aluminum
control casing	black-oxide coated aluminum
needle	black-oxide coated aluminum
nozzle	stainless steel
seals	customized for application



## APPLICATION CONTROLS IFC

The ATN IFC application controls system (independent flow control) is made up of one IPC with 12" Touch Display (screen resolution of 800x600 pixel). The IFC system controls and monitors all vital parameters and components of the application process. All processes are visualized on the display and components can be easily controlled.

### Composition and functions of IFC

- the system includes a switch cabinet with IPC and control panel
- simple intuitive operation
- freely adjustable and configurable systems for all types of applications
- parameterization of all relevant process parameters (e.g. volume flow, pressure, temperature)
- remote control for HMI systems via network
- extensive logging and diagnosis capabilities
- connection to production networks possible

### Technical data

- Intel® Atom™ Processor
- fanless design
- 2x USB (1x USB 3.0, 1x USB 2.0)
- 2x Ethernet 10/100/1000 Mbit
- CAN-Interface
- multibus module for integration in main network (e.g. Profibus, Profinet, Ethernet/IP, CAN)

## MATERIAL SUPPLY

The primer material supply is made up of four main components: pressure container, membrane pump, weighing cell and surge drum.

### PRESSURE CONTAINER

- available in different sizes between 1l and 45l
- pressurization using dry air or nitrogen (optionally controlled by proportional valve)
- stirrer system and circulation connector are optional

### MEMBRANE PUMP

- located within the return path
- permanent circulation of primer material

### WEIGHING CELL

- fluid level detection
- alternatively via sensors (depends on barrel configuration)

### SURGE DRUM

- protection for an uninterrupted production

