WHO WE ARE.

Whenever the industry reflects needs for productivity gains, quality improvements, improvements in working conditions in terms of safety and ergonomics, Fluidotronica can help.

ts line of action is based on the sale of quality products and systems, supported by technical and application knowledge from several years of experience.

It is our firm purpose to support our customers in selecting the products best suited to their needs, in development of its projects and the offer of specific equipment, always taking into account the trinomial quality/price/delivery time.

When the commercialization of these products is not enough to satisfy customer needs, systems are created from scratch in a partnership attitude, which facilitate the functionality of the industry in general. To this end, the services available range from process study, development of mechanical and electrical projects, machining, programming and electrification to final assembly and testing. This is the so-called “turnkey” solution.

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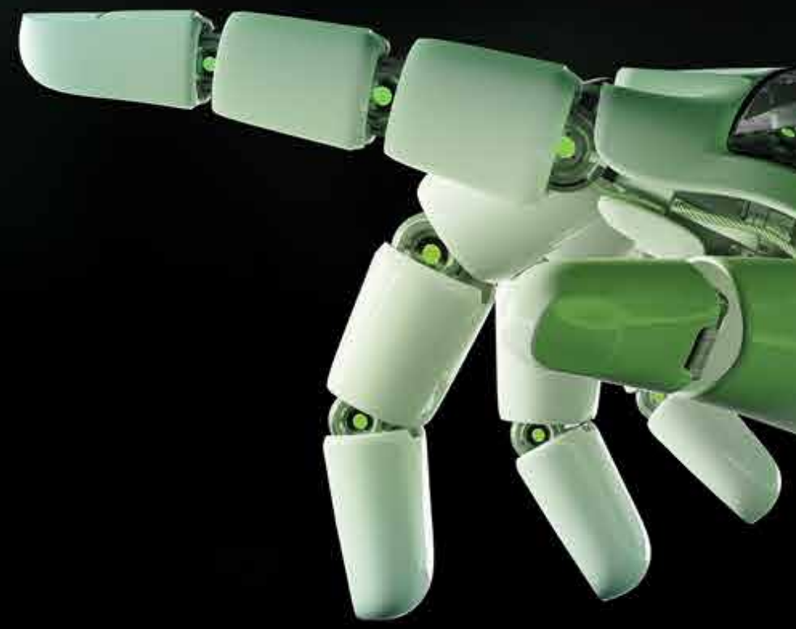
INDUSTRIAL EQUIPMENT
AUTOMATION
ROBOTICS

3M fluidotronica



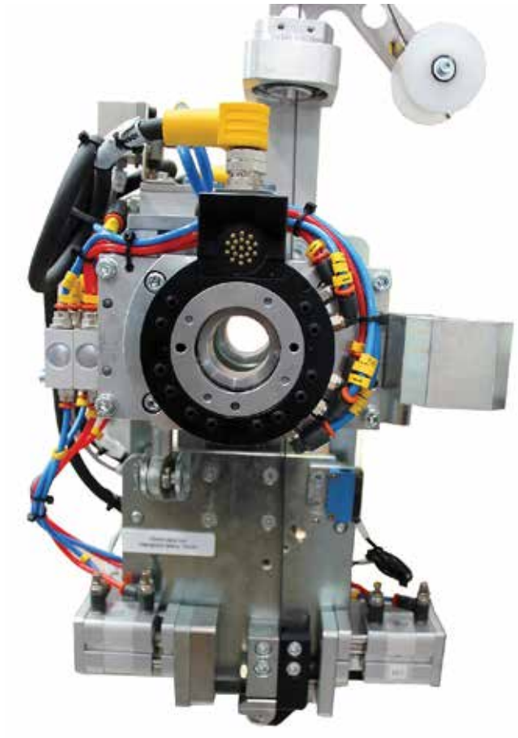
AUTOMATIC APPLICATION OF DOUBLE-SIDED TAPES/FOAMS

AUTOMATIC APPLICATION OF DOUBLE-SIDED TAPES/FOAMS

1 | ROBOTIZED ADHESIVE SYSTEMS

Implementing robotized adhesive systems can provide a competitive advantage in automotive manufacturing. **Robotized adhesive** systems can significantly improve the efficiency and accuracy of applying double-sided tape in automotive processes.

These systems consist of robotic arms equipped with adhesive dispensers that can apply tape with a high degree of precision and consistency. The processes of gluing and dispensing can be automated through the following solutions: **double-sided tape/ foam in automative processes**



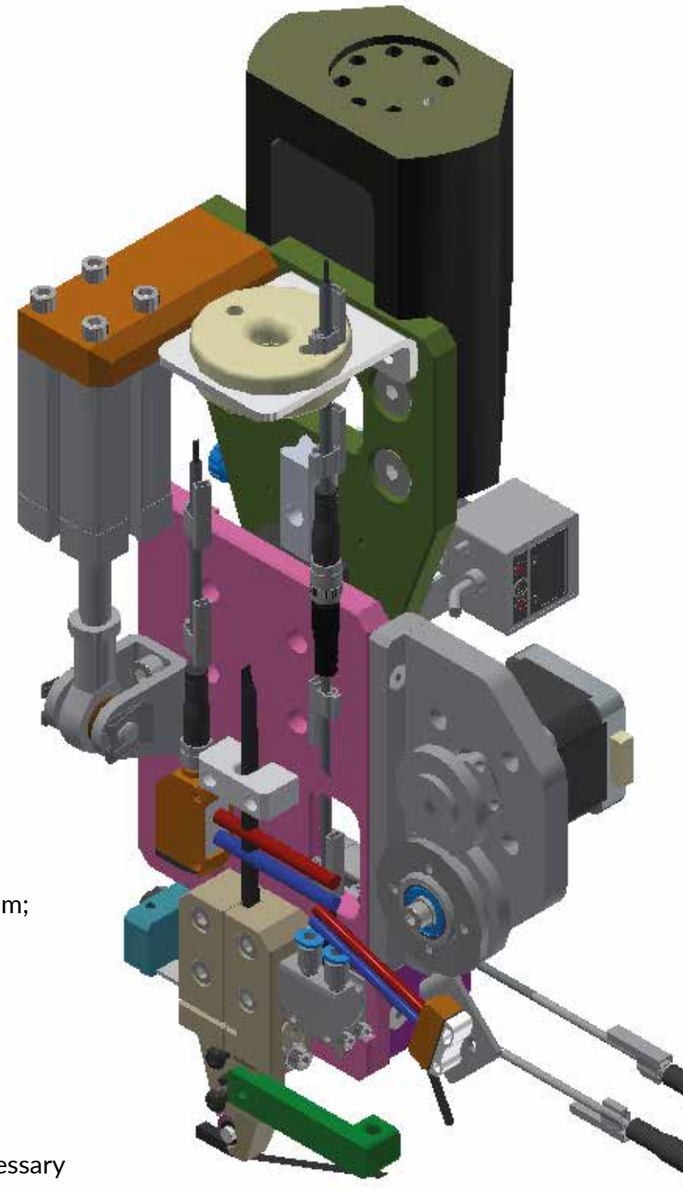
2 | BENEFITS OF IMPLEMENTING ROBOTIZED ADHESIVE SYSTEMS IN AUTOMOTIVE APPLICATIONS

- Improved accuracy and repeatability
- Improved product quality and consistency
- Decrease the number of production of nok parts
- Lowering of consumables costs
- The unpredictable direct and indirect costs of employing human labor are replaced by more predictable and controlled system costs
- Cycle time warranty
- Collect the liner(s)

3 | TYPOLOGY OF SOLUTION

- A machine
- A robotic arm with an attached dispenser;
- A tape dispenser (tool) around which a robot moves the part.

Robotic systems can be customized to meet specific automotive manufacturing requirements, such as cycle time, part size and geometry, and tape type and application method.



4 | TECHNICAL FEATURES OF ROBOTIZED ADHESIVE SYSTEMS

Application speed
- Up to a maximum of **30 m/min** for optimized sliver unwinding (application time)
  Typical application time: 1 sec start-up + unwinding time + 3 sec to peel-off

Minimum lenght to apply
- 40 mm of tape

Application in curve
- Minimum radius depends on the tape features (thickness and behavior when a radius is applied)

Pressure used to activate the adhesion
- According to 3M guidelines and specifications but it's important to keep track the use of force and monitoring

Storage temperature
- According to 3M guidelines and specifications (specially when subject to high temperatures)

Dimensions of spools and amount of tape
- Dimensions of the cores: diameter 6"; Spool size and tape quantity depends on tape thickness and width

Liner collection
- **Double-sided spooltape**
  - 1) collect the transparent secondary liner from the side with glue;
  - 2) remove 2 liners (primary and secondary) one with step motor system and the other with unwinding system;
- **Double-sided tape on rol** - either you don't remove the roll or you remove it with a step motor system;
- **One-sided tape** unwinding system or step motor system (depending on the liner tension resistance)

Liner removal
- Tabs welding
- Tabs with glue on the ends of the liner

Estimated time to change the roll
- 1min with purge operation included

Tape purge
- (when exposed to air for extended periods of time) – according to 3M specifications, it may or may not be necessary