TM designs, manufactures and sells dosing components, systems and machines for liquids and viscous fluids. TM is a dynamic industrial reality, a close-knit team that integrates the experience from historical minds and the energy of the youth, all coordinated by a great professionalility.

TM was born on 2000 with the aim to become an excellence center for fluid dosing applications, and today it has gathered a unique know-how, covering all possible aspects and complexities of this trade. This has been made possible also because TM lives and operates within the most important district of automation for industry, that of Bologna (Italy), worldwide known for productive skills and design creativity. TM has several international patents, and several more are presently pending, which represent an intellectual property and tradition that gathers innovative machines and technologies, studied to offer a concrete and exclusive solution to its customers.

TM is in fact structured to provide quick responses to a continually growing and expanding market, always looking for novelties and performance, efficiency and control, and today TM is to its customers more a partner than a plain supplier.

TM team with professionalism follows each customer all along their project, from early phases with laboratory work to project phases where the drawings are laid down, to prototyping and until the final testing of the chosen solutions and after sale service.

TM's work method in all processes guarantees the highest quality standards, together with the possibility to completely customize products and solutions, because the world of today -and of tomorrow- wants custom. What remains a constant standard is, instead, our attention to details. Always.

Lubricants, adhesives and resins have seen, in recent years, an incredible technological development, which had as principal motors aerospace and military areas, and have found a massive application in industrial fields like automotive, electronics, houseware appliances and furniture accessories design. Therefore the need has grown exponentially from industries to access and use more and more evolved, accurate and controllable systems for the dosing application of such fluids, which become themselves more and more sophisticated and advanced.

TM designs and manufactures components and systems for precision dosing, microdosing, filling and process control of low to high viscosity industrial fluids, such as oils, greases and lubricant pastes, glues, adhesives (anaerobe or cyanoacrylate), one- and two-component resins and sealants, thermally and electrically conductive resins, greases and pastes, water, emulsions, solvents, inks, paints, primers, etc.

The present catalogue shows the main products made by TM, which for over 20 years has developed, and keeps on developing, technologies to cover efficiently the huge world of industrial dosing applications, and today, strong with its know-how, is a reference point in its field.
**Twin Column Elevator Extrusion**  
*Pumps from 1 to 200 lt*  
Extrusion pumps featuring twin-column pneumatic elevator. Suitable to feed dosing systems with greases, pastes, medium-to-high viscosity silicones and resins. Dashboard includes full frontal controls and indicators. Size fit for 1-3 liter canisters, 5 to 50 liter pails and 200 liter drums/barrels. Custom made extrusion disc/plate sized upon packaging. Optional: minimum level pump stopping device. 2-hand safety controls.

**Pneumatic Pumps for Pails and Canisters**  
Pneumatic pumps without elevator for medium-to-low viscosity fluid extraction. Suitable to feed dosing systems with greases and pastes from 1-3 liter canisters, 5-50 liter pails, 200 liter drums/barrels, 1000 liter bulk or cistern, and to transfer fluids from drums or cisterns. Custom made pressing plates sized upon packaging for fluids. Optional: minimum level pump stopping device. 2-hand safety controls.

**Cartridge Extractors**  
Pneumatic cartridge extractor tank. Suitable to feed dosing systems with silicones, resins, adhesives, pastes or lubricants in cartridge packaging. Cartridge safety locking system made by TM. Optional: minimum level pump stopping device. 2-hand safety controls.

**Pressure Tanks for Liquids**  
Pneumatic pressure tanks for liquids. Suitable to feed dosing systems with oils, glues, resins and low-to-medium viscosity fluids. Tank capacities from 2 up to 40 liters. Optionally integrated with minimum level sensors or stirring devices. Standard materials painted steel or stainless steel. Fluid outlet from the top or from the bottom according to models.

**Pressure Tanks for Bottles**  
Pneumatic pressure tanks for fluid extraction directly from bottle or pail, without need to pour the fluid. Suitable to feed dosing systems with adhesives, glues, resins or lubricants with low-to-medium viscosities. Maximum nominal capacity 2 liters. Optionally integrated with minimum level sensors, heater base or stirring devices.

**Low Pressure Accumulators**  
Pneumatic pressure accumulators for low-medium-high viscosity fluids. Suitable to feed dosing systems with greases, oils or pastes. Capacity 1,5 to 8 liters. Minimum and maximum level sensors integrated. Suitable for refilling directly from the pump or through degassing machines of the VACUUM TOWER series. Different colors available. Aluminum body. Max working pressure 15bar.

**Low Pressure Volumetric/Metering Dosing Systems**  
Pneumatic volumetric dosers for precision impulsive doses. Suitable to dose greases, oils, pastes and silicone-based fluids low-to-high viscosities. Dosing range from 0.03 to 10cc according to selected model. Mechanical suck-back effect at the end of the dosing cycle to help detaching the tip in presence of viscos fluids. Dose manually adjustable through graduated knob. Materials: aluminum, brass. Inlet fluid pressure max 15bar.

**High Pressure Volumetric/Metering Dosing Systems**  
Pneumatic volumetric dosers for precision impulsive doses. Suitable to dose greases, oils, pastes and silicone-based fluids low-to-high viscosities. Dosing range from 0.03 to 100cc according to selected model. Mechanical suck-back effect at the end of the dosing cycle to help detaching the tip in presence of viscos fluids. Dose manually adjustable through graduated knob. Diverted technology for longer durability in presence of heavy duty applications or extremely high viscosities. Inlet fluid pressure max 150bar.

**High Pressure Volumetric/Metering Dosing Systems with Divorced Technology**  
Pneumatic volumetric dosers for precision impulsive doses. Suitable to dose greases, oils, pastes and silicone-based fluids low-to-high viscosities. Dosing range from 0.03 to 10cc according to selected model. Mechanical suck-back effect at the end of the dosing cycle to help detaching the tip in presence of viscos fluids. Dose manually adjustable through graduated knob. Diverted technology for longer durability in presence of heavy duty applications or extremely high viscosities. Inlet fluid pressure max 15bar.

**Dispensing Valves for Medium-High Viscosity Fluids**  
Pneumatic dispensing valves, on-off, non volumetric, for continuous or impulsive doses. Suitable for dosing or dispensing of greases, oils, pastes, silicones or resins. Possible dosing range from microdoses up to continuous dispensing as in fitting or liquid seal applications. Suitable for direct feeding from tank or pail or integrated with volumetric dosers for precision fitting or precision liquid sealing. Manual output flow adjustment through knob. Aluminum body.

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**Materials:** aluminum, brass, steel, synthetic materials. Inlet fluid pressure max 15bar.
Grease microdosing application on the electric part of the washing machine program selector. Diameter 45mm, two concentric crowns of microdots for a total of 0.1cc of grease. Semi-automatic station on a manifol assembly process. VVPP5 volumetric doser with a custom frontal microdot dispensing terminal.

Fluorinated grease microdosing application along a 1mm wide perimeter ditch. Microdots have the function to hold a gasket in place during the assembly process. Total dose 0.02cc. Manual station. VVPP3 volumetric doser with custom-made frontal microdot dispensing terminal.

Microspray battery application of VMJETC dosing valves and volumetric dosers for a microlubrication on automotive engines.

Examples of liquid sealing applications with volumetric continuous strings of one-component silicones. Applications done using DVC volumetric dosing groups fed via PE25, PE200 or SBRE cartridge extruders.

Two-component epoxy resin microcoating, mixing ratio 1:3, with total amount of 0.5cc distributed along a Ø70mm circumference in a 5s cycle. Application made with a DVL2 dosing group and feeding from two PE25 extrusion pumps.

Thermal grease continuous string. Thermally conductive paste with high abrasive charge distribution on aluminum heat-sink. Dose volume 6cc (about 15g) distribute on a square spiral on a 15s cycle time. Application made with a special DVL dosing group for abrasive fluids, with a M-062 type machine with a special extrusion pump for abrasive fluids.

Special application of VMJETC microspraying valve with a VVPP volumetric doser for a precision oil microsprayed deposit on an automated assembly line. Specifications: to guarantee an accurate overall dose (0.03ml) uniformly distributed along the inner circumference of an assembled O-ring based on a pressure regulator for gas. The part set in a vertical position, a sequence of microdots was sprayed through VSF analogue flow sensors for absolute process control. Pneumatic volumetric doser with sequenced activation series and each dose is checked. Cycle time 3s.

Precision filling of a condenser with oil. Application done with a VVAP100 volumetric doser.
REMOVING VOLUMETRIC/METERING CONTINUOUS DOSERS

Electric volumetric continuous dosers based on gear-dosing technology. Suitable to dose greases and silicones, low to high viscosities. Volumetric dispensing of microdoses, continuous strings/doses or precision filling. Brushless motor integrated. Requires dedicated TM electronic drive and/or control unit/panel.

DVC

DVL

DVL2

DOSE VOLUME DETECTION

Requires dedicated TM electronic drive and/or control unit/panel. Possibility of custom-made projects for size, capacity and dosed fluids.

DOSE VOLUME DETECTION

Dose manually adjustable through graduated knob. Dosing range from 0.003 to 0.75cc/pulse. Suitable for lubricants, glues, paints, inks, solvents, silicones, resins, pastes, water and generally fluids with low to high viscosities. From pressure regulators/stabilizers to anti-leak remote shutters VIBLOC, fluid manifolds, accumulators and filters. Systems are integrated with pressure tank for bottle/can, without need to pour the fluid. Dose management/control through dedicated control unit that can be interfaced with external PLC’s. Custom solutions with structures, custom fixtures/terminals and quick touch/dose cycle start. Can be integrated with TM’s dose detection solutions.

DOSE VOLUME DETECTION

Pneumatic volumetric dosers for two-component resins, for impulsive precision doses. Suitable for two-component fluids such as resins, silicones, polyurethane, epoxy or methacrylate, low to high viscosity, also with aggressive chemical or physical properties. Pneumatic dosers with static mixing for doses, strings or fillings. Requires external PLC or TM units for management and command. Can be custom-made according to fluid and dose capacity. Suitable for lubricants, glues, paints, inks, solvents, silicones, resins, pastes, water and generally fluids with low to high viscosities. From pressure regulators/stabilizers to anti-leak remote shutters VIBLOC, fluid manifolds, accumulators and filters. Systems are integrated with pressure tank for bottle/can, without need to pour the fluid. Dose management/control through dedicated control unit that can be interfaced with external PLC’s. Custom solutions with structures, custom fixtures/terminals and quick touch/dose cycle start. Can be integrated with TM’s dose detection solutions.

DOSE VOLUME DETECTION

Pneumatic needle valves, non volumetric, for continuous or impulsive/spot fluid applications. Suitable for low to medium viscosity fluids such as oils, glues, silicones, emulsions, water, paints, inks, solvents, etc. Complete standalone system with or without integrated stainless steel pressure tank and control unit with pneumatic and electric circuits. Complete spray cycle management with fine tuning per single channel of air and fluid flows. Possibility to interact with external PLC’s to receive start/stop cycle signals. Feeding and management of VMJET spray guns single or in battery to different cover surfaces with a very fine spray, working at super low pressure to minimize fume dispersions and overspray. Suitable for direct feeding from pressure tank/pump or paired with volumetric/metering continuous dosers as remote feeding head for precision dosing.

DOSE VOLUME DETECTION

Microspraying systems predisposed to be integrated onboard automatic presses or lubrication stations. Suitable for low to medium viscosity liquids such as oils, emulsions, water, paints, inks, solvents, etc. Complete standalone system with or without integrated stainless steel pressure tank and control unit with pneumatic and electric circuits. Complete spray cycle management with fine tuning per single channel of air and fluid flows. Possibility to interact with external PLC’s to receive start/stop cycle signals. Feeding and management of VMJET spray guns single or in battery to different cover surfaces with a very fine spray, working at super low pressure to minimize fume dispersions and overspray. Suitable for direct feeding from pressure tank/pump or paired with volumetric/metering continuous dosers as remote feeding head for precision dosing.

DOSE VOLUME DETECTION

Pneumatic air spray guns, non volumetric, for continuous or impulsive/spot fluid applications. Suitable for low to medium high viscosity fluids such as oils, glues, silicones, emulsions, water, paints, inks, solvents, greases, pastes, resins, etc. Anti-leak nosepiece pressure on the tip and various spray nozzles available. Flow adjustable mechanically with finely milled ticking knob. Materials: aluminum and stainless steel. Suitable for straight feeding from pressure tank or paired with volumetric/metering impulsive or continuous dosers for precision spraying and microspraying applications.