

# Quantum, the new gravimetric blender

The new gravimetric batch blender range by Piovan helps improve the quality performance of production lines and redefines technical standards and market applications, delivering outstanding features of flexibility, precision, safety and efficiency. Quantum is the name of the new range of gravimetric blenders designed by Piovan, the world leader in the production of auxiliary equipment for the plastics processing industry.

Quantum embodies innovations that radically change the way injection moulding machines and extruders are fed with blends of materials (virgin, recycled, masterbatch and additives). These innovations contribute to increasing the efficiency of production, and feature improved design, innovative technologies and high performance components, which translate into concrete advantages for the user.

**Absolute flexibility in use:** Quantum is utilised in all application environments such as Packaging, Automotive, Industrial and Electronics, Building and Construction, Textile, Furniture, Toys and Housewares, Medical and Pharmaceutical, Recycling and Compounds. Its flexibility derives from two distinctive and unique characteristics.

- All the surfaces that come into contact with the process material are stainless steel, usable also in the most critical environments, like those found in medical and food & beverage sectors. Low roughness prevents friction and permits uniform treatment of the polymer pellets, preventing the alteration of physical conditions. Quantum therefore protects the physical characteristics of the raw material, and thereby the quality of the plastic product.
- Every blender comes with up to six dosing stations, which can easily be removed, for emptying or cleaning. Each dosing station is dedicated to a single ingredient – be it principal or additive; easy removal therefore aids material changes and enables optimal operating conditions to be immediately resumed without contamination from powder or residue. These interventions do not require the blender to be dismantled and can be done manually by an individual operator. The dosing stations can be used across all Quantum blenders in a factory.

**Digital and mechanical protection of data:** The weighing pan is mounted on two load-cells, even on the more compact Quantum model. Shock absorbers, between weighing pan and load-cells, filter all possible machine vibrations to enable the load-cells to weigh the material with greater precision and mechanically protect the data transmitted to the control unit: another competitive advantage of Quantum.

**Excellent blend uniformity:** The entire batch is transferred



from the weighing pan to the mixer by the dump flapper, which opens and closes pneumatically. The mixer is spherical and the mixer blade is round to fit its geometry and prevent material stagnation problems. Its strength lies in an intelligent sensor that employs the surface of the mixer as a sensitive element, needing no adjustment caused by powder, electrostatic charges, or changes in material and blend density. The sensor is an integral part of the mixer's design.

**Proprietary control system with 8" touch screen interface:** The interface is designed to maximise intuitive use. The control panel in fact shows the operator the actual configuration of the equipment in real time, without showing redundant or unused elements. Depending on the type of production, the control system calls up the corresponding recipe and the blender automatically configures accordingly.

**Integration with WinFactory:** The control system is designed for integration with WinFactory, the industrial supervisory software operating by application licence developed by Piovan, the outcome of consolidated knowledge in various application environments. WinFactory can interface all Quantum blenders in the factory for: sharing recipes, managing material and production batches, and tracking raw materials; these are fundamental data for product certification, in particular in food & beverage and medical-pharmaceutical environments.

**Patented design:** Piovan has filed a patent application for the two more complex parts of Quantum: the dosing device and the mixer unit. The Quantum blenders are designed to be produced at all Piovan plants in the world and are part of the "High Efficiency Line", comprising all products guaranteeing maximum energy and operational efficiency.

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