



**ADROIT**  
TECHNOLOGY

# GRADO

GRAVIMETRIC GAIN-IN-WEIGHT BLENDER WITH INTEGRATED  
GRAVIMETRIC EXTRUSION CONTROL

**DOTECO**  
ART OF CONTROL

# GRADO **ADROIT** TECHNOLOGY

GRAVIMETRIC GAIN-IN-WEIGHT BLENDER  
WITH INTEGRATED  
GRAVIMETRIC EXTRUSION CONTROL

Designed to blend free flowing pellets in processes which require accurate dosing and repeatability with efficient mixing. Unaffected by vibrations, GRADO has been designed to be easily mounted directly onto the throat of the processing machine, to be installed either on a mezzanine, or on a vacuum take-off stand to feed one or more machines.

Available in 3 sizes, with throughputs up to 200, 600 and 1200 kg/h.

## IMPROVED THROUGHPUT CAPACITY IN A COMPACT SIZE

- Advanced high noise immunity weighing system improves gain-in-weight control dynamics
- Throughput capacity results improved thanks to faster weighing cycle time

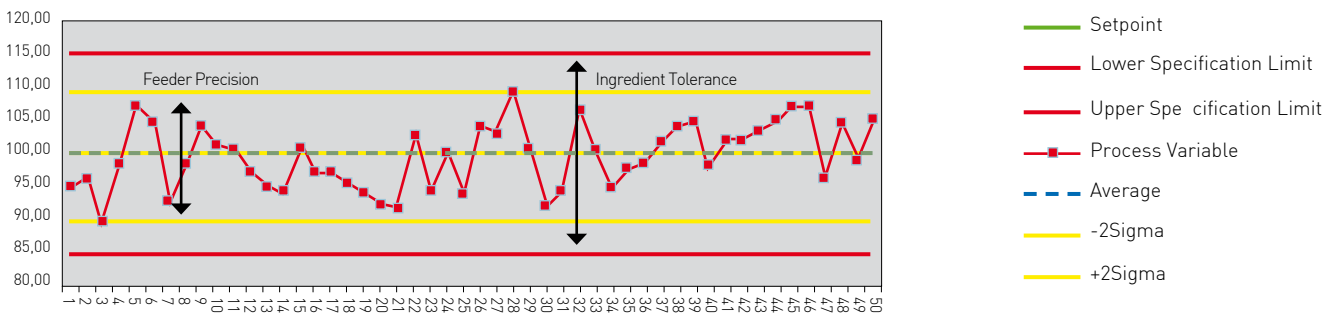
## PRODUCT DESIGNED AND ENGINEERED TO TOP LEVEL RELIABILITY AND QUICKEST LEAD-TIME



- Number of parts optimized to minimum
- No one hand-made part, but:
  - cast aluminium parts;
  - molded plastic compounds hoppers;
  - machined steel parts;
- PLC based control from market leader producer;
- Re-engineered manufacturing process reducing lead time.

## BLENDING ACCURACY AND PRECISION

We put our last state-of-the-art control software together with the most performing PLC's and load cells. The result is the highest level of accuracy and precision in blending, most probably the highest for a gain-in-weight blender.

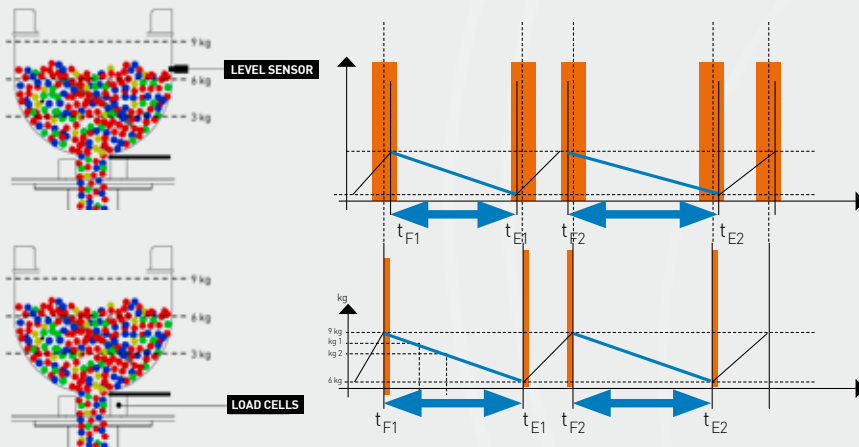


## MIXING CHAMBER SIZED AND DESIGNED TO IMPROVE BLEND HOMOGENEITY

- The 3 batches mixing chamber capacity ensure the right mixing time and improves blending consistency
- No stagnation areas with round bottom mixer:
- The motor mixing paddle moves all the material, avoiding any preferential flows regardless weight and size of granules;
- Material can be discharged with no residuals inside.



# INTEGRATED GRAVIMETRIC EXTRUSION CONTROL (GRAVILINE)



→ Continuous loss-in-weight gravimetric system, available for mono extrusion and co-extrusion processes. It controls the weight per meter of the end product, reaching and maintaining minimum tolerances. GraviLine can measure and control extruder throughput or use the data to control line speed, or alternatively, carry out both functions simultaneously. With multi-layer lines the throughput of each extruder is measured and controlled to maintain a constant layer-to-layer percentage ratio in the end product.

→ Gravimetric measuring of the throughput, by load cell. No volumetric measuring and no level sensors inside the mixer. Hence measuring is faster and much more accurate, being not affected by material level variations inside the mixer, due to paddle action.

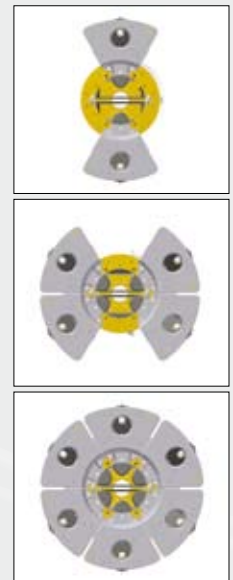
# INTEGRATED LOADING SYSTEM CONTROL (SMARTCONVEY)

Fully automated loading system control, easy operated by the same interface used for gravimetric blenders. One or more vacuum pumps to serve more than one receiver whose association can be set through configuration. All receivers linked to the same pump are served in turn, according to a priority sequence automatically assigned. Loading active control to reduce ingredient at minimum on changeover



## FEATURES

- Ingredients can be changed "on the fly", with no need to stop the machine.
- Quick and easy access to all parts for maintenance cleaning. No tools required.
- Drain spout for quick and complete ingredient feed hopper emptying
- Clean out doors for fast removal of dust or ingredient residues and for visual inspection
- Removable individual hopper for each ingredient
- Easy to use, simply set the dosing percentage
- Full modular construction, from two to six components
- Self-supporting structure prearranged for vacuum receiver installation without additional supports
- All parts that come into contact with the ingredients are made of food-grade materials or finishes
- The on-board control box does not require any floor space
- PLC based control, CPU x86 100 MHz Intel compatible (or superior)
- Standard type load cells, high resolution weighing system (16 bit A/D converter) to maximize analog accuracy
- Flashing alarm signal and diagnostics in plain text
- No scheduled maintenance is required
- Reduced installation costs. Complete wiring of the dosing unit is factory made



## WIDE RANGE OF NETWORKING OPTIONS FOR REMOTE CONTROL AND DATA ACQUISITION

- OPC via Ethernet (one entry-point)
- OPC via CanBus (one entry-point or multi entry-point)
- ModBus TCP/IP (one entry-point)
- RS485/422 ModBus (one entry-point or multi entry-point)
- Profibus (one entry-point or multi entry-point)
- CanBus (one entry-point or multi entry-point)

## MOUNTING CONFIGURATION

- On the throat of the processing machine
- On a mezzanine, to feed by gravity the supply hopper of the processing machine
- On a vacuum take-off stand, to feed one or more processing machine
- On a mezzanine, to be used as blending station



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