

# solids *Fine dosing*

The fine art of fine dosing



## Gravimetric loss-in-weight scales Fine dosing Opti-feeder FD-SP C or FD-SP B



**Fine dosing loss-in-weight scales:** Compact line of loss-in-weight scales for materials with varying bulk density: The digital load cell integrated in stainless steel housing is associated with a weight controller. Thus decrease of weight due to powder outlet flow is measured at high frequency.

To reach a better dosing accuracy, the feeder is designed in such a way that only ingredient hopper and extractors are weighed (so load cell with smaller capacity are integrated for a better accuracy).

Two different soft wares are proposed for batch or continuous dosing.

The feeder is controlled with a multitasking operating system combining the functions of an operator interface, weighing controller, PLC and interfaces.

The design is made in agreement with drug and food industries requests for cleaning.

### Technical data :

<b>Dosing accuracy (batch)</b>	Standard deviation $\approx$ 0.3 – 0.6 gram.
<b>Min. flow rate (continuous process)</b>	0.05 gram/sec
<b>GMP design</b>	yes
<b>Min dosing time (batch)</b>	From : 3 "

### Applications :

- Continuous feeding: For all process application with stability and accuracy of flow rate requested.
- Batch process: Formulation, for minor ingredients. Conditioning...

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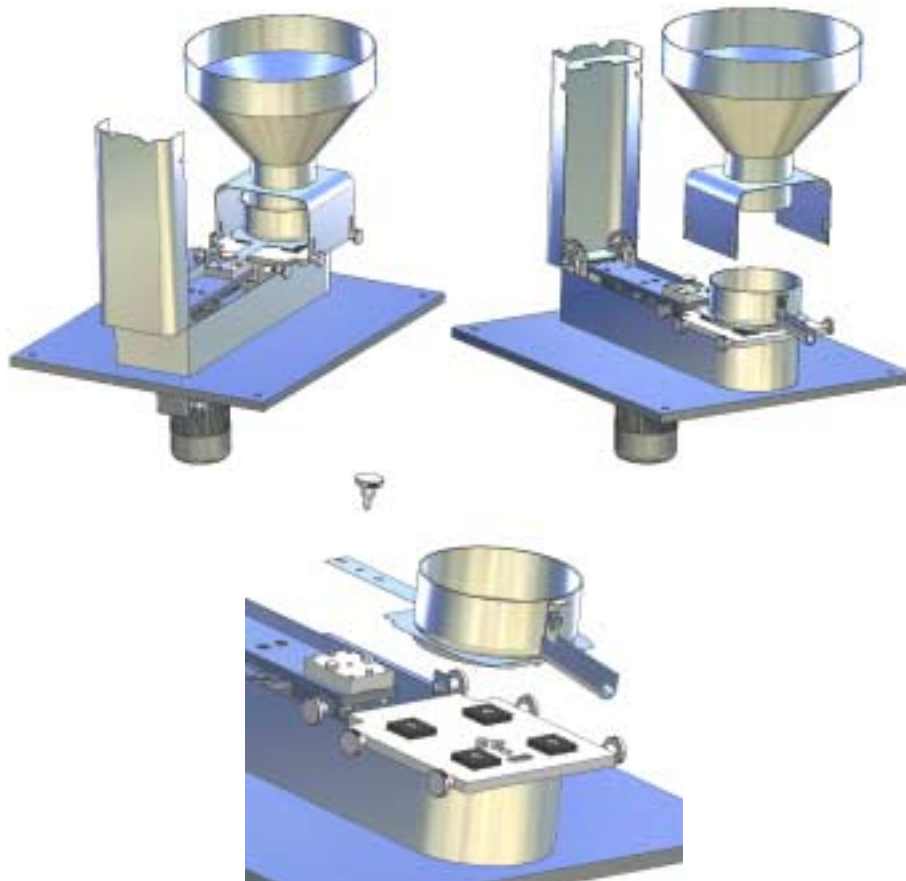
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Cleaning / dismantling : dismantling time below 20 sec, no tool requested.



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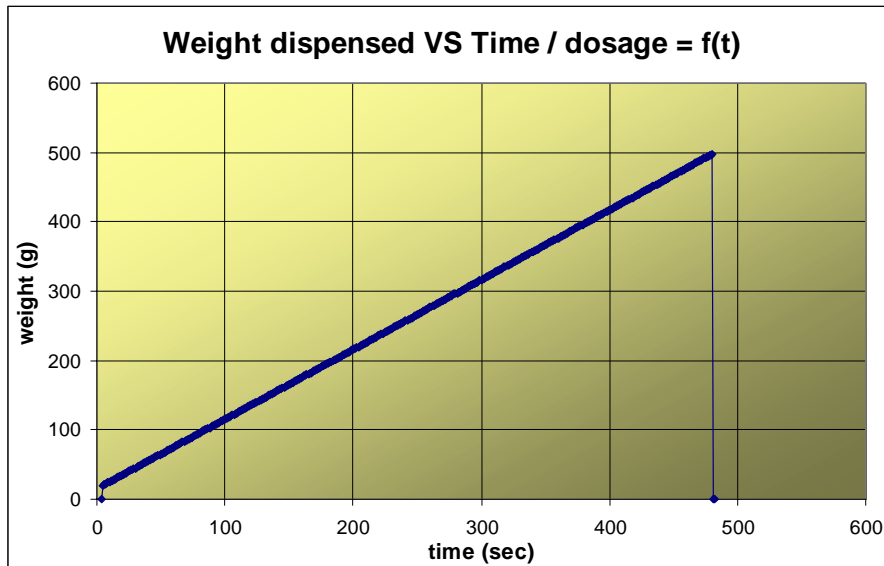
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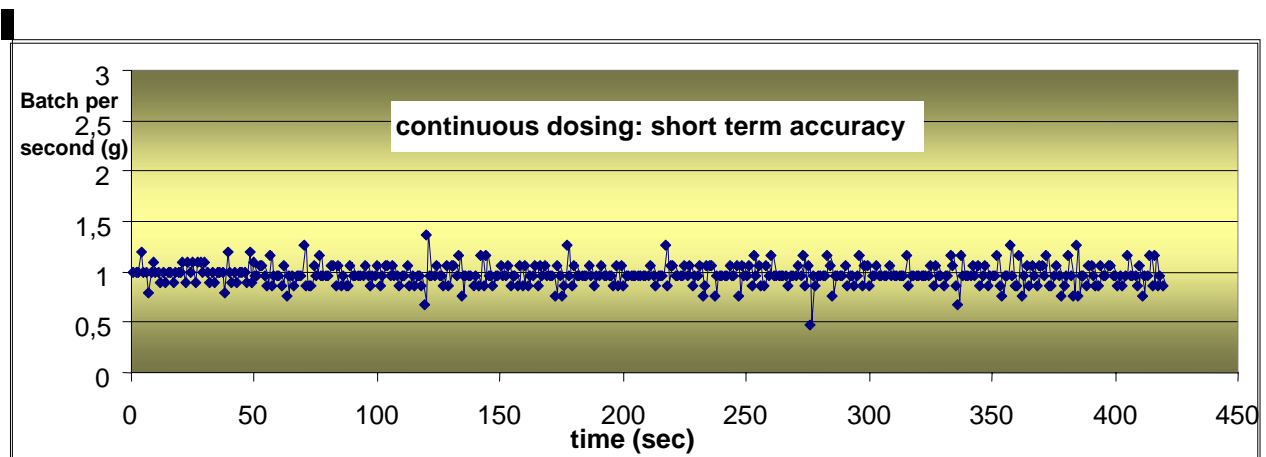
### Some results (pilot trials)

Dosing flow stability with flow regulation: 1 gram /sec (aspirin powder).



### Accuracy / stability (aspirin powder)

Output flow is weighed on a balance, and data are bridged to a PC at a constant time-based interval (1 sec). The resulting standard deviation is 0.1gram, a very stable output flow (free of pulses) is observed.



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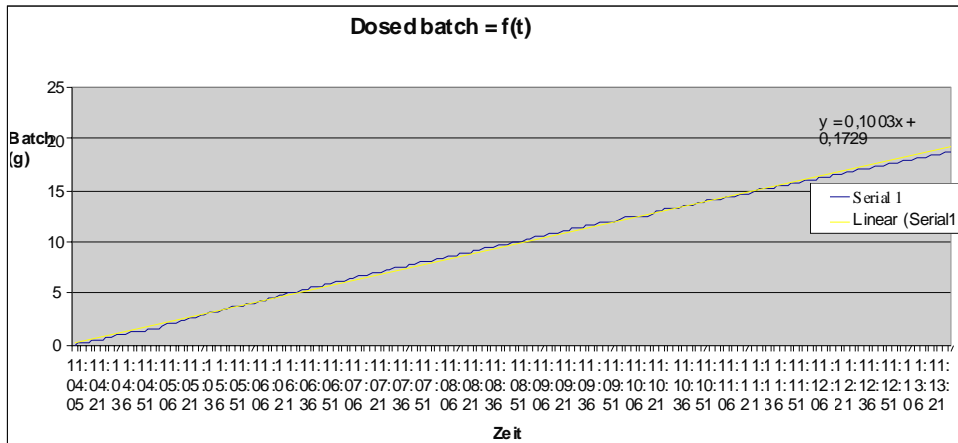


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**Continuous feeder: 2 gram/min. Performances even very low output flow rate**



### Batch feeder

Type of ingredient	Dosing set point	Dosing time	Standard deviation
Die	35 g	7 sec	0.7 g
Die	100 g	9 sec	1,0 g
Die	12 g	30 sec	0.2 g
Flour	80g	5 sec	0.7 g
Alum	1400 g	10 sec	3 g
Semolina	50 g	8 sec	0.5 g
Semolina	3 g	3 sec	0.3 g
Semolina	21 g	3 sec	0.63 g
Tablets ø 5mm	45 g	8.0 sec	0.31 g
Tablets ø 5mm	7 g	4.5 sec	0.28 g

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