

PetiteDoser®

Liquid Nitrogen Dosing

PetiteDoser™ is an Ultra-Compact doser, requiring the smallest installation foot print in most food production fillers. It has the capability to dose large volume of liquid nitrogen to inert full containers with high-volume headspace. Applications for food inerting are such as peanuts, potato chips and snacks



How it Works

LN2 is supplied to the doser by a vacuum insulated pipe and flows into the dosing head. Sensor will detect the container and send pulses to the controller. Controller will command the dosing head to dispense the required amount of LN2 into the container. LN2 droplets quickly evaporate and expand 700 X into gaseous N2 equivalent, filling the container headspace with inert N2 gas at the desired pressure.

Applications

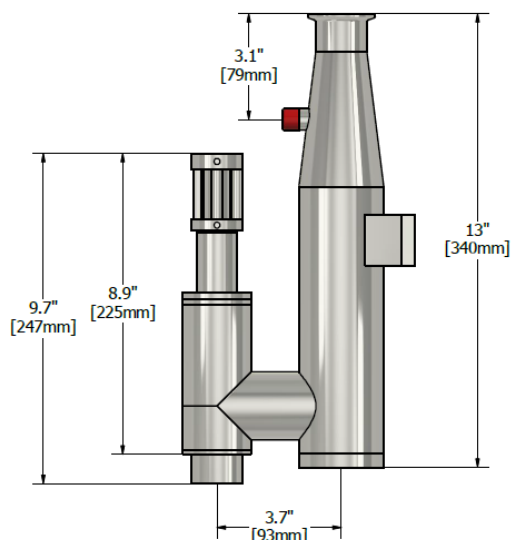
- **Oxygen Exclusion** – Reduce residual oxygen in product headspace to prevent oxidation to the product
- **Extend Product Shelf Life** – N2 in product packaging can extend product shelf life longer
- **Replace traditional MAP** – increase production efficiency and effectiveness compared to inert gas flushing in MAP peanuts, potato chips and snacks

Ergonomic Features and Benefits

- **Frost-free nozzle** – Self-generating GN2 for dosing head blanketing
- **Consistent Container Pressure** – delivers accurate dosing $\pm 2\%$
- **Lowest LN2 Consumption** – Discrete dosing, NO-container-NO dose capability
- **Lowest LN2 Losses** – Proprietary vacuum insulation with lowest heat leak 0.1 LPH
- **Minimized Product Splash** – Soft-dose nozzles prevent product splash, maintain line hygiene and reduce COP / CIP cleaning frequency
- **Ease of Maintenance** – Achievable by system maintenance alarm and remote monitoring
- **Corrosion Resistant** – 304L material grade of construction for doser body
- **Highest Hygiene Design** – All external surface has rounded corners and sloped design for easy wash-down
- **Lowest Maintenance** – Ultra long life cycle dosing valve > 30 million
- **Ease of Installation** – Compact size for easy installation in limited space
- **Applications Flexibility** – Compatible with soft-dose and micro-dose technology for hot fill, powder, and granular applications
- **5 years vacuum warranty** – lowest cost of ownership

PetiteDoser® Specifications

Material	Stainless Steel 300 Series
Head Pressure	0.4 ~ 3 psi
Steady State Consumption	< 0.03 gal (0.1 liter) / hour
Body Dimension	13"H x 2.5"W (340 x 63mm)
Dosing Head Dimension	EA Head 9.5"H x 2"W (241 x 50mm)
Dosing Head Arm Reach	3.7" (93mm)
Weight	6 lbs (3kg)
Utilities	Liquid Nitrogen : 22 psi Gaseous N2 : 60 - 100 psi Electrical : 110-220VAC



Controller Specifications

Model	500FD	800SC	2000DSC
PLC Platform	Siemens S7-1200	Siemens S7-1200	Siemens S7-1200
HMI (LCD touch screen)	4.3" Color	4.3" Color	7.0" Color
Dose Duration, 1ms interval	20 to 1500 ms	15 to 1500 ms	5 to 1500 ms
Dose Volume, mg/dose	10 to 1400	10 to 1400	5 to 1400
Dose Accuracy	± 3%	± 2%	± 1%
Max. Discrete Dosing	500 CPM	800 CPM	2000 CPM
Fixed Delay	✓	✓	✓
Speed Compensation		✓	✓
Dose Compensation		✓	✓
Dynamic Dose	✓		
Encoder Compatible			✓
Nozzle Pre-Cooling	Manual	Manual	Automatic
Nozzle Defrost	Optional (Manual)	Automatic	Automatic
User's Filler Signal Interface			Optional
Modbus RTU User Interface	✓	✓	✓
Mobile Remote Monitoring (Wi-Fi / Lan)			✓
Smart Maintenance			✓
Overall Equipment Effectiveness	✓	✓	✓
Recipe Storage	5	5	12
Dosing Head	Bimba / EA	Bimba / EA	EA / ES
Certifications	CE, IP65	CE, IP65	CE, IP66