

PET FOOD



PLP Systems

TECHNOLOGY IN LIQUID HANDLING & POWDER DOSING



IMPROVING PALATABILITY

ADVANCED COATING TECHNOLOGY

SOLUTION ORIENTED

PRECISION

PERFORMING SPRAY

HIGH-END PRODUCTS

HOMOGENEITY

ACCURATE DOSING

HIGH QUALITY

EASY CLEANING

EXPERIENCE





OUR COMPANY

PLP SYSTEMS was founded in 1980, in Lugagnano Val d'Arda, Piacenza.

PLP is specialised in liquid and powder weighing equipment in the animal feed, pet food, food & beverage, oenology, chemical and cement industry.

An important area for PLP is the development of continuous coating applications and the handling of pet food kibbles.

Making kibbles tasty and palatable with liquid or powdered palatants, loved by animals, as well seeking more “natural” and better quality ingredients, has been one of PLP Systems main focuses.

PLP works actively and guarantees: competence, professionalism and high quality manufacturing products in all countries throughout the world.

DOSAMIX TECHNOLOGY

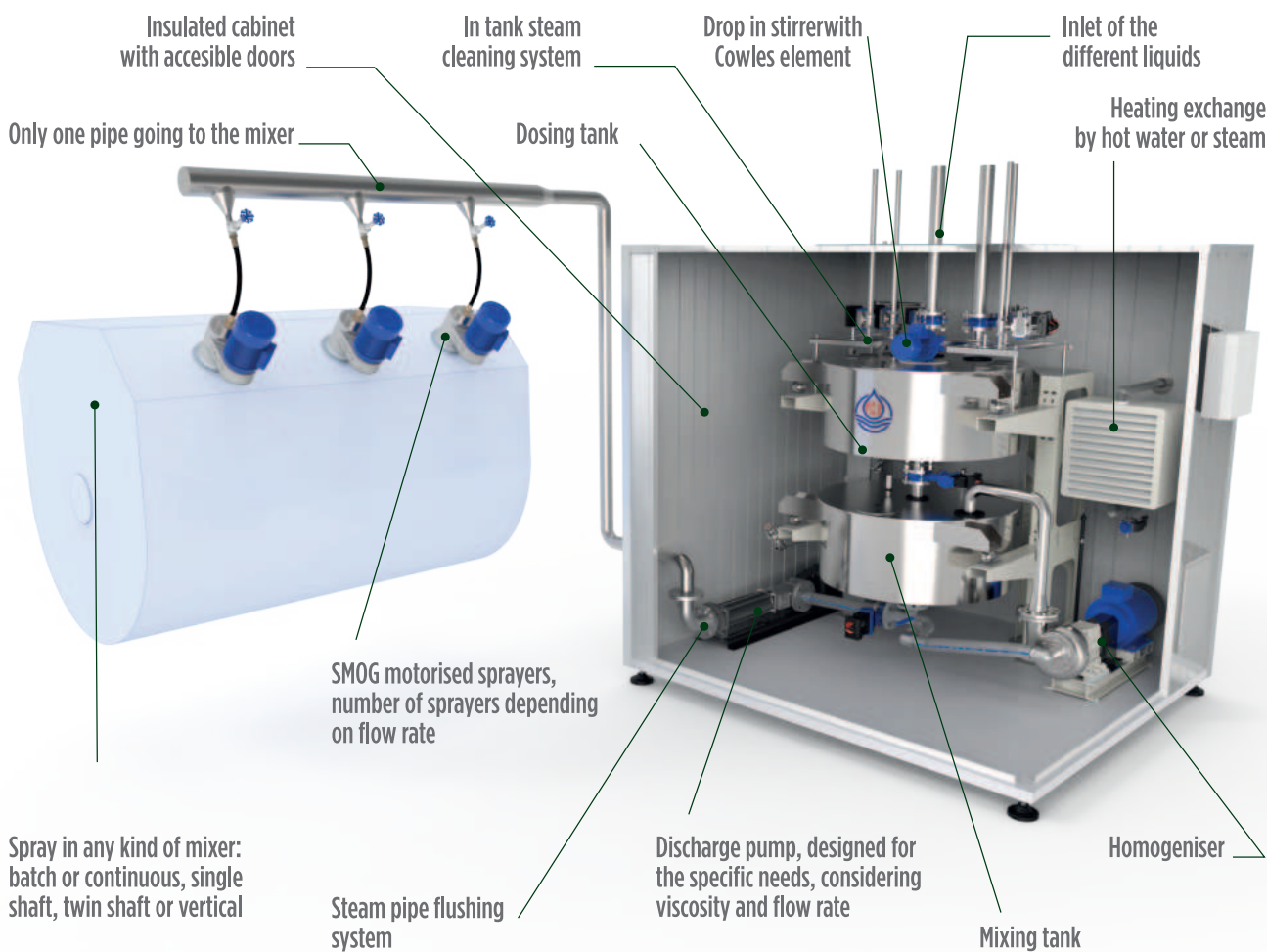
The Dosamix system is the best way to add all the liquids into the mixer.

By creating a homogeneous premix of the various liquid components, they are then incorporated into the mill, a process that can take place in the batch mixer, or directly in the extruder's conditioner.

The premix of the liquids is handled by the HOMOGENISER

machine, which creates a homogenous solution even when combining together both water and oil based products, with any type of viscosity.

The spraying is done by our SMOG Atomiser that guarantees small droplets and a perfect distribution into the mixer.



INVESTMENT RETURN AND COST SAVING

Poduction capacity will increase
Increase moisture retention
Longer life of the dies, pumps and dosing lines

Less cleaning time
Reduction of lumps and fines
Better end product quality

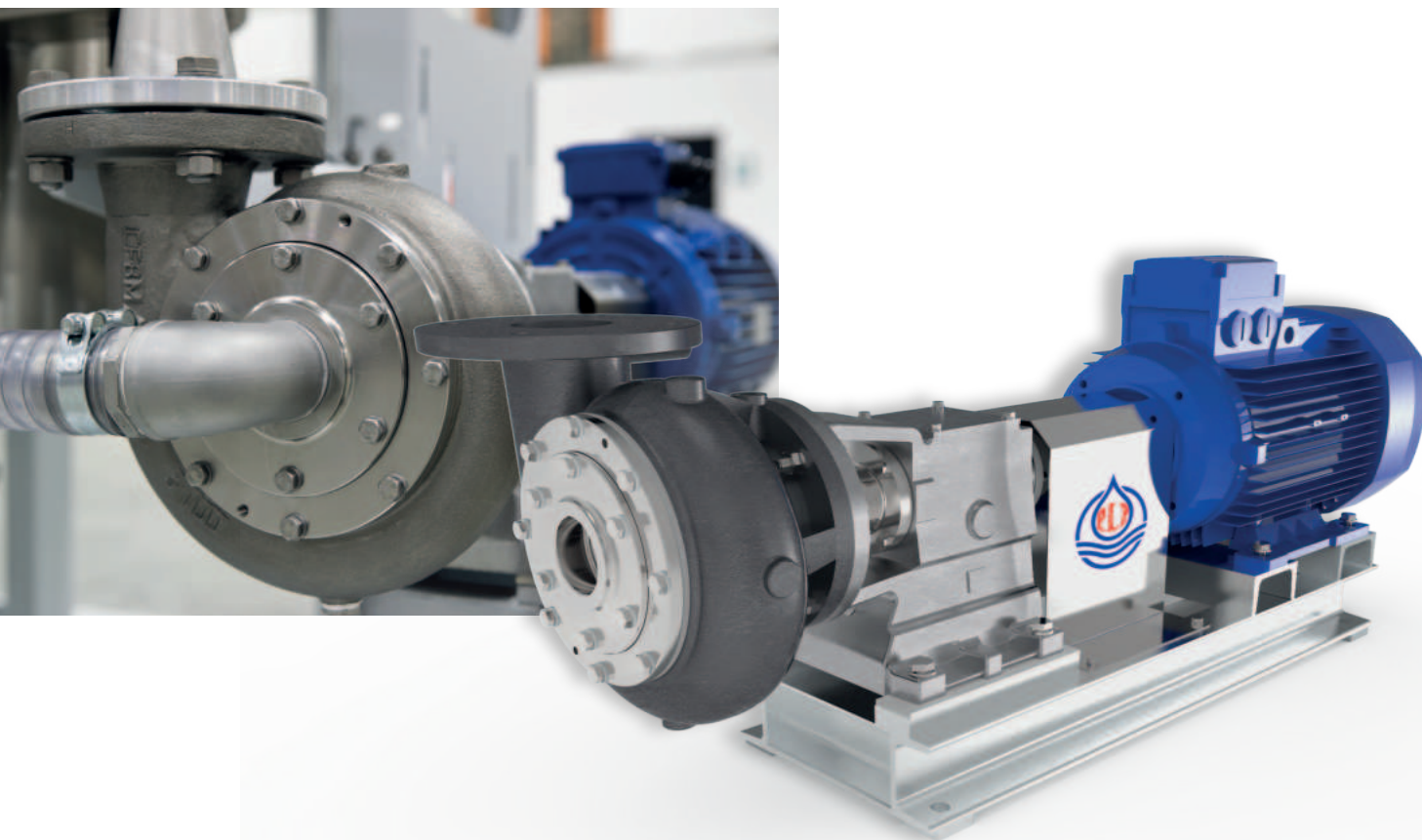
Benefits of the dosing unit

- HIGH ACCURACY OF THE PRODUCT TO BE DOSED
- MACRO AND MICRO COMPONENT MANAGEMENT
- TANK CLEANING AND SANITATION SYSTEM



Type	Capacity (L)	Types of mixing		Liquids
		Emulsifier	Homogeniser	
DOSAMIX 2/25	25	F 400	EML 1.5/200	4
DOSAMIX 2/50	50	F 400	EML 1.5/200	4
DOSAMIX 2/100	100	F 400	EML 1.5/300 - EML 3/100	6
DOSAMIX 2/150	150	F 400	EML 3/100	6
DOSAMIX 2/300	300	F 400	EML 3/100	8
DOSAMIX 2/400	400	F 400	EML 3/100	8
DOSAMIX 2/500	500	F 400	EML 3/100	10
DOSAMIX 2/700	700	F 400	EML 3/100	12
DOSAMIX 2/1000	1000	F 400	EML 3/100	12

HOMOGENISER



Benefits of the HOMOGENISER

- REDUCTION OF LUMPS AND PARTICLES OF THE LIQUIDS
- IMPROVE THE SPRAYING PHASE EFFECT AND THE COEFFICIENT OF VARIATION OF THE LIQUIDS MIXED TOGETHER
- IMPROVE THE QUALITY OF THE FINAL PRODUCT AND COLOUR QUALITY OF THE COMPOUND
- REDUCTION OF VARIATION OF PRODUCTION AND CONSUMPTION OF THE EXTRUDER MACHINE
- RETAINS HUMIDITY IN THE FINAL KIBBLE, AS THE WATER WILL BECOME ENGLOBED INTO THE OIL PARTICLES
- PERFECT HOMOGENEITY OF THE PREMIXED LIQUIDS

Type	Motor	Speed	In/out	Flow	Notes
EML 1.5/P	1,5 KW	2800 rpm	3/4 gas	3 m ³ /h	Body in POM
EML 1.5/200	1,5 KW	2800 rpm	3/4 gas	3 m ³ /h	Monoblock
EML 1.5/300	3 KW	2800 rpm	3/4 gas	5 m ³ /h	Monoblock
EML 1/200	1,5 KW	2800 rpm	3/4 gas	3 m ³ /h	Assisted
EML 1/300	3 KW	2800 rpm	3/4 gas	5 m ³ /h	Assisted
EML 3/100	7,5 KW	1400/2800 rpm	2"/DN 80	15 m ³ /h	High shear
EML 3/400	30-55 KW	1400 rpm	DN 100	48 m ³ /h	High shear

SMOG



Benefits of atomizer SMOG sprayer

- NO NEED FOR HIGH PRESSURE TO NEBULIZE THE LIQUIDS
- FLOW RATE CAN RANGE FROM 0.1 TO 40 LITRES PER MINUTE, ALWAYS GUARANTEEING A GOOD NEBULIZATION
- SUITABLE FOR ANY TYPE OF LIQUID WITH ANY VISCOSITY
- THANKS TO THE LARGE HOLE INJECTOR, BLOCKAGE OF THE NOZZLE IS RARE
- LESS CLEANING REQUIRED COMPARED TO WHEN USING STANDARD NOZZLES
- IMPROVE CV "COEFFICIENT OF VARIATION" OF THE LIQUIDS SPRAYED INTO THE MIXER, THE QUALITY OF THE FINISHED PRODUCT
- REDUCTION OF MAINTENANCE FREQUENCY

Type	Mounting	Range	Assist	kW	Notes
MicroSMOG	TOP/SIDE	0-20 lt/min*	Air blower	0.12	Any liquid and pressure
SMOG	TOP/SIDE	0-30 lt/min*	Air blower	1.1	Any liquid and pressure
SMOG XL	TOP/SIDE	0-40 lt/min*	Air blower	1.1	Any liquid and pressure

* Given limits with low-viscosity fluids, to be confirmed depending on the product.

MDP

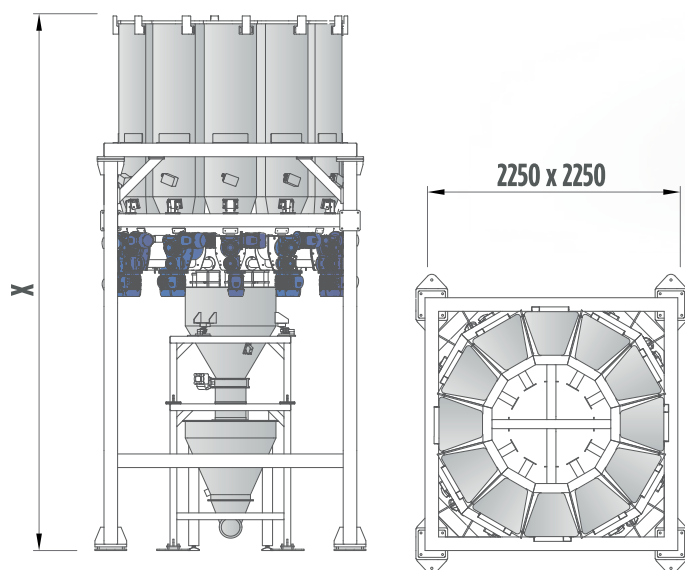
MDP, micro powder dosing system used for the formulation of additives and premixes, constructed on a standard carousel design with up to 12 components and very small dimensions.

However, it can be customised according to customer requirements.

The batch dosing can range from a few grams up to 1000 kg capacity.

The system is normally used as a batch weigher, dosing each powder individually into the weighing hopper.

Other configurations such as loss-in-weight dosing, continuous dosing and volumetric dosing are possible.



Type	BATCH 25L	BATCH 50L	BATCH 100L	BATCH 200L	BATCH 300L	BATCH 400L
MDP - 50	3010 mm	3060 mm	3210 mm	3460 mm	3860 mm	4310 mm
MDP - 100	3410 mm	3460 mm	3610 mm	3860 mm	4260 mm	4710 mm
MDP - 200	4210 mm	4260 mm	4410 mm	4660 mm	5060 mm	5510 mm
MDP - 300	5010 mm	5060 mm	5210 mm	5460 mm	5860 mm	6310 mm
MDP - 400	5810 mm	5860 mm	6010 mm	6260 mm	6660 mm	7110 mm
MDP - 500	6610 mm	6660 mm	6810 mm	7060 mm	7460 mm	7910 mm

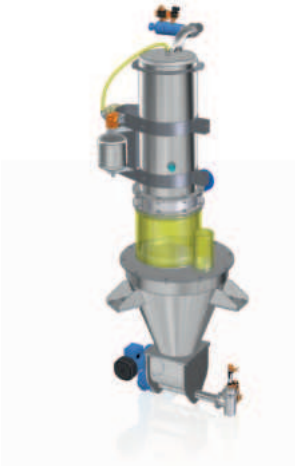
Approximate dimensions: MDP station + batch hopper WH + Pneumatic hopper PBH -- Plan dimensions 2250 mm

Benefits of the MDP system

- WIDE RANGE OF CAPACITY DOSING
- ACCURACY AND REPEATABILITY OF THE DOSAGE
- FLEXIBILITY AND SPEED OF THE BATCH
- COMPACT SIZE, IDEAL FOR INSTALLATION IN EXISTING SYSTEMS
- EASY WORKING PROCESS AND MAINTENANCE
- EASY CLEANING THANKS TO THE FAST CLAMPS CONNECTIONS
- MODULARITY AND EXPANDABILITY FOR FUTURE IMPLEMENTATIONS

Batch Kg	Batch liters	Resolution
0.5 - 1	3	+/- 0,5 g
1 - 3	5	+/- 1 g
4 - 5	10	+/- 2 g
5 - 15	25	+/- 5 g
15 - 30	50	+/- 10 g
4 - 50	75	+/- 10 g
50 - 75	100	+/- 15 g
75 - 100	150	+/- 30 g
80 - 150	200	+/- 30 g
100 - 200	300	+/- 50 g
150 - 250	400	+/- 50 g
200 - 300	500	+/- 100 g
300 - 500	700	+/- 150 g
500 - 700	1000	+/- 200 g

DOSING STATION ACCESSORIES



AUTOMATIC PNEUMATIC
LOADING STATION,
FOR EACH FEEDER



BAG EMPTYING STATION, WITH
ASPIRATION AND FILTER



UNLOADING BIG BAG
STATION, WITH DOSING
SCREW



UNLOADING BAG STATION WITH
CUTTER AND LEXAN PANEL.
CONNECTED TO THE PNEUMATIC
LOADING LINE

MT SYSTEM

Continuous twin shaft paddle coater, MT Series.
The best application for a premium quality pet food.



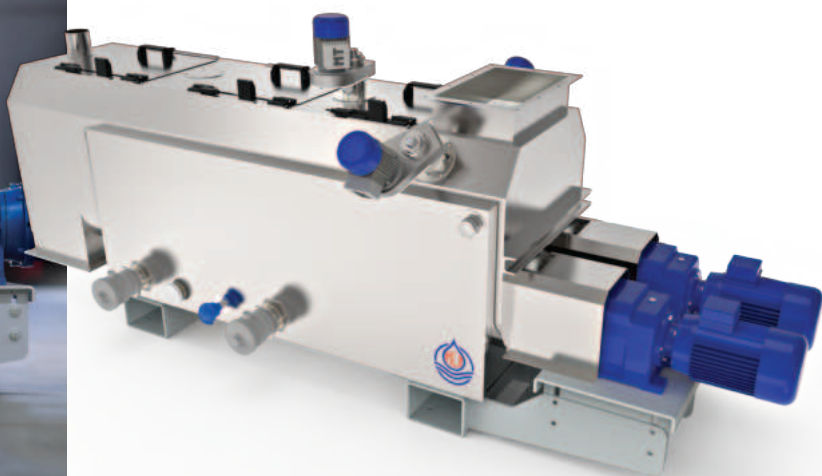
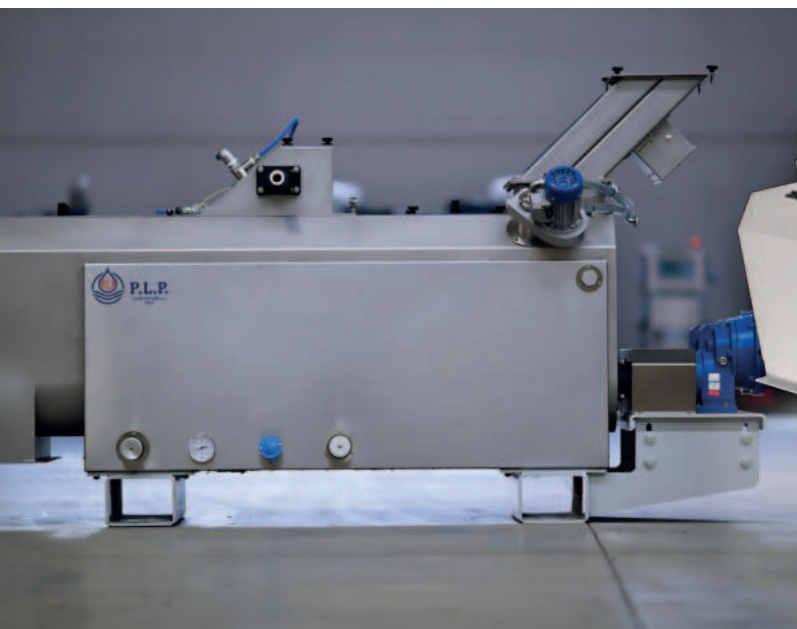
Example of a pet food coating line, using: the MT series coater, gravimetric feeding belt and Dosamix system for multiple oil inclusion and separate dosing of digest.

Benefits of MT System

- ACCURATE DOSING OF THE KIBBLES AND ADDITIVES
- HOMOGENEITY COATING WITH A UNIFORM FINAL COLOUR OF THE FOOD
- IDEAL FOR SPRAYING SMALL AMOUNT OF OILS AS LOW AS 0.5% OR LESS
- ABLE TO APPLY UP TO 17% OF OILS ON COATING
- RELIABLE, FLEXIBLE AND EASY TO RUN, MAKING IT THE BEST APPLICATION FOR COATING
- EXCELLENT SPRAYING AND HOMOGENEITY OF ADDED HYDROLYSATES
- PROVIDES HIGH RETENTION OF THE KIBBLE WITHOUT DAMAGING IT



MT SERIES



The MT coating system, is a complete machine able to mix in line: pellets, kibbles, and other granulated products with additives such as: liquid enzymes, fat, digest, aromas, oil, medicines, vitamins.

The coater MT, is complete with two shafts and adjustable paddles to mix and hold the product in suspension, and is as well equipped with an electronic device used to identify the instantaneous flow of the product, in order to determine the right amount of additive set by the operator.

Type	Capacity	Addition	Power
MT10	0.3-1,5 t/h	0.1-10%	3+3 kW - H 3+3 kW
MT30	1-3 t/h	0.1-10%	4+4 kW - H 3+3 kW
MT30XL	1-5 t/h	0.1-17%	4+4 kW - H 3+3 kW
MT50	3-8 t/h	0.1-17%	5+5 kW - H 3+3 kW
MT100	6-15 t/h (up to (20t/h)	0.1-17%	5+5 kW - H 3+3 kW

RETENTION HATCH ARV

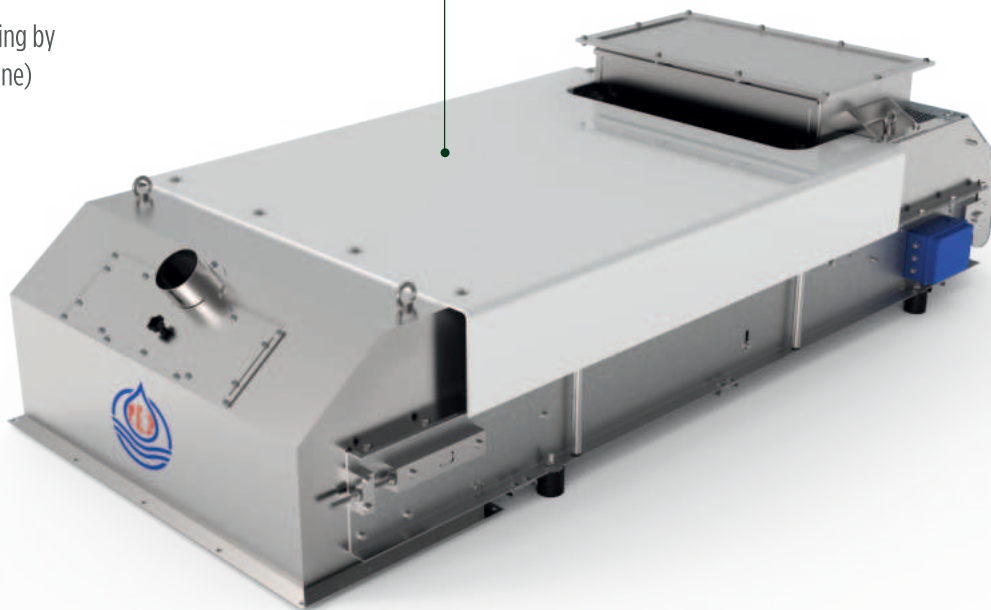
Several systems are used to increase the retention of kibble inside the machine in order to increase fat adhesion.

These include the automatic **RETENTION HATCH ARV** valve which slows down the release of the product and increases its volume inside the machine.

ADVANCED COATING

ENSP

Gravimetric continuous dosing,
with weighing belt
(or gravimetric dosing by
screw feeder machine)



MicroSMOG

Motorized sprayer, designed for
adding fats and hydrolysed liquids
for achieving a perfect nebulization
with any type of liquid, at any
viscosity and capacity.
Thanks to the injection nozzle of 9
mm, the sprayer avoids blockages
and dirtiness.



NG TECHNOLOGIES



MD/G-LOSS

Gravimetric proportional screw feeder for dosing digest and other powdered additives

After dosing, the powders are sprayed with a Venturi injector that increases distribution and homogeneity

DRUM COATING SYSTEM

The DC coating system is a complete machine, consisting of a continuous weight dosage of the product, a mixing and coating system by rotating drum and a proportional dosing system of liquid or powder additives.

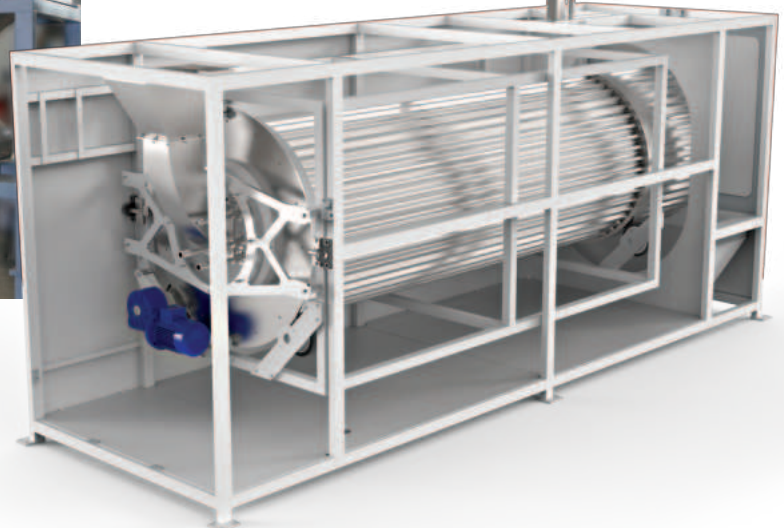
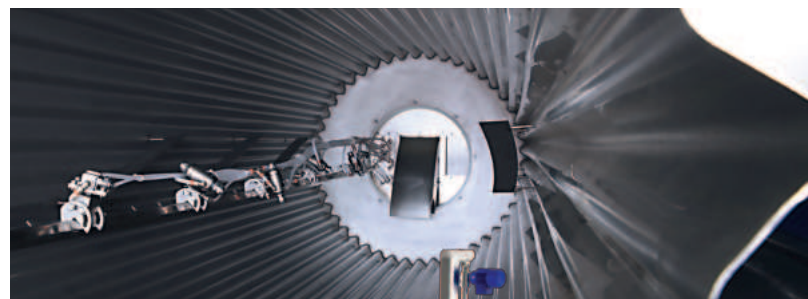
In the pet food sector, this type of technology is used

exclusively for the treatment of semi-moist products, biscuits, snacks, pillows, sticks or other very fragile products.

Thanks to its “gentle” movement, the damaging of the product is avoided.



Complete line with top hopper for receiving the product, weighing belt, elevator, drum coating machine and dosing system.



Type	Diameter	Length	Capacity	Addition
DC 600-2000	600 mm	2000 mm	0.3 – 4 m ³ /h	0,01 – 8%
DC 800-2000	800 mm	2000 mm	0.6 – 6 m ³ /h	0,01 – 8%
DC 1000-2000	1000 mm	2000 mm	1 – 10 m ³ /h	0,01 – 8%
DC 600-3400	600 mm	3400 mm	0.3 – 5 m ³ /h	0,01 – 12%
DC 800-3400	800 mm	3400 mm	0.6 – 7 m ³ /h	0,01 – 12%
DC 1000-3400	1000 mm	3400 mm	1 – 12 m ³ /h	0,01 – 12%

Capacity and addition may vary depending on the type of application, granularity, viscosity and absorption capacities.

WASTE RECOVERY PLANT SYSTEM

In order to reduce the waste of extrusion discards left from the beginning and end of the cycle, the product can be recovered and mixed through a turbo-emulsifier which breaks up any eventual large grains together

with water. The product obtained, similar to a fluid paste, is dosed into the conditioner. This greatly reduces waste and saves the costs of both raw materials and any costs associated with disposal.

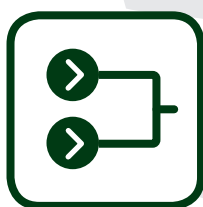


Type	Capacity	Lump breaker power
WRS 250	250 Litri	4 kW
WRS 500	500 Litri	5.5 kW
WRS 1000	1000 Litri	7.5 kW

The system can be supplied with various loading methods: by screw conveyor either aero-mechanical or manual or with tilting tanks through motor-powered lifting systems.



**Batch
dosing**



**Continuous
dosing**



**Homogenizers
and Emulsifiers**



Sprayers



Coating

**Find out more on:
www.plp-systems.com**



P.L.P. SYSTEMS s.r.l

Sp21 N.303 29018 Lugagnano Val D'Arda
Piacenza - Italy

Tel. +39.0523.891629 - Fax +39.0523.891013
info@plp-systems.com