Gravimetric Blenders
MXP Series

English

The MXP gravimetric blenders combine in one single machine the advantages of batch dosing with precise and rapid throughput adjustment of the loss-in-weight technology. They represent the ideal solution to satisfy the requirements for dosing and process control in the extrusion field, in particular in the production of single and multi-layer blown and cast films, and of pipes. The MXP dosers allow for elimination of wastage of raw material and ensure constant quality production.

PIOVAN

Customers. The core of our innovation

Gravimetric blenders customised for the extrusion sector

The MXP gravimetric blenders combine in one single machine the advantages of batch dosing with precise and rapid throughput adjustment of the loss-in-weight technology. They represent the ideal solution to satisfy the requirements for dosing and process control in the extrusion field, in particular in the production of single and multi-layer blown and cast films, and of pipes. The MXP dosers allow for elimination of wastage of raw material and ensure constant quality production.

Exclusive advantages of a modern design

> **Rapidity in gathering data from the line** and consequent adjustment of the dosing functions and the extruder control

> **No interruption of the extrusion process**: it is possible to access the doser and modify the recipe, without stopping production

> Possibility to **modify the recipe while running**, with the adjustment of the parameters from the first batch

> **Rapid start-up procedure**; the blender starts immediately dosing after selecting the recipe, and it works in the automatic mode

> Advantage of the native integration of the **measuring functions of film thickness** and **width**

Gravimetric Blenders MXP Series

The gravimetric technology

MXP blenders can dose up to 6 components (virgin material, regrind, masterbatch and additives), with a total throughput of up to 600 kg/h. A feeding hopper is dedicated to a single component, and it is equipped with a rapid emptying device, a wide inspection and cleaning window and pre-arranged for the installation of a minimum level sensor.

Components are individually dispensed into the mixing chamber using dosing augers or pneumatically operated slide gates, and weighed till the set batch is achieved. The batch is discharged into the mixer, which creates a homogeneous blend before entering the plastification screw.

The performances

> **High precision** and **batch repeatability**, also in case of variations in granule dimensions or bulk density of the various components

> **Accurate dosing** also with components used in **low percentages**, thanks to screws of absolute precision

> **Constant control** of the extrusion line's **parameters**: screw speed and haul-off speed

> **Edge-trim management function** to optimise and automate the management of edge-trims, both with in-line and off-line recovery

Costant blend guaranteed

The spherical **mixer**, with no stagnation point, and the particular design of the mixing shaft, ensure a perfectly homogeneous blend and constant material flow feeding the extruder. The mixing chamber and the mixer are entirely in stainless steel, to avoid the risk of material contamination and allow effective cleaning operations. The mixer can be easily extracted.

The **loss-in-weight function** is included, thus making the mechanical construction particularly compact. The mixer positioned on the weigh pan is used as a gravimetric hopper for the calculation of the extruder's output, allowing thus detection of any minimum variation. The system is able to rapidly operate and keep the required production parameters constant.

Dosing precision

Reliable dosing devices, the weighing system with a **resolution higher than 1/100 of a gram** and the state-of-the-art software control ensure for all models high dosing precision and maximum adherence to the set.

All models are equipped with pneumatically operated slide gates specifically designed to ensure high reliability for any type of material and dosing augers, ideal for precise dosing.

Quick production changes

The operator can carry out cleaning and material change operations, without need of stopping production. Every dosing hopper can be rapidly emptied to allow individual recovery of the components, which can be used for future production batches.
Access to the mixing chamber is easy and fast, thanks to the wide hinged inspection door.

The options

On demand, the MXP dosers can be supplied with:
> incremental encoder for reading the line speed
> kit for detecting RPMs of the extruder
> minimum level sensor to signal material shortage
> adapting flange for installation of the doser on the extruder

To satisfy the various application needs in the extrusion sector, Piovan offers also:
> TXP gravimetric control unit for single component. It allows control of the layers also in applications requiring the use of a single material on one or multiple layers. Management is carried out through the main operator interface.
> thickness level sensor for blown films, which allows immediate visualisation of the profile
> width-measuring device, to visualise the width of the film produced in real time.

A wide range of configurations

The range of MXP dosers is composed of three models, available in a flexible configuration. It is possible to install up to 4 dosing stations in the unit MXP 200 and MXP 300, and up to 6 stations in the MXP 500 model.
The auger stations are modular, and can be added at any time.

Configuration with 6 dosing stations - MXP 500

MXP 300 model

Integrated transport solutions

As a completion of the dosing units, Piovan offers also transport solutions – individual and centralised ones – for granule conveying local to the dosers and in any plant solution (outside silos, inside storage hoppers, material distribution stations etc.). In this field the company has deep knowledge and has realised many granule handling installations in various application sectors.

Piovan powerful electronics

The functioning of the MXP series dosers is controlled by a **microprocessor** included in the electric board mounted and on the unit frame. Both the card and the software, the fruit of Piovan's experience, have been expressively developed for the MXP models and the extrusion field.
The highly powerful and flexible Piovan electronics has the following main features:
> powerful hardware and software filters thanks to which the loading cells collect data without being affected by mechanical vibrations and industrial electric disturbances;
> dangerous electrostatic charges generated from plastic material handling do not affect the software's functioning;
> integrated management of the **thickness measuring sensor**;
> integrated management of the film width measuring sensor;
> calibration of the weighing cells directly from the unit's control;
> high calculation capacity for quick data collection and elaboration.

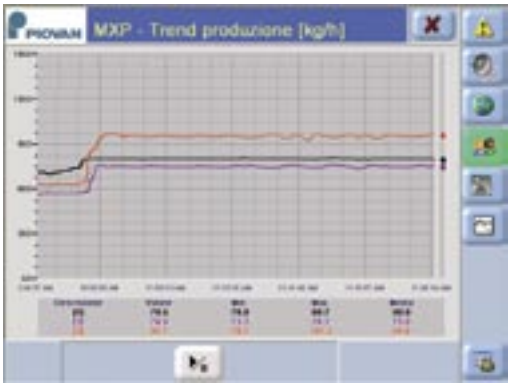
User-friendly control instruments

A series of highly performing colour touch screen panels combined with an accurate graphics design ensure excellent visualisation and a really user-friendly use of the extrusion line, of the dosers and of the data charts.

The operator can access the following functions:
> dosing management control
> extrusion control function
> haul off control function
> management of the line production data
> alarm management
> management of material consumption totalisers
> recipe database
> visualisation of thickness profile
> visualisation of film width.

Process parameters allow the operator to work in the **weight/meter** mode or in the mode of **average thickness management**. The thickness-measuring sensor (if present) displays the thickness of the film with the variation range admitted. The peaks over the limit are highlighted to allow for rapid visual evaluation of the number of points and of the wideness of the off-the-thickness.

As standard, the control graphics is enriched with Cartesian diagrams, which represent the consumption of every doser, and the totalisers referred to total consumption. The possibility to visualise the real dosing values and throughputs of the extruder in the form of graphics trend allows the operator to monitor the production trend at a glance.



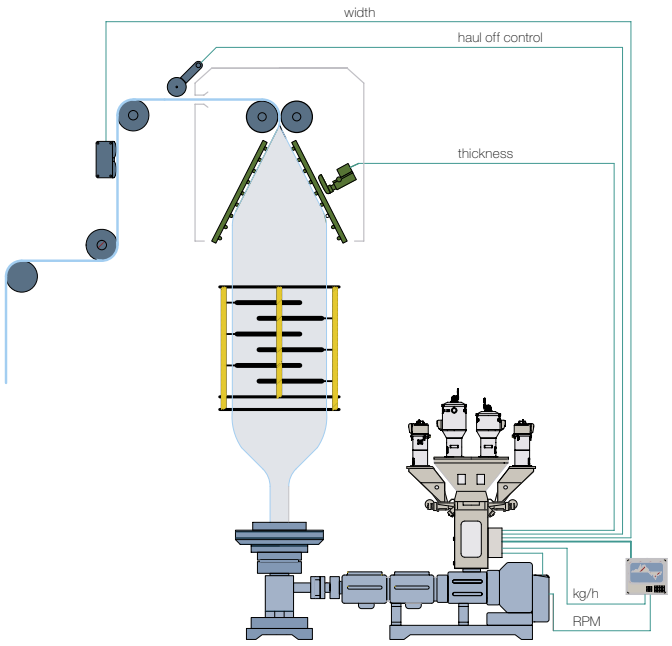
In the more complex systems, where several data are to be controlled, the MXP system allows an even clearer visualisation and the possibility to store in all the production data and events. In this way, also after some time, the operator can refer to the list of all the events and carry out research by production batch.

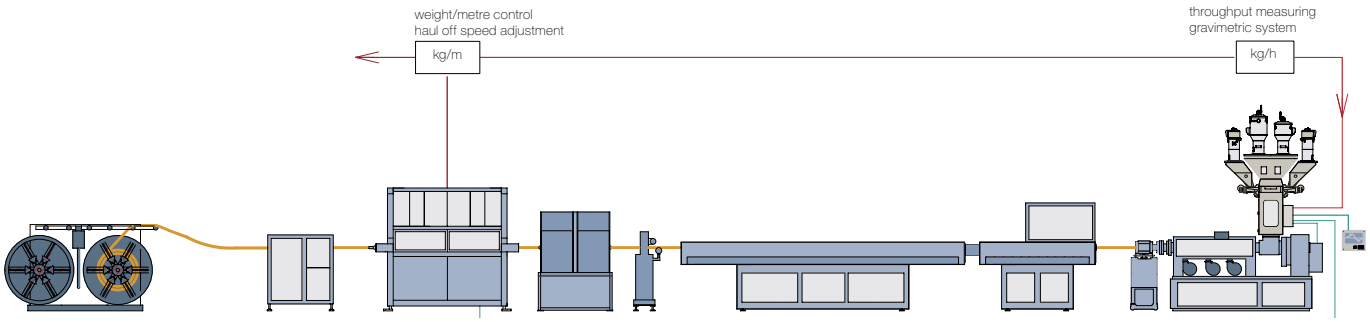
When the system is installed in plants already equipped with a general control panel, Piovan is able to supply a direct control system, without passing through the operator interface. It offers all the most important communication protocols and supplies software packages to simplify data exchange.

Open to the exterior world

The MXP system has the possibility to share all the dosing and extrusion data with other software systems, in order to allow for simplified management and elaboration.

Examples of applications





Technical data

		MXP 200	MXP 300	MXP 500
Batch weight	kg	3	4	6
Dosing stations max.	no.	4		6
Augers	no.	2		2
Slide gates	no.	4		4
Auger motor power	kW	0.18		0.18
Mixer motor power	kW	0.24		0.24
Mixer volume	dm^3	8		20
Capacity of the auger hoppers	dm^3	20		25
Capacity of the slide gate hoppers	dm^3	50		75
Throughput	kg/h	200	300	450
Max. power installed	kW	0.8		0.8
Compressed air supply	bar	6-8		6-8
Max. compressed air consumption	Nl/h	310		310
Weight	kg	210		250
Max. dimensions	mm	860x795x1275		1745x1050x1510

www.piovan.com

EUROPE

PIOVAN S.p.A.
Tel. +39 041 57.99.111
Fax +39 041 48.74.37
sales@piovan.com

PIOVAN GmbH
Tel. +49 89 329.457.0
Fax +49 89 329.457.11
info@piovan.de

PIOVAN CENTRAL EUROPE GmbH
Tel. +43 2236 312.110.0
Fax +43 2236 312.110.50
office@piovan.at

PIOVAN UK Ltd
Tel. +44 (0) 1527 879.419
Fax +44 (0) 1527 879.504
piovanuk@piovan.com

AMERICAS

PIOVAN Canada Ltd.
Tel. +1 905 629.8822
Fax +1 905 629.8827
info@piovancanada.com

PIOVAN MEXICO S.A. de C.V.
Tel. +52 55 5386.8577/1997.8562
Fax +52 55 1997.8563
infomexico@piovan.ca

PIOVAN do Brasil Ltda
Tel. +55 11 3693.9500
Fax +55 11 3693.9515
piovan@piovan.com.br

ASIA

PIOVAN ASIA Pte Ltd
Tel. +65 6 8745.930
Fax +65 6 8745.901
sales@piovanasia.com.sg

PIOVAN SHANGHAI
Tel. +86 21 5081.5778
Fax +86 21 5081.5788
sales@piovanasia.com.sg

PIOVAN PLASTICS MACHINERY Co. Ltd
Tel. +86 756 383.7770
Fax +86 756 383.7771
sales@piovanasia.com.sg

PIOVAN HONG KONG Ltd
Tel. +852 2368.8728
Fax +852 2368.8758
sales@piovanhk.com.hk

PIOVAN THAILAND
Tel. +662 643 97.53/55
Fax +662 643 97.57
sales@piovanasia.com.sg