WOYWOD

PLASTICOOR

Endless Opportunities

PRECISION SINCE 1971

WOYWOD = PLASTICOLOR
PLASTICOLOR = WOYWOD

Both names are inextricably linked and are well-established in the plastics sector. We have been marketing our PLASTICOLOR dosing units and systems for the plastics-processing industry since 1980. The PLASTICOLOR system is synonymous with precision, quality, longevity and an optimum cost-benefit ratio. It is used by Plastics processing companies and manufacturers of high-quality extrusion and injection moulding systems all over the world.

Woywod. The Woywod staff has decades of experience in the dosing and mixing sectors of the plastics industries.

Woywod was founded in the late 1970`s and was typical of the engineering company supplying equipment into the extrusion industries. Due to technical expertise, ingenuity and ongoing product development through to the current day has made us trusted partner in the plastic processing industry.

Since 1980 when we took on the rights to PLASTICOLOR, our product range has grown and moved onto the current range of products we supply. In a modified form, dosing units continue to be the core elements of the modular PLASTICOLOR system, which we have further developed on a step-by-step basis. Our first units were literally built in a garage and delivered onto our customers.

Our current services range from consultation, planning and design through to production, commissioning on customers site, maintenance of existing equipment. In addition, we offer comprehensive logistics and handling services as well as a comprehensive spare parts service – worldwide.

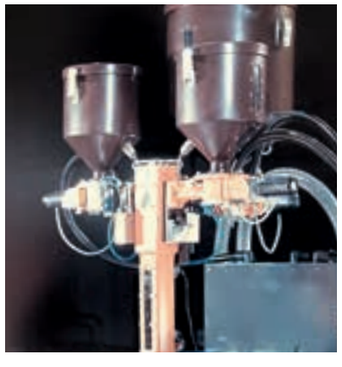
Initially we started with a small production of units but this grew rapidly thanks to a high level of sales due to meeting customers requirements

Innovative and down to earth. For us, this is not a contradiction, but rather a living corporate culture. WOYWOD's passion for innovation is demonstrated in particular by the number of patents that we hold. Our highest priority is to make good products and keep good customer relations.

We aim for our products to be even better and future-proofed while constantly ensuring maximum quality. How do we achieve this? With highly experienced employees and a uniquely friendly team spirit.

Every WOYWOD employee knows their role and that they can depend on their colleagues – and understands what our company is all about. Our close-knit, sociable ethos has made us what we are today.

Our products and systems are extremely versatile. Our customers include manufacturers of cables, wires and fibre-optic cables as well as producers of technical profiles, monofilaments, films, sheets and building materials, we also supply into companies that manufacture injection moulding products. Individual components are designed so that they can be easily combined to create a customised system.



SPECALISTS IN DOSING AND MIXING

WOYWOD is much more than just a supplier of system components for plastics processing.

Consulting, planning and design

The WOYWOD sales team is on hand to advise and develop the ideal solution together with our customers. The modular design of our PLASTICOLOR system means that we typically only need to manufacture a few parts specifically for each customer. Our in-house design team uses state-of-the-art CAD tools to create the plans for the respective systems and special components.

Final assembly and special designs

After approval of the construction plans, all dosing and mixing systems are assembled, finished and tested in our factory in Werneuchen/Seefeld near Berlin. Modifications and custom systems are also implemented there in accordance with customer requirements. At all times, our qualified specialists ensure that our products are of the highest quality.

Logistics and handling

After thorough quality control, our order processing staff guarantee smooth project execution. They make sure that the goods are delivered as agreed to the respective production site – worldwide. Our employees receive constant training to ensure their knowledge of the regulations governing customs clearance, delivery documents, transport, etc. is always up-to-date.

Commissioning and maintenance

As far as possible, our dosing and mixing systems are delivered fully assembled. Assembly of the system as well as the control connections can usually be easily completed at our factory. For more complex systems, we optionally offer commissioning directly on site. As an additional benefit, WOYWOD products are virtually maintenance-free. If there are any other problems, our service staff can provide rapid assistance using remote maintenance tools or directly on-site.

Spare parts

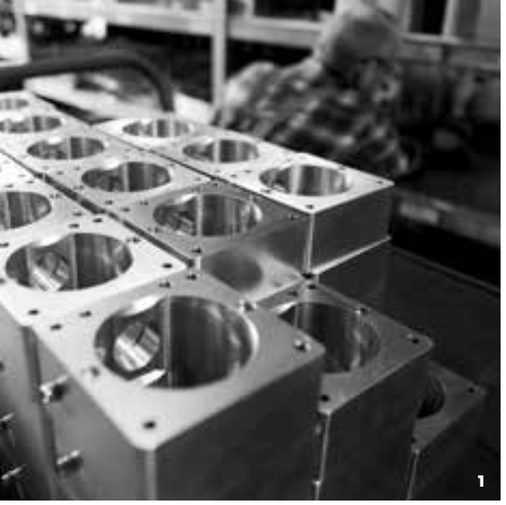
More than 10,000 items are kept in stock in our spare parts warehouse. For orders received by 12.00 pm (German time) the goods are n ormally dispatched the same day, depending on the delivery location, same-day deliveries are theoretically possible. This means the cost of storing spare parts is no longer a factor for the customer.

Training

On request, we offer workshops for our customers' employees with in-depth training of the respective dosing and mixing system. This know-how guarantees a smooth, trouble-free installation process and uninterrupted operation of the system.

MADE IN GERMANY

The PLASTICOLOR system is exclusively finished and tested at our factory in Werneuchen/Seefeld. System assembly by our trained specialists ensures the highest degree of precision and quality. Thanks to them, we are also able to respond to customer requests and modifications in a flexible and straightforward manner.



1 Picking
2 Prototyping
3 PCB repair
4 Final assembly of dosing units
5 Final testing of mixing systems
6 Final inspection
7 Packaging line

THE PLASTICOLOR SYSTEM

Versatile in use

The PLASTICOLOR system has a completely modular structure. The individual components are designed such that they can be easily combined to create a customised system. This makes it possible to create efficient and scalable systems that are precisely tailored to our customers' needs.

At the heart of the system is our sophisticated and robust dosing units. They are available in four sizes with performances of between 70 g/h and 6,600 kg/h. Depending on customer's requirements it is also possible to use all the components either individually or as a complete system.

The PLASTICOLOR system is designed for dosing Granular, free flowing and non-sticky materials, such as masterbatch, regrind, virgin and PVC dry blends. The application's cover all extrusion, blow-moulding and injection moulding manufacturing processes.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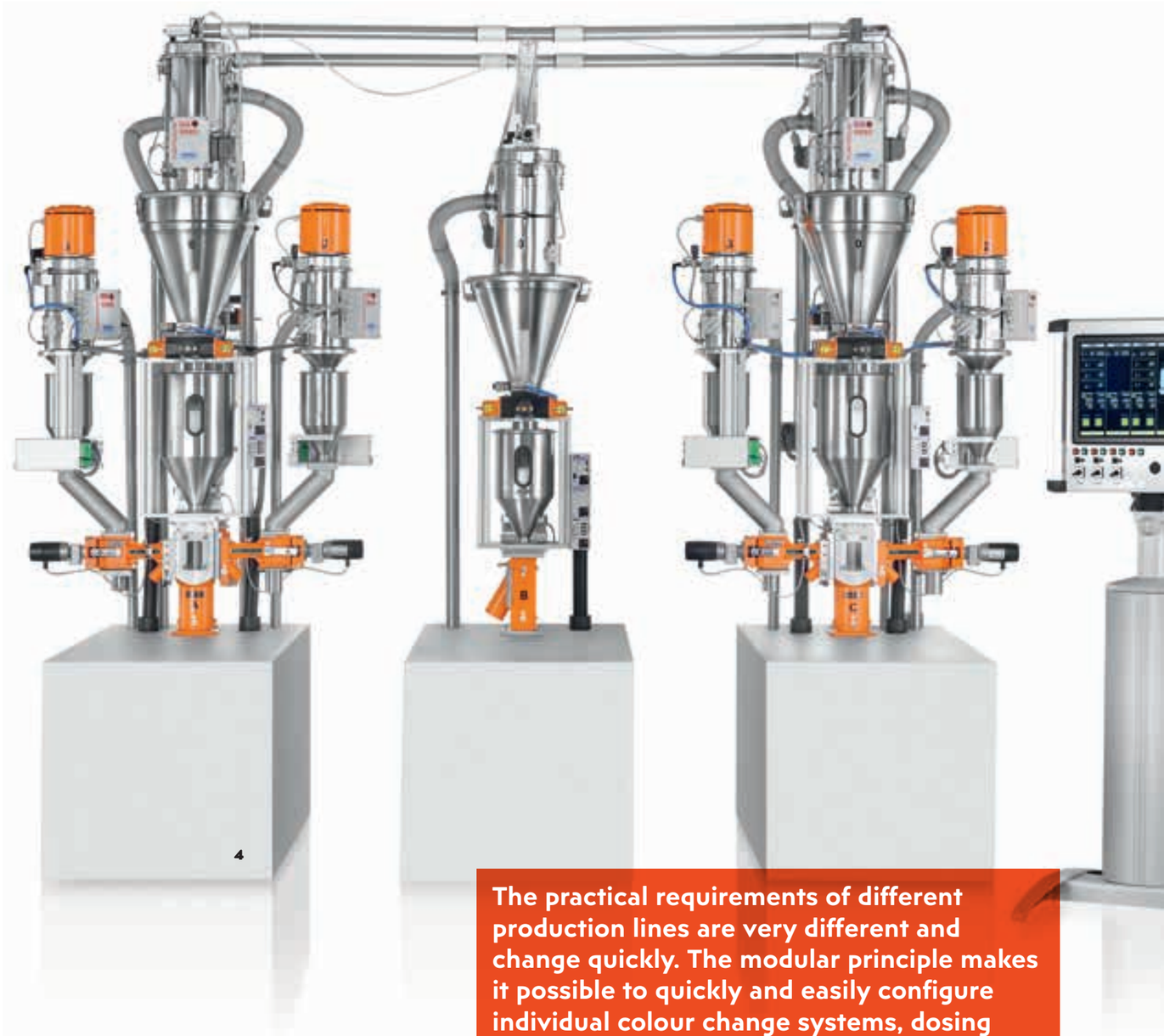
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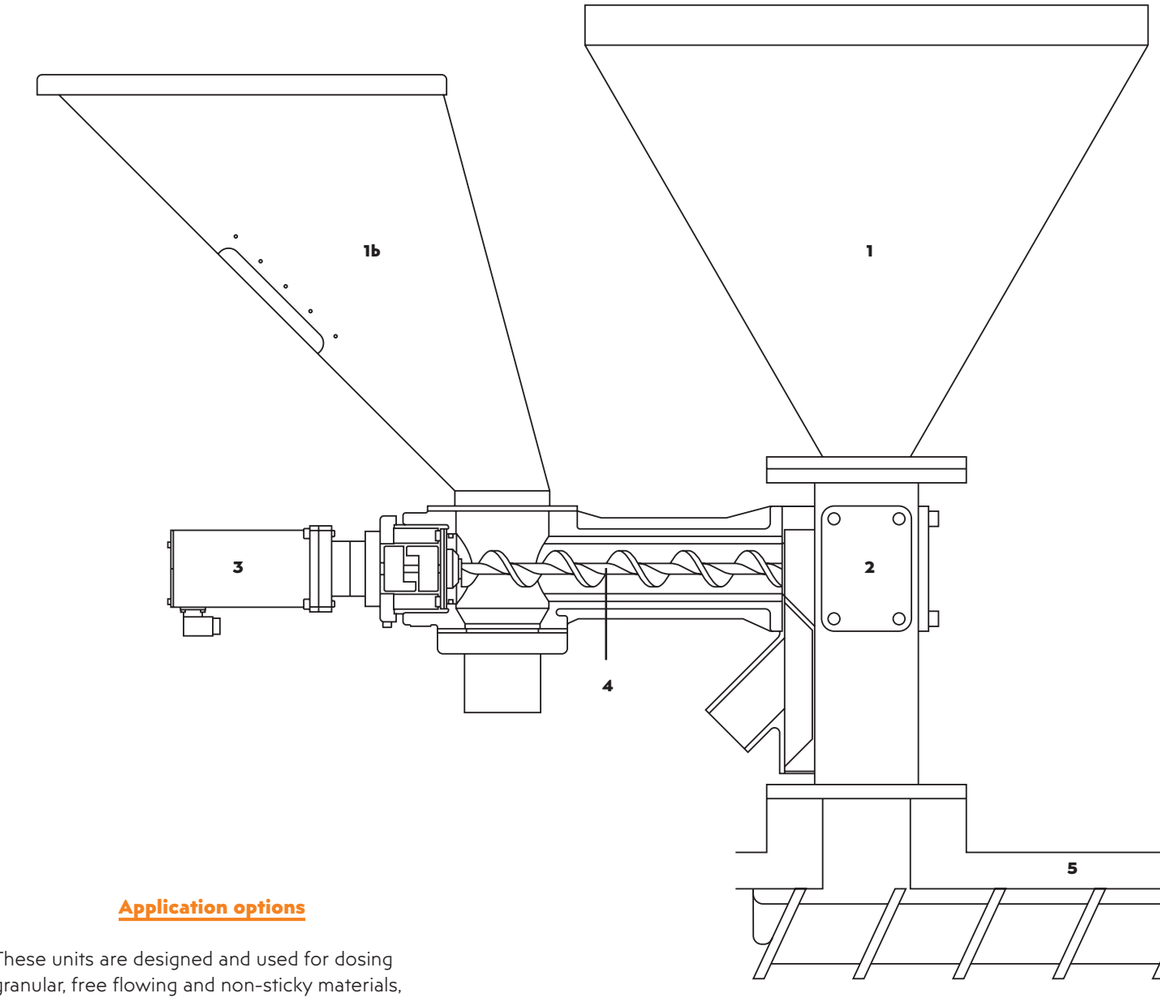
1 Individual dosing unit
2 Colour change system
3 Volumetric mixing station
4 Loss-In-Weight dosing system for 3-layer co-extrusion

The practical requirements of different production lines are very different and change quickly. The modular principle makes it possible to quickly and easily configure individual colour change systems, dosing stations as well as volumetric or gravimetric mixing stations. Depending on the requirements, all the components of our PLASTICOLOR system can be used either individually or as a complete system.

DOSING UNITS

Our sophisticated and robust dosing units are at the heart of our PLASTICOLOR system. They are available in four sizes with output ranging from 70 g/h to 6,600 kg/h.



Application options

These units are designed and used for dosing granular, free flowing and non-sticky materials, such as masterbatch, regrind, virgin and PVC dry blends. They cover all extrusion, blow-moulding and injection moulding manufacturing processes.

Accessories

A wide range of accessories is available for our dosing units including, for example: Fill level sensors for the neckpiece and/or hopper, powder seals, high-capacity inserts/plates for different materials or hopper slides.

1 Main hopper
1b Storage hopper of dosing unit
2 Neckpiece
3 Dosing motor
4 Dosing screw
5 Production machine

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Practical benefits

- Screw changes made easy – thanks to quick-release latches, the motor can be folded away easily.
- Easy cleaning via quick discharge facility (manual or pneumatic).
- Volume control via a neckpiece slide with test discharge for the PC 1500 to PC 3500 devices (optional on some models).
- Filling or discharge in ongoing production (with two or more units) by means of neckpiece slides (manual or pneumatic).

1 PC 1500 dosing unit
Delivery rate of between 70 g/h and 53 kg/h*

2 PC 2500 dosing unit
Delivery rate of between 70 g/h and 205 kg/h*

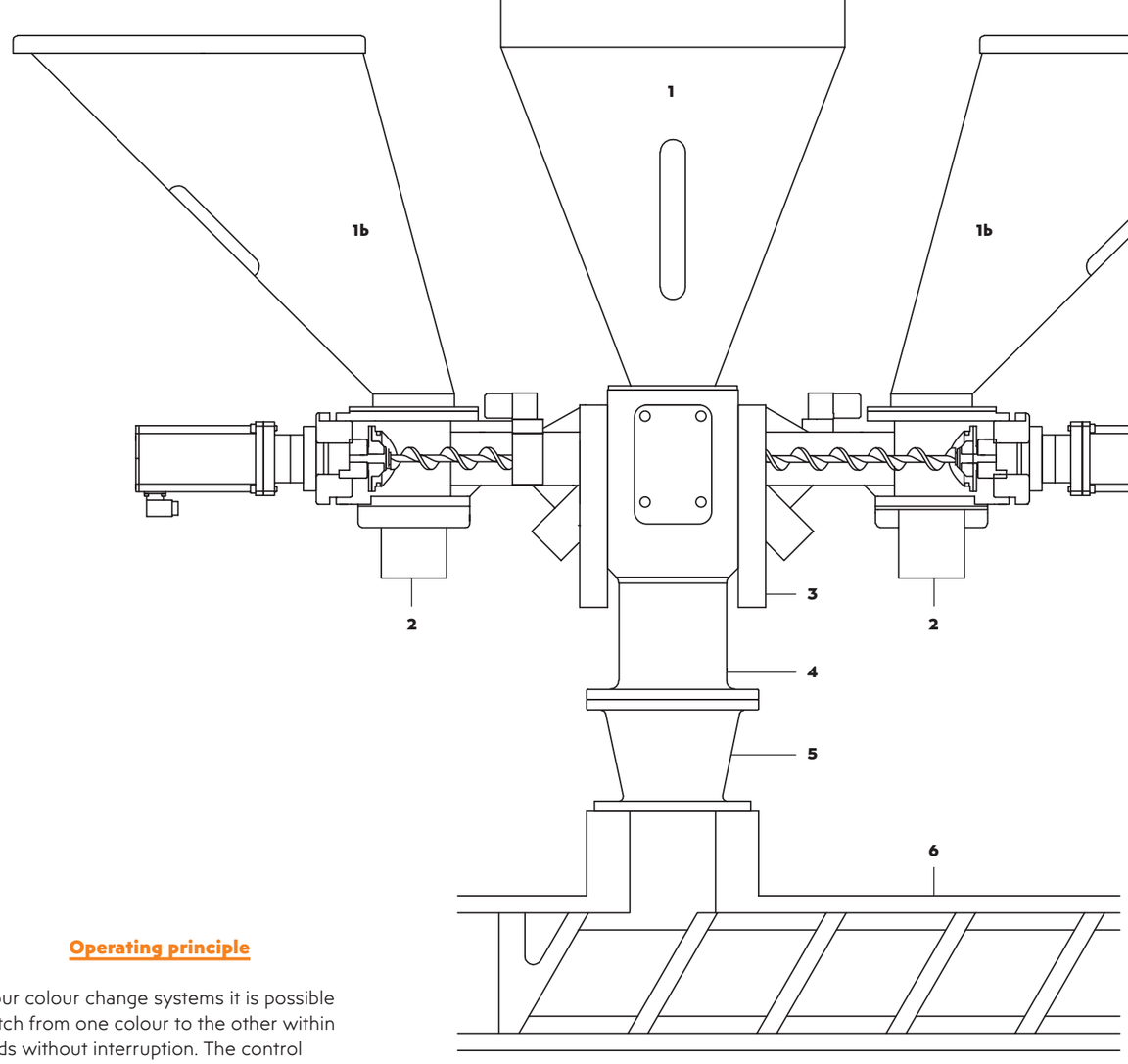
3 PC 3500 dosing unit
Delivery rate of between 100 g/h and 1,100 kg/h*

PC 5000 dosing unit (without illustration)
Delivery rate of between 10 and 6,600 kg/h*

* depending on the material

COLOUR CHANGE SYSTEMS

Our colour change systems are suitable for simple or complex applications designed for extruders and injection moulding machines. They are available in standard versions for two to eight dosing units, or as special designs with more than eight dosing units.



Operating principle

With our colour change systems it is possible to switch from one colour to the other within seconds without interruption. The control can shut down one production unit while simultaneously starting another. Each dosing unit is equipped with a pneumatic neckpiece slide. These open and close automatically, which prevents material from trickling out. Secure closure of the dosing unit that is not involved in the recipe means that it can be prepared for the next production run.

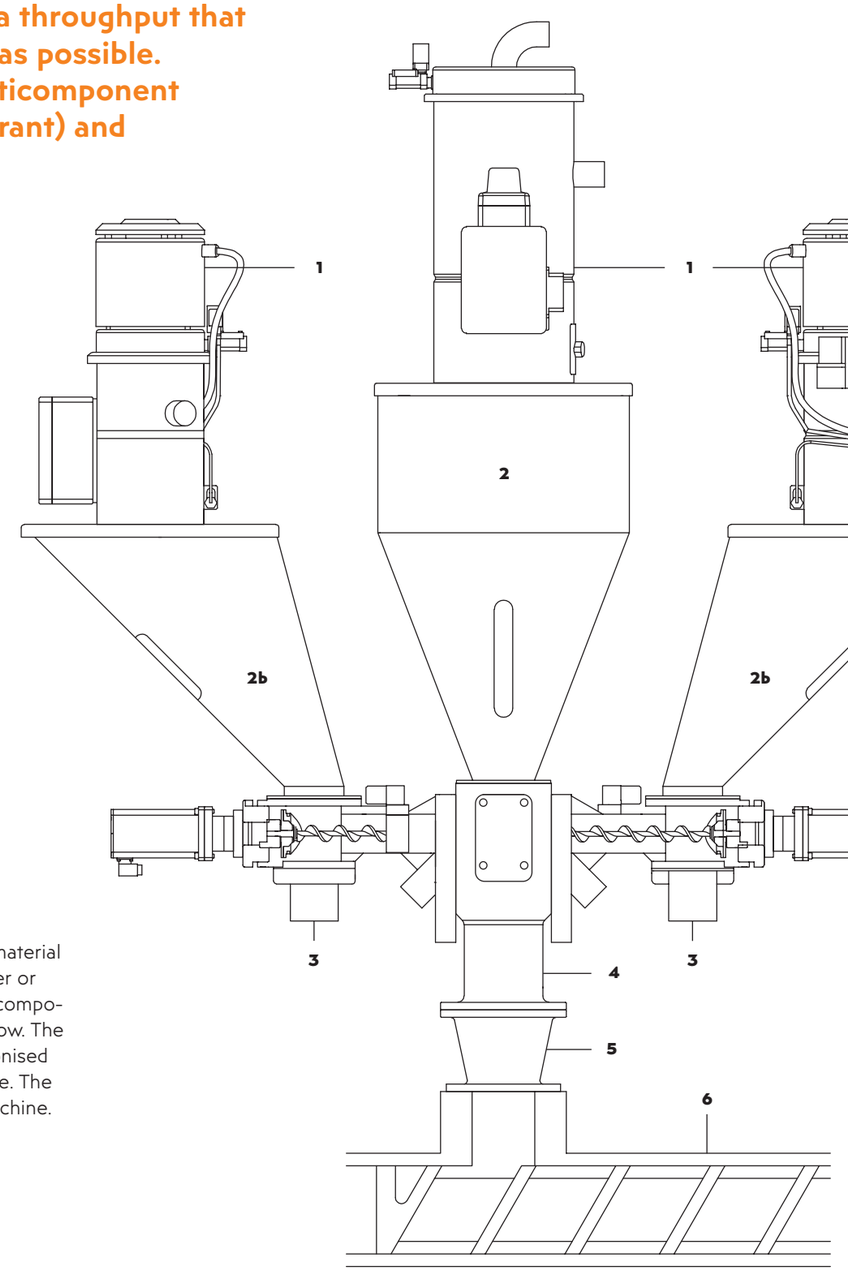
Practical benefits

- Immediate switch over of production.
- Easy handling and operation.
- Small amount of pre-mixed material.
- Reduced set-up costs.
- Avoidance of production waste and rejects.
- Scalable due to interconnection of several units.

1 Main hopper
1b Storage hopper of dosing unit
2 Dosing units
3 Neckpiece slide
4 Neckpiece
5 Adapter
6 Production machine

DOSING STATIONS

In WOYWOD dosing stations, all the components are conveyed from the machine feeder (e.g. main hopper, hopper loader, magnetic separator). Our dosing stations are designed for use with processing machines that have a throughput that is as constant and stable as possible. They are suitable for multicomponent dosing (e.g. catalyst/colorant) and multiple colour changes.



1 Hopper loaders
2 Main hopper
2b Storage hopper of dosing unit
3 Dosing units
4 Neckpiece
5 Adapter
6 Production machine

Operating principle

Just like in our individual units, the main material flows freely into the screw of the extruder or injection moulding machine. All additive components are dosed into the main material flow. The speeds of the dosing screws are synchronised with the speed of the processing machine. The materials are mixed in the production machine. The short distance between dosing and processing prevents separation.

Practical benefits

- Custom compositions are possible.
- Dosing of secondary components directly via the machine feeder.
- Avoiding of separation.
- Can be extended to a mixing station.

MIXING STATIONS

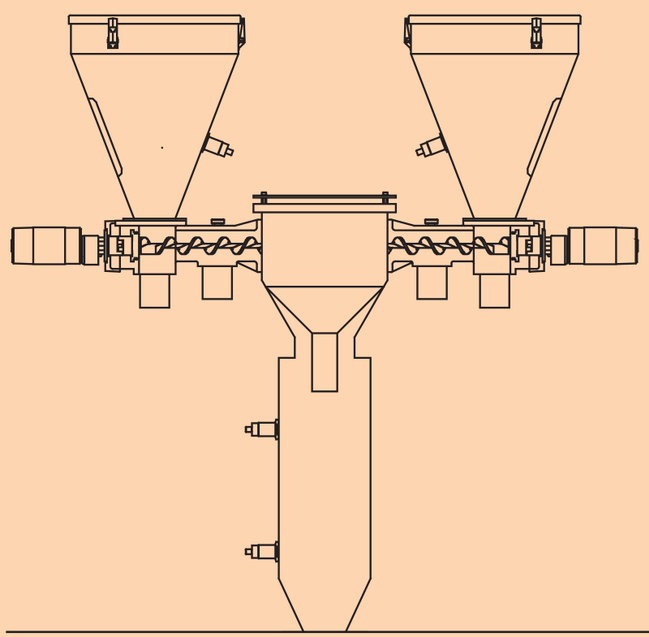
In our mixing stations, all materials, including the main material are fed by a dosing unit. A standard mixing station consists of between two and eight dosing units. Special designs with more than eight components can be easily realised thanks to the modular structure. The PLASTICOLOR system also facilitates an easy and inexpensive expansion of existing mixing stations or a conversion from volumetric to gravimetric operation.

Structure

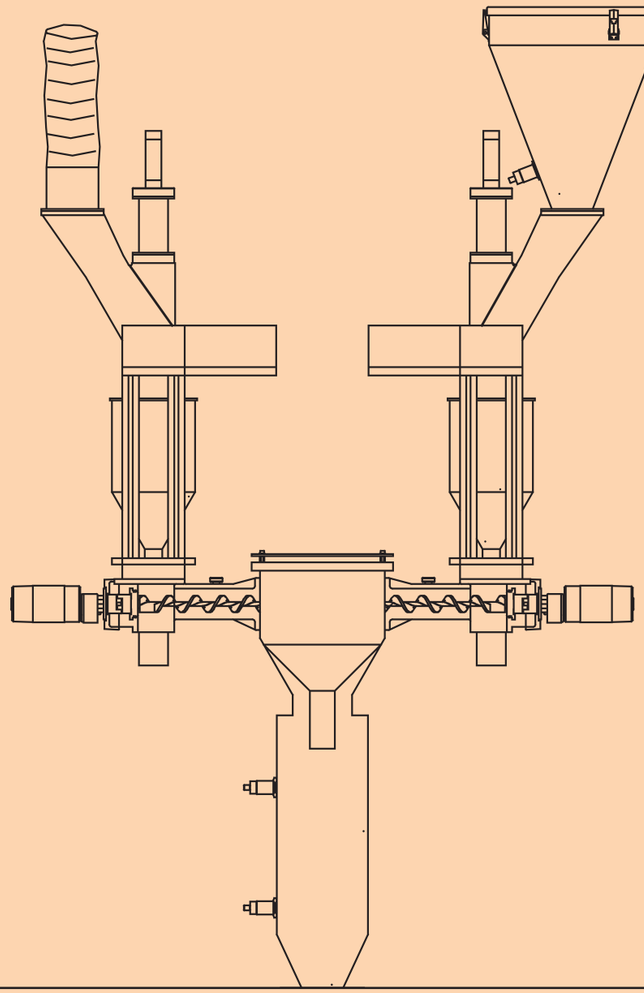
The main components of PLASTICOLOR mixing stations are the mixing station neckpiece, the PLASTICOLOR dosers, the material feed and, with gravimetric mixing stations, a weigh hopper assembly. Different variations of all of the components are available. Depending on your application, you can combine them and match them to your individual production process in an optimum way.

Practical benefits

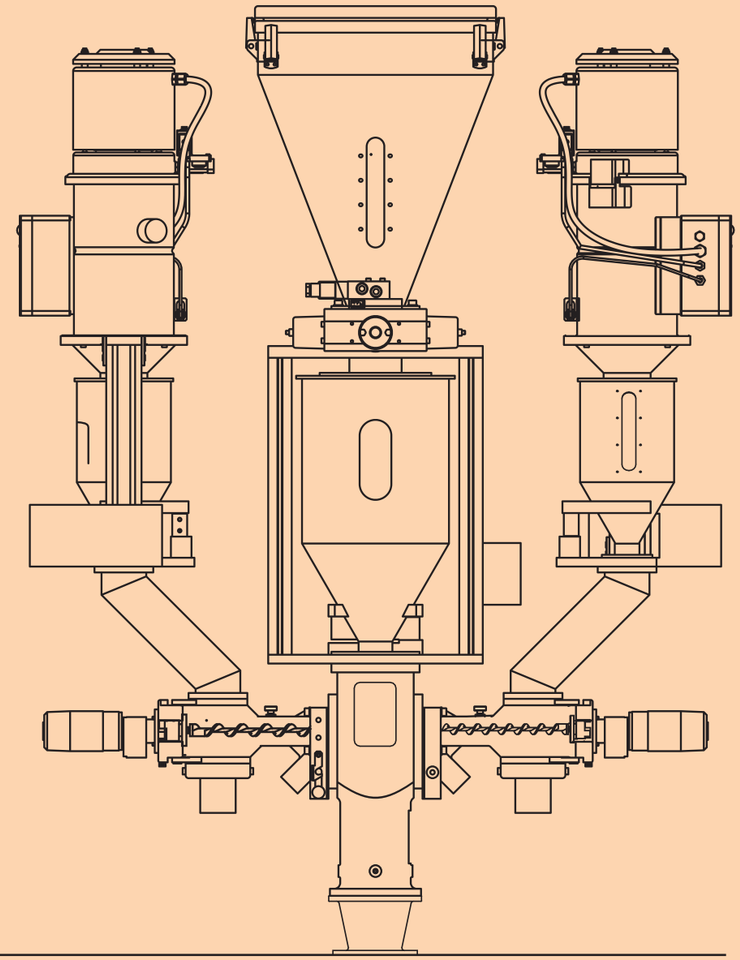
- High dosing accuracy (around +/- 0.5 % or better).
- Extremely small amount of premixed material during material changes.
- Sampling without interrupting production.
- No separation.
- Extreme mixing ratios such as 1: 2000, for example, are possible.
- Very good reproducibility.
- Material and recipe storage, order management (optional).
- Extensive monitoring functions.
- High reliability, even during continuous operation.
- Complete logging of all operational data and faults.
- Exact recording of all consumption data and production processes.



Volumetric mixing station



Loss-In-Weight Gravimetric mixing station



Loss-In-Weight Gravimetric dosing/mixing station

THROUGHPUT ACQUISITION/ WEIGH HOPPER ASSEMBLIES

In the field of measuring and control technology, the PLASTICOLOR system is used to put together hopper assemblies of various sizes with additional components such as quick discharge systems, storage hoppers and hopper loaders, which function as complete systems for throughput measurement. Our throughput measurement systems can easily be combined with existing mixing stations (PLASTICOLOR or third-party products).

Application options

Our throughput measurement systems and complete control systems help to improve product quality. You can save material and ensure an optimum layer thickness ratio in co-extrusion processes. In conjunction with an IPC, it is possible to acquire, display, evaluate and print all the relevant data.

Practical benefits

- Can easily be combined with existing mixing stations (PLASTICOLOR or third-party products).
- Connection is possible via fieldbus systems (Modbus, Profibus etc.)
- Data analysis via IPC (optional).
- Consistently high quality of finished products.
- Reduced material consumption.
- Stable, reproducible production processes.
- Reduction in start-up and shutdown waste.
- Scales with or without automatic bulk density detection.
- Scales can be installed and removed without tools (fast cleaning).
- Easy-to-use with IPC touch screen PC (available in different sizes).

1 Hopper loaders
2 Storage hopper
3 Refill valve
4 Weighing hopper
5 PPM control module and interface
6 Quick discharge facility
7 Adapter

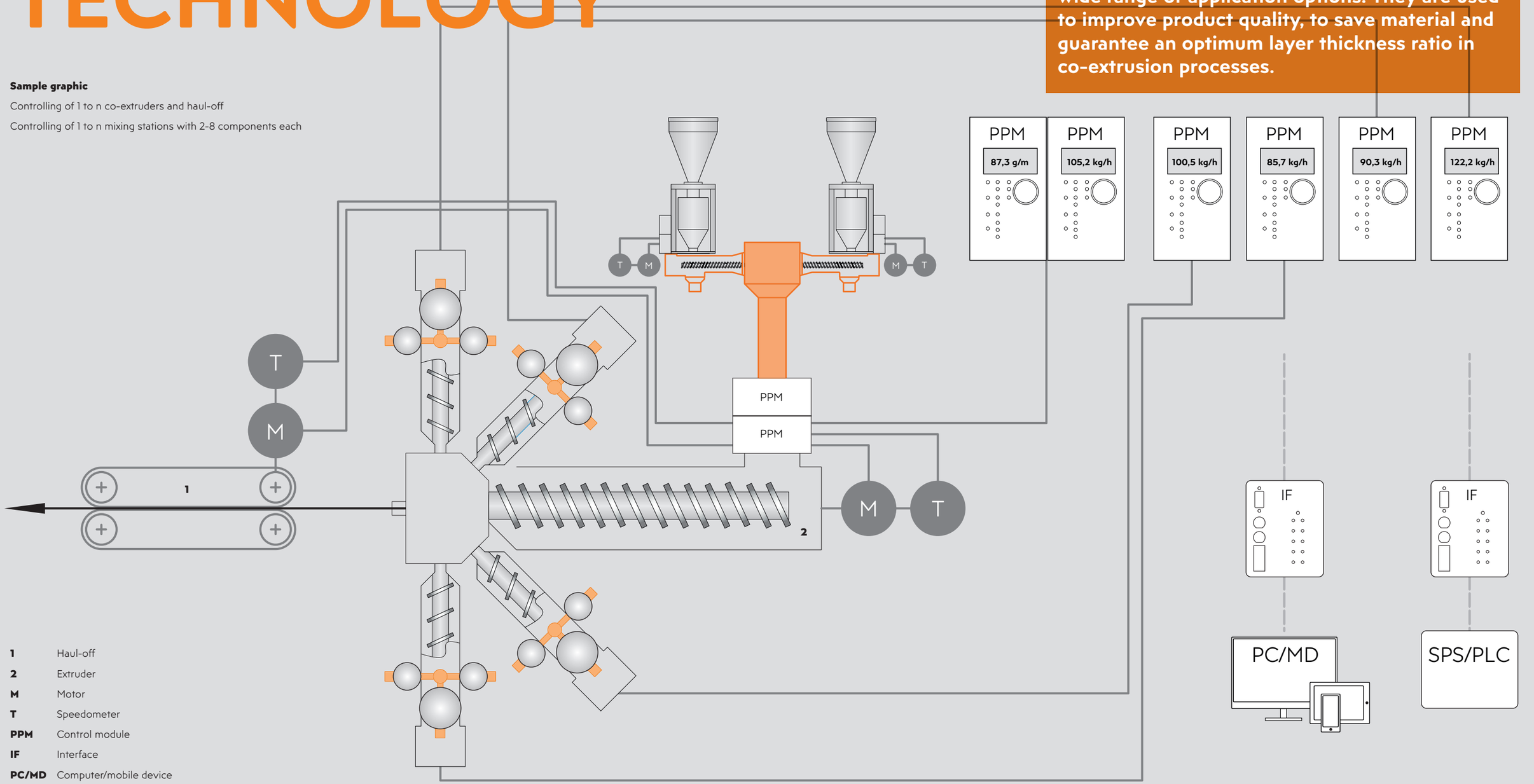
MEASURING AND CONTROL TECHNOLOGY

PLASTICOLOR measuring and control technology is used in all areas of the plastics processing industry, e.g. In cable manufacture, sheet extrusion, blown film extrusion, profile extrusion, pipe extrusion or blow-moulding. Gravimetric analysis and the measuring and control equipment associated with it offer a wide range of application options. They are used to improve product quality, to save material and guarantee an optimum layer thickness ratio in co-extrusion processes.

Sample graphic

Controlling of 1 to n co-extruders and haul-off

Controlling of 1 to n mixing stations with 2-8 components each



1	Haul-off
2	Extruder
M	Motor
T	Speedometer
PPM	Control module
IF	Interface
PC/MD	Computer/mobile device

HOPPER LOADERS

For plastic granulate, agglomerate, flakes, regrind or powder

Fields of application

Our hopper loaders (vacuum conveyors) can be used to automatically convey free-flowing materials such as plastic granulate, agglomerate, flakes and plastic powder (e.g. PVC Dry Blend for profile and pipe production). Our equipment is used in the plastic and food industries, the manufacture of animal feed and the chemicals and environmental sectors. In addition, our hopper loaders can be easily adapted to new tasks.

Practical benefits

- Robust, high-quality construction (stainless steel container).
- High performance due to powerful vacuum.
- Microprocessor control.
- Automatic (pulse) filter cleaning.
- Programmable suction time via three-character display.
- Alarm if filling is not carried out.
- Stop triggered if material is missing.
- Low noise emissions.
- Various accessories are available.

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Like all the components of our PLASTICOLOR system, our hopper loaders are of modular design. They are available in different sizes for various throughputs (up to about 4,000 kg/h), are suitable for long conveying distances and are characterised by a robust design, simple assembly, easy handling and high operational safety. Thanks to demand-driven configuration and component selection, these devices are capable of clean, energy-efficient operation with low noise emissions.

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1 Extract from the product range
2 Quick-opening system
3 Large-diameter stainless steel outlet flap
4 20-litre stainless steel hopper loader

DRYING SYSTEMS

**Efficient drying of plastic materials to ensure an optimum residual moisture content is crucial for producing high-quality products. The WOYWOD product range includes mobile compact dryers or central drying systems, as well as crystallisation systems for converting amorphous material into semi-crystalline PET.
All drying hoppers are completely insulated and fitted with an inspection glass. Larger hoppers are fitted with a cleaning door to ensure optimum accessibility.**

Air Drying systems

These systems are based on the absorption principle, i.e. closed-loop heating and dehumidification by means of a chamber containing a drying agent. They operate independently of the ambient conditions and can optionally be supplied with an IPC and a bus interface. All the systems are planned individually and tailored to the respective application.

Hot air systems

These dryers make use of the surrounding air. The drying results therefore depend on the environmental conditions (relative air humidity and temperature). Hot-air systems are primarily used for preheating or drying of non-hygroscopic materials.

Practical benefits

- A wide range of possible combinations.
- Completely insulated drying hopper.
- Energy efficiency (energy saving of up to 40 %).
- Modular design.
- Easy operation.

ELECTRONIC SYSTEM & SOFTWARE

WOYWOD's proprietary solutions for the PLASTICOLOR system ensure perfect interaction between people and machines

Controls

All controls and control systems are developed and manufactured directly at WOYWOD and are precisely tailored to the PLASTICOLOR system.

A large number of variants with diverse functions are available for operation and visualisation of the various units and systems. The areas of application differ depending on the model, ranging from synchronous control and storage of production and error data to integrated material and recipe and/or order management.

Our controls can also be easily connected to all common bus systems (Modbus, Profibus etc.) and are „Ready for Industry 4.0" (communication via OPC UA).

Development

Our development engineers have decades of experience in the field of control engineering. The perfect match between our equipment and systems and our proprietary hardware and software solutions guarantees the highest levels of functionality combined with intuitive operation.

Variants

Single control for individual volumetric dosing units with commutator and brushless motors.

PDC-series module control for individual volumetric dosing units, colour change systems, dosing stations and volumetric mixing stations.

PPM control system for dosing units, colour change systems, dosing stations, throughput measurements, volumetric mixing stations, gravimetric mixing stations, control tasks, e.g. extruder control (kg/h), weight per-metre control (g/m).

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1 PPM II control with operator control unit and display
2 Drawing up of test record
3 Assembly production


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ACCESSORIES

Our extensive range of accessories allows you to further customise and adapt our dosing units and mixing stations to match your requirements even more precisely. Their modular design also makes it easy to configure our devices in the future for different materials and to extend their application options. It is possible to increase the degree of automation, to reduce costs and to utilise existing resources better.

1 Rotary wing and vibration sensors
2 Stainless steel magnetic separator
3 Ioniser unit


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Do you have any questions about our range of products or services? Are you looking for an expert partner for the dosing and mixing of granular, free-flowing and non-sticky material? Then please contact us. We will be glad to assist and advise you in person.

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