Central conveying systems

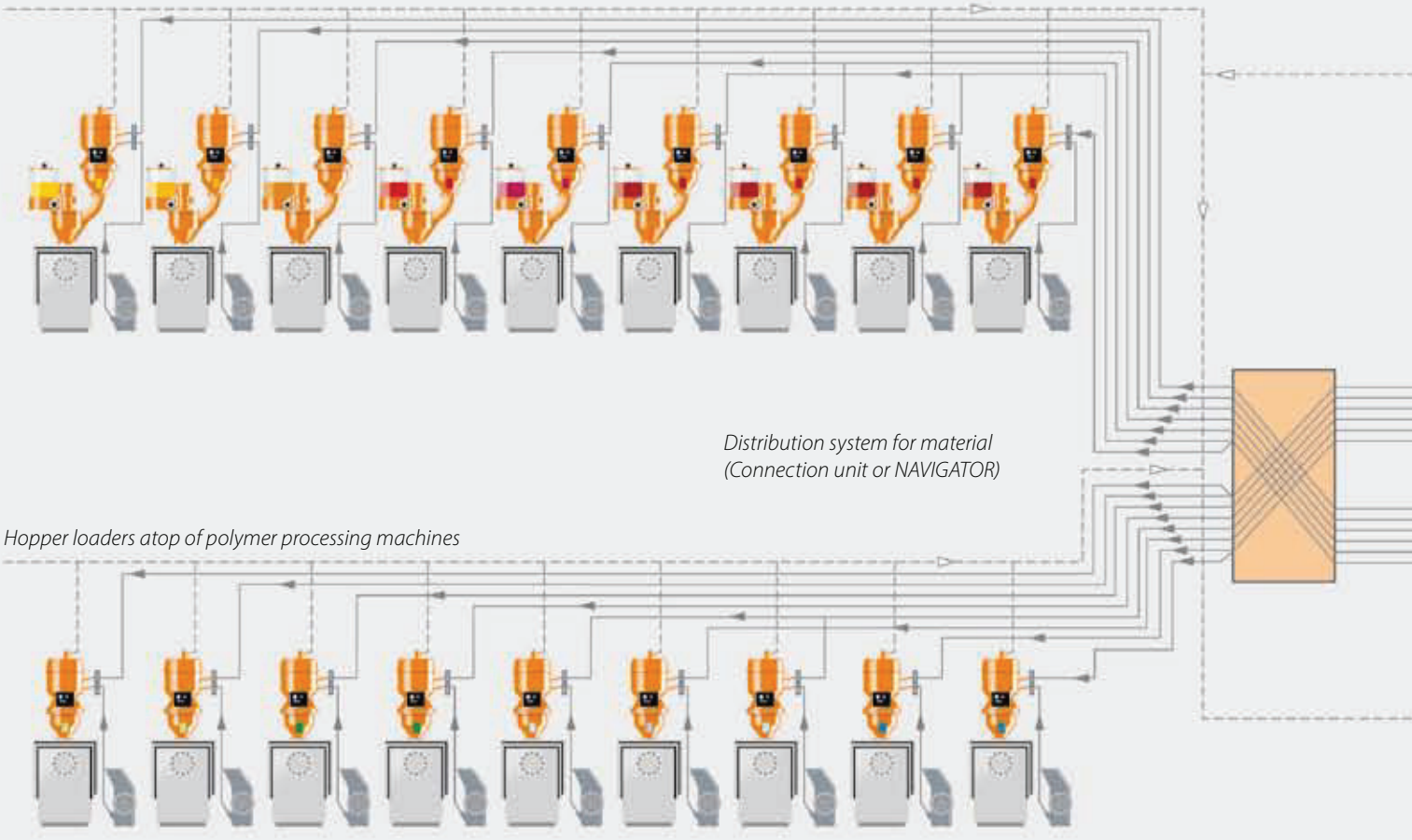
With more than 40 years of experience in automation for the plastics processing sector, we at KOCH-TECHNIK have earned our position as a market leader in this field. We plan, produce and install conveying systems for you which exactly meet your requirements and are appropriate for the conditions under which you operate. All the components in the modular system are at your disposal. The KOCH modular system guarantees any company a high degree of flexibility.

In this way you can also benefit from our innovative research and development work with which we have succeeded in manufacturing all our conveyor systems in accordance with clean room requirements.

We are happy to draw up a individual offer for a conveyor system.

Our central granulate supply systems have considerable advantages:

- central material administration system with no risk of confusion
- a minimum of staff required
- clean production without granulates on the machine
- better use of factory facilities, as there is no need for space to deposit pallets
- very short payback period
- possible to integrate central drying plants and central pre-mixers
- central material distribution system possible
- performance average and material coordinated with throughput
- automatic continuous operation: can be used continuously 24 hours a day, 7 days a week
- modular system which can be extended at any time



Distribution system for material (Connection unit or NAVIGATOR)

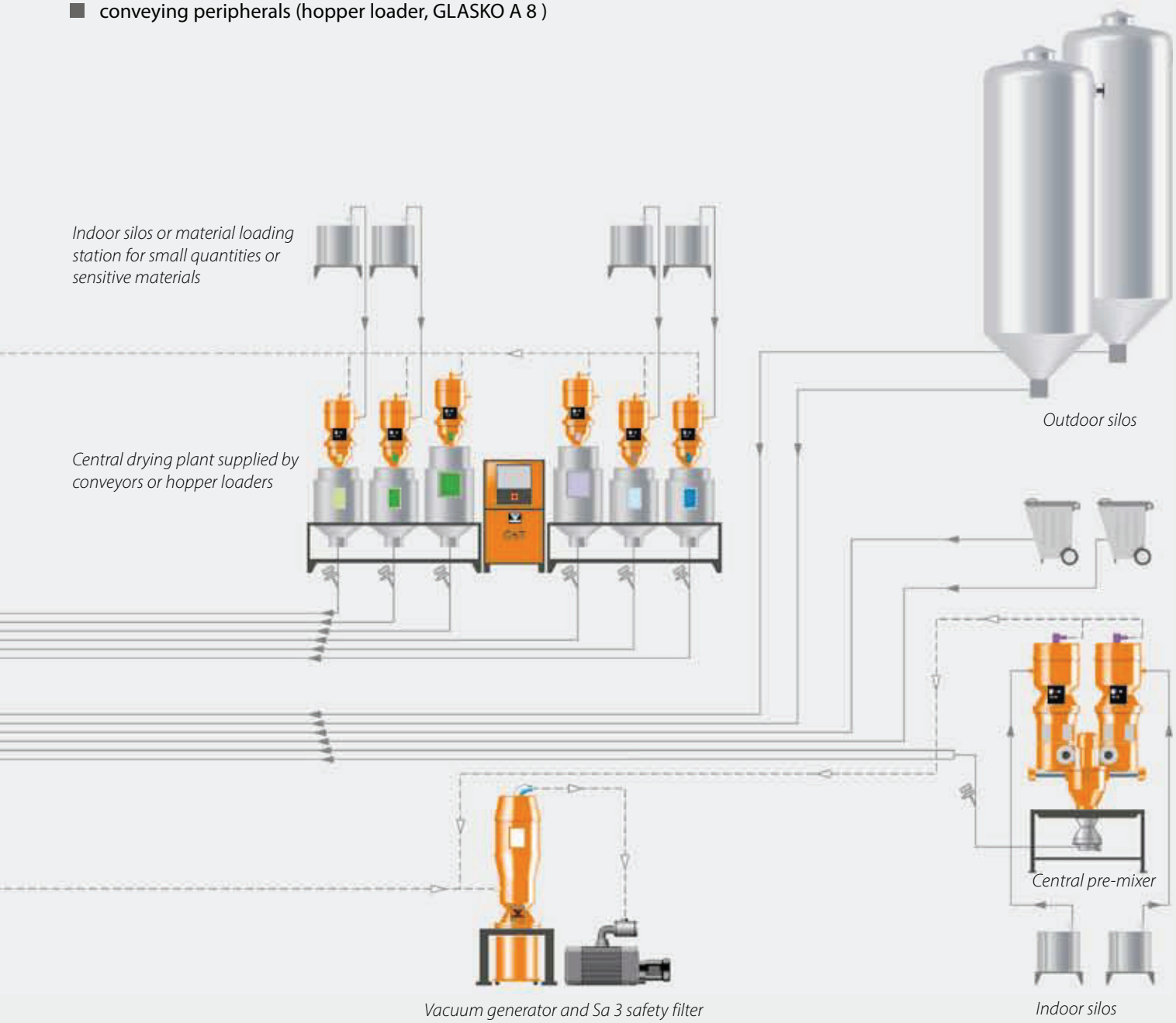
Hopper loaders atop of polymer processing machines

Schematic representation of a machine-dependent conveying system by KOCH

For central conveyor systems, KOCH-TECHNIK offers you a host of components for all kinds of plastics processing from warehousing solutions to processing in polymer processing machines. The interaction between these components makes a significant contribution to the quality of the end product.

Components of central conveying systems by KOCH:

- storage solutions (silos and more)
- transport solutions (pipelines, vaccuum generators, safety solutions)
- material distribution solutions (NAVIGATOR, connection unit)
- central control solutions
- drying solutions
- conveying peripherals (hopper loader, GLASKO A 8)



Hopper loaders* for conveying systems

A 2 hopper loader

Intermediate hopper type Z 1

*also referred to as feeder

Type A 2

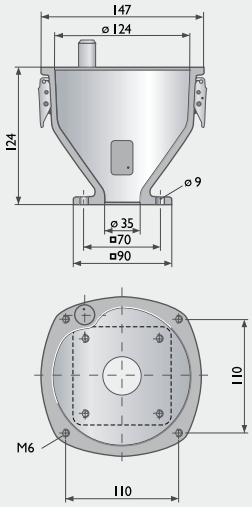
a hopper loader for minimum throughputs

You can process from 4 - 5 kg per hour with the appropriate Z 1 intermediate hopper. For very hygroscopic and dried materials, the benefits are obvious. With this hopper loader for very small quantities, the materials are held for less time before they are processed, which means that detrimental effects on the quality are avoided. You can achieve higher throughput rates, up to 15 kg/h, with a Z 2 intermediate hopper.

Intermediate hopper type Z 1

The intermediate hopper type Z 1 is suitable for A 2 hopper loaders and all very small conveyors. It is ideal for throughputs of up to a maximum of 5 kg/h.

Capacity: 0,7 litre. Made of die-cast aluminium with two sight glasses. We also have the matching intermediate plates or sliders for all small machines.



A 8 hopper loader, intermediate hopper Z 1 and material locking mechanism

A 2 hopper loader and intermediate hopper Z 1 in a conveying system

Type A 8

Type A 20

Beliko

Features:

- Hinged hood,
- Main body of separator swivels through 360°*

**up to Z 26 hopper*

A 8 as Tm separator for transporting two different material components

Type A 8

The A 8 hopper loader is for regenerated materials and grains at throughputs up to 150/200 kg/h.

A KOCH hopper loader for large quantities: extremely reliable, maintenance-free and long-lasting.

Types A 20 / A 30

The A 20 / A 30 hopper loaders are designed for regenerated materials and grains up to 300/400 kg/h.

Robust KOCH hopper loaders for use in central conveyor systems – for high quantities. The container is constructed in V 2 A, and the body is made of die-cast aluminium / special paint finish.

Type		Housing	Capacity Litre	Weight* kg	Height*/□ mm	Cleaning rotary blades
A 2		GKAL/glass	1,3	3,4	408 / 198	
(Tm) A 8		GKAL	8	9	595 / 311	
(Tm) A 8 D		GKAL	8	9	595 / 434	autom.
(Tm) A 20		GKAL/V 2 A	20	11	815 / 311	
(Tm) A 20 D		GKAL/V 2 A	20	11	815 / 434	autom.
(Tm) A 30		GKAL/V 2 A	30	18	1045 / 311	
(Tm) A 30 D		GKAL/V 2 A	30	18	1045 / 418	autom.
(Tm) A 50	BELIKO	GKAL/V 2 A	50	34	960 / 480	
(Tm) A 50 D	BELIKO	GKAL/V 2 A	50	34	1135 / 480	autom.
(Tm) A 70	BELIKO	GKAL/V 2 A	70	40	1155 / 480	
(Tm) A 70 D	BELIKO	GKAL/V 2 A	70	40	1330 / 480	autom.
(Tm) A 100	BELIKO	GKAL/V 2 A	100	52	1400 / 533	
(Tm) A 150	BELIKO	GKAL/V 2 A	150	68	1727 / 533	

GKAL = abrasion-resistant die-cast aluminium with a value of 100 on the Brinell hardness scale
*varies depending on model

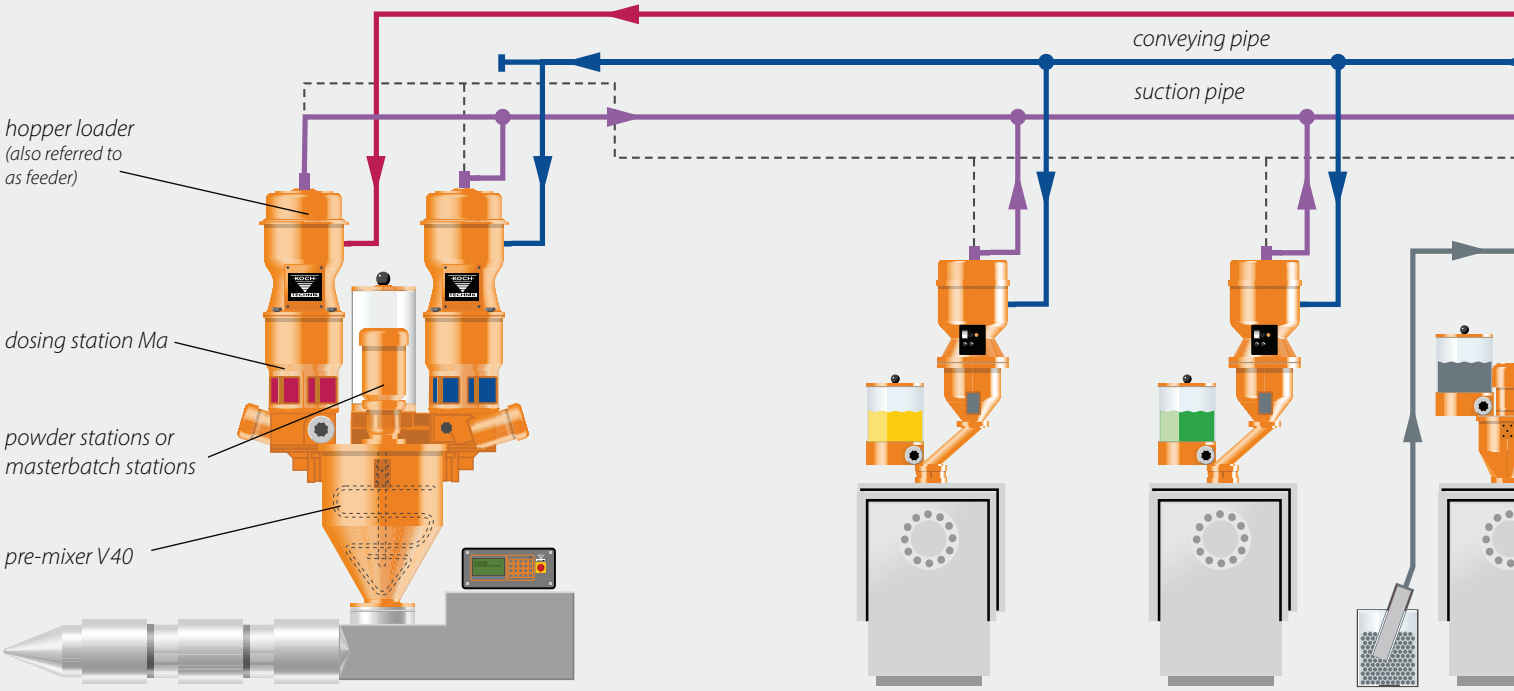
Types A 50 / A 70 / A 100 / A150 BELIKO

BELIKO hopper loaders are designed for throughputs of regenerated material and grains from 500 kg/h up to 2500 kg/h

Long-lasting KOCH hopper loaders for use in large central conveyor systems and with extremely high quantities. The basic bodies are made from V 2 A stainless steel.

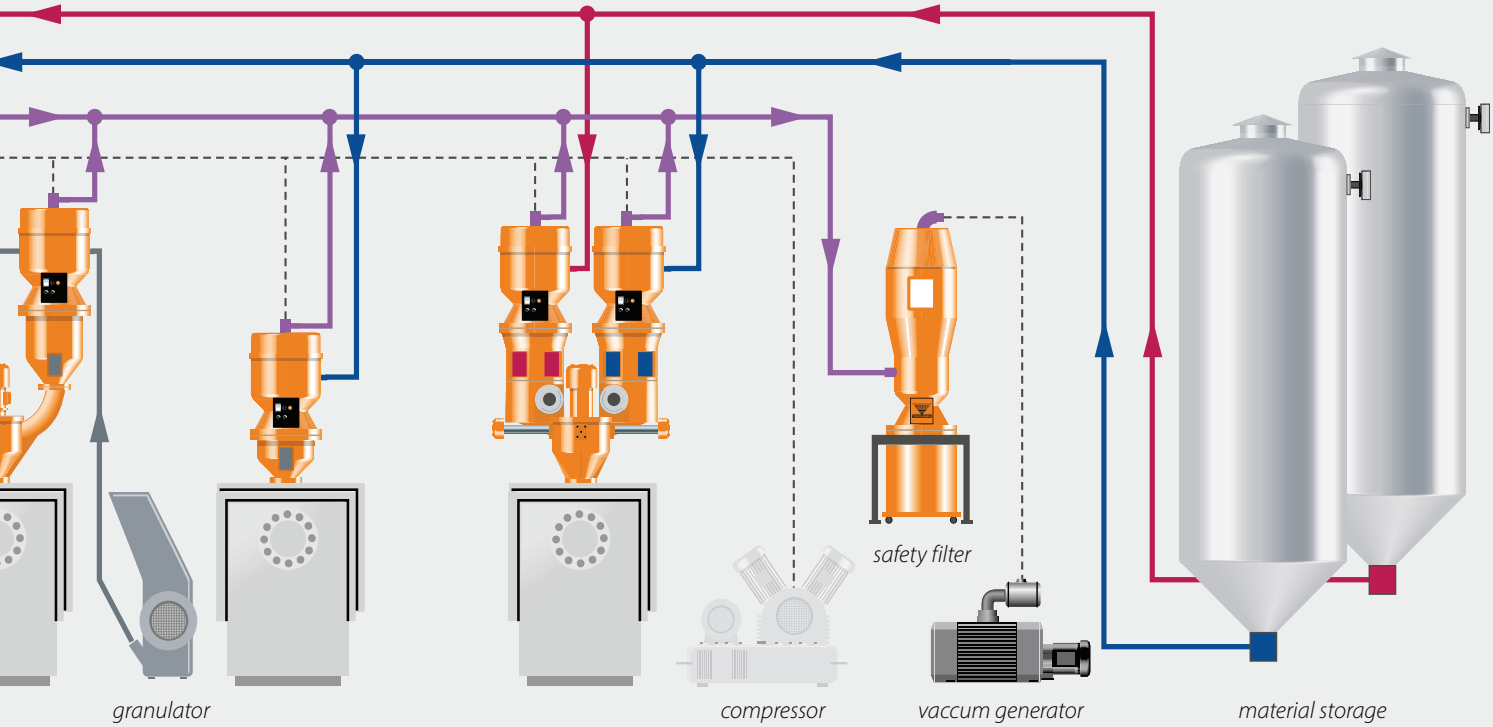
All KOCH hopper loaders are supplied with a dust filter for central conveyor systems or with a fleece filter.

Central conveyor system with direct dyeing using a KEM / AZ / Z12 + TmA30 hopper loader.



Schematic representation of a machine-dependent conveying system by KOCH

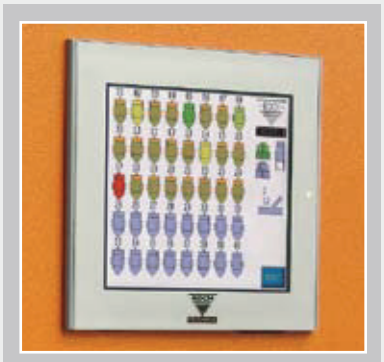
Central conveyor system with direct dyeing using a KEM / AZ / Z5 + TmA8 hopper loader.



Components of central conveying systems

Silos - intelligent material storage

Our silos and all the necessary accessories are designed for a wide range of bulk materials. Over the long term, silos are the most cost-effective solution for storing large quantities of plastic material. We configure all our storage silos to the requirements of your operation.



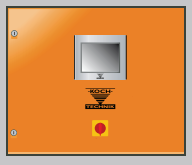
Central PLC control unit with touch panel

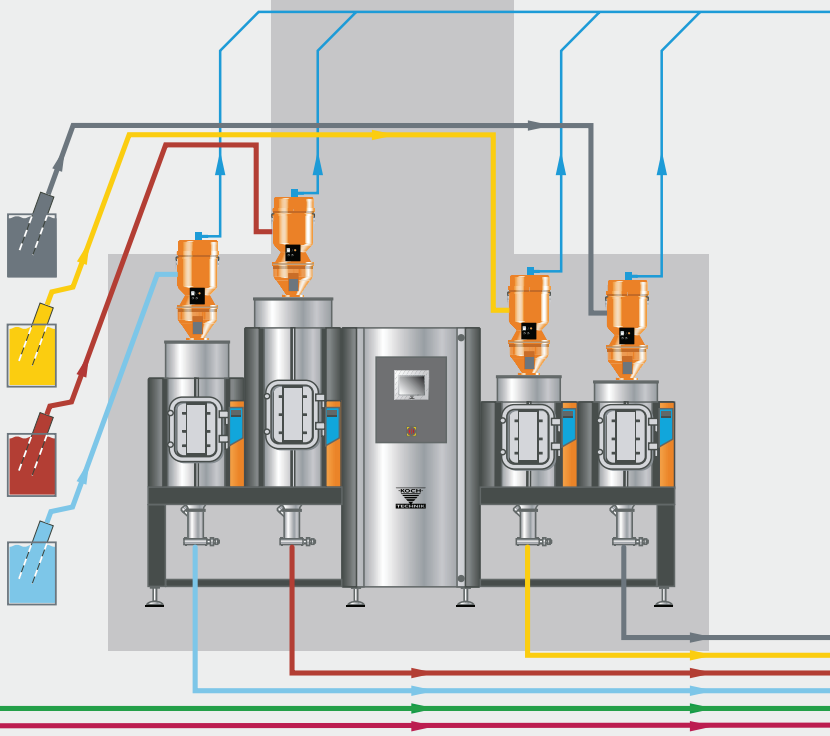
The central control unit is based on a SIEMENS PLC component and represents the heart of any conveyor system. This is where the parameters can be modified. All the operating data is recorded and stored and can also be printed from here. Navigation through the menus is via touch panel. Interfaces enable digital input and output and communication with external control components, such as the KOCH visualisation software.

Dehumidified air dryers

KOCH dryers can be easily integrated as components in conveyor systems.
The dryers offer these benefits:

- *they dry hygroscopic substances such as PA, PC, POM, LCP etc.*
- *with fully automatic dew point control from -30°C to -55°C*
- *residual humidity is less than 0.02 g H_2O/m^3*
- *they come with the patented KOCH energy saving programs*
- *mobile, or integrated permanently in the central conveyor system*
- *advice, planning, production and installation tailored fully to your requirements*





NAVIGATOR

The patented NAVIGATOR uses a very simple method to ensure that material is distributed without leaving any residues:

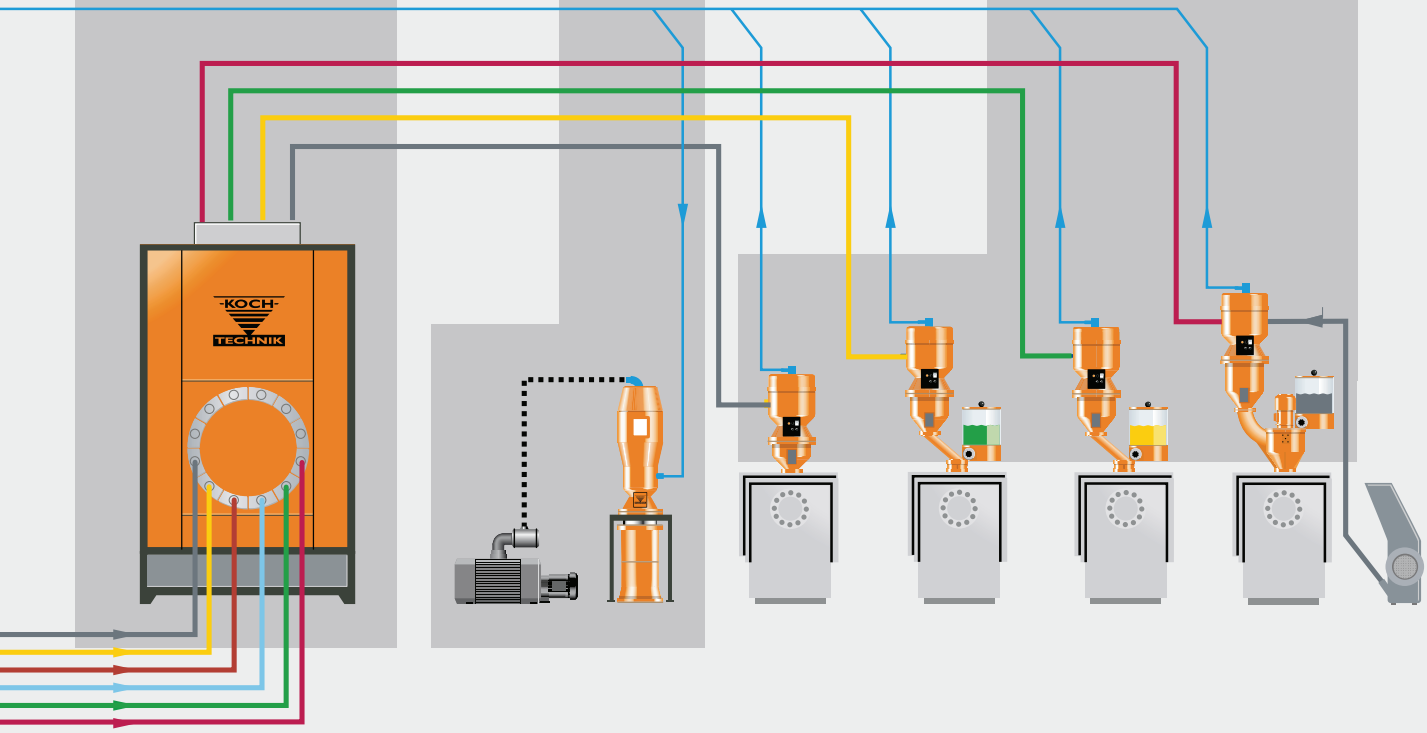
- *there is no contamination of the various materials*
- *the machine line is connected directly with the material line.*
- *the integrated PLC makes it possible to supply up to 40 machines fully automatically*
- *you can record all the operating data via interfaces*
- *sensors supply all the information about current conveyor processes in the production system*

Safety filters and vacuum generators

The KOCH safety filter automatically cleans dusty conveyor air. The internal filter cartridge has a surface of 2.5m² and is automatically cleaned with rotary blades after every conveying operation.
The vacuum generators are dimensioned for continuous running and are free of maintenances.

Hopper loaders *(also referred to as feeder)*

The hopper loaders will installed in place of the material hopper at the top of the polymer processing machine. The KOCH modular system enables every reasonable combinations with other conveyors, dosing stations, dyeing units or pre-mixers. The unit bodies can be swivelled through 360°, the conveyor bonnets are hinged, the dosing stations can be moved and all this without needing to resort to any tools. The Tm connector allows you to use recycled plastics and re-feed them to the hopper loader.



90 machines are being supplied here

PLC control with a touch panel provides menu navigation

On request we can provide remote monitoring via a tablet with an Android, iOS or Windows operating system.

Silos - intelligent material storage

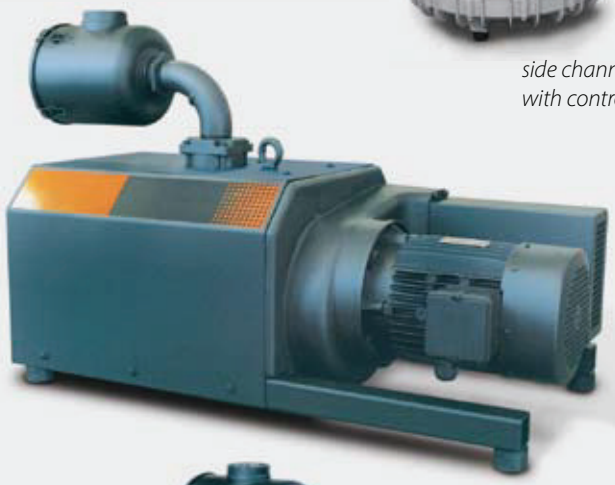
SLM Kunststofftechnik GmbH • www.slm-kunststofftechnik.de

Central conveying system with three CKT dryers and 30 drying containers. The conveying pipes and bends was made in V 2 A (highest-quality stainless steel) and special shatterproof glass. The glass pipes and bends are used for the transport of hard materials and materials containing fibreglass.

Suction valves

Sa 3 safety filter with PLC control unit (left) and vacuum generator

Vacuum generators and safety filter



side channel blower with control unit

Vacuum blowers

Every conveyor system is tailored individually to your requirements. Your material can be removed from bags, octabins, Big Bags or silos with suction. There is a range of blowers to generate the vacuum required.

Side channel blower

(three-phase fans)

Side channel blowers are durable, maintenance-free vacuum generators for small conveyor systems.

To be available 1,3 kW / 2,3 kW / 3,0 kW / 4,0 kW / 5,5 kW / 7,5 kW / 11 kW.

Vacuum blowers

(rotary claw vacuum pumps)

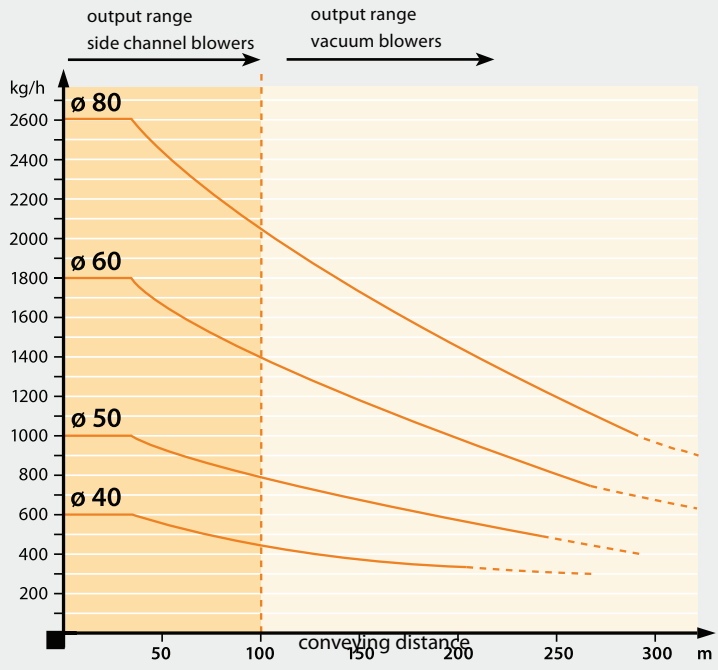
are used for long distances and heavy-duty work. The performance of these blowers is unbeatable.

To be available 3 kW / 4,5 kW / 5,5 kW / 7,5 kW / 11 kW / 15 kW

Blower control via touch panel

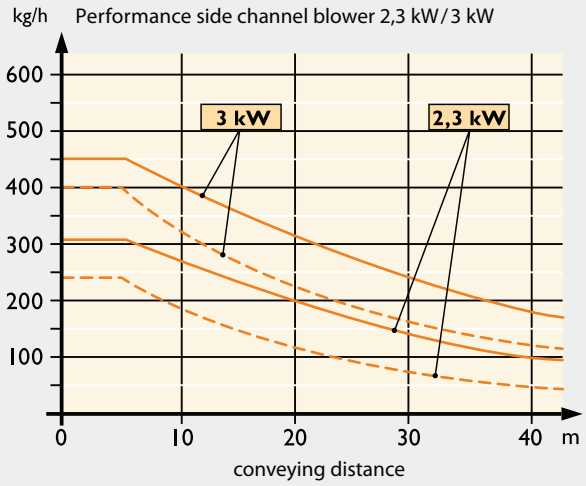
Frequency regulator

All the vacuum generators we have designed are optionally available with frequency converters. Frequency converters are used to control the speed of the pumps by regulating the voltage and frequency. Frequency converters enable the vacuum generators to make major energy-savings by adjusting the conveyor flow to the load.



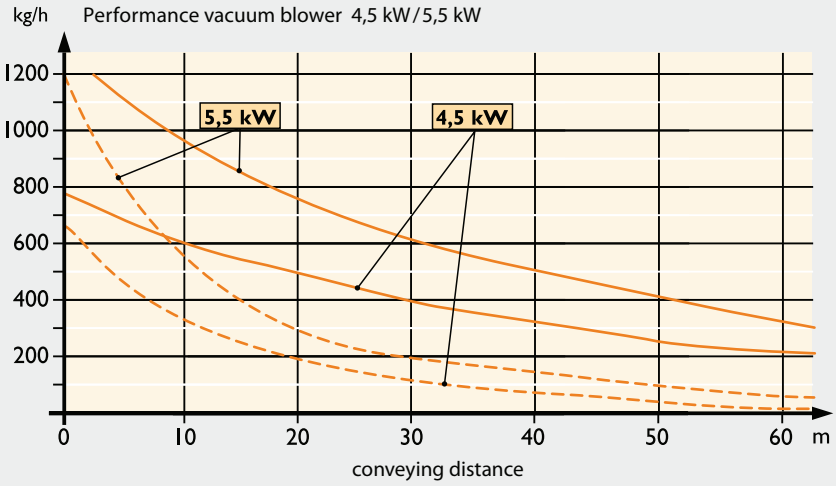
The diagram is based on:

- *granulate: Ø 3 - 5 mm*
- *conveying pipe with five bends*
- *conveing distance vertikal 6 m*
- *bulk weight: 0,65 kg/dm³*



The diagram is based on:

- *conveying pipe: Ø 40 mm*
- *conveyed material: granules/grit*
- *particle size: Ø 3 - 5 mm/> 100 µ*
- *bulk weight: 0,65 kg/dm³*
- *horizontal conveying distance (m) – vertical conveying distance is 5 m*



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- *particle size: Ø 3 - 6 mm/> 100 µ*
- *bulk weight: 0,65 kg/dm³*
- *horizontal conveying distance (m) – vertical conveying distance is 6 m*
- *with five bends with 90°*

virgin material
pourable powder

- *conveying pipe: Ø 50 mm + 65 % more performance **
- *conveying pipe: Ø 60 mm + 180 % more performance **

* efficiency is material-dependent!

Sa3 safety filter with 25 litre collecting tank

Sa 3 safety filter

The KOCH safety filter automatically cleans dusty conveyor air. The internal filter cartridge has a surface of 2.5m² and is automatically cleaned with rotary blades after every conveying operation. Dust and foreign bodies as small as 2 µ are filtered from the conveyor air and removed. The filter housing is constructed from V 2 A (highest-quality stainless steel). Collecting tanks with capacity of 25 litres and 60 litres.

11 kW vacuum pumps and Sa 3 safety filter with 60l collecting tank