

stolz

desmet ballestra

Pelletizing

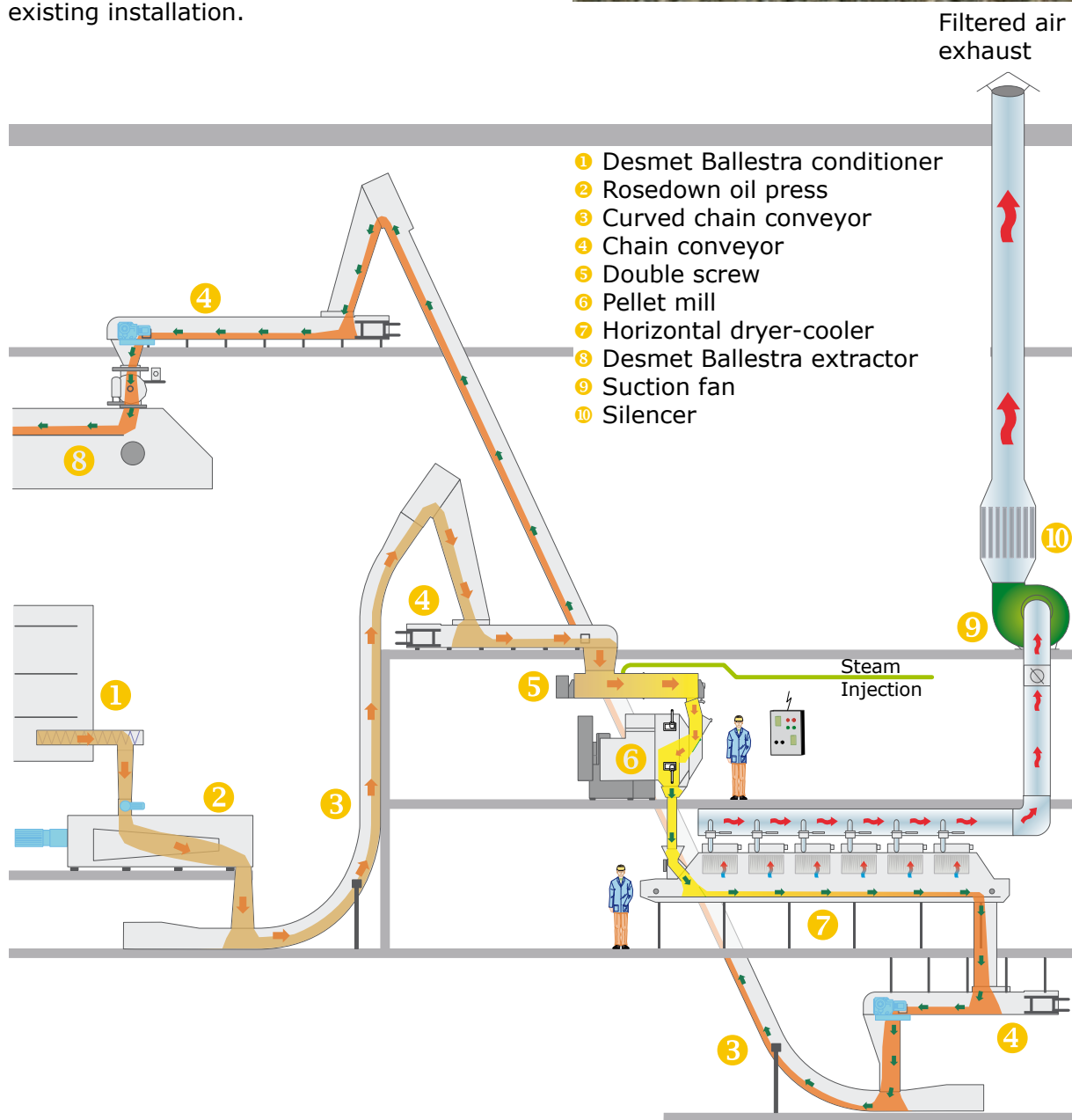


Oil mill pelletizing line : cakes

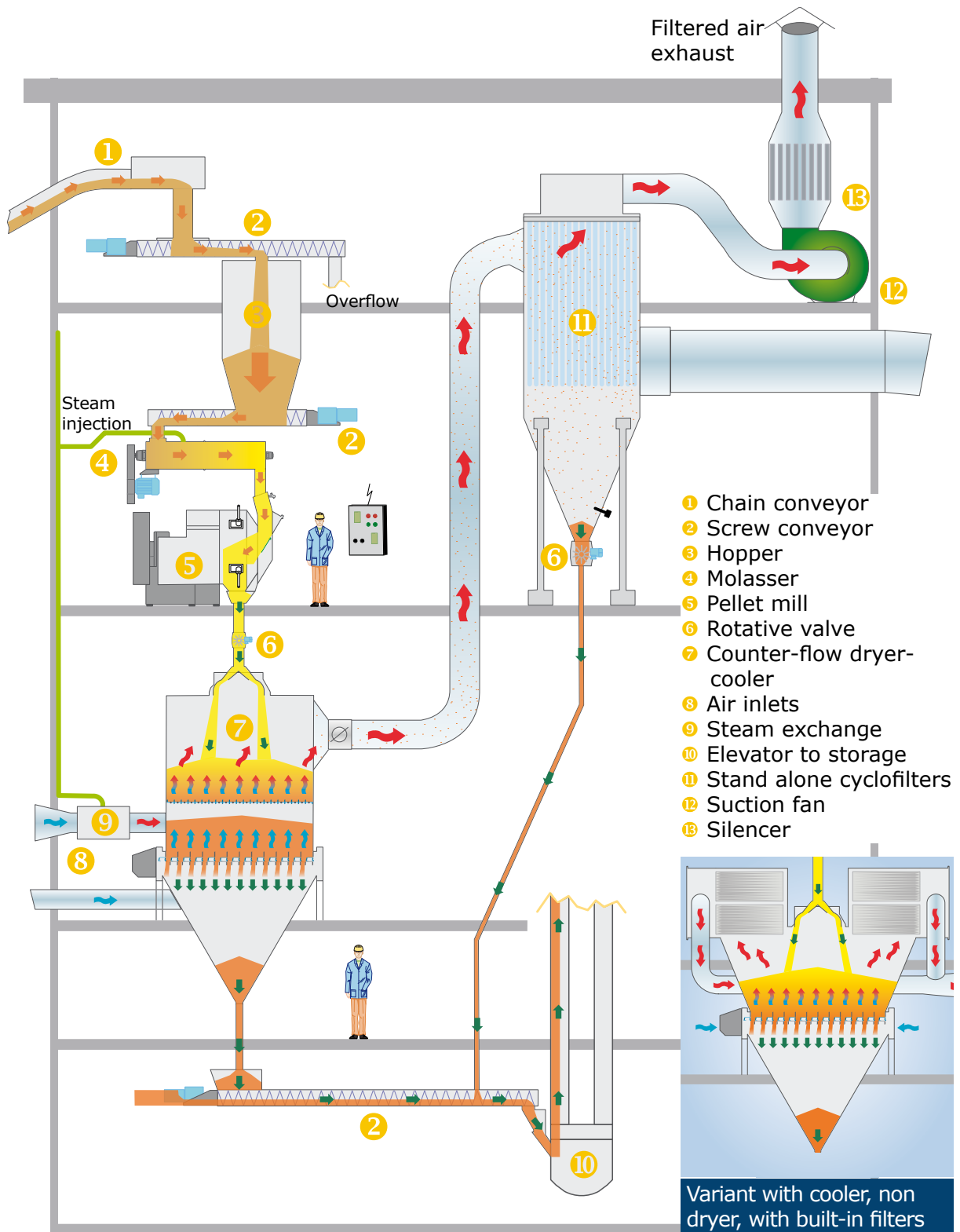
With a view to improve the process continuously Desmet Ballestra Group, has been a pioneer by inserting a pellet mill between oil press and solvent extractor.

A higher yield is obtained in the extractor by optimizing the specific weight and improving the percolation.

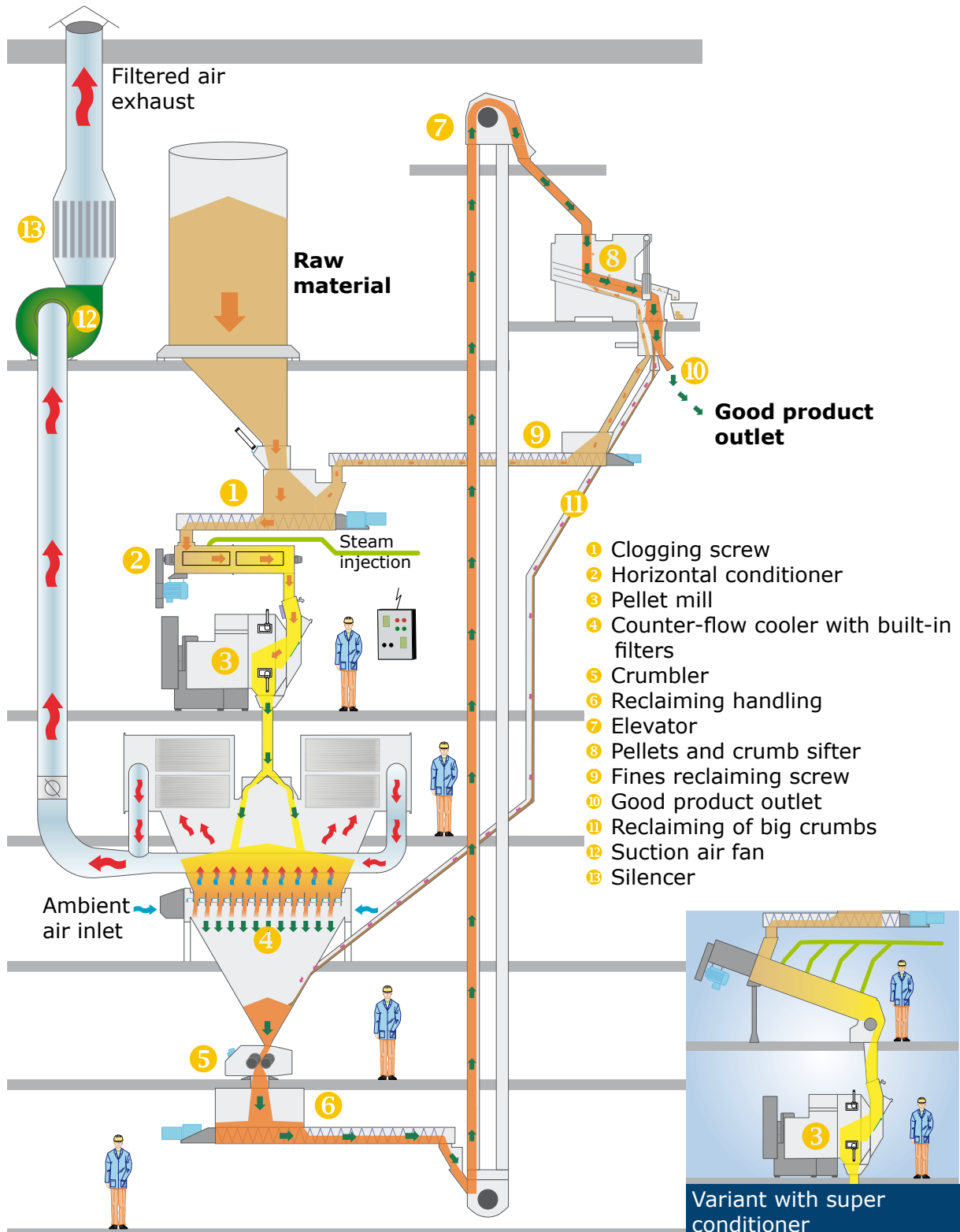
That equipment can be added in every existing installation.



Oil mill pelletizing line : soybean

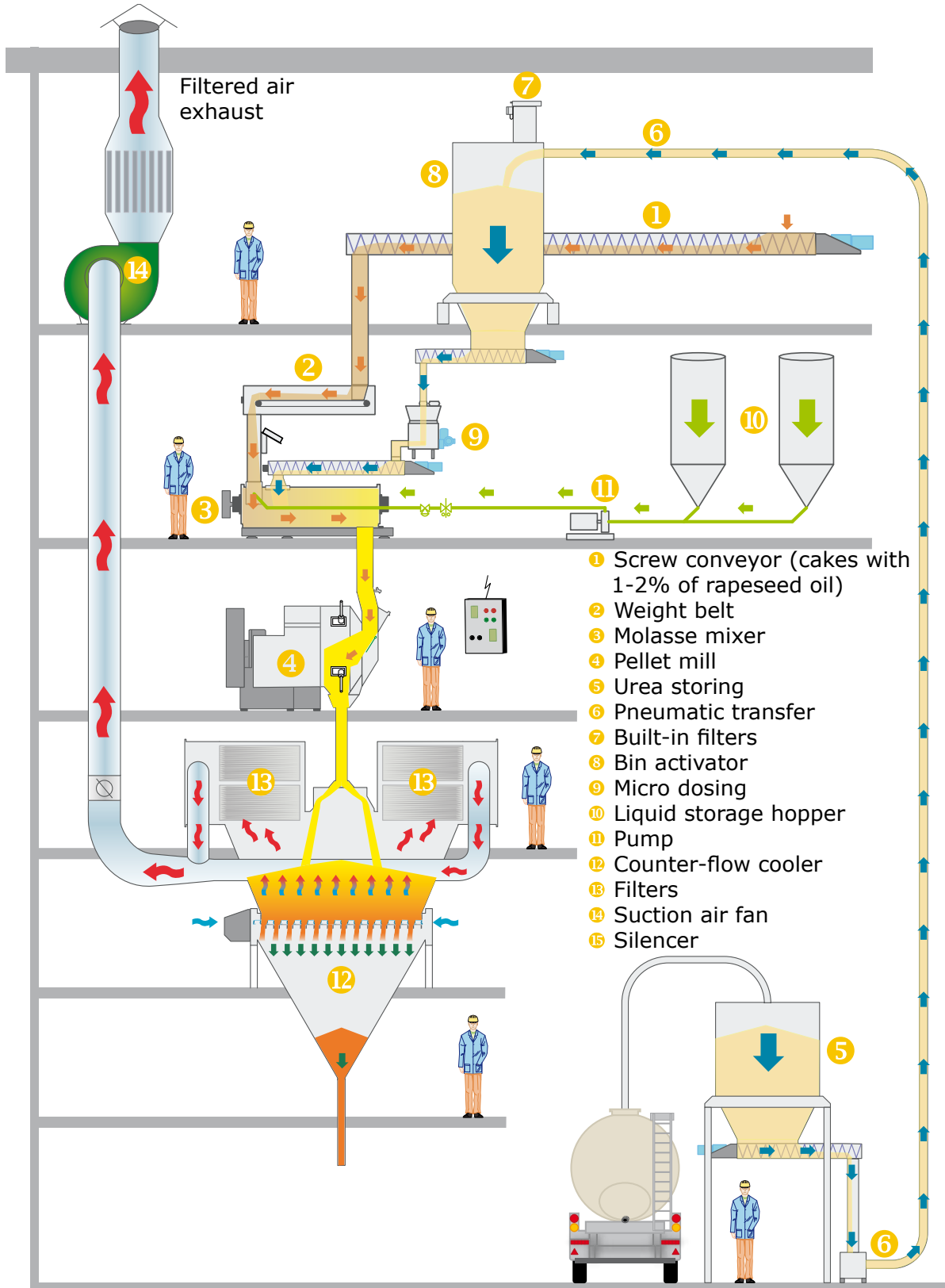


Pelletizing line : Animal feed



Non-contractual drawings and pictures

Pelletizing line : simple feed



Non-contractual drawings and pictures

Standard conditioner



Mixer

Purpose

The conditioner is designed for mixing closely steam with meal, thus heating the product up to the suitable temperature for a proper granulation. Its adjustable blades are designed to set the product progress.

It can eventually receive molasse directly with a small percentage.

It is entirely made out of stainless steel.

Depending on the use, the capacity, the specific weight of the product to be compressed, the preparation will be done with one of the STOLZ conditioners.

Each conditioner, depending on its design and content allows an incorporation (steam, etc...), a treatment and a residence time adapting best to the product characteristics at dies inlet (temperature, moisture, etc...).

Features

- Rotor with blades with adjustable step
- Lateral steam inlet
- Temperature sensors

Options

- Liquids incorporation rack (molasse, proteinal, sulfite lye)
- ATEX compliance



Feeding screw with adjustable speed + conditioner + pellet mill

Range	Length	Width	Height	Diameter	Useful length	Power	Speed (50 Hz)
	mm	mm	mm	mm	mm	kW	rpm
PEP 315	2600	450	630	315	2175	7.5	320
PEP 400	3000	500	700	400	2456	11	272
PEP 450	3000	600	800	450	2175	11	272
PEP 550	3000	700	800	550	2456	15	245
PEP 680	3500	800	1160	680	2900	18.5	168
MD 420	2900	840	730	450	2425	18.5	308

Long residence time horizontal conditioner



Long residence time horizontal conditioner

Purpose

The long residence time horizontal conditioner purpose is to increase the residence time of the heated meal and improve the parameters required to obtain a high quality pelleting results.

The processing temperatures range from 60°C to 100°C for a treatment time of 30 seconds up to 6 minutes.

That heat treatment is designed to increase the flow rate on pellet mill and improve pellets durability. It also kills the pathogenic germs, improves digestibility of products resulting from this process, limits wearing, energy consumption and shrinkage.

The regulated feeding of the pellet mill is carried out via a special valve with adjustable speed.

The screw feeding the conditioner is called "clogging" screw.

Features

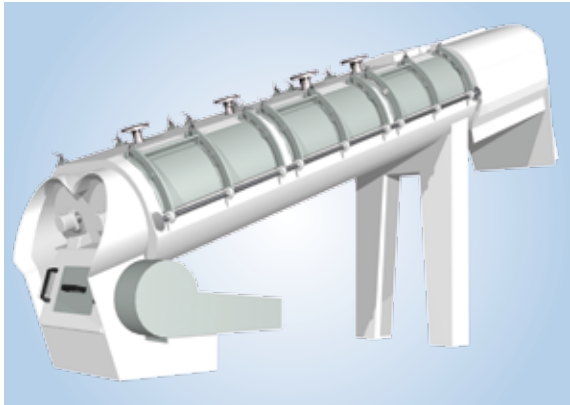
- Body heating by electrical wire
- Body insulating
- Liquids incorporation
- Temperature sensors
- Made with stainless steel



Long residence time horizontal conditioner on pellet mill

Range	Length	Width	Height	Diameter	Useful length	Power	Speed (50 Hz)
	mm	mm	mm	mm	mm	kW	rpm
MLD 550	3150	900	1000	550	2450	18,5	70
MLD 680	3700	1100	1160	680	3000	30	60

Super conditioner



Super conditioner

Purpose

When installed upstream a pellet mill, the super conditioner increases its capacity, and dramatically improve its P.D.I. (Pellets Durability Index). That heat treatment provides the same benefits as the long residence time horizontal conditioner.

The super conditioner has a slope angle improving again the filling up and the residence time.

Principle

The meal is inserted into the body via a clogging screw ensuring at every time a complete filling of the conditioner.

The product is mixed by the blades of the rotor. It is submitted to a shearing effect and a residence time before coming out until the opening order is given according to the temperature and duration of the selected treatment.

That treatment allows direct steam injection and a homogeneous cooking of the product. The long lasting treatment capacity (up to 6 minutes) of this unit ensures a perfect mixing of starch and gluten molecules.

The transverse and horizontal shearing undergone by the product increases water addition possibilities into meal thus improving the quality of pellets produced by the pellet mill and decreasing the energy consumption.

The outlet valve is designed for a regular feeding, and a quick response time of the pellet mill. It is designed to be cleaned easily and to avoid any leak-off steam leak.



Super conditioner in pellet mill preparation

Range	Number of rotors	Length	Width	Height	Capacity	Power	Speed (50 Hz)
		mm	mm	mm			L
CPIS 520	1	4491	1095	2028	450	22	73
CPIS 680	1	4500	1100	2950	1000	30	52
CPID 520	2	4600	1170	2380	1160	2x15	50
CPID 700	2	5700	1450	2722	2200	2x30	47



Steam unit on CPID 700



Super conditioner with steam injection



Super conditioner in pellet mill preparation



Rotors detail on CPID 700



Super conditioner upstream a pellet mill

LYDER Pellet mill (2 rollers)



LYDER pellet mill

Purpose

The pellet mill is designed to process a powdery product into pellets through the combined action of heat, moisture, and compression.

Features

- Driven by belt
- Single or dual transmission
- Robust and reliable
- High capacities
- Very good value for money
- Low maintenance costs
- Options flexibility

Options

- Product chute with by-pass flap
- Dual transmission (DT)
- Special unclogging ring on hollow shaft
- Flap box under outlet

Safety devices

- Micro contacts on doors
- Shearing pin
- Static magnet
- Belt slipping control on transmission belts
- Clogging detection



LYDER pellet mill with conditioner

Range	Die Ø	Die width / useful width	Motor power	Motor speed	Die speed	Linear speed	Working area	Approx. capacity
	mm	mm	kW	rpm	rpm	m/s	dm ²	t/h
Lyder 40.10	400	175/99	55/75	1000	281	5,8	12,4	4 to 5
Lyder 40.13	400	220/129	90/110	1000	281	5,8	16,2	5 to 6
Lyder 52.14	520	182/138	132	1000	254	6,9	22,5	7 to 9
Lyder 52.18	520	222/178	160	1000	254	6,9	29,1	8 to 11
Lyder 66.18	660	236/178	200	1000	214	7.4	36.9	10 to 14
Lyder 66.18 DT*	660	236/178	200	1500/1000	142/214	4.9/7.4	36.9	10 to 14
Lyder 66.23	660	286/230	200/250	1000	214	7.4	47.7	13 to 18
Lyder 66.23 DT*	660	286/230	200/250	1500/1000	142/214	4.9/7.4	47.7	13 to 18

*DT = Dual Transmission



Tipping unclogging chute



Electrical safety device on doors



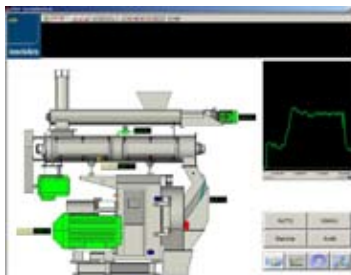
Built-in winch for die handling

Regulation

STOLZ offers a system guaranteeing automation, supervision, and control of the pelleting lines components.

That system is provided with the following capabilities :

- Formula control,
- Load and temperature monitoring,
- Self-adapting variations intensity,
- Additives injection control,
- Dies control,
- Accessibles parameters with password,
- Loading shapes and regulation can be linked to formulas.
- Remote maintenance



Supervision of pelleting lines



Magnet on feed chute



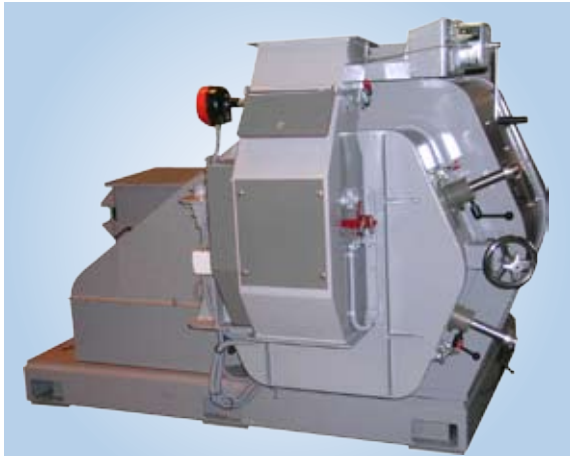
Pellet knife



Fixed knives supports



RC 500 pellet mill (3 rollers)



RC 500 pellet mill

Purpose

Pellet mill specifically designed for the production of pellets with «heavy» density (minerals, shrimp feed).

This robust and long-lasting machine has a reduced maintenance thanks to its slow speed (4.2 m/s) and its 3 rollers.

The main raw materials that can be used are : wheat, broken rice, wheat bran or rice bran, soya meal, lime, fish meals and

scale meals, minerals, fish oils, premix, etc... Oils and molasses can also be used.

Options

- Product chute with by-pass flap
- Flap box under outlet

Safety devices

- Micro contacts on doors
- Shearing pin
- Static magnet
- Belt slipping control on transmission belts
- Clogging detection



Automatic greasing

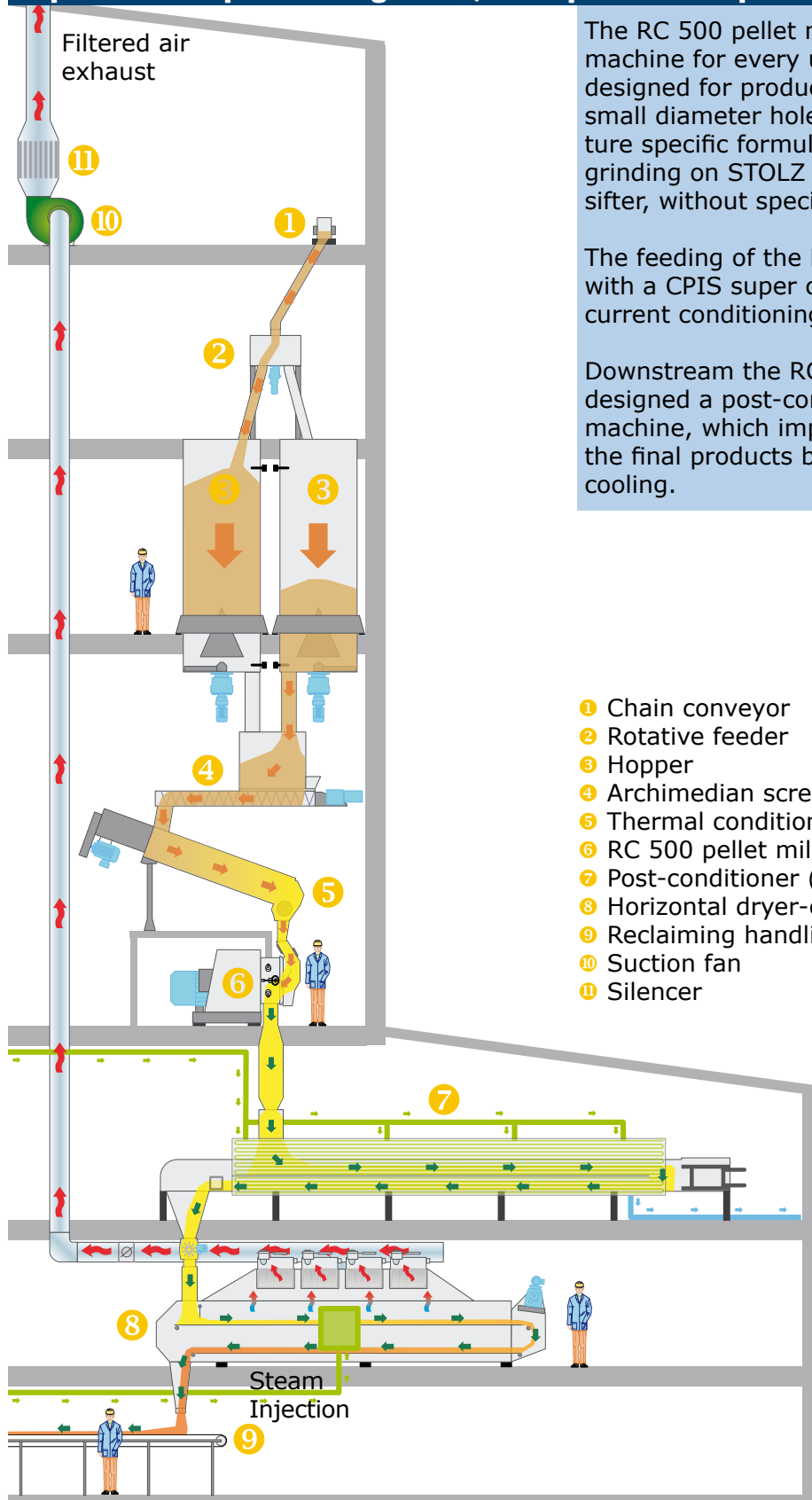


3 rollers die

Range	Die Ø	Die width / useful width	Motor power	Motor speed	Die speed	Linear speed	Working area	Approx. capacity
	mm	mm	kW	rpm	rpm	m/s	dm ²	t/h
RC 500 DT*	500	206/113	132/160	1500/1000	158/254	4,2/6,9	17,7	3 to 8

*DT = Dual Transmission

Aquaculture pelletizing line (example : shrimpfeed)



The RC 500 pellet mill is not a standard machine for every use, but it is designed for production of feed with small diameter holes dies for aquaculture specific formulas (with super fine grinding on STOLZ RMPF line and turbo sifter, without specific microniser).

The feeding of the RC 500 pellet mill with a CPIS super conditioner meets the current conditioning requirements.

Downstream the RC 500, STOLZ has designed a post-conditioner, a specific machine, which improves the quality of the final products before final drying and cooling.

- ① Chain conveyor
- ② Rotative feeder
- ③ Hopper
- ④ Archimedian screw
- ⑤ Thermal conditioner
- ⑥ RC 500 pellet mill
- ⑦ Post-conditioner (heated by steam)
- ⑧ Horizontal dryer-cooler
- ⑨ Reclaiming handling
- ⑩ Suction fan
- ⑪ Silencer

Condensates draining

Steam Injection

Alliance pellet mill



Alliance pellet mill

- Easy and limited cleaning
- Pellet mill central system largely sized guaranteeing long-lasting rollers and die while improving operating quality.

Options

The Alliance pellet mill can include several options to optimize and secure operation while limiting the operating and maintenance costs.

All options can be added up and set up in the future :

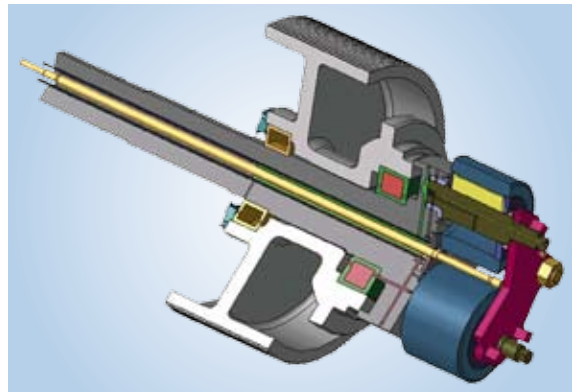
- Rollers temperature control
- Ultra slow two-way die speed
- Forced feeding by screw
- Limited contamination by draining the used grease
- Automatic distance between rollers and die
- Motorized pellet knives
- Heated door
- Regulation of meals and steam feeding

Purpose

Pellet mill range designed for the compression of powdery products for animal nutrition meeting health, safety and normative requirements, or for the compression of any product.

Features

- Transmission using a double set of belts designed for a modulation of the die speed according to the type of product (3,8 to 6,7 m/s)
- Restricted vibration level : guarantees a long life of the pellet mill
- Height compact construction making the replacement of an existing pellet mill easier
- Absorption of shocks in case of a sudden overload
- Low noise level
- Limited risk of contamination



Used grease recovery system limiting pellets contamination

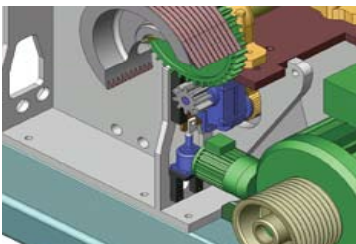
Range	Die Ø	Die width / useful width	Motor power	Motor speed	Die speed	Linear speed	Working area	Approx. capacity
	mm	mm	kW	rpm	rpm	m/s	dm ²	t/h
Alliance 80-22	800	347/220	250	1500	91/154	3,8/6,5	55	10 to 21
Alliance 80-25	800	347/250	315	1500	91/154	3,8/6,5	63	12 to 24
Alliance 90-25	900	381/250	315	1500	81/138	3,8/6,5	71	15 to 27
Alliance 90-28	900	381/280	355	1500	81/138	3,8/6,5	79	18 to 30
Alliance 90-31	900	381/310	355	1500	81/138	3,8/6,5	87	20 to 33

Ultra slow die speed

Slow disengageable motorized rotation. Two-way die rotation. Ultra low speed (1 rpm) and strong available torque.

Advantages

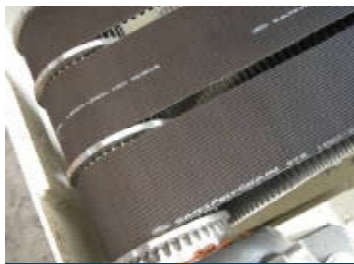
Helps to release the product.
Easy repositioning of the safety pin.
Adjustment control of clearance between die and rollers.



Slow rotation powered by a gear motor.



Door and casing



Belt transmission reducing maintenance costs.



Strong and high precision mechanic

Automatic greasing

Design allowing the recovery of used grease. Automatic distribution on :

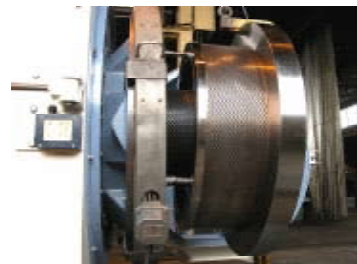
- the roller bearings
- the main shaft bearings with discharge of the used grease at the rear of the pellet mill.

Advantages

Limits the pellet contamination with grease.
Lower costs : food grade grease use is not required.



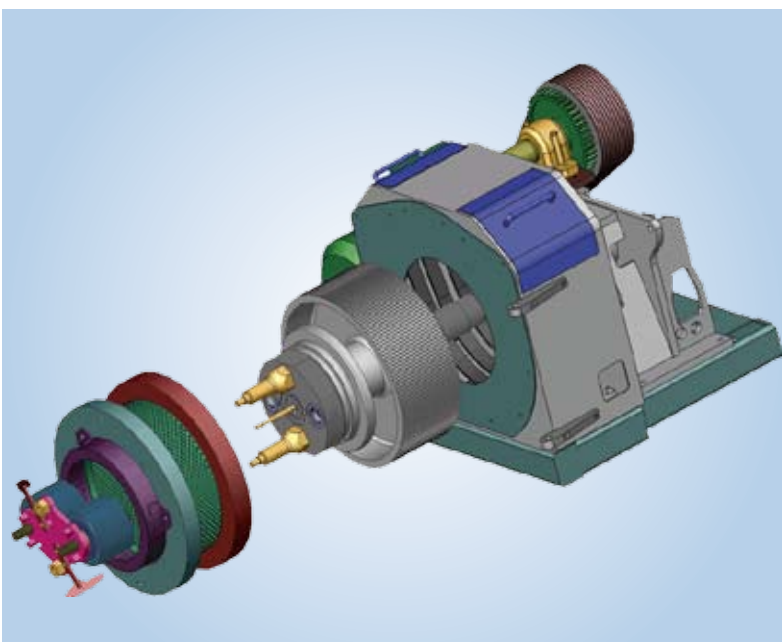
Easier maintenance



Die fixing system by hot hooping



Optimum automation



Alliance pellet mill

Vertical counter-flow cooler



Counter-flow coolers

Purpose

The cooler is designed to lower the temperature and moisture of the products to values close to ambient temperature. This operation improves the durability and preservation of the pellets.

Features

The RCCS is a machine with a simple and compact design. It is designed to lower the maintenance costs, to limit the remaining particles that can contaminate the product or increase



19x55 counter-flow cooler

the amount of bacteria and mould. The limited power cost results from an optimization of the internal air flow. Several types and variants can meet any application with or without built-in filters.

Range	Length	Width	Area	Theoretical capacity in t/h (P.S. 0.60)				
	mm	mm	m ²	Pellets Ø2 mm	Pellets Ø3.5 mm	Pellets Ø6 mm	Pellets Ø8 mm	Pellets Ø10 mm
RCCS 9x8	900	900	0,8	2,7	2,2	1,7	1,4	1,2
RCCS 19x17	900	1900	1,70	5,8	4,7	3,7	3,1	2,6
RCCS 19x26	1400	1900	2,60	9,4	7,7	6,0	5,0	4,2
RCCS 19x36	1900	1900	3,60	13,0	10,6	8,3	6,9	5,8
RCCS 19x45	2400	1900	4,50	18,0	14,7	11,6	9,5	8,1
RCCS 19x55	2900	1900	5,50	22,0	18,0	14,1	11,6	9,9
RCCS 22x64	2900	2200	6,40	25,6	20,9	16,5	13,6	11,5
RCCS 22x78	3525	2200	7,75	31,0	25,4	19,9	16,4	14,0
RCCS 28x88	3200	2740	8,75	35,0	28,6	22,5	18,5	15,8
RCCS 28x100	3840	2740	10,00	40,0	32,7	25,7	21,2	18,0
RCCS 29x125	4320	2880	12,5	50	41	44	26,5	22,5
RCCS 29x135	4720	2880	13,5	54	44	35	28,6	24,3
RCCS 29x170	6000	2880	17	68	56	43,7	36	30,6

Advantages

- First In First Out
- Optimized filling rate
- Output evenness
- Reliability and simplicity
- Control of the residence times and temperatures
- Dynamic optimization of the exchange areas

Options

- Possibility of several levels to lower time waste between 2 batches
- Thermal insulation
- Built-in filters
- Driven mechanically
- Drying level
- Extracting system by rotating flaps
- Inerting by gas injection
- Product layer levelling system



Cooler fed by 3 pellet mills



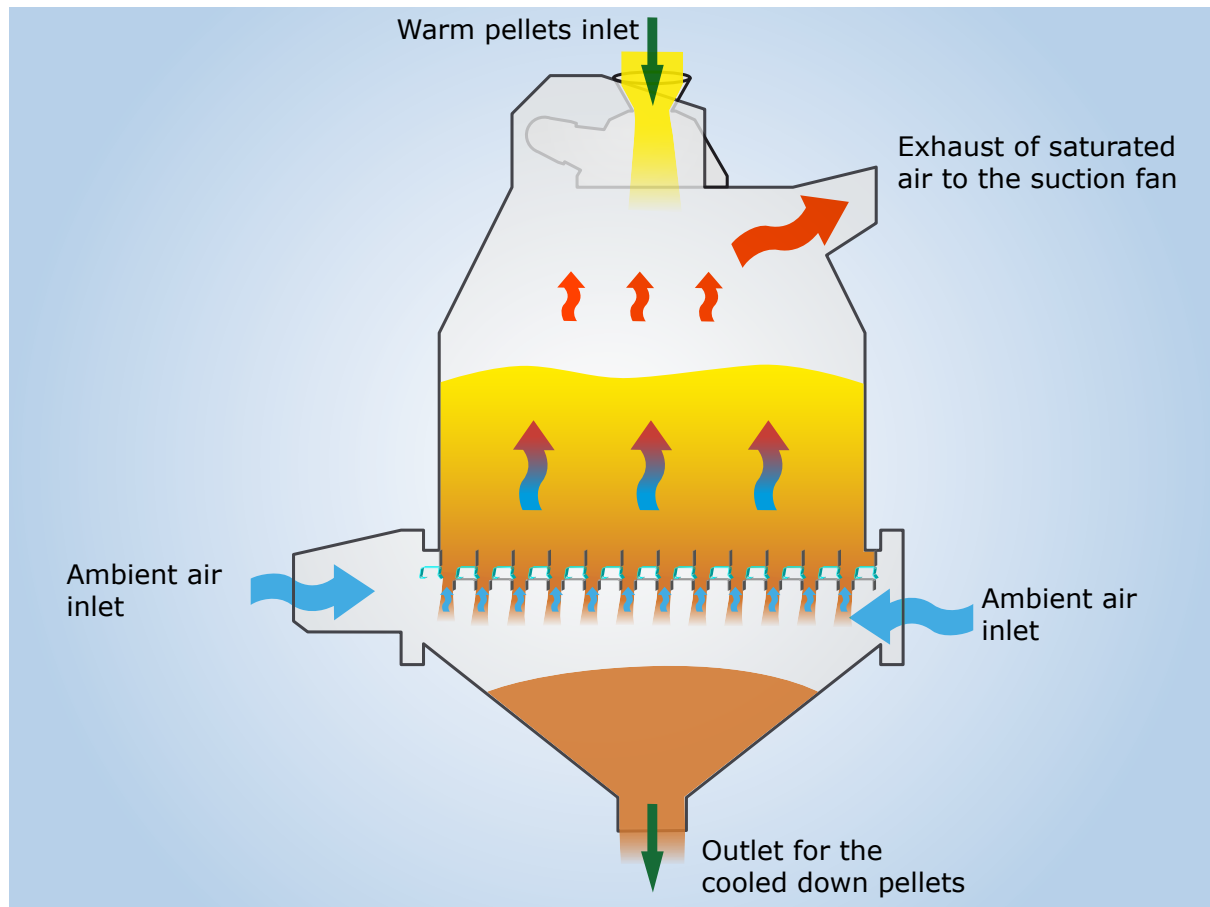
Cooler with built-in filters



Extractor with grids



Double swivelling valve



Working principle (version without built-in filters)

Non-contractual drawings and pictures

Horizontal cooler



Horizontal cooler



2 passages cooler fitted with filters

Purpose

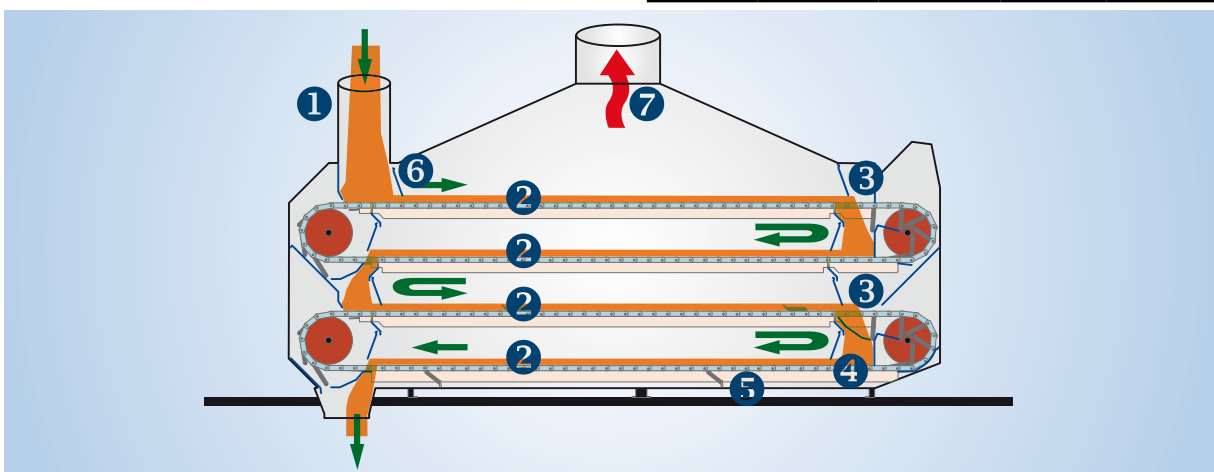
The cooler is designed to lower the temperature and moisture of the product to values close to ambient temperature. That operation improves the durability and preservation of the pellets.

The pellets to be cooled down are thus laid down onto a metal belt made of bored components conveying them and preventing them from moving, thus not breaking them, for a preset time and speed to reach a temperature between 5 to 10°C maximum above the ambient temperature.

Principle

The warm products produced by the pellet mill are placed into the horizontal cooler via a swivelling valve distributing them uniformly all over the machine width.

Range	Number of passages	Max length	Width	Height
		m	mm	mm
RHS 10	1	12	1275	1775
RHS 15	2	12	1740	2000
RHS 17	3	12	1990	3160
RHS 20	4	12	2240	3410



Working principle of the horizontal cooler



Dual regulation, air flow and layer thickness

Components

- ① A swivelling valve ensure a uniform and regular feeding all over the belt width.
- ② Conveying belt designed with bored components assembled on traction chains. The sliding paths of the chains are isolated from the product avoiding any crushing risks of the pellets
- ③ Automatic device for pellets cooling level change ensuring the layer height uniformity. A permanent cleaning device is installed at the end of each level.
- ④ Guide flaps forcing the air to pass through the pellets layer.
- ⑤ Complete cleaning of the cooler with a silent bottom scraping brushes device.
- ⑥ Flap for layer height control.
- ⑦ Warm air suction.

Sifter

Purpose

The sifter is designed to extract the fines from the pellets to improve the quality of the final product. These fines are then recycled back to the pellet mill, thus reducing product wastes.

Features

- Specific self-swivelling system designed to optimize the products distribution while reducing the dynamic stress.
- Convenient for every size distribution from huge diameter pellets to mealy products.
- Final products outlet by single or multidirectional valve with flexible circular component.
- Possibility to be placed in depression.
- Variant with a built-in crumbler.



PTAG-2 216 sifter

Crumbler

Purpose

To crush the pellets (usually a 4 mm diameter is easier to pellet than a 2.5 mm diameter) for poultry, game, fish, and piglets thus improving ingestion by small animals and digestion.

Features

- Speed variator of feeder fitted with a pneumatic valve for a precise adjustment of the capacity.
- Every type of spline on cylinders.
- Space adjustment between cylinders with remote control with analog position detection.
- Integrated system for product sampling.
- Flexibility of V-belts and dual toothing belt.
- Automatic spacing of cylinders when foreign bodies going through



Crumbler beneath cooler

stolz

desmet ballestra

Handling equipment & Dedusting

Grinding

Thermal conditioning & Cooling

Pelletizing

Mixing & Coating

Sifting & Cleaning

Services

www.stolz.fr

STOLZ SEQUIPAG SA, 82 route de Boisjean - 62170 WAILLY-BEAUCAMP - FRANCE
Tél. +33 (0)3 21 90 05 05 - Fax +33 (0)3 21 90 05 15 - E-mail : contact@stolz.fr