GRAIN TREATMENT AND LOGISTICS

COMPLETE SYSTEMS | DRYING EQUIPMENT | COOLING DEVICES | CONVEYOR TECHNOLOGY | CLEANING SYSTEMS | SILOS

goldsaat®
AGRARTECHNIK

The History of Goldsaat

Quality "Made in Germany"

On 01/08/2015, Goldsaat Agrartechnik GmbH & Co KG celebrated its 20th anniversary under the leadership of Ramona Bohl and CEO Erwin Funk.

Oswald Metzen founded Goldsaat Agrartechnik GmbH in 1995. Currently situated on Prümtalstraße in Prüm, Germany, the history of Goldsaat stretches back to 1920s Berlin. This is where the roots of today's success were first set down.

Initially founded as a Berlin-based export company, seed processing machines were distributed by the company Neuhaus under the brand name NEUSAAT. After 1945, the manufacturer first moved to Solingen and then to Remscheid where, for the first time, the brand continued under the name Goldsaat. The product range was gradually expanded with the "Poppelsdorf" pickling machine, the "SIVO" pre-cleaner, cereal cooling devices and grain dryers.
By the end of 1966, thousands of grain dryers from the "Continius", "Contilag" and "KTS" series were being used by farmers, traders and cooperatives.

In 1967, the Prüm production facilities were added and there was continual expansion through to the 1990s. Innovations in grain conveyor technology and cooling device production took place. After a few years, management relocated from Remscheid to Prüm.

In 1995, during a difficult economic period and the closure of Goldsaat Fritz Döring GmbH, Oswald Metzen founded Goldsaat Agrartechnik GmbH. In a strong alliance with Oswald Metzen GmbH for industrial systems, the businesses were revived and a solid foundation was laid for the future. By 2007, new production and administrative buildings were constructed. Since 2013, the company has been trading under the name Goldsaat Agrartechnik GmbH & Co. KG, under the ownership of Mrs Ramona Bohl (née Metzen), Mr Oswald Metzen and CEO Mr Erwin Funk.

Expertise was continually expanded and developed. Today, the Goldsaat of Prüm, Germany, is an international leader in designing, constructing and installing complete agricultural grain systems. This also includes equipment for rice and maize. From planning through to a ready-to-use system, Goldsaat guarantees "Made in Prüm/Germany" quality that makes an important contribution to securing harvest yields in the agricultural sector. The company's success is based on a team of around thirty experts, including craftsmen, office staff, engineers and technicians. Many of the staff come from the Prüm area and some have been working at Goldsaat for more than 20 years. They produce high-performance, large-scale systems based on customer requirements.

The basis of the company philosophy is punctuality, precision, fairness and cost-transparency.

HÜCKESWAGENER ZEITUNG

Häßliche Werksfassade wird verschwinden

Die „Brotfabrik" wird völlig umgekrempelt

„Goldsaat" baut um und erweitert

Von unserem Redaktionsmitglied Theo Dörpinghaus

GOLDSAAT FRITZ DÖRING

BEI DER FIRMA GOLDSAAT in Bergisch Born wird zur Zeit gebaut. Zwei Werkhallen entstehen, die eine gleich neben dem alten Hauptgebäude, die andere an der Hofseite. Im Zuge der Sanierarbeiten wird auch eine alte Gaubude eingebaut und neue Fenster verschönert.

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Services

Know-how for Optimal Grain Technology

We plan, build and install machines and systems, particularly for wheat, barley, rye, maize, rice and other cereals, as well as free-flowing products.

Our service portfolio encompasses individual modules which optimise or expand on existing plants, through to complete systems which perfectly compliment each other in all work steps, even across large volumes.

As a partner to the modern farming and agricultural industry, we individually design each system in line with our customers' requirements and wishes. Our speciality is planning, as well as the construction of particularly large, high-performance systems. The expansion of existing, complex structures is also one of our areas of expertise. The core competency of Goldsaat is building complete ready-to-use systems.

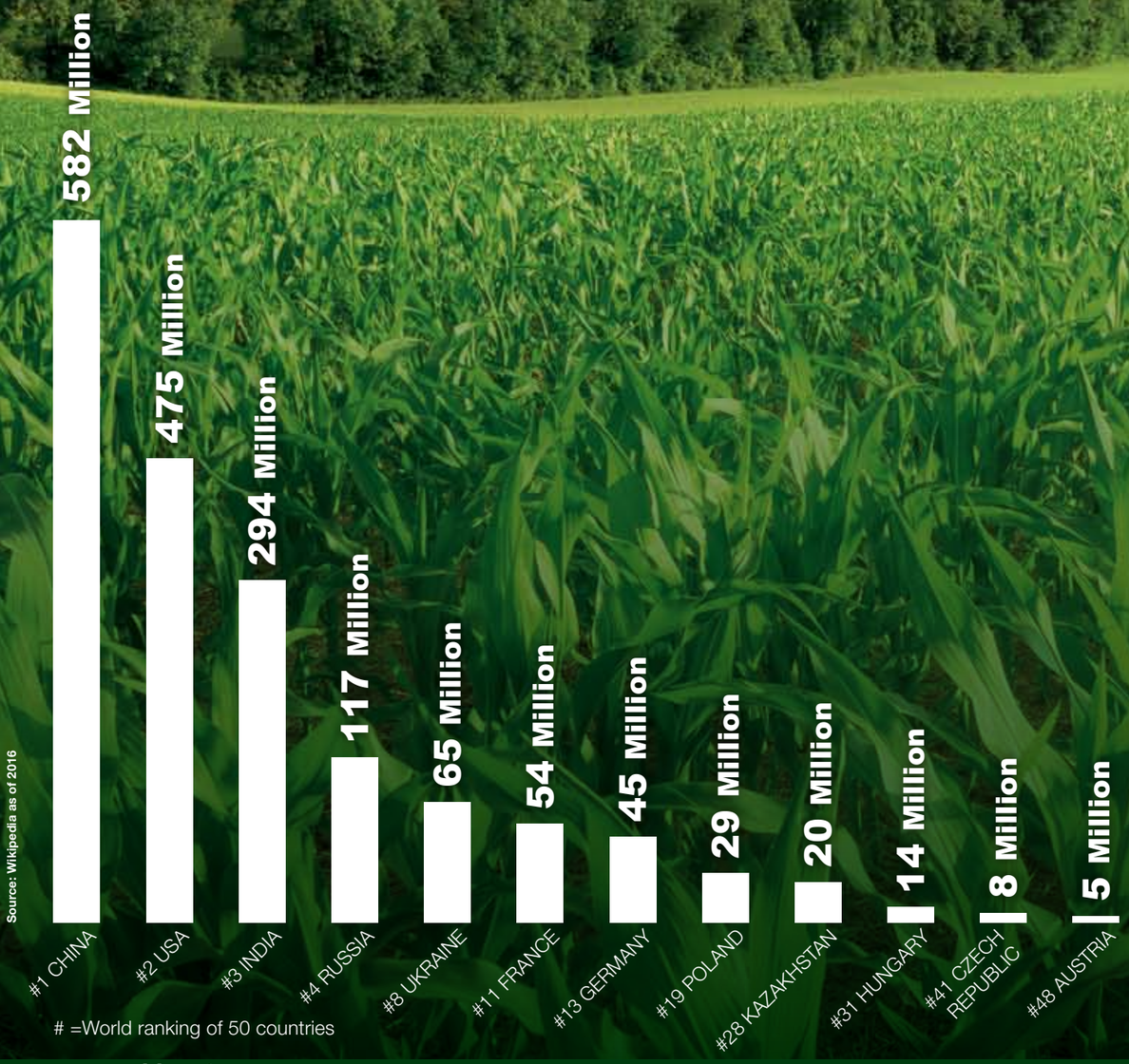
Installation, initial operation and servicing are carried out by our experienced team of technicians on-location with the customer.

Business Worldwide

Technology produced by Goldsaat can be found in all world markets.
The key service areas are located in Central and Eastern Europe.

World grain production in tonnes
of barley, oats, millet, maize, rice, rye and wheat

Across 12 example countries:



Source: Wikipedia as of 2016

=World ranking of 50 countries

Grain is the world's most important food market!
For the world population of 7.7 billion people, over 2.848 billion tonnes of grain are produced a year worldwide.

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Complete Systems

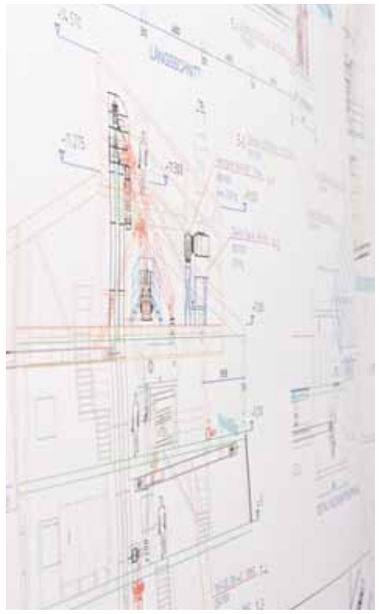
Logistics from Receipt to Removal

The whole is more than the sum of its parts (or components). This expression explains the process by which grain plants are constructed - all the components must match and be aligned to ensure secure conveyance, processing and storage. This is how our systems can achieve the desired efficiency. This is the principle by which we plan, produce and install our Goldsaat systems.

Planning and manufacturing large, high-performance plants from one metal casting process is one of our strengths. Our experts work hand-in-hand to perform proprietary engineering and produce spare parts. Even those looking for a more complex solution capable of performing a range of unusual tasks can rely on the specialists at Goldsaat. Each client is assigned a contact person who acts as a go-between for the various departments, accessing specialist knowledge and ensuring proper planning, installation, commissioning and the flawless operation of your systems.

Goldsaat has been acquiring expertise for decades in the following areas: Consumer grain, malting barley, seed grain, maize, oilseeds/pulses and rice. Make the most of our know-how.

During planning, we take into account your systems, economic and ecological aspects for securing crop as well as your increased revenue.



No two grain management solutions are alike

This is because which processing steps are necessary from collection to processing is dependent upon various factors, for example, the type, transport route, cultivation area, contamination levels and grain moisture. Not least, the scale of operation is relevant for system design.

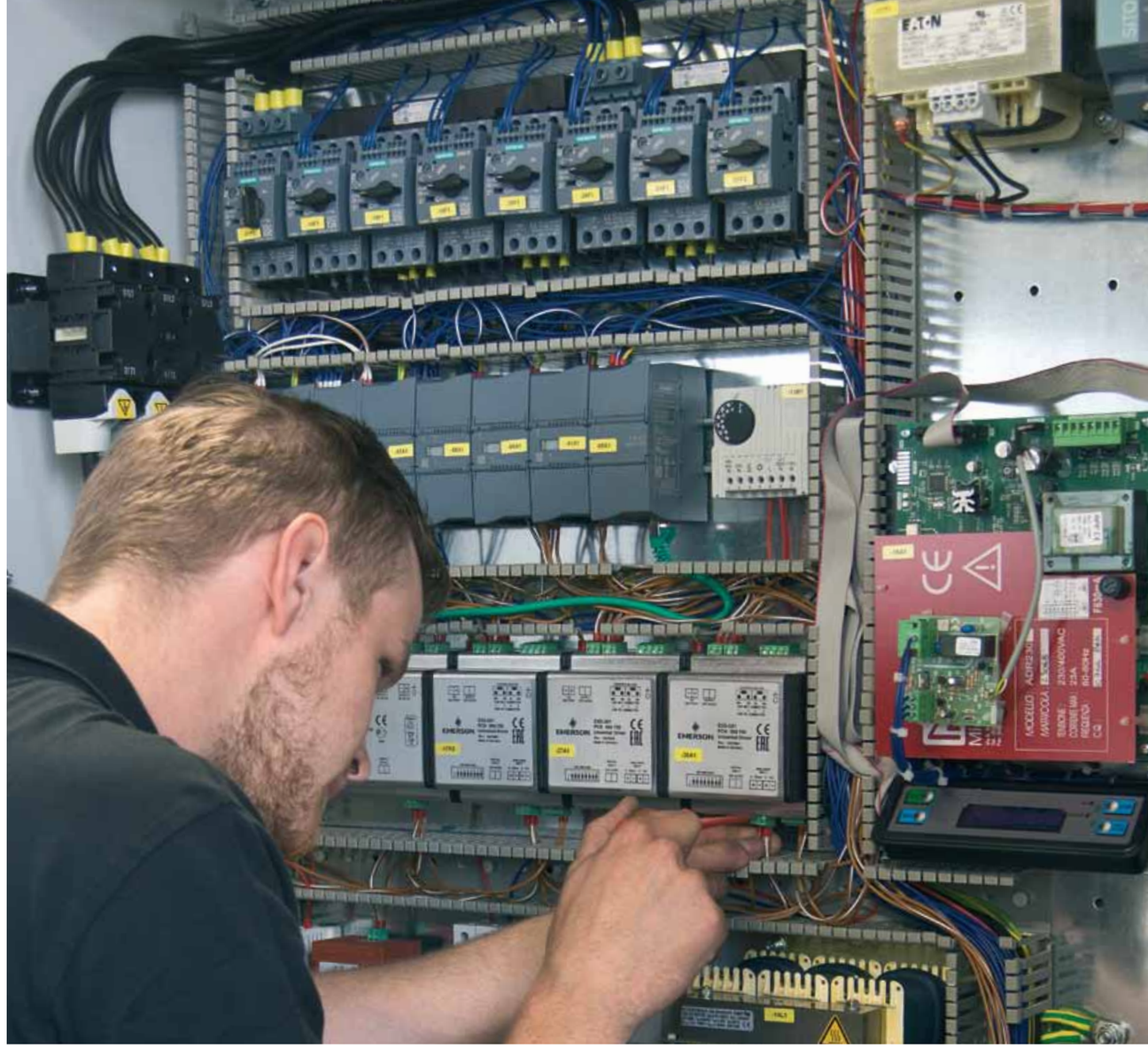
Individual solutions for small businesses differ substantially from industrial complete systems. Additional challenges in grain management are increasingly strict quality control requirements and environmental protection as well as a constantly changing markets.

Whoever wants to remain competitive in this environment, has to be flexible and adaptable.

Know-how in System Construction

In view of the complexity of the new construction of a complete system, solutions are, on the one hand, particularly appropriate for reducing the organisational expense of system operators to a minimum.

As a specialist provider, we have the required know-how at our disposal to guarantee smooth operation of all project phases: from the initial required analysis, through the planning ans on to successful implementation.



Electrical Engineering

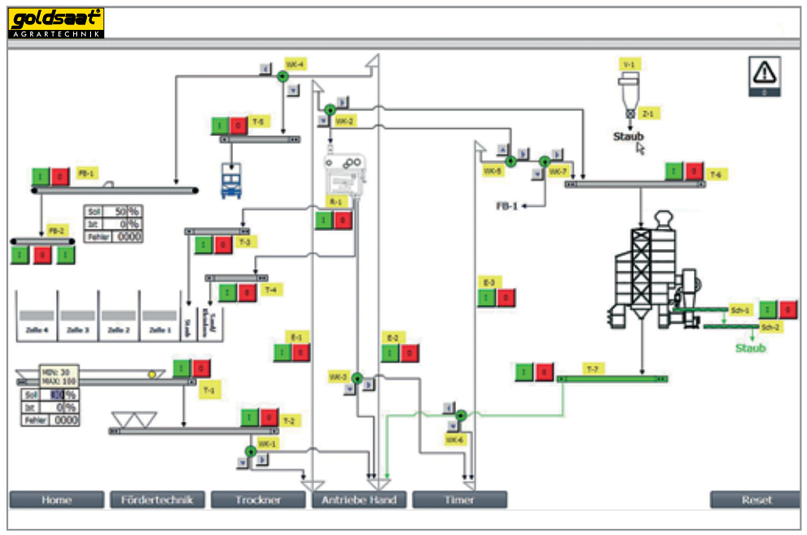
Through in-house switchboard construction, in combination with the “Made by Goldsaat” software, we’re able to look at each project individually and, in consultation with the customer, create the optimum solution for them.

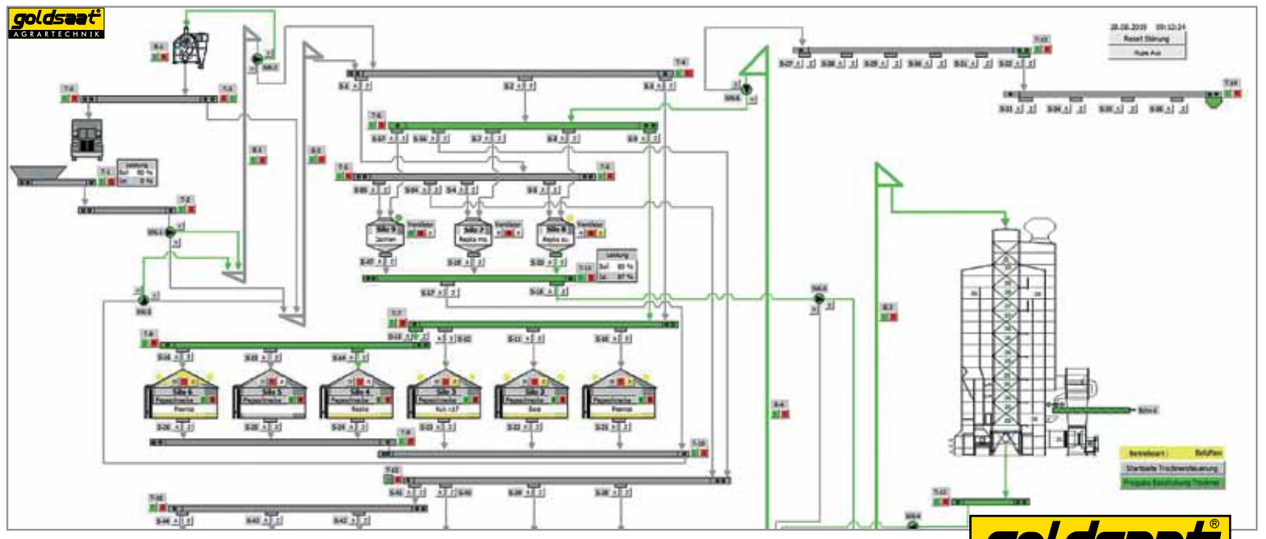
An efficient, easy-to-use control system from Siemens is the basis for all control and regulation tasks of Goldsaat system engineering. This monitors and regulates all functions from drying to conveyor technology as well as building technology, such as lighting and ventilation.

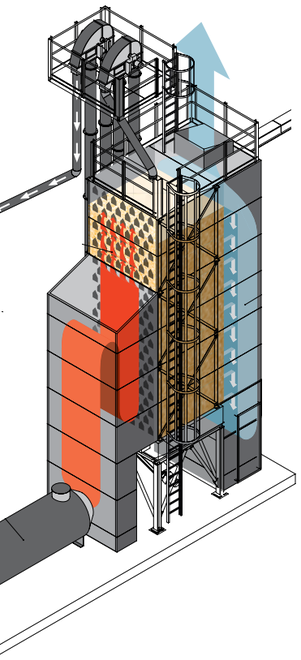
Monitoring technology is operated either via a touch panel or a PC workstation with several screens. The integration of a temperature measuring system for monitoring grain is also possible; as is the transfer of data to an external control system.

With numerous serial interfaces control in existing systems can be integrated in order to deal with complex tasks or to meet the demand for centralised documentation of system data.

Our remote maintenance technology offers different transmission routes such as, for example, GSM or DSL and as such we’re capable of providing active support for the identification and repair of faults.







Drying Technology

Efficient and ecological – hand-in-hand

One of the main skill areas of Goldsaat is drying machines for grain, maize and rice. Goldsaat has been working in this area for decades to great success and has introduced various developments based on their experience with these systems.

The development of new systems and, most of all, the integration of modern drying technology in existing, often narrow and difficult-to-access plant structures are disciplines in which Goldsaat is well-versed.

Goldsaat Vertical Dryers

Grain Dryers
Maize Dryers
Rice Dryers

Our flow-through dryer systems can be adapted to meet output requirements of between 5 to 170 tonnes per hour. They combine energy-efficiency requirements with the latest environmental findings: Resource-efficiency and energy savings. This is thanks to innovative processes, such as heat recovery or warm-air drying with subsequent ventilation through the silo.

The goods to be dried (e.g. maize, rice, grain or pulses) are put through a dehumidification process that is gentle, consistent and biologically-sound. The end result is natural raw materials and top-quality foodstuffs.

Goldsaat Flat Dryers

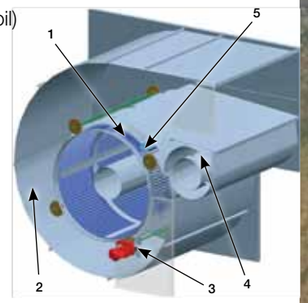
Goldsaat flat dryers are an alternative to through-feed dryers and are especially suited to non-free-flowing goods. They ensure consistent and gentle dehumidification and are suitable for drying cotton, acorns, carrots, chippings, oilseeds, peppers, granules, cereals, rape, maize etc.

Operation: Thanks to perfectly aligned, fully-automated control elements, malfunctions in humidity regulation (i.e. over- or under-drying) are a thing of the past; time-consuming, manual control is also kept to a minimum.

Material: Goldsaat dryers are designed to have long service lives. Through the use of high-quality materials, such as rust-proof, light metal alloys, the drying systems feature excellent longevity and guarantee congestion-free flow.

Environment: Energy is becoming more and more expensive. This is why we continually work on developing insulation for warm air compartments and devise new ways of recovering and generating heat, as can be seen by the excellent efficiency already achieved by our systems.
Goldsaat develops new techniques of reducing dust emissions, e.g. with maize dryers. This includes innovative centroseparators that take up minimal space when installed and do their part for the environment.

Accessories:
- Fans
- Discharge unit
- Controls
- Warm air generator (gas/oil)
- Dust separators



1 filtration tissue
2 primary settling tanks
3 filter actuators
4 secondary settling tanks
5 suction/cleaning filtration tissue

Efficient Drying Technology

Aside from thorough cleaning and storage, correct drying for the conservation of grains plays an decisive role. They ensure the quality of the product and the value to the producer. Firstly, the extraction of moisture safeguards the storage suitability of raw goods. Harvest moistures vary in many different parts of the world – with maize in Central Europe for instance – it's 30% The associated drying costs therefore represent a significant criteria for competitiveness.

Goldsaat offers a broad portfolio of efficient drying technologies. Dryer sizes with drying performance from 5 to more than 170 t/h are available. Depending on the harvest moisture and desired throughput, devices can be operated according to individual customer needs. As a result, continuous research and further development characterises these systems through lower energy requirements, considerate product treatment and reduced dust emissions.

Everything Under Control Automatically

Integrated automatised solutions are now fixed components of a modern grain management. They increase the system's capacity and availability and enable traceability of products. Furthermore, they provide a considerable contribution towards reducing energy requirements. Important criterion when deciding upon an automated solution are user-friendly operation as well as the future sustainability of the system. If requirements grow within a business, the system should be able to keep pace.

Goldsaat offers an intuitive, useable process control system which, thanks to its modular and scalable construction, can be easily adapted to system size and functional requirements. The integration of sensor technology enables product quality in the flow of materials to be analysed and optimised directly online. Additional ratio calculations give information about the profitability of the system.

Maintenance and Training for Maximum System Availability

In grain management high system availability is in demand; especially as unplanned stand-stills impact negatively on productivity, and, therefore, on profitability as well. Therefore, customer service shouldn't stop with the initial operation of a system. Goldsaat draws on different locations in order to ensure smooth operation.

Sampler

for Quick Sample Extraction

The sampler developed by Goldsaat has gained wide-ranging currency amongst stockists both at home and abroad and is considered to be an indispensable work tool.

The sampler is an extremely practical backpack device, such as seen in Fig. 1. As an option, it can be housed in a chassis. Shelves act as storage for the sample container.

They drive the entire work tool up onto the delivery vehicle and draw the required samples out of the load.

Due to easy removal from the chassis, the sampler can also be used for taking samples from silo cells and flat stores. The suction depth is a maximum of 10 metres.

A complete unit consists of the following:

Sampler
- with high-performance fan approx. 1200 W/220 V
- Knock-out vessel with in-built filter
- On/Off switch
- Bearer frame with shoulder straps
- Approx. 8 metre connection cable with plug
- 4 pipe probes, each 1.5 meters in length
- Suction nozzle with 2 metre flexible suction tube

Chassis (Optional)
- Sheet steel profile with 2 transport handles
- 4 wheels, of which 2 are steerable with arrestors
- Lateral mounting box for pipe probes
- 2 sheet steel shelves for mounting the sample container

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Cooling Technology

Pest Control without Pesticides

Photo:
Rice weevil
by Olaf Leillinger,
wikimedia.org

Sitophilus granarius [Wheat Weevil]. The wheat weevil (body length of 3.8 to 5.1 mm) is one of the most common stored food pests. Within a year, as many as 90 million offspring can be produced that are capable of consuming up to 50 tonnes of grain. According to statistics, approx. 2% of grain harvests are destroyed by pests such as wheat weevils, flour beetles, saw-toothed grain beetles, grain borers and grain moths.

Pests like warm conditions. Goldsaat cooling devices pump in cold air to drive out the pests from the stored goods which helps put a stop to excessive proliferation. This is all achieved without any pesticides which ensures the goods do not deteriorate in quality. Goldsaat has decades of experience in everything to do with the cold preservation of grain crops.

PLC controls, “granoplus” climate control, integrated self-monitoring of the device and electronics, as well as bulk materials monitoring via “coolstop” all contribute to ensuring flawless automated operation of the cooling technology. All output levels and parameters can be perfectly regulated.

Naturally, only CFC-free coolants are used because protecting our natural environment is a cornerstone of our corporate philosophy.

People are also protected by reducing noise pollution through intake silencers that come as standard with all our cooling facilities. This is further supported through optional proprietary sound protection called PST (Particular Silent Task).

Our cooling devices are available with output ranges of between 40 t/d and 250 t/d (regular summer output) or 70 t/d and 350 t/d (maximum performance). Cover: At 22°C ambient temperature, 50% relative air humidity, 16% grain humidity, the t/d for grain indicated, including 2 K (°C) granosafe-residual heat, is cooled to 10°C in 24 hrs. Following the GK 160/448-DWN model series, the ability to integrate with an existing local network became possible. Operation takes place either on the cooling device or from a workstation.
Optionally, remote access across a GSM-Modem is possible for remote maintenance operations.

Overview:
Cooling device GK 40/448-DWM
Cooling device GK 80/448-DWM
Cooling device GK 160/448-DWM
Cooling device GK 240/448-DWM
Cooling device GK 320/448-DWM

Design features:
- PLC controller
- CFC-free coolant 448-A)
- Machine operating range between + 4 °C and + 40 °C
- Functional procedures are not influenced by overall counterpressure
- Granoplus - climate control
- Residual heat regulation up to 9 K (°C) irrespective of ambient temperature
- Working range in compressor mode of between + 2 °C and + 17 °C, temperatures within this range can be selected irrespective of the weather
- Device can be operated according to blow-in temperature or moisture sorption (aw [water activity]-value of the cereal crop)
- Highest possible volume flow while consuming the least amount of energy
- Integrated self-monitoring of the device and electronics as well as bulk goods monitoring with coolstop
- Corrosion protection through use of galvanised sheet steel and multiple varnishes
- Silent-Mode for nighttime operation

Conveying Technology

Moving Big Loads – with Innovative and Long-Lasting Solutions

Free-flowing products of all types, be they delicate or robust, can be transported towards the next processing station using Goldsaat conveying technology in an energy-saving, efficient, quick and gentle manner.

Conveyor performance, composed of speed and quantity conveyed, is optimised for every product. The automation technology used is also perfectly engineered, which is key for ensuring plant efficiency, be it an agricultural plant or recycling facility.

The design of each of our conveyor system solutions is tailored exactly to customer requirements. They operate reliably and are flexible enough to allow future expansion or modification to new environmental conditions or production requirements. We also offer top-of-the-range standard elements.

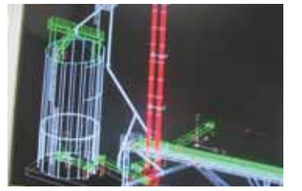
Our conveyor belts can shift volumes of up to 1000 tonnes per hour; our feed screws can manage up to 300 tonnes per hour.

Drag chain conveyors are capable of moving up to 600 tonnes while being gentle on delicate goods. The elevators which need to lift large quantities of product to great height can transport up to 600 tonnes per hour.

For precision we apply, upon request, modern measurement technology with which we can control and measure the flow of materials.

Performance range:

Elevators	up to	600 t/h
Drag chain conveyors	up to	600 t/h
Conveyor belts	up to	1000 t/h
Feed screws	up to	300 t/h



Conveyor Belt Systems

Our conveyor belts are used for transporting bulk goods. They're suitable for transporting all types of grain, fertilisers, salt, gravel, sand and other industrial goods.

Our conveyor belts are extremely powerful with a width up to 1,600 mm and a conveyor performance of up to 1,000 t/h with a bulk weight of 750 kg/t.

As stockpile conveyors, they're suitable for port handling as well as all types of hangar warehousing. The belts are available both as stationary or driven for all sectors and functional areas.

In addition to galvanised steel constructions, we also produce tailor-made stainless steel conveyor belt systems, e.g. for the transportation of fertilisers and salts.

Cleaning Technology

High-Performance, Ecological and Economical!
Pre-Cleaner Systems from the SIVO and SIVO UL Series

SIVO 20 t/h up to 200 t/h (heavy fruits)

The special design features of the Goldsaat SIVO mean it always operates reliably and can clean goods no matter what the level of humidity or contamination. Wherever there are performance losses or failures on flat screening machines due to the consistency of the bulk material, the SIVO machine is the ideal choice for ensuring flawless precleaning of feed and foodstuffs.

Excellent cleaning results can be achieved with: cereals, rice, maize, pulses, small seeds, turnip rape, soybeans, peanuts, coffee, cocoa beans, sesame seeds, sorghum, buckwheat and many more.

Economical and malfunction-free!

The SIVO pre-cleaner has been reviewed as outstanding in practical trials, particularly where it is used upstream of a drying facility, or as part of low-temperature preservation.
Drying systems can be operated without interruption and economically with reduced emissions. SIVO also contributes to preventing dryer fires via pre-cleaning, which helps avoid clogs and material accumulation.
Dirt deposits are reduced and better cold preservation results are achieved. Drying and cold preservation therefore become easier and more cost-effective.

SIVO-UL 20 t/h up to 200 t/h (heavy fruits)

The SIVO UL grain pre-cleaner, the successor to the tried-and-tested SIVO series, has been designed to be environmentally-friendly.

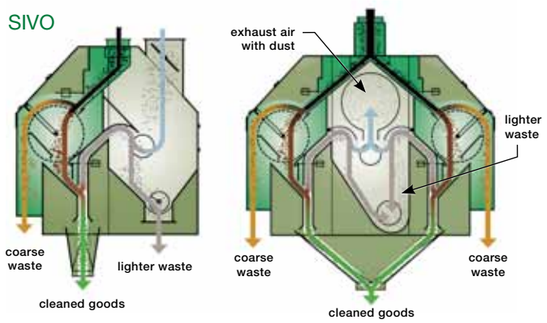
The SIVO UL pre-cleaner is capable of processing 20 to 200 t/h of grains and cereal and its compact design is further enhanced by small dust separators and exhaust air pipes.

The reduction in exhaust air volume also enables a smaller post-separator to be used, which in turn means less space is needed for any downstream filtering systems used. Fine adjustments can be made to the regulating valves to ensure the pre-cleaning results achieved are the best possible. The design of the SIVO UL with a ventilation system has been specially conceived to satisfy both today's economical and ecological requirements.

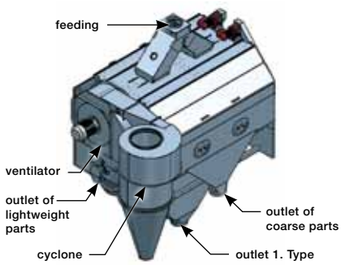
Advantages:

- A compact design with improved performance for easy installation
- Significantly reduced exhaust air volume (only max. 20% compared to a conventional SIVO)
- Applicable emissions regulations are met in full when a filter is linked downstream
- Dust separators and pipelines for exhaust air have small dimensions and are cost-effective
- Overall energy consumption is reduced

SIVO



SIVO-UL



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Silos

Goldsaat storage technology for grains and cereals

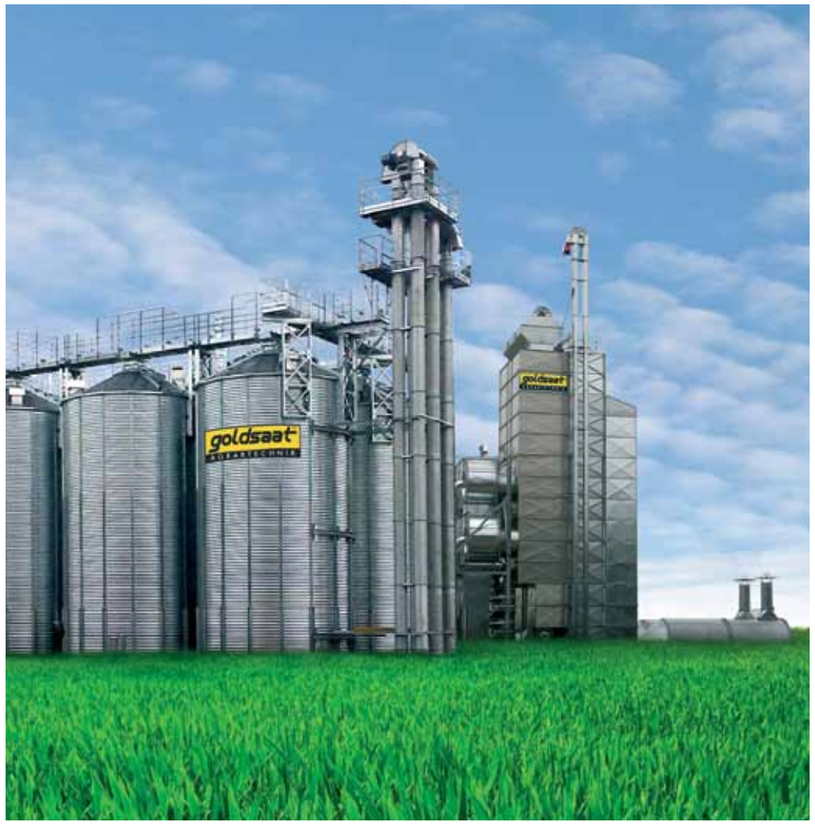
A major part of the grains and cereals logistics process is taken up by storage options for the treated and untreated grain. The requirements vary greatly. Goldsaat designs silo systems for the gathering crops and as handling warehouses, all of which are ready to operate from day one.

Key components include tailor-made conveyor and discharge solutions that transport the grains and cereal quickly and reliably to warehouses or truck/ship-loading points. The outdoor silo facilities most frequently selected by clients are those featuring round silos. Goldsaat supplies these with diameters of up to Ø 32.80 m and heights of up to 28 m.

All the silos are assessed in line with the current EUROCODE standards. For box silos, Goldsaat can also supply suitable conveyor solutions.

Types of Silo:

- Round steel silo with cone (with or without ventilation system)
- Round steel silo with sweep auger (with or without ventilation system)
- Free-flow floor silos



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COMPLETE SYSTEMS | DRYING EQUIPMENT | COOLING DEVICES | CONVEYOR TECHNOLOGY | CLEANING SYSTEMS | SILOS

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AGRARTECHNIK

COMPLETE SYSTEMS
planning and manufacture

DRYING TECHNOLOGY
ecologically and economically
ideal for securing revenue

COOLING TECHNOLOGY
chemical-free preservation
for your crop

CONVEYING TECHNOLOGY
careful conveying of
free-flowing goods

CLEANING TECHNOLOGY
SIVO UL - available for hourly
outputs from 20 - 200 t

SILOS
Goldsaat storage technology
for grains and cereals

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