

Leading in
Optimised Pulse
Processing.
**Equipment and
Solutions.**

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A close-up photograph of a white ceramic bowl filled with a thick, yellow lentil soup. The soup is garnished with small pieces of green herbs and red vegetables. The bowl sits on a light-colored wooden surface. In the background, another white bowl containing a different food item is partially visible, slightly out of focus.

Bühler in partnership with processors.
**An integral part of the pulse
processing industry.**

Bühler offers pulse processors a comprehensive portfolio of process engineered, high-capacity processing machines and on-site services for processors worldwide. We understand the complexities and many variants of these commodities and as a leading global technology partner, we are able to deliver customised solutions that can provide performance, yield and efficiency superiority that maximise profitability.

Our commitment to this industry is further proven in our collaborative approach, offering innovative solutions for alternative pulse-based products, broadening the appeal of this nutritious food staple to the mass market. Comprehensive process solutions, developed through a network of Bühler application and research centres, located throughout many pulses producing countries have produced solutions that help processors create alternative foods such as pasta, flour and healthy snacks from pulses – reinventing pulses for the 21st century consumer.

Bühler Integrated solutions for optimised Pulses processing.

Bühler offers optimised, integrated solutions for Pulse Processing – from single products and technologies up to the complete process chain, including engineering, training and consultancy services.

Bagging, Packing and Ancillary Equipment

A wide range of bagging and packing equipment to suit any capacity, plant and end-user requirement.

Additional Services

- Consultancy and process know-how in optimised pulses processing
- Project management
- Training courses
- Research and development for new value-added solutions



5

Drying

Consistent performance - for uniform and exceptional end-product.



4

Hulling

Hulling solutions - designed exclusively for pulses - less breakage.



3

Grading

Modular solutions - for flexibility whilst offering consistent grading quality.



Deston



Combi-Cleaner



Separator Classifier



Magnetic Separator

2

Cleaning

Remove coarse and fine impurities and protect machine damage during further processing.



Drum Cleaner



High Capacity Cleaner
TAS™

1

Pre-Cleaning & Storage

Conveyors, pre-cleaners and storage systems.



Splitter

6 Splitting

Gentle and efficient solution - for perfect shaped splits to achieve higher premium



SORTEX®
Optical Sorters

7 Optical Sorting

First-class in foreign material, defect and colour detection - maximise food safety and end-product quality.



PulShine®
Pulse Polisher

8 Polishing

The world's first food safe and hygienic pulse polisher - no contact with leather, cloth and other non food safe polishing solutions.



ANTARES
Roller Mill

9 Pulse Flour

State-of-the-art milling technologies to produce a wide range of flours for various application with the highest yield



Plansifter

10 Sifting

A range of sifting and sizing equipment to separate different fractions with precision.



Polytwin™
Extruder

11 Extruder

Solutions and know-how - to meet the needs of consumer trends; convenient snacks, breakfast cereals and pasta.

■ Process highlight. **Pre-Cleaning and Handling Systems.**

Bühler offers comprehensive pre-milling solutions, which includes pre-cleaning machines, storage and cleaning equipment.



TAS™ Cleaner

High separation efficiency, removing coarse, small and light impurities to maximise silo storage capacity, improve process flow and enhance process reliability.

- Available in four models
- Heavy-duty, designed for round-the-clock operation
- Convenient air volume regulation
- Low vibration, no need for extensive structural platforms
- Wear protection



Drum Sieve

Efficiently separates coarse impurities such as pieces of straw, bag tapes, paper, pieces of wood and leaves, successfully protecting downstream processing and conveying systems from machine damage.

- Available in four models for different capacity requirements
- Fast and easy drum change
- High degree of self-cleaning



Pulses Reception and Handling

Reliable high-performance bulk and bagged pulses reception plus conveying systems are a key contributor to success in production.

Additionally, for efficient transportation of pulse grains throughout a processing plant, chain conveyors, screws, belts and elevators can also be offered.

- Suitable for a capacity range of up to 300 t/h
- Flexible modular systems to suit every plant requirement
- Heavy-duty, stable off-track detector and speed monitor
- Designed for hygienic operation
- High product reliability with long service life

Process highlight. **Drying Systems.**



Eco Dry™

Exclusively designed for pulses, offering extremely gentle handling to significantly reduce thermal stresses to pulses.

- High capacity and reduced drying time through an optimised multiple stage process
- Low heat impact on pulses, reducing losses through product breakages as a result of stress cracking
- First in - First out delivers uniform and consistent drying results
- Elimination of variations in moisture levels in tempering bins

Process highlight. Cleaning and Grading Systems.



GrainPlus

Engineered for the reception and storage of grains, the GrainPlus LKGA is an economical and compact screening machine, equipped with an optional inlet aspiration system for reduced dust and ease of maintenance.

- Easy access to screens for fast screen change and maintenance
- Combined inlet and outlet aspirations for highest cleaning performance



Classifier

Efficiently removes both coarse and fine impurities including field materials, wood, stones, soil and sand. An aspiration channel is fitted to remove low-density particles such as dust and loose husk.

- Available in three models for different capacity requirements
- Fast and easily changeable sieves, wear parts and absence of lubrication points
- Closed machine design prevents dust and safeguards food safety



Destoner

Designed to meet food safety requirements, the MTSC efficiently removes stones and other high-density impurities such as metal and glass.

- Available in three models to meet different capacity requirements
- Enclosed machine design for reduced dust emissions
- Sturdy design, can withstand the abrasiveness caused by paddy
- Most efficient destoner available in the industry. Double-deck models offer even better results for stones and glass removal



TAS™ Cleaner

High separation efficiency, removing coarse, small and light impurities to maximise silo storage capacity, improve process flow and enhance process reliability.

- Available in four models
- Heavy-duty, designed for round-the-clock operation
- Convenient air volume regulation
- Low vibration, no need for extensive structural platforms
- Wear protection



Precision Grader

Incorporates a unique Bühler patented design to provide an even product distribution with high precision slot width for accurate grading even during high capacity processing.

- Modular design for different capacity
- Efficient adjustment of screen revolutions for optimised separation
- Shaft-less peripheral drive for easier control and changing of screens
- Easy to maintain - drums can be easily removed



Process highlight. **Hulling.**



PULSROLL™ Pulse Huller

CE and ATEX compliant, designed exclusively for hulling all major pulse varieties. Delivers consistent, uniformed hulling performance at the highest of throughputs.

- High throughput with low power consumption
- Robust machine design
- Better yield and optimum finish on hulled pulses
- Safe and hygienic operation with CE certification
- Easy to operate and versatile application on all major pulse variety.



MS-25

PS-37

CONTROL ROOM

CONTROL ROOM

Do not open without safety goggles





Process highlight. **Optical Sorting.**



SORTEX A MultiVision™

Bühler's most sophisticated and versatile sorting capabilities, the SORTEX A MultiVision™ is the first choice for pulse processors with challenging applications.

- Exceptional sorting performance – designed to detect subtle defects in colour; light and dark, spots, damages or blemishes and various foreign materials and seeds
- Consistent product quality; uniformed in sized and colour – Features PROfile™, a combination of three dynamic technologies; PROsize™, PROshape™ and PROcolor™ to detect multiple levels of shape, size and colour
- Available with up to 5 modules for a flexible sorting configuration



SORTEX B MultiVision™

Incorporates a combination of new and improved technologies in the design of its lighting, inspection and ejection systems, the SORTEX B MultiVision™ offers pulse processors the functionality and proven performance of the SORTEX® brand.

- High sorting performance for every day, mainstream sorting – features new and improved trusted SORTEX® technologies
- Consistent performance – detects colour, product defects, foreign material and seeds
- Uniformed product and quality – equipped with PROsize™ technology to sort pulses based on size characteristics

■ Process highlight. **Polishing.**



PulShine® Pulse Polisher

The world's first hygienic and food safe pulse polisher, PulShine is the only industry solution that uses grain-to-grain friction eliminating the need for contact with non-food safe materials such as leather, cloth or polishing solution. Available in CE & ATEX compliant versions.

- Food safe design – no contact with leather, cloth or polishing solution needed
- Uniform and long lasting polishing finish – unique and patented grain-to-grain design
- Control over polishing finish – Easy to operate with adjustable control for variant polishing; from matt, medium polish to glossy



Additional services. **Automation and process control.**



Engineering and Project Management

Providing a complete solution including equipment, technology and services is one of the key factors of our success. Bühler technologists and process engineers, have the process know-how and local in-depth knowledge to give advice on how you can fully utilise your processing plant to the fullest.

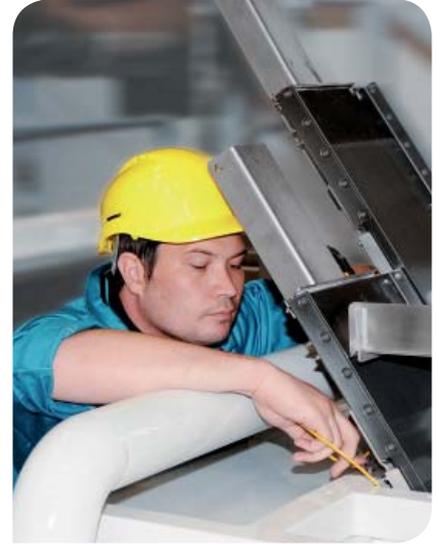
Automation and Process Control

Bühler automation systems deliver ease of operation in processing plants. Processors can opt to incorporate a modular system or a fully automated plant to control and monitor plant production - improving plant processes, efficiency and equipment performance.

Research, Development and Technology Support

Bühler's leadership in pulses processing stems from our continuous research, development, equipment technology and consultation services. We invest in the future, developing the latest solutions from our world-class research facilities to give our customers the competitive edge.

Additional services. Professional education and training.



Global Education and Training

Remain competitive with Bühler education and training courses. Understand current processing trends and market development, have a better understanding of your machines and be the first-to-know of new Bühler technologies – all can help you optimise the use of your equipment and plant performance to maximise your growth potential. Our extensive range of courses are structured to suit various responsibilities within a processing plant including owners, managers and operators. Courses are available on-site or through Bühler Competence Centres located in various regions and countries, offering localised in-depth knowledge conducted by Bühler specialists.

Application Centres

Bühler application centres are located throughout the region, many in pulses processing geographies, to offer customer services such as product trials, sampling and a convenient location to visit for machine trials. Various application centres now also serve as Bühler competence centres, housing some of the world experts in food technology, engineers and product developers, leading to new applications and technologies.

Global Service Stations

Bühler is present in over 140 countries with 30 of its branches serving as Bühler Service Stations. In addition to a full portfolio of equipment and a single point of contact, as available in all Bühler offices, Service Stations offer roll conditioning services, sales of spare parts, maintenance and service repairs, locally – minimum downtime and reduced costs.

Additional services. **Alternative pulse-based products.**



Pulse Flour

Depending on its final application of use, pulse flour can vary in requirement; particle size and finish. It can be used as a main ingredient in sweets and savouries, as replacement ingredient for gluten-free products or for further processing into pasta, bread or healthy-snacks.

Bühler's comprehensive milling solutions includes a range of roller mills that efficiently grinds pulses into the required particle size and sifters to separate oversized particle fractions to deliver a homogeneous finished flour product.

Pulse Pasta, Noodles and Healthy Snacks.

As awareness of its nutritional benefits soar, a plethora of new growth opportunities emerges – using pulses as an alternative product for making pasta, noodles and healthy snacks. Depending on the pulse variety and final product, processing pulses into pasta, noodles and snacks can be an intricate process that may include cooking, mixing, kneading and extrusion to required shape.

By partnering with our customers and investing in research and development programs, Bühler now has the capability, solutions and know-how to deliver a comprehensive range of advance processing solutions that can offer pulse processors engineered alternative processes to meet the change in consumer taste – maximising your growth opportunities.



Several good reasons for pulse processing with Bühler.

With over 150 years experience in food processing we own a unique knowledge in pulse processing, realising many successful projects in every major pulse processing geography. Our comprehensive machine portfolio, supported by our turnkey capabilities ensures unprecedented levels of processing capacity and product quality.

Dedicated pulse research and Competence Centres house some of the world's experts in pulse processing, developing unique, value-added innovations and solutions to bring processors smarter, lower cost and more sustainable processing. With presence in over 140 countries, our global reach gives you unparalleled access to our wide range of capabilities, successfully delivering equipment, service and support locally.



The best references are satisfied customers.



Hangzhou Wahaha Group

The completion of a turnkey installation at the Hangzhou Wahaha Group's Eight Porridge production plants in Haining has allowed one of China's largest and most prestigious food and beverage manufacturer to make dramatic improvements to the quality of its end product and reduce processing costs. Replacing its existing, largely manual cleaning and sorting process, the new Bühler cleaning and grading plant includes two compact and advanced lines, each of which can clean and grade various of its raw materials.

Each line incorporates Bühler's de-stoners, sifters, metal detection and optical sorters, with one currently dedicated to rice and the other for beans and pulses.

"Our investment in Bühler's advanced technology and custom-designed solutions has surpassed our expectation. It has drastically reduces our customer complaints about foreign body contamination, operating costs and ensured us, consistent quality"

Spokesman from Hangzhou Wahaha



Shivam Protein

Shivam Protein started as a trading organisation over 60 years ago and moved into processing so that it could guarantee its product quality and food safety on hulled and split pigeon peas. To achieve this, the company needed to reduce manual labour in its plants and seek the help of Bühler - a company that can offer a comprehensive machine portfolio backed by full turnkey service. The project which included plant design, installation, testing and integrating full processes resulted in a state-of-the art, fully integrated automated plant for Shivam Protein. A complete line, which included cleaning, grading, drying, hulling, splitting and optical sorting was commissioned. Shivam Protein have reported positive results.

"Yield is up by 2% when compared to existing mill while labour and power costs per tonne of output reduced significantly."

Mr. Ashok Jethwani, Owner of Shivam Protein.

In the region – for the region

Centres of Competence, training and service.

With presences in over 140 countries, our global reach gives you unparalleled access to our wide range of capabilities, successfully delivering equipment, services and support locally. Furthermore, Centres of Competence located throughout the world, many in major pulse producing markets, houses some of the world's best pulse technology and nutrition experts.

Over 150
Years Experience

No 1 supplier
of solutions
to many
industries

Over
optical
installed

North America

Stockton – USA   
Minneapolis – USA   

South America

Joinville – Brazil    
Blumenau – Brazil    
Bogata – Colombia 

Europe

Braunschweig - Germany     
London – United Kingdom     
Uzwil - Switzerland     

Middle East & Africa

Nairobi - Kenya    
Abidjan – Côte d'Ivoire 
Dubai - United Arab Emirates  

They are well placed to develop regional pulse processing and added-value technology solutions that meet distinct local requirements in handling, processing and storage.

48 hour
global parts
availability

**Bühler Centre of Competence,
research, manufacturing, training and
service stations for optical sorting:**

- Application Centre
- Research Centre
- Production and Engineering
- Training Academy
- Service Stations

Present in
140 countries

25,000
optical sorters
worldwide

Local presence
for fast local service.

South Asia

Bangalore – India ● ● ● ● ●

South East Asia

Bangkok – Thailand ● ● ● ●
 Ho Chi Minh City – Vietnam ● ● ●
 Jakarta – Indonesia ● ● ●
 Singapore – Singapore ●

China

Wuxi ● ● ● ● ●
 Shenzhen ● ● ● ● ●
 Hefei ● ● ● ● ●



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