



# VALUE ADDITION & INNOVATIONS IN MILLING INDUSTRY

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Innovations for a better world.



# CHANGING MARKETS GLOBALLY

- Increasing world population and urbanization
- Changing eating habits, that means more convenient food
- Demand for health and safe food
- Luxury & lifestyle products



Our solution - healthy food!

# Consumer Trends in the Food Industry.

*I want food to be.....*



# Setting new measurable targets.

50% less



ENERGY



WASTE



WATER

BUHLER

# MOISTURE CONTROL / INTENSIVE DAMPENING

## Automatic Moisture Control MYFC



## Intensive Dampener MOZL



## Automatic Water Proportioning MOZF



- Automatic moisture measurement
- Re-adjustment of moisture content
- Intensive mixing of grain for optimum water distribution

# LIGHT PEELING / PEARLING PROCESS

*Peeling with DCPeeler by “friction”*

before Light Peeling



after Light Peeling





WHEAT PEARLER

# Modern Wheat Cleaning Concepts

## Precise optical sorting



### Dark defects - Impurities



Foreign grain + seeds



Ergot



Discoloured grains

### Light defects - Impurities

Lighth Braid  
Spelt, Straw

### Various defects - Impurities





# Intelligent process optimization with sensor technology.

## Intelligent loop based on MYTA.

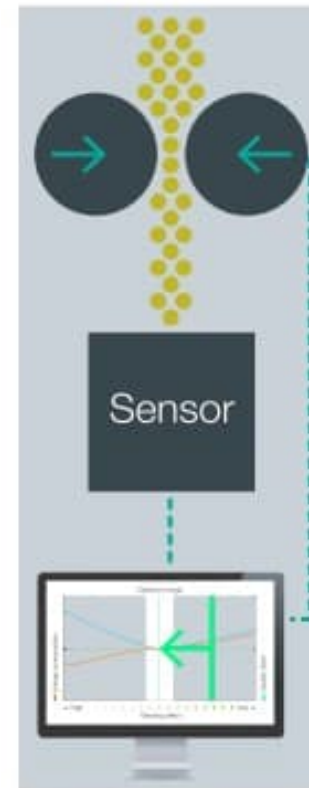
- Wheat mill:
  - Process optimization by installation in first break product
  - Final product monitoring and quality control
- Durum wheat mill:
  - Monitoring of the particle granulation
  - Consistent product quality
- Additional applications:
  - Corn grits / instant corn
  - First break product in breweries
  - Rye mill
- Process automation



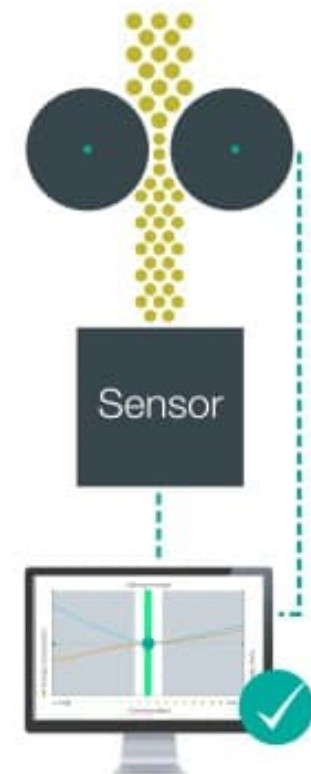
# Roller Mill Antares Plus MDDR. Automatic Process Optimization.

- Constant online particle size measurement
- Setting of optimum grinding effect

Suboptimal grinding effect,  
automatic gap adjustment



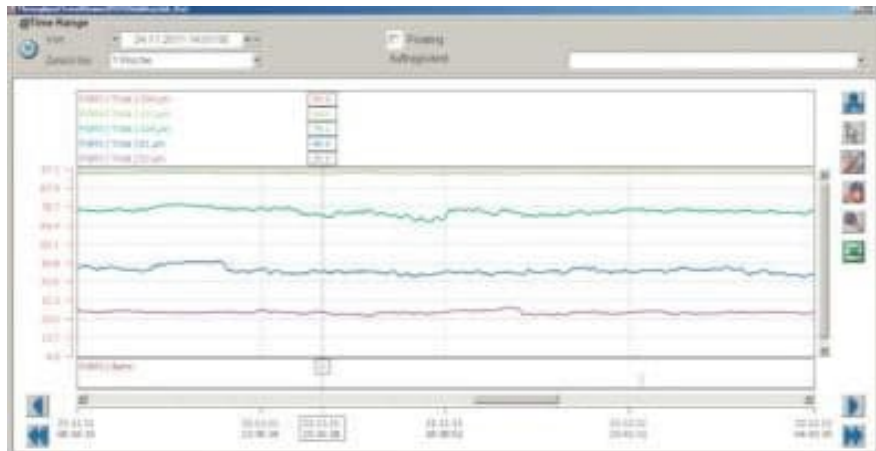
Optimal grinding effect



➔ ***Consistent finished product quality***

# Intelligent process optimization with sensor technology. Monitoring of particle size distribution *MYTA*.

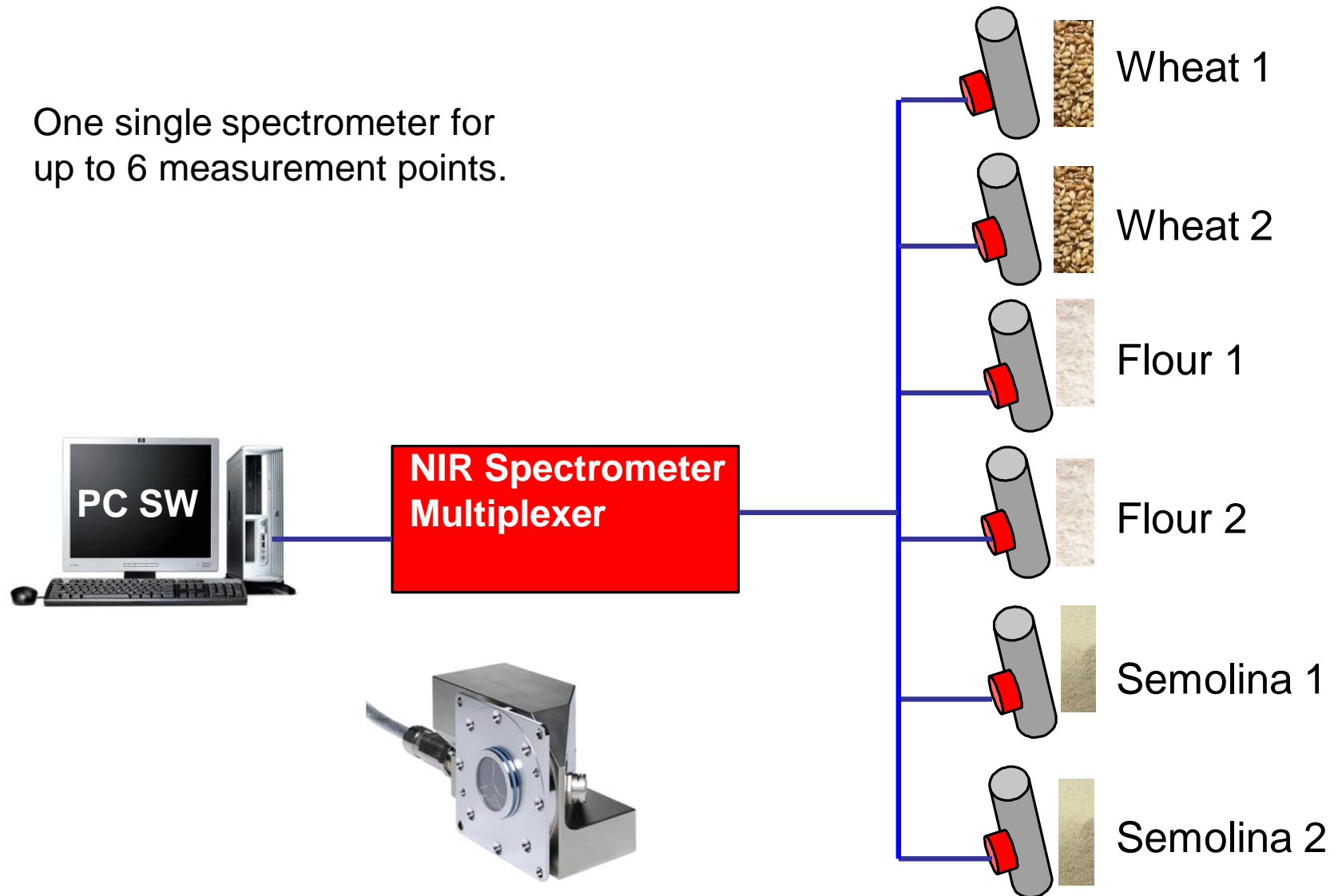
Online determination of particles  
in the range of 10 – 5000 microns.



# Intelligent process optimization with sensor technology.

## NIR Multi Online Analyzer MYRG, the new *Buhler* NIR generation

One single spectrometer for up to 6 measurement points.



# Bühler Mill E3.

Efficiency on three levels.



## SPACE

30 % building investment savings



## TIME

30 % faster installation



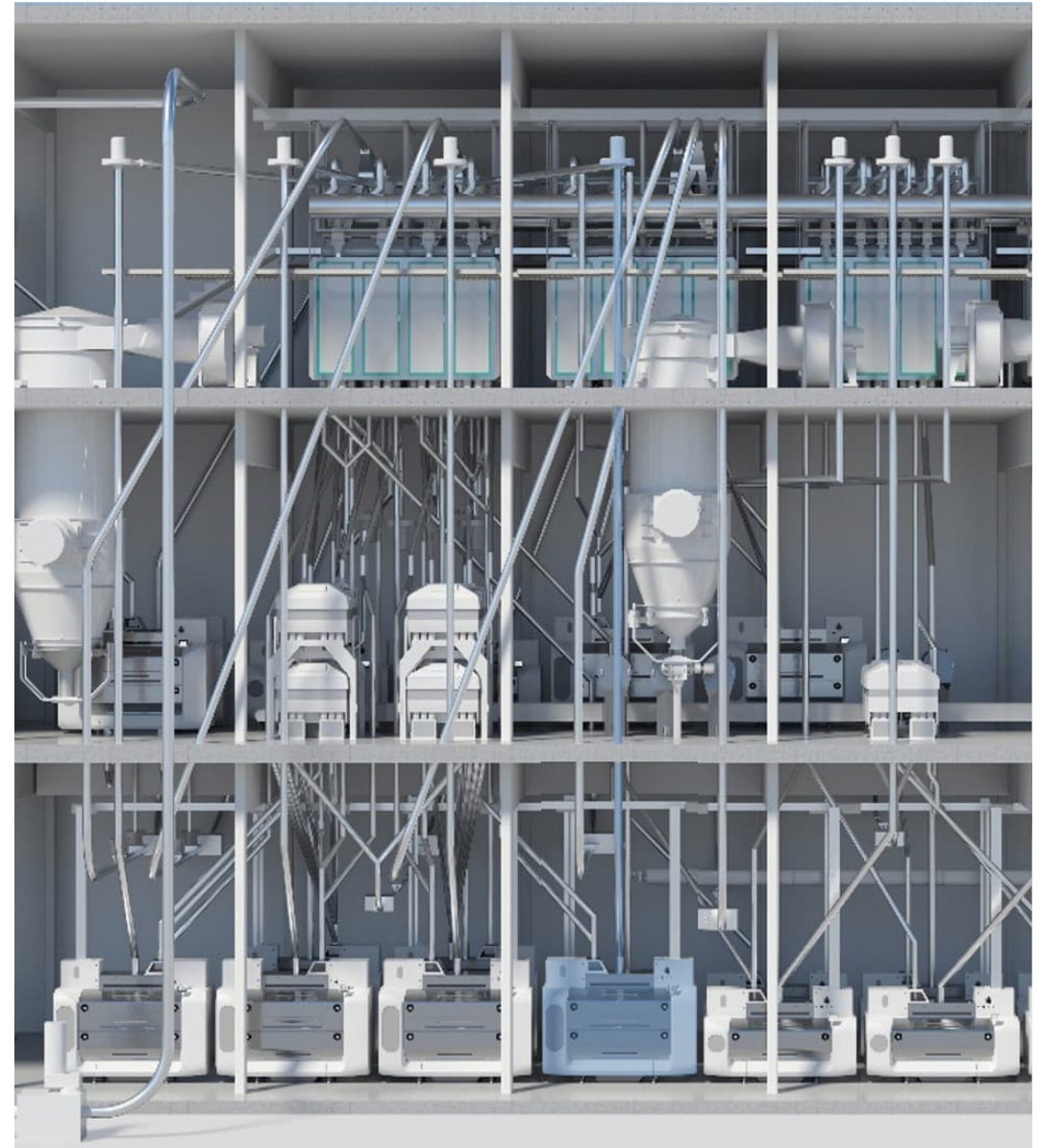
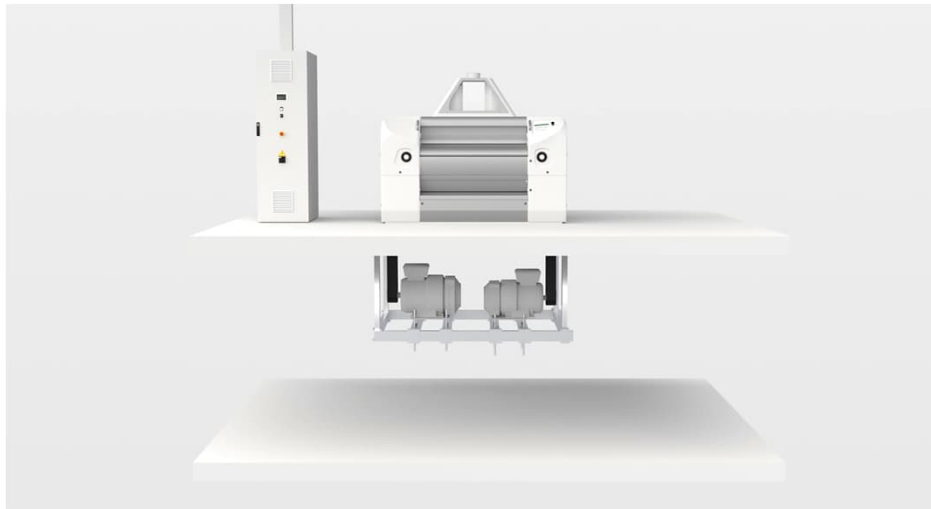
## ENERGY

10 % energy savings

# Arrius.

## Integrated Grinding System.

- The integrated drive and the direct suction of Arrius
- **saves one floor.**
- Detachers are repositioned to top floor.

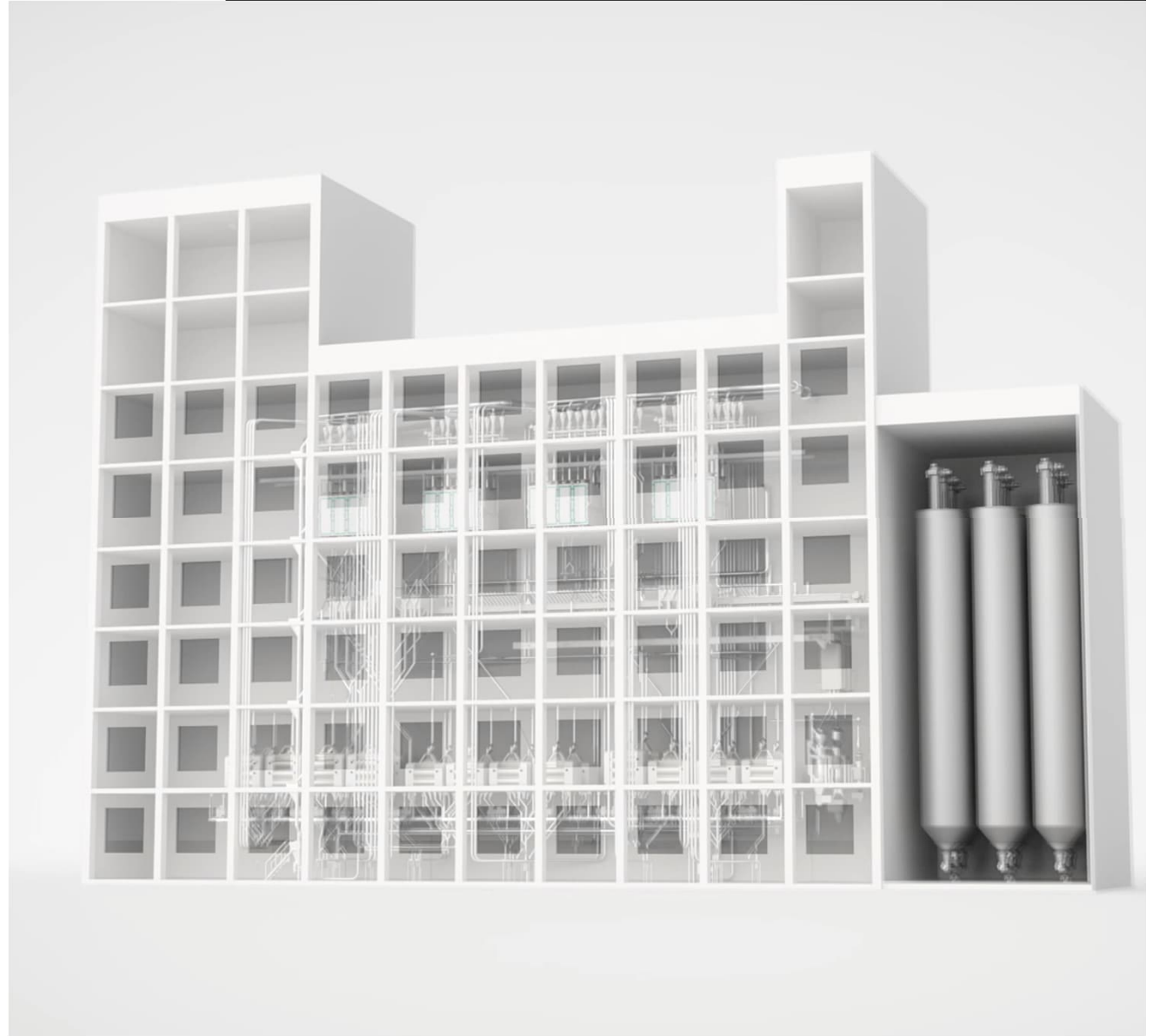


# Compact mill design.

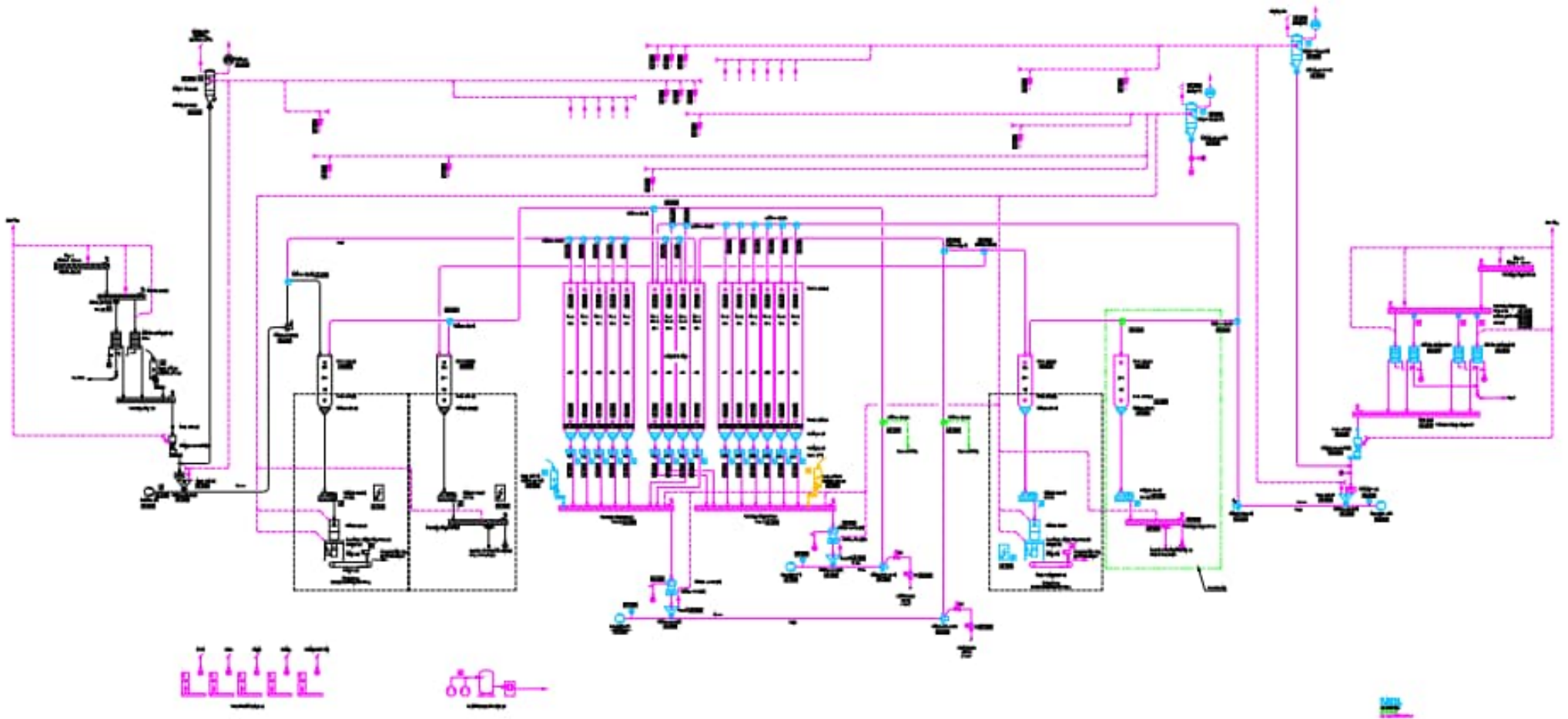
Mill building that can be reduced to

**3 floors**

saves additional energy thanks to less vertical transport height of mill pneumatic.



# FLOUR BLENDING SYSTEM





# MJZH - MATADOR

- Food Safety
- Can be installed in the existing plant before packing of flour
- Spouting / blow line version are available.
- Easy to install / stand alone can be planned
- It is becoming mandatory if the flour is supplied to biscuit/big bakeries.
- Increases the shelf life of the product.

Top mortality rate.  
For high-quality end products.



The Matador impact machine destroys insects and their eggs with absolute dependability and ensures top food safety standards.



Mature impacting on the basis of the cross-current principle.

#### Food safety as a success factor

Only the best possible flour and semolina quality will provide the basis for making successful products, differentiating yourself from competitors, and generating high margins.

One essential challenge in this connection is to destroy insects and their eggs that the flour contains and which might jeopardize food safety. This calls for an intelligent solution that blends seamlessly with the existing production process, offers maximum throughput capacity and process reliability, and at the same time destroys insects and their eggs with unrivaled dependability.

#### Efficient destruction of insect eggs

The Matador impact machine is an entirely new impact machine design for mechanical destruction of insects and their eggs in flour or semolina. The machine's particularly effective cross-current principle enables more than 99% of all insects and their eggs contained in the flour to be destroyed with absolute dependability – at top-throughput capacity, minimum operating and maintenance costs and proved by independent examination.

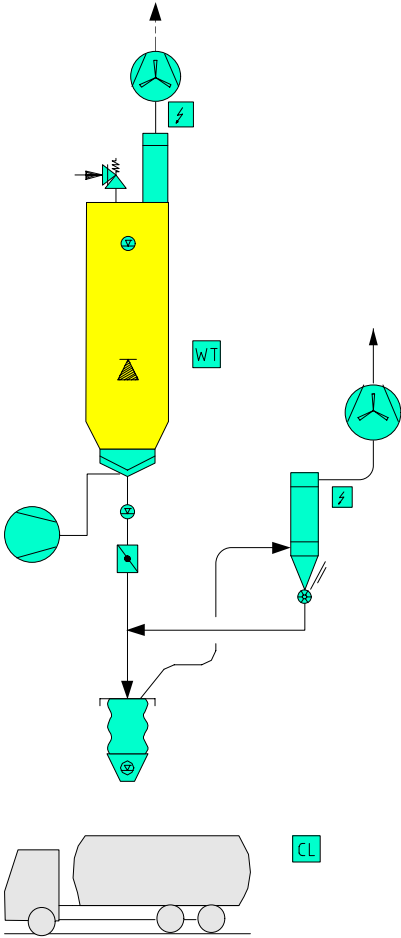


Maximum end product hygiene thanks to mortality rates of over 99%.

#### The benefits at a glance

- Mortality rate over 99%
- Maximum process reliability
- Minimum maintenance requirement
- Low energy consumption

# BULK LOADING SYSTEM



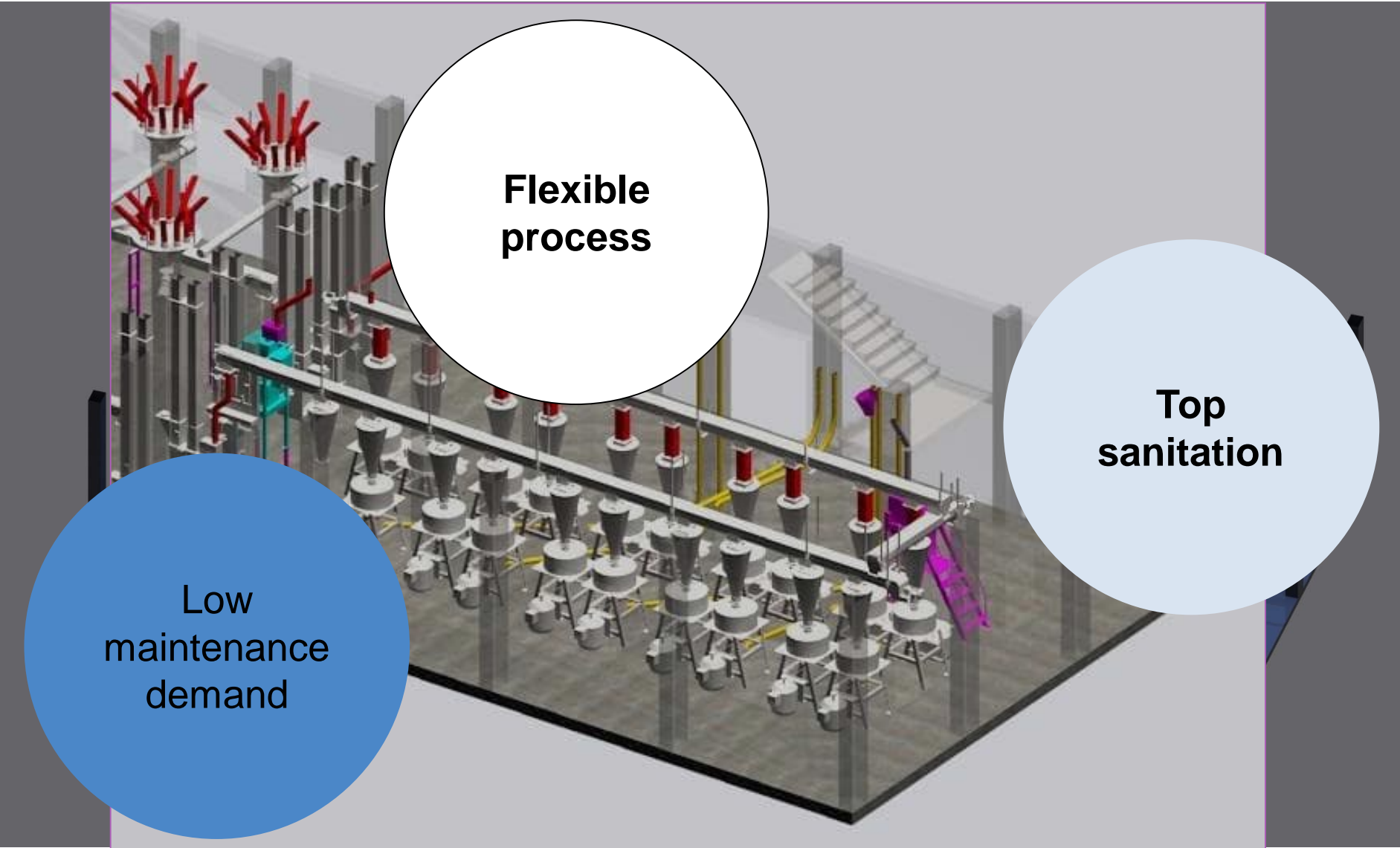
# INDUSTRIAL ATTA MILL FROM BUHLER\_PESA



***Chakki Mills***

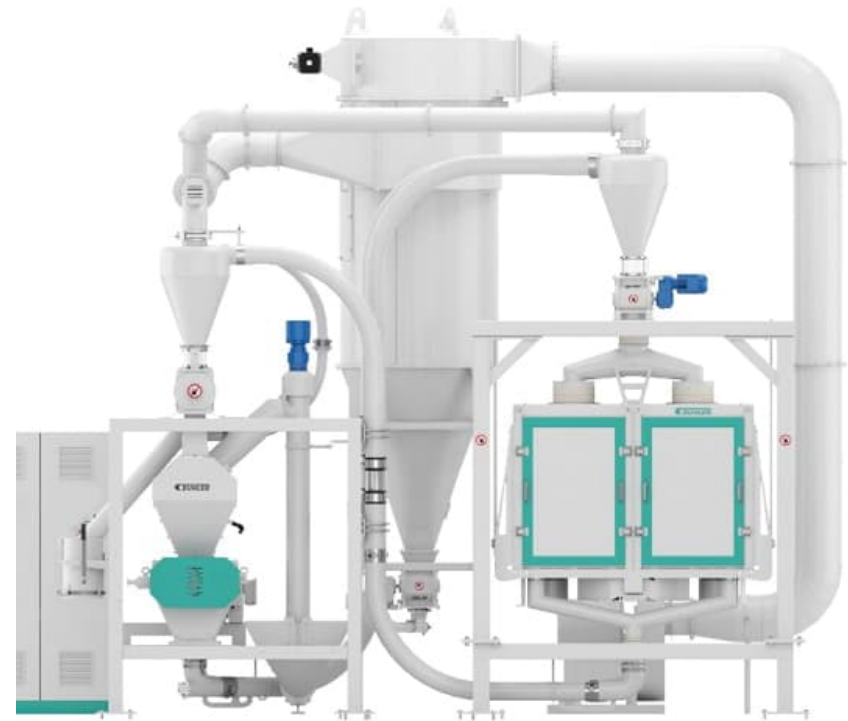


# One Pesa Mill replace 20 Chakki Mills.



# ALPESA \_ WHOLE WHEAT ATTA

- Flexible operation
- Compact Footprint
- Food Safety/Hygienic\_Stoneless grinding
- Less maintenance
- Multiple products
- Organic ??



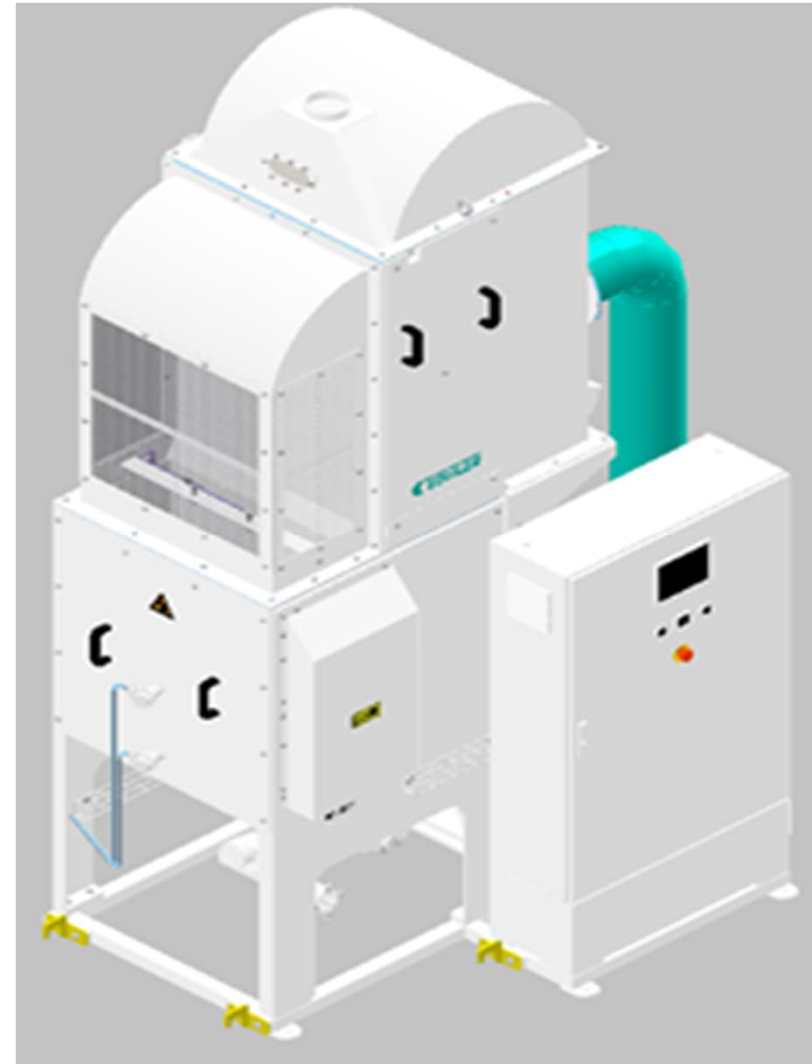
# COMBI MILL

- Option to produce Whole Wheat flour/atta OR High Extraction refined/white flour.
- Suitable for the biscuit/aqua feed industry.
- Option of producing regular extraction of flour and semolina.
- Up to 85% extraction



# SEMOLINA DRYER

- Online system – Moisture reduction upto 2% at 1 tph.
- Energy efficient
- Low operating cost
- Easy installation & Maintenance
- Automated with electronic temperature regulation
- Stand alone in existing mill can be planned
- Increasing the shelf life of the product



# PREMIX PLANTS

## Products & Applications

### Standard Products

- Bread
- Biscuits, Cakes, Muffins
- Fruit and Nut fillings
- Pudding mixes
- Mixture for beverages
- Mixture for isotonic beverages
- Ice cream mixture
- Instant soup mixture



### Allergen free products

- Bread
- Biscuits, Cakes, Muffins
- Ice cream mixture





## *Customers advantages*

- Producing goods with high consistent quality
- Time and cost saving, because of short reaction time
- Large product variety
- Short change over time for new products
- Tailor made products
- Easy logistics
- High flexibility
- Fast on the market

# FLOUR HEAT TREATMENT

To modify the physical and rheological as well as the bacteriological properties of cereal products. i.e.,

- Shortening of the gluten in baking flours up to the point of denaturing.
- Reduction of enzyme activities up to a point of inactivation.
- Partial gelatinization of the starch
- Reduction of germ & bacterial count.



*Soups*



*Sauces*

## FHT - APPLICATION

Heat treated flours are used in a wide range of applications :

- Bread, batter flour, coatings.
- Soups, Sauces, baby foods
- Biscuit, wafer and cake flours
- Binders – Sausage products
- Thickeners for food specialities in industrial applications.
- Carrier flours for premixes, tablets, etc.
- Blend flours for special recipes in ready mixes.
- Partial starch replacement for food and non-food industries.



Coatings



# THANK YOU

.....Value creation  
opportunities

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