High impurity requires accurate cleaning.

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High impurity requires accurate cleaning.
Requirements for a state of the art grain cleaning.

- Consistent and high quality of the finish products.
- Efficient reduction of harmful substances.
- Fulfillment of legal requirements.
- Optimization of the production costs.
High impurity requires accurate cleaning.
Overview of a Flour Mill.
Benefit of a pre-cleaning process at intake.
**High impurity requires accurate cleaning.**

*Benefit of a pre-cleaning process.*

**Local intake pit aspiration:**
- Dust returns to the product flow.
- Traders, terminals; e.g. cooperatives, agricultural trade

**Central aspiration:**
- Dust does not return to the product flow.
- Processers; e.g. flour mills, food processors
High impurity requires accurate cleaning.
Benefits of an aspirator in the pre-cleaning process.

- Aspirators
  - Reduce risk of dust explosions
  - Less flow problems when large bins get empty.
  - Increasing storage space.

- Fresh air, or air-recirculation aspirators are efficiently removing light impurities.

Air-recirculation aspirator LAIA
High impurity requires accurate cleaning. Pre-cleaner and aspirator.

- Capacity: up to 250 t/h
- Sieving area: up to 48 m²
- Durability & high operational reliability
- Re-use of aspiration air ensures the cost effectiveness of the cleaning process
- Rhino-hyde lining to provide optimum wear and noise protection

Pre-Cleaner LAAB / TAS

| Raw material | Coarse impurities | Low-density material | Fine impurities | Clean product |
High impurity requires accurate cleaning.
Pre-cleaner and aspirator.

1 Product inlet
2 Distribution flap
3 Inlet aspiration
4 Expansion chambers with discharge screws
5 Product distribution onto sieves
6 Outlet aspiration
7 Exhaust air
8 Screen box drive

A 1. grade
B 2. grade
C Coarse particles
1st Cleaning Line
High impurity requires accurate cleaning.
State of the art grain cleaning concepts with large sieve surface and optical sorting.

Vega-Cleaner
- Concept with high performance and accurate sorting.
- Separation of light-, coarse- and fine impurities.
- Separation of Soya beans, Maize, etc. possible.

Sortex
- Optical sorting of the whole product flow.
High impurity requires accurate cleaning. Concept for wheat cleaning with high amount of stones and sand.
High impurity requires accurate cleaning.
Removal of impurities and light product.

Raw grain

Coarse impurities
Maize
Soya beans
Sunflower kernels

Option: grain classification

Large grain  Medium grain  small grain

Light product
Dust
Spelt
Shriveled kernels

Fine impurities
Sand
Weed seeds
High impurity requires accurate cleaning. De-stoner.

For the removal of
- stones and
- heavy particles (metal / glass)

Working principle
Specific weight – gravity separation
High impurity requires accurate cleaning.
Combi-stoner / Functions: Two machines in one.
Air Recycling Separator
High impurity requires accurate cleaning.
Air recycling separator.
Precise classification of grain.
High impurity requires accurate cleaning. Precise removal of all discolored particles.
High impurity requires accurate cleaning.
Optical Sorter SORTEX.

Input

Dark defects
- Foreign grain + seeds
- Ergot
- Discoloured grains

Light defects
- Light Braid
- Spelt, Straw

Foreign material, unhealthy wheat
- Semi-transparent
- Stones, Glas, Plastics
- Mycotoxin damaged
- Diseased kernels

Accept  Reject
High impurity requires accurate cleaning.
Dark- / Light- / Infrared Sort
High impurity requires accurate cleaning.
2nd Cleaning line

Equipment installed:
- Magnet
- Dry scourer
- Grain sterilator (optional)
- Aspiration channel
- B1 dampening (optional)
- 1st break bin
- 1st break scale
High impurity requires accurate cleaning. Scourer.

**Working principle**

Friction of

1. Grain against screen
2. Grain against rotor segments
3. Grain against grain

**Important:**

Aspiration channel after scourer for removal of remaining dust
High impurity requires accurate cleaning. Grain Sterilator.

- Grain sterilator for Insect reduction in the Mill
- Breaks open kernels that contain insects and are thus structurally weakened
- Improvement of Filth Test
High impurity requires accurate cleaning.
Reduction of bacteria count.

![Graph showing the reduction in bacteria count after cleaning steps.](image)

- Raw wheat
- After 1st Cleaning
- After tempering
- After 2nd Cleaning
- Flour
High impurity requires accurate cleaning. Summery.

- Accurate cleaning starts at the intake.
- Concept of Cleaning Line needs to be adapted to the raw wheat used and the finish products produced.
- Reduction of harmful substances / Fulfillment of legal requirements.
- High efficient cleaning line is enhancing the food safety.
One step ahead.