



Iskra pio d.o.o.
Industrial equipment manufacturer

MATERIAL HANDLING SYSTEM



The material handling system (MHS) is purposed for the preparation of different mixtures by integrated equipment required for grinding, milling, sieving, dosing, weighing, compacting...

It is designed universally and is capable of performing all these operations in one place and with the same control system. The systems design (without platforms) assures effective and easy cleaning. Synchronous operation of lifts provides a fast and accurate process.

Basic characteristics

- no platform design:
 - all manual operations (loading, unloading, connecting) are executed from the floor
 - easy and efficient cleaning
- easy changeable processing units (conical sieve, hammer mill, oscillating sieve, vibrating sieve, dosing unit, compactor)
- safety measures during operation (presence sensors, container type detection, photocell or laser radar)
- dust tight docking (feeding source/processing unit/receiving unit)
- designed and executed according to GMP standards
- weight control
- various feeding sources
- various receiving units
- gravitational material flow
- stainless steel execution
- lifting, rotating, positioning and docking
- electrically driven
- easily accessible electrical components

Options:

- containment execution (split valves, ZIP bags)
- process inertization
- manual (sieving) operating – platform
- splash water protection

SCADA/HMI

- user friendly touch panel – easy to control
- SIEMENS control equipment
- multi-leveled access
- recipe management
- monitoring and alarming critical parameters
- history of events
- service, manual and automatic mode
- GAMP 5, 21 CFR part 11 compliant

Possible integration with:

- autonomous mobile forklift (AGV)
- business (MES) system
- warehouse (WMS) system



Concept

The material handling system is based on minimum two lifting columns. The first one (lift for processing unit) lifts up the processing unit and places it on the receiving unit. The second one (lift for feeding source) lifts up the feeding source and places it on the processing unit. The receiving unit is placed on the weighing platform or on the mobile weighing scale. Units are automatically connected to each other by dust tight connections. The whole system is adjusted for different types of feeding sources (various IBC's), pro-cessing units (various sieves, mills, dosing units, compactor) and receiving units (various IBC's, drums, bags). All units are loaded from the floor. All operations that operator can't execute manually from the ground are automatic (docking of units, feeding source opening, dosing).

The equipment operates in multilevel:

Level I (Upper level - feeding source)

- containers of different shapes and sizes
- automatic valve opening
- pneumatic hammer for poor flowing materials
- container presence detection

Level II (Dosing system)

- dust tight docking to feeding source
- dosing module for controlled dosing from the upper containers into the processing unit

Level III (Processing unit)

- different processing units
 - conical sieve
 - oscillating sieve
 - vibrating sieve
 - hammer mill
 - dosing unit (precise dosing, compactor)

Level IV (Docking system)

- dust-free connection between processing unit and out feed unit

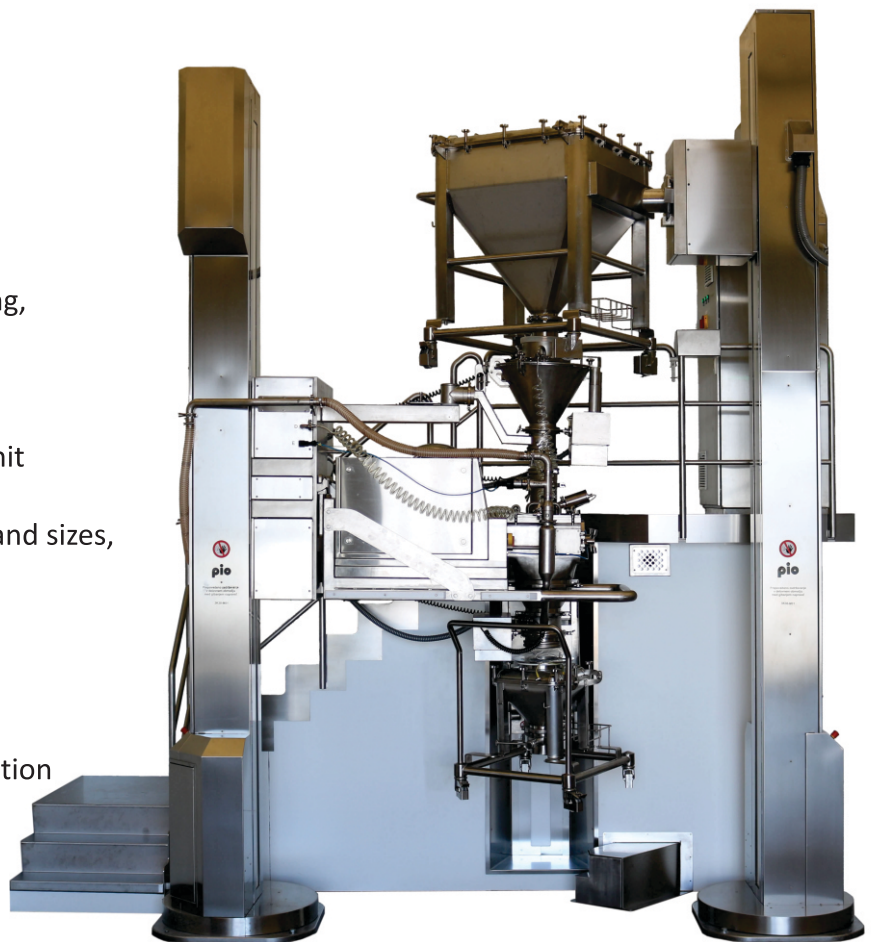
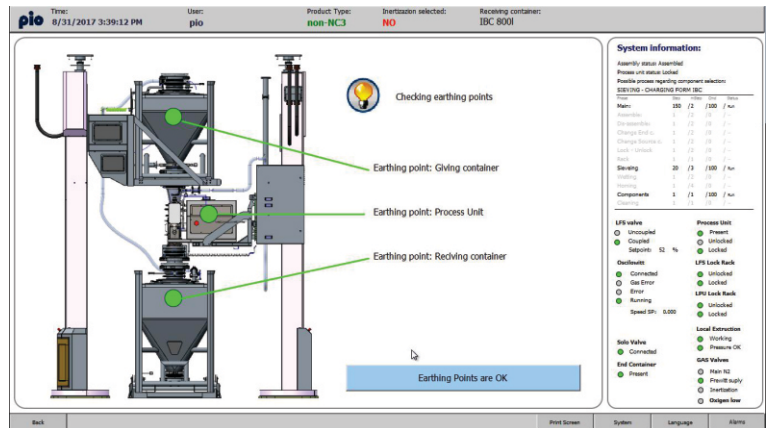
Level V (Receiving unit)

- containers of different shapes and sizes,
- barrels
- bags
- continuous liner system (CLS)

Level VI (Weighing)

- Weighing scale
 - container presence detection
 - 1500 kg
 - lifting execution
- table scale on mobile platform

Level VII (IBC inertization system)



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