

Mobile Supercompactor

Background

Supercompaction is a proven and effective technology for volume reduction of nearly all the different kinds of solid radioactive waste such as metals, electronic parts, small equipment, piping, plastics, insulation material, filters, dried resin, sludge and asphalt.

Westinghouse mobile supercompactors have been in worldwide operation since 1985. The supercompactor allows reliable and proven volume reduction as a mobile solution. The supercompactor provides customers with cost-effective, flexible and independent campaign planning and optimum space management on their sites, for both equipment and waste volume.

Description

The Westinghouse mobile supercompaction system comes with a 4-column hydraulic press with a maximum compaction force of 2000 tons. For transport means, the compactor is integrated in a semitrailer together with the ventilation system and the hydraulic and electrical components. In order to be compliant with European Road Traffic Regulations and not to exceed the maximum permissible transport height of 4.0 m, the mobile supercompactor is height-adjustable.

The systems core components are the 2000-ton supercompactor with a vertically acting press cylinder, the hydraulic unit and an automated loading device for the drums and an unloading device for the pellets. The system also includes an off-gas system with HEPA filter, the semitrailer, as well as handling and conveying systems for the drums/pellets and overpacks including the instrumentation and the control system.

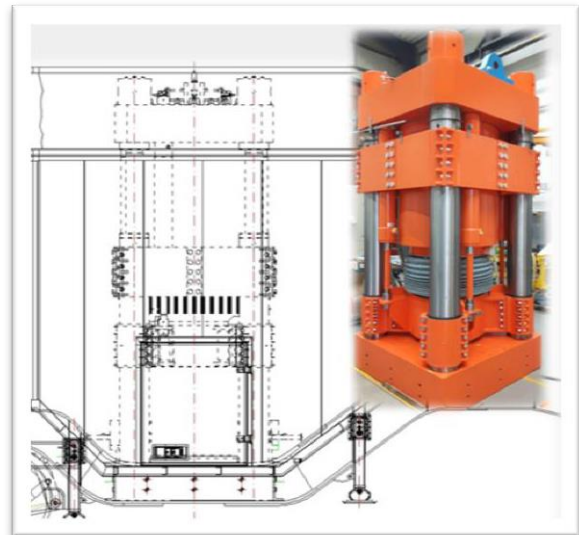
Decades of operational experience and feedback from our customers have led to a continuous improvement of the design of our supercompaction systems. The latest mobile supercompactor includes new telescopic type columns, designed in 2016. This improved modular designed transport system is easier to handle and faster to install.

Compaction Module

The compaction module is located in the front section of the semitrailer. It contains the following components:

- Supercompactor
- Off-gas system with HEPA filter
- Drainage system

To protect the system from damaging environmental impacts, particularly when being transported, the mobile supercompactor is enclosed by a protective hood.



Compaction Module

Hydraulic Module

The hydraulic module is located in the rear section of the semitrailer. It is covered just like the compaction module by a containment hood. It comprises both the control room and the hydraulic room. A sound insulation wall is located in between the two rooms. The hydraulic module comprises the following main components:

- Base frame
- Hydraulic power unit
- Control panel
- Main switch cabinet with central controller unit

Mobile Supercompactor



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e carries all components of the hydraulic power unit, the control panel and the containment hood. This enables the separation of the complete module from the semitrailer. It can be handled like an ISO container. The connection to the semitrailer is performed by standard ISO locking fixtures, as usually used for standard containers.

System Overview

A typical scope of supply includes the following components, but it can be customized to a customer's specific needs:

- Roller Conveyor (RC) for drum load
- Loading device
- Supercompactor
- Hydraulic unit
- Unloading device
- RC with weighing device
- RC with pellet pusher
- Sorting table
- Portal with pellet gripper
- RC for repository container (overpack)

Technical Details

- Operating height: 4.335 mm
- Transport height: 3.495 mm
- Width x length: 1.600 x 1.600 mm
- Weight: 37.000 kg
- Max. compaction force: 20.000 kN(at 250 bar)

- Min. drum diameter: 510 mm
- Max. drum diameter: 625 mm
- Max. drum height: 900 mm
- Waste volume reduction ratio up to 12:1
- Processing of 180, 200- or 220-liter drums (as well as 52 or 55 US gallons drums)
- Operational capacity up to 15 drums per hour

Benefits

The main advantages of Westinghouse's mobile supercompaction system are:

- Worldwide proven technical solutions
- Easy handling and fast commissioning after transport between different locations
- Highly reliable construction with optimized manufacturing and operation costs
- Application of state-of-the-art systems and components
- No existing controlled area required on-site, independent operation, remote controlled
- Design and delivery in compliance with all applicable safety rules and regulations

Experience

Westinghouse has more than 30 years of experience in the design and delivery of supercompaction systems. Based on this long operational experience and constant dialogues with our customers, both stationary and mobile systems have been continuously improved and optimized. Westinghouse has successfully performed more than 24 projects globally.

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