

Sand Filling Systems



kleinSAND.max

Slim design for maintenance facilities

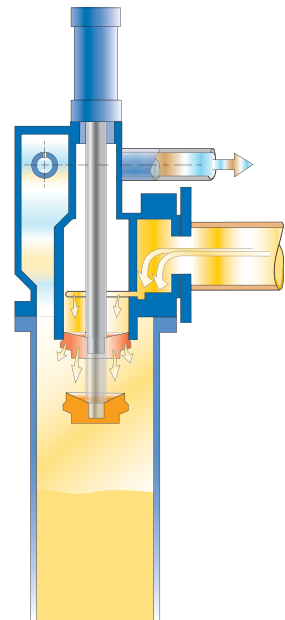
KLEIN sand filling systems with kleinSAND.max are suitable for use inside maintenance halls or at outdoors maintenance sites. Thanks to the remarkably slim design, the kleinSAND.max sand dispensing stations can easily be integrated into the limited space conditions of maintenance facilities and alongside tracks.

The brake sand is supplied from the storage silo to the individual sand dispensing stations fully automatically and in a particularly gentle conveying process. In order to adapt the operation of the sand filling system optimally to the special demands of maintenance facilities, each sand dispensing station can be activated individually. The automatic air return system carries the dust from the individual filling valves to a central filter located near the silo so that no dust escapes into the working area or is conveyed into the sand boxes.

The sand dispensing station kleinSAND.max is constructed in such a way, that it is not subject to regular inspections according to European pressure vessel guidelines.



- Conceived for particularly limited space conditions, maximum depth 200 mm.
- Available as stationary or suspended, as single pipe, twin pipe or Y-shape models.
- Sand supplied from above, from below or from each side. Flexible connection.
- Inlet head with special expansion disc valve and return of dust to the exhaust system.
- One or two filling hoses per sand dispensing station.
- Velocity of sand within the filling hoses less than 0.25 m/s.
- The conveying air is extracted and returned to the exhaust system. In order to ensure the dosing of sand, free dust is not conveyed into the sand boxes.
- Pressure vessel is not required to be monitored.



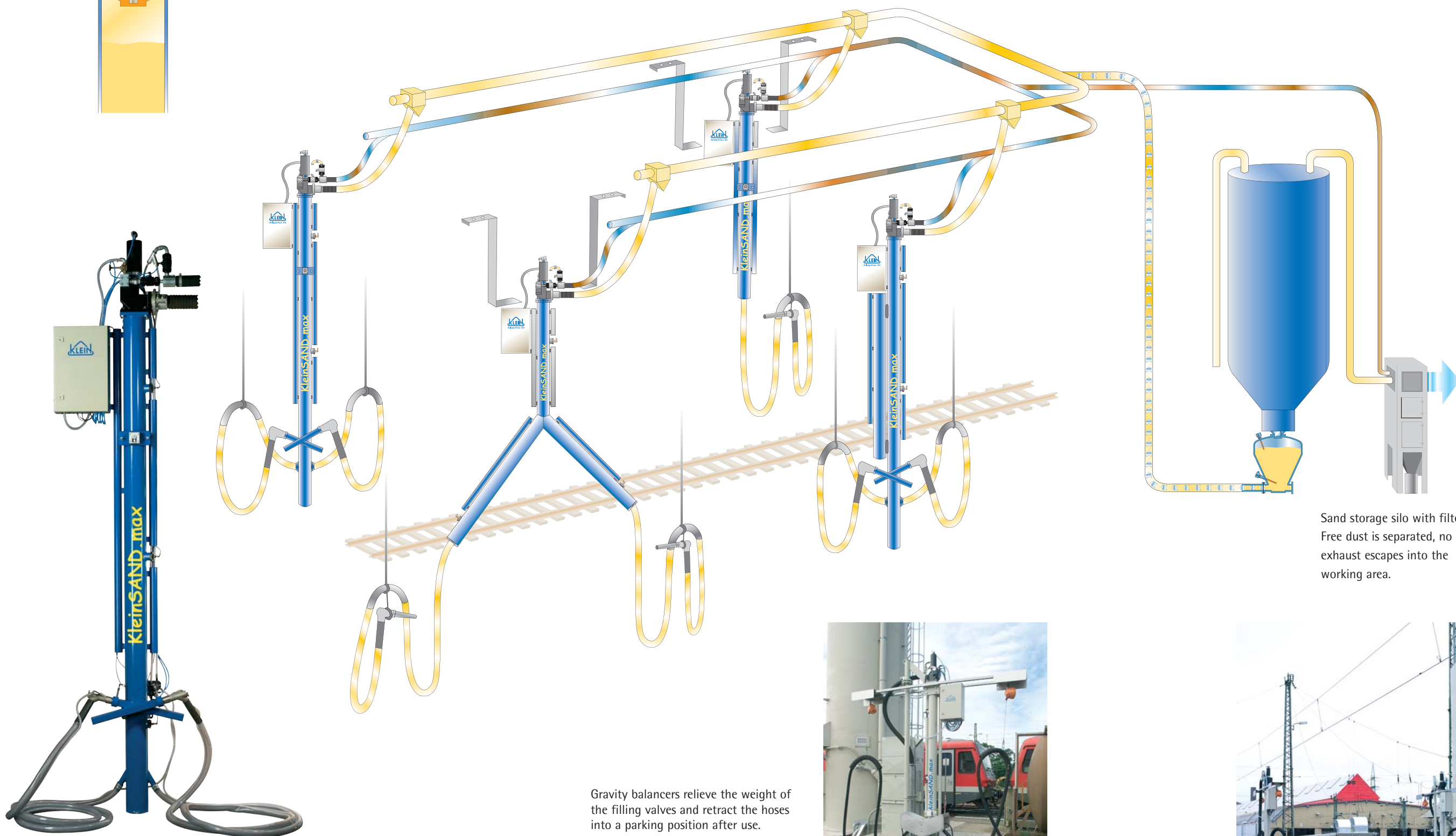
Arrangement of pipes including conveying pipe, compressed air pipe, exhaust air pipe, cable conduit. Compact, space-saving.



Advanced control technique.
ISO-base plate valves.
Compact, protected.



Flexible connection.
Optimally adaptable to the conditions at site.



Pneumatic conveyor to supply sand to the individual sand dispensing stations. Gentle conveying process, low consumption of compressed air.

Sand storage silo with filter.
Free dust is separated, no exhaust escapes into the working area.



Gravity balancers relieve the weight of the filling valves and retract the hoses into a parking position after use.

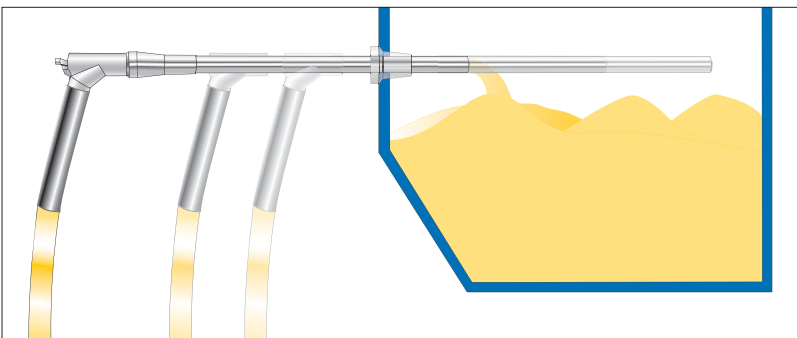




- An SPC-controlled switch and control system, equipped with a luminous circuit diagram or a screen monitoring system, ensures the safe and automatic function of the entire system.



- Filling valves with integrated dust extraction. Ergonomical, self-arresting, no sand spills on the floor.



- Filling valve equipped with sliding cone for maximum filling of various sand box sizes.



- KLEIN sand filling openings. Optimized for the pneumatic filling of the sand boxes.
- Extraction of the conveying air by special injector system. Individual for each filling valve. Effective, safe, wear-resistant.

For low sand consumption, for mobile operation in maintenance halls and at outdoors maintenance sites:

The KLEIN *SANDflöhe*



KLEIN sand filling systems for the environmental friendly supply of rail vehicles with brake sand enjoy a good reputation all over the world.

The experienced KLEIN team offers support and advice, from the planning of your maintenance facilities and the construction of your sand boxes and/or their filling openings to extensive service and maintenance of the system. Take advantage of our more than 30 years of experience!

More than 800 KLEIN sand dispensing stations all over the world are proof of our professional skills. Contact us!

Excerpt from our list of references:



ATM Barcelona, Spanien
ATM und Ferroviaria Turin, Italien
BKV Budapest, Ungarn
BVB, Basel, Schweiz
Ceska-Trebovo u. Motol, Prag, Tschechien
City of Calgary, Alberta, Canada
De Lijn Antwerpen, Belgien
Edmonton Transit, Alberta, Canada
ESTRAM, Eskisehir, Türkei
GVB Amsterdam, Niederlande
Mass Transport Amin., Baltimore, USA
Melbourne NRS, Australia
Mitex S.A., Depot Krakau, Polen
Santa Clara County Transp., San José, USA
Terna S.A. Athen, Griechenland
Transports Publics Genevois, Genf, Schweiz
Tuen Mun, Hongkong
Verkehrsbetriebe Zürich, Schweiz

Deutsche Bahn 



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