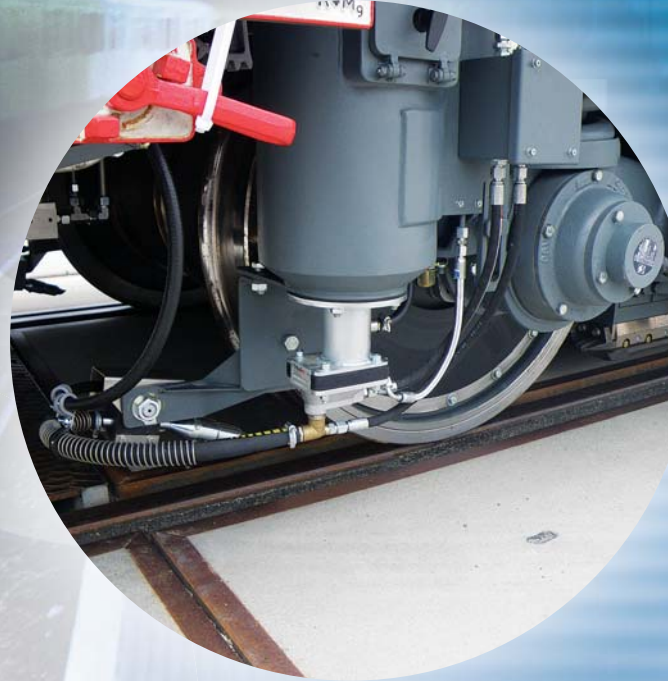


Sanding systems locomotives



© Tribotec

Central lubrication / Hydraulics

Systems for Rail vehicles

Sanding system for locomotives KOVA

Difficult operating conditions of rail transport such as moisture, fallen leaves, snow and ice on rails have a great influence on safety traffic and braking systems of all vehicles. The special systems for operating the friction between a wheel and rail have become a standard part of all modern rail vehicles. This sanding system ensures uniform and controlled sand spread between the wheel and rail so it positively influences the vehicle's operating power and its efficiency while both braking and moving off.

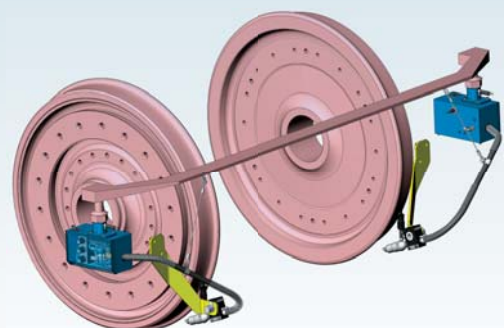
TRIBOTEC produces sanding systems as effective and economic solutions for wide range of applications of the whole spectrum of rail vehicles and type of rails.

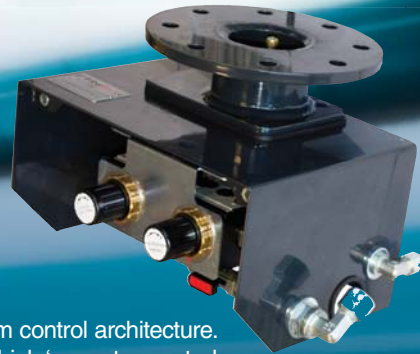


The sanding equipment for railway vehicles KOVA is a modern ecological system whose pneumatic principle ensures operational reliability. System KOVA is designed for locomotives which are equipped with their own source and distribution of pressure air.

The KOVA system is capable of operation in a wide range of weather conditions and in the difficult external operational environment. Sand boxes as well as dosing units have their own heating to eliminate sand moisture after its replenishment. Sand nozzles are also equipped with heating to eliminate their freezing. Heating units are equipped with a protection of overvoltage and with an automatic regulation of the temperature range. Sand nozzles exhibit high mechanical resistance; they are fixed in special holders, simultaneously ensuring easy setting in three degrees of freedom, which is highly user friendly during reconfiguration after vehicle wheel profiling.

Sanding systems KOVA are manufactured in a wide range of designs. They are fully conformable with installation in all types of locomotives. The build-in dimensions of the system are minimized, building-sets enables to project every single vehicle, with utilization of standardized modular elements, by which means the favourable price is achieved also for customized (project) constructions. Considering its versatility, the system is easily applied and suitable for re-design and modernization of older types of vehicles. Materials ensuring low weight are utilized in the construction of the system. We also provide the systems in stainless steel. The systems are possible to equip with sensors for electrical signalling for monitoring of the sand level in the sand box. The sand filler flaps are manufactured in several versions so as to cover multiple types of rail vehicle and simultaneously to facilitate the sand filling systems widely represented in the market.





Sanding system PZKV is delivered with open system control architecture. The system is operated and controlled from the vehicle's master control system.

Data are stated for one sander and amount of sand 400g +100g/30s for the speed up to 140 km/hr and for one sander and amount of sand 650g +150g/30s for the speed 140 km/hr and higher.

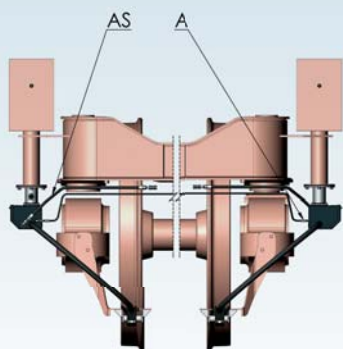
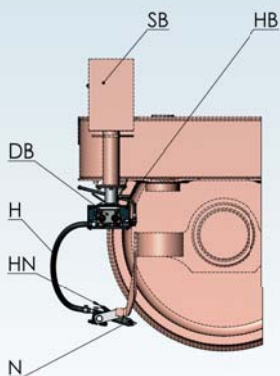
Benefits

Basic technical data

Supply voltage	24V, 48V, 110V DC +25 % -30 %
Maximum current – Dispensing unit with heating power 30W	1,25 A, 0,75 A, 0,25 A
Maximum current – Dispensing unit with heating power 50W	2 A, 1 A, 0,5 A
Maximum current – Sand nozzle with heating power 30W	1,25 A, 0,75 A, 0,25 A
Maximum current – Sand nozzle with heating power 50W	2 A, 1 A, 0,5 A
Working pressure	5 ÷ 10 bar
Amount of dispensed sand - up to vehicle speed 140 km/hod.	400g +100g /30s
Amount of dispensed sand - for vehicle speed 140 km/hod. and higher	650g +150g /30s
Sanding device activation time	within 0,2s
Sand box capacity	according to design and vehicle type
Weight of Sanding system (without sand and Sand box)	12 ÷ 40 kg
Working environment temperature	-35 °C až +60 °C
Service life	30 years

- Significant reduction of the sand consumption, connected with cost savings
- Significant reduction of dust pollution
- Traffic safety increase
- Continuous flow of sand under the wheel the sanding periods
- Adjusting amount of dosing sand depending on a vehicle's speed
- Drying the sand inside the Sand box, heating the Sand nozzles
- Blow-out function of sand inside the Dispensing unit with a warm air
- Manual or semi-automatic refilling of sand into the Sand box by filling pistols
- Signalling of sand level inside the Sand box
- Modular design, minimizing installation space, low weight
- High reliability and service life

Sanding systems type KOVA fulfill the TSI standards, i.e. the products is in conformity with the technical requirements of Commission Regulation (EU) no. 1302/2014 (TSI LOC&PAS). TRIBOTEC is a holder of Type Examination Certificate for systems KOVA, no. 3149/1/CB/16/RST/EN/0060, issued by the Certification Body No. 3149 authorized for the product certification (Výzkumný Ústav Železniční a.s.).



- Legend:
- DB Dispensing unit
 - AS Compressed air for sanding
 - A Compressed air for aeration
 - HB Heating of sand box
 - HN Heating of nozzle
 - N Nozzle
 - SB Sand box





TRIBOTEC is a Czech manufacturing company concentrating on deliveries of central lubrication systems, lubrication technology, hydraulic systems and special systems for rail transport.

The company produces central lubrication systems, multi-line, progressive, two-line and single-line systems for lube oils and plastic lubricants up to the consistency NLGI-3, systems for oil re-circulation lubrication and oil cooling, spray lubrication systems with application for plastic lubricants and oils, oil-air lubricating systems, mobile and portable lubricating pumps.

In hydraulic systems, the company concentrates on production of hydraulic aggregates in the customer's design and a complex solution incorporating the project, production and delivery of the hydraulic systems, including special hydraulic systems for rail vehicles and rail transport.

As special products for railways TRIBOTEC produces systems of Wheel flange lubrication for trams and locomotives, Sanding systems for trams and locomotives and Stationary track lubrication for lubricating rail curves.

Both sale and manufacture activities are based on a mutual cooperation and on processing each individual project according to the customer's demands. The company provides installations and assemblies in the customer's destination, including commissioning and optimizing the operation, with after-sales service, preventive maintenance and consultations.

Its products are designed as a building kit, which enables wide modifications according to the specific technical data without increasing the project's costs. The company designs all drawings in 3D modelling and has established SW sharing the customer's documentation in order to implement the models directly in their documentations.

All business activities are in conformity with the quality management system ISO 9001:2008



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