Sanding Systems

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SANDING SYSTEMS

CONTINUOUS DEVELOPMENT

Knorr-Bremse has combined experience with continuous investment in research and development to deliver sanding systems that can meet any requirement. Care for the environment is a key consideration in the development of the latest generation of sanding systems. Issues such as road reduction while delivering higher system availability and features such as function monitoring have led to some exciting new developments in this area. Systems are designed and developed for individual customer requirements. A wide range of sanding systems is available for rail vehicles in the narrow gauge, plants, mines, and port facilities in all countries. Knorr-Bremse is producing a wide range of sanding systems for a huge variety of different applications. Systems are all subject to the highest quality standards. From the idea concept through to delivery to the customer.

FEATURES AND BENEFITS

- Special sand system design for the optimal use of water and features to prevent the build-up of fine dust
- Speed-controlled sand filling rate
- Detachable sand box
- Less than 5 g/meter of track
- Time-controlled sand volume
- Area of sand box (optional)
- Sand hose routing requirements.
- Under pressure principle with a tailor-made injector.
- Time-controlled sand volume
- Heating for warming up the air flow

SDP-1

This basic type of sanding device is based on an under pressure principle using a tube valve principle. Depending on the type of pneumatic control, one or two steps a continuous flow rate can be adjusted within a defined range. A lot of functionalities can be added to customer requirements.

- Maximum accuracy
- Sanding rates 260 to 1,440 g/min
- Blow-out function to clean delivery hose after sanding avoids blockages
- Heating of air for sanding
- Overhaul efforts
- Air electronic sanding system
- Time controlled sand volume
- Blow-out function and defined sand volume per meter of track
- Blow-out function (optional)

SDP-2

This conventional sanding device has an optimal performance with the basic functionality. It is based on an under pressure principle with a valve principle as an aiming device.

- Drying of grit in the sand box
- Heating for warming up the air flow between compressor and dosing device (optional)
- Blow-out function to clean the used sand out of delivery system after sanding in bad environmental conditions
- Air electronic sanding system
- Heating of drying air flow and sand
- Blow-out function (optional)

SDP-2-1

This new version in the SDP family allows a horizontal as well as a vertical arrangement of the sand outlet on the sand box in order to accommodate different sanding requirements. The sanding unit is dosing and conveying principle using the following features:

- Sanding rates 260 to 1,440 g/min
- Blow-out function

SD1

This conventional sanding device is based on an under pressure principle using a tube valve principle. Depending on the type of pneumatic control, one or two steps a continuous flow rate can be adjusted within a defined range. A lot of functionalities can be added to customer requirements.

- Maximum accuracy
- Sanding rates 260 to 1,440 g/min
- Blow-out function to clean delivery hose after sanding avoids blockages
- Heating of air for sanding
- Overhaul efforts
- Air electronic sanding system
- Time controlled sand volume
- Blow-out function and defined sand volume per meter of track
- Blow-out function (optional)

SEJ

This sanding system is based on an electric principle for dosing and conveying the grit. Additional functionalities and benefits are:

- Sanding rates 1,250 to 700 g/min
- Electric control
- Time controlled sand volume
- Speed controlled sand delivery rate with defined volume per meter of track
- Reduction of sand consumption by up to 40%
- Air electronic sanding system
- Drying of the grit in the sand box
- Heating for warming up the air flow between compressor and dosing device (optional)
- Blow-out function to clean the used sand out of delivery system after sanding in bad environmental conditions
- Air electronic sanding system
- Heating of drying air flow and sand
- Blow-out function (optional)

SEB

This sanding unit is very similar to the SEJ sanding system, but with additional functionalities:

- Sanding rates 1,250 to 700 g/min
- Electric control
- Time controlled sand volume
- Speed controlled sand delivery rate with defined volume per meter of track
- Reduction of sand consumption by up to 40%
- Air electronic sanding system
- Drying of the grit in the sand box
- Heating for warming up the air flow between compressor and dosing device (optional)
- Blow-out function to clean the used sand out of delivery system after sanding in bad environmental conditions
- Air electronic sanding system
- Heating of drying air flow and sand
- Blow-out function (optional)

SDP-4

This sanding system has a longer service life and can be set very precisely. The core functionalities are:

- Time-controlled sand volume
- Heating of drying air flow and sand
- Blow-out function (optional)
- Air electronic sanding system
- Time controlled sand volume
- Blow-out function and defined volume per meter of track

SDN-1

This unit is able to offer the entire range of functionalities, even for very difficult sanding rates. The main advantage of the system is the separation of the sanding and conveying functionality. The output sand quantity is independent of the sanding device quantity and can be set very precisely. The core functionalities are:

- Time-controlled sand volume
- Heating of drying air flow and sand
- Blow-out function (optional)
- Air electronic sanding system
- Time controlled sand volume
- Blow-out function and defined volume per meter of track

SDN-4

This conventional sanding device has an optimal performance with the basic functionality. It is based on an under pressure principle with a tube valve principle as an aiming device.

- Drying of grit in the sand box
- Time controlled sand volume
- Blow-out function

SDN-7

This conventional sanding device has an optimal performance with the basic functionality. It is based on an under pressure principle with a tube valve principle as an aiming device.

- Drying of grit in the sand box
- Time controlled sand volume
- Blow-out function

SDN-10

This conventional sanding device has an optimal performance with the basic functionality. It is based on an under pressure principle with a tube valve principle as an aiming device.

- Drying of grit in the sand box
- Time controlled sand volume
- Blow-out function

SDN-14

This conventional sanding device has an optimal performance with the basic functionality. It is based on an under pressure principle with a tube valve principle as an aiming device.

- Drying of grit in the sand box
- Time controlled sand volume
- Blow-out function

SDN-20

This conventional sanding device has an optimal performance with the basic functionality. It is based on an under pressure principle with a tube valve principle as an aiming device.

- Drying of grit in the sand box
- Time controlled sand volume
- Blow-out function

SDN-40

This conventional sanding device has an optimal performance with the basic functionality. It is based on an under pressure principle with a tube valve principle as an aiming device.

- Drying of grit in the sand box
- Time controlled sand volume
- Blow-out function

All types of sanding units can be upgraded with optional sand level sensors (including monitoring device), heated sand nozzles, sand hose options, etc. Sand boxes are available standardised as well as custom-made. Knorr-Bremse recommends the use of size from 2,000 to 12,000 g/min. Local sand quality is supported by a maintenance adjustment of the system during the course of the system’s integration test.

SANDING SYSTEMS FOR LIGHT RAIL VEHICLES

Knorr-Bremse has combined experience with continuous investment in research and development to deliver sanding systems that can meet any requirement. Care for the environment in today’s busy rail environment. Difficult operating conditions such as moisture, leafage or even ice on the track can affect service performance and dealing with these issues requires a real understanding of the wheel and rail interface dynamics. Knorr-Bremse understands these dynamics and can offer solutions which efficiently and economically improve the friction between wheel and rail.

Typical representatives of sanding systems for light rail vehicles (street cars, tramways) without central air supply are the types SEJ and SEB. A dedicated air supply compressor up to 1 bar pressure is required to perform the listed functions. Functionally, all versions are related to rotary vane types 6SE, 6SGD and 6VSGD.

DELIVERING FULL ADHESION UNDER ALL TRACK CONDITIONS

Controlled and safe stopping distances are essential in today’s busy rail environment. Difficult operating conditions such as moisture, leafage or even ice on the track can affect service performance and dealing with these issues requires a real understanding of the wheel and rail interface dynamics. Knorr-Bremse understands these dynamics and can offer solutions which efficiently and economically improve the friction between wheel and rail.