

Secure loading with minimal effort

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As leading supplier in this segment, the BEUMER group designs, manufactures and installs complete systems for loading bulk material and bags on lorries, ships and trains. These systems meet the individual needs of the customer. Using sophisticated technology, bags and bulk material can be loaded and unloaded virtually dust-free, with fewer personnel and minimal effort.

Bulk material such as building materials, coal, cereals, fodder, mineral compounds or products of the chemical industry are often loaded at the production location in suitable vehicles and transported as bulk cargo via motorways, railways or waterways to other locations. Loading and handling systems designed specifically for the product and adapted to the installation conditions must be available. When dimensioning these systems, characteristics of the goods like bulk density, product temperature as well as flow properties or bag weight are to be taken into account. Other important criteria are the loading capacity, weight and volume monitoring and dust-free, environmentally friendly operation.

Rapid and dust-free loading

Bulk transporter vehicles can be loaded quickly and free of dust with the BEUMER bulk loading head, which has been designed according to the double-wall system. The material inlet and the dedusting unit are separated from each other. The bulk loading head is connected to a dedusting air system. The hoist equipment consists of a powered winch. When placing the bulk loading head on a filler neck, the sealing cone is lowered and opens the outlet spout. The fill level can be adjusted using a fill level meter in the vehicle. In order to balance out any minor positional deviations of the vehicle, the bulk loading head can be moved laterally during placement. If the BEUMER bulk loading head is equipped with an integrated compressed-air filter, it can operate independently from centralised dedusting systems and dust transporting devices. The dust removed from the bulk transporter vehicle is then fed back into the material flow during loading. An externally installed fan is used to suction off the dust.

Mobile loaders for bulk transporter vehicles

Stationary bulk loading heads are often insufficient for large loading capacities, as for example in the cement industry. It should be possible to move the bulk loading head to each filler neck of the vehicle. For this reason, BEUMER developed mobile loaders that can be adapted to the length of the vehicle.

If open vehicles are to be loaded dust-free, various telescoping loading devices are available. When the loading process starts, the bulk loading head is lowered to the floor of the vehicle and the material feed is switched on. The bulk loading head is raised automatically by a fill level switch in the lower dedusting hood, which is activated by the rising material. The edge of the dedusting hood always rests on the material cone while it rises, so that no dust can escape.

Efficiently load bags

In order to load bags on lorries and wagons, BEUMER co-developed adjustable loading machines. For example, BEUMER offers side and rear loading machines, as well as machines that load from above in stationary and mobile designs for loading lorries. For loading wagons, there are machines in multiple-part and three-dimensional design, and for lorries and wagons, there are machines with and without ramps, rail-mounted or rubber coated.

Fully automatic bag loading

With the BEUMER autopac® 3000, loading and palletising system, bags can be loaded on lorries automatically. The machine simultaneously loads and palletises bagged goods such as cement, limestone or gypsum - without needing pallets. Therefore, it is suitable to be used in countries where no pallets are available. In rows or stacking patterns with a pre-selected number of layers, the BEUMER autopac® 3000 works quickly and effectively achieving a performance of up to 3,000 bags per hour. The machine can load bags in double patterns of five, six and ten bags. To secure the loads, five-bag patterns can be placed at both ends of the loading space to act like the walls of the lorry. The bags are handled gently, which proves to be primarily advantageous when loading paper bags and woven fabric bags, because it prevents the bags from breaking from the outset. An electronic counting device ensures that the lorry is not loaded too lightly or too heavily.

The BEUMER autopac® 3000 does not operate on a pneumatic and hydraulic drive unit, because this can lead to leakages and therefore to soiling of the load. Also, primarily in warmer countries, these energy-intensive drive units require additional cooling. Therefore, for a high level of availability and efficient operation, electromechanical components are used.

Fewer personnel are required when using BEUMER systems to load bags into lorries, wagons and ships. When loading bags, for example, the system merely needs to be moved into the wagon or ship's cargo bay. Then, the bags need to be taken from the conveyor and positioned. If bulk material is being loaded on ships,

the bulk loading head only needs to be moved so that the material is evenly distributed. Loading bags with the BEUMER systems is especially efficient in cases where a large number of personnel would be required. This is the case, for instance, in newly industrialising countries, in which the transshipment of bagged bulk goods and labour costs are increasing.

With the BEUMER bulk loading head bulk transporter vehicles can be loaded quickly and free of dust.

Telescoping loading devices are provided for dust-free loading of even open vehicles.

With adjustable loading machines bags can be loaded in waggons or on trucks. These machines are available with or without ramp, running on rails or equipped with rubber tires.

When bulk material is loaded into ships, the loading head is swivelled to ensure even distribution.

The bag loader for trucks loads and palletizes bags filled with materials like cement, lime or gypsum.

Press contact BEUMER Group GmbH & Co. KG:

Regina Schnathmann: phone: + 49 (0) 2521 24 381, Regina.Schnathmann@beumergroup.com

Verena Breuer: phone: + 49 (0) 2521 24 317, Verena.Breuer@beumergroup.com

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