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Bag loading systems

Bag loading machines
for loading trucks, wagons, containers and ships

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Bag loading machines
for loading trucks, wagons, containers and ships
Bag loading technology from Möllers

Bag loading or unloading machines have to be used to achieve acceptable throughputs and limit the physical strain on the personnel wherever bulk materials in bags are loaded or unloaded as individual units.

During their many years of use Möllers bag loaders have been developed to a high level of performance and reliability. The machines fulfill exacting demands on manoeuvrability and smooth adjustment, and have been extended to form a range which can cope with every situation.

The autoloader is a further refinement of the bag loader. It is an automatic loading system which reduces the personnel requirement for the loading process to virtually zero. Möllers bag loaders form part of the comprehensive conveying, filling, palletizing, packaging and loading technology for which Möllers has been famous throughout the world for many years as a first-class supplier of equipment to the industries which produce bagged products.

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Möllers bag loaders for this application are designed as single-pivot systems (ET model) and double-pivot systems (GT and GTL models). The ET machines can be advanced until the boom reaches the longitudinal axis of the wagon; from this position the pivoting telescopic loading belt can reach the load floors of normal wagons as far as the end walls. With double-pivot machines for loading the large wagons (GT and GTL models) the boom for the intermediate belt can also be pivoted.

Distributing the bend over two pivot points gives the machine a greater reach and also results in smaller transfer angles which contribute to smooth transport of the bags.

Centralized operation of all the movement functions from the loading head means that the machines can be manoeuvred reliably and swiftly to any loading point in the wagon. Under restricted space conditions it is also possible to use double-pivot systems in an arrangement parallel to the platform.
Smooth loading operation, higher loading capacity and increased productivity can be achieved by the use of platform carriages when loading rows of wagons. This dispenses with the time-consuming, labour-intensive, winching of the wagons to the loading position; the loader travels along the row of wagons.

Wagon loaders on platform carriages

Systems of this type consist of Möllers ET, GT and GTL bag loaders combined with appropriate platform carriages. The material to be loaded is supplied by a fixed conveyor belt system parallel to the platform and transferred to the loader by a deflector station travelling with the platform carriage. Large loading systems with several loaders on platform carriages can be supplied by a common feed belt with remote-controlled deflector stations.
Off-the-floor truck loaders

Bag loaders of the off-the-floor type are used for efficient rear loading of vehicles in covered loading lanes. Möllers bag loaders for this type of operation are built in two basic designs. The LH model leads the material to be loaded down to the load floor on a vertically adjustable loading belt, and is intended for loading open vehicles. This can be designed for any length of travel – there is no limit to the length of vehicle which can be loaded.

With the LHP model of rear loader it is also possible to load covered vehicles.

Travelling loaders with high belt carriages are made for loading vehicles from floor level.

In addition to stationary systems it is also possible to use travelling bag loaders with normal or telescopic loading belts at loading platforms for loading trucks over the side or rear of the vehicle.

The Möllers HT bag loader designed for this purpose carries the telescopic loading belt and short belt carriage with motorized travel, is used for side loading. Vehicles with permanent superstructures – as with containers – can often only be loaded from the rear. The loading belt must be inserted deep into the vehicle.

With the LHP model of rear loader it is also possible to load covered vehicles.
Stationary bag loaders as well as travelling loaders are used for side and rear loading of vehicles. The design features of these machines are the pivoting running frame containing the loading belt with fixed axle spacing and motorized travel.

**Stationary truck loaders**

For side loading of trucks there are also the Möllers LT bag loaders. In this model the Möllers standard telescopic belt is mounted on a pedestal by means of a ball bearing slewing rim and, with its electromechanical height adjustment and motorized telescopic extension, forms a flexible and easily operated unit.

With the appropriate configuration the LT loading belt can also be used for semi-mechanical palletizing of fairly small quantities of bags.

Longer extensions than can be achieved with the standard telescopic loading belt models are provided by the Möllers three-piece double telescopic belt.

This telescopic design can also be incorporated in other models of the Möllers bag loader instead of the standard telescopic belt.

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**Stationary telescopic loader**

<table>
<thead>
<tr>
<th>A</th>
<th>2300</th>
<th>3600</th>
</tr>
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<tbody>
<tr>
<td>A1</td>
<td>5000</td>
<td>5000</td>
</tr>
<tr>
<td>B</td>
<td>1060</td>
<td>1060</td>
</tr>
<tr>
<td>L</td>
<td>ca. 100</td>
<td>0</td>
</tr>
<tr>
<td>F</td>
<td>2750</td>
<td>4050</td>
</tr>
<tr>
<td>G</td>
<td>1320</td>
<td>2320</td>
</tr>
<tr>
<td>J</td>
<td>550</td>
<td>550</td>
</tr>
<tr>
<td>K</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>M</td>
<td>ca. 1200</td>
<td>ca. 2000</td>
</tr>
</tbody>
</table>

The Möllers double telescopic loading belt is, like the Möllers standard telescopic loading belt, mounted so that it can pivot freely on a ball bearing slewing rim and is provided with electromechanical height adjustment and telescopic loading head. However, it has a substantially greater extension and therefore greater reach because of its double telescopic system.

**Double telescopic loading belt**

<table>
<thead>
<tr>
<th>A</th>
<th>2400</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>5000</td>
</tr>
<tr>
<td>B</td>
<td>1000</td>
</tr>
<tr>
<td>F</td>
<td>2850</td>
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<tr>
<td>G</td>
<td>2600</td>
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<tr>
<td>J</td>
<td>540</td>
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<tr>
<td>K</td>
<td>1000</td>
</tr>
<tr>
<td>L</td>
<td>200</td>
</tr>
<tr>
<td>M</td>
<td>1550</td>
</tr>
</tbody>
</table>


**Ship loading systems**

Möllers travelling or stationary ship loading systems for handling bags in inland and maritime ports are built from standard subassemblies as tailor-made structures to suit local conditions.

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**Bag unloading machines**

The manual unloading of bags, where loads have to be picked up at frequent intervals with a bent body, is – even more than with loading – an extremely heavy and rapidly tiring activity with a correspondingly low throughput. Möllers therefore provides bag unloading machines for efficient unloading of bags from wagons, trucks and containers.

They are based on the principle of the bag loaders but with reversed direction of travel and appropriately designed transfer points. The belt boom has a greater angle of inclination so that the bags can be picked up from down at floor level.

### RGT

- A = 2300
- A1 = 3550
- A2 = 1200
- B = 1060
- F = 3750
- G = 1250
- K = 1850
- K1 = 1000
- L = ca. 500
- M = ca. 1800
- Q = 2000
- R = 2250
- T = 7100
- U = 6100
- V = 1380
- W = 280
- Z = 2000
Möllers autoloaders carry out the vehicle loading cycle with a pre-selected number of stacks and layers completely unattended; they utilize the careful positioning and placing technology typical of Möllers machines to produce accurately stacked, transport-proof loads.

Exceptionally flexible dispatch operation can be achieved with Möllers autoloaders. The machines can stack the bagged product directly on the vehicle load surface as well as on pallets placed in the vehicle. It is also possible to load pallets supplied to a fixed position. An advantage of the Möllers autoloader which is typical of the design is that interlocking bag stacks of the same width as the vehicle can be formed and stacking patterns other than the ten-layer one can be used. The fact that truck-trailer combinations can be fully loaded without uncoupling the trailer contributes substantially to the high efficiency of the system.

The loading process takes place fully automatically from the first to the last bag.
Silo systems and bulk loading plants

The packaging, loading and despatch of bulk materials starts in the bulk store, which in the modern cement industry takes the form of a large silo. Möllers has also proved to be an excellent supplier in this field and produces complete silo systems in all sizes with different filling and extraction systems. The filling plants and bulk loading stations, which load the product into bulk vehicles, are often integrated into the silo structure.

Möllers bulk loading terminals for loading trucks and wagons work without any operating personnel by using an efficient self-service technology.

Bulk packaging units, which with appropriate marketing structure can form a more economic alternative, have appeared alongside the classical bagging systems in many branches of industry which produce bulk materials.

For filling these packaging units, such as Big Bags, Möllers supplies filling stations including the empty pallet magazines and associated pallet conveyors.
Möllers Engineering: complete filling, packaging and despatch plants from a single source

Mechanical single bag loading system: Möllers mobile or stationary machines for rear and side loading of trucks, as well as wagon loading systems with single- and double-pivot machines.

Silo technology: Möllers complete silo systems supplied pneumatically or by bucket elevator, and with aeration and extraction systems and integral bagging plant.

Bag filling: Möllers rotary packer with horizontal filling impeller and automatic bag applicator.

Palletless shrinkpackaging using the Möllers reverse-hood shrinkwrapping system: transport-proof, watertight, environmentally friendly, recyclable, cost-effective – the ideal despatch packaging system.

Automatic truck-loading: Möllers autoloader for fully automatic bag loading on the floor of the truck.

Palletizing and securing the load: Möllers automatic palletizers for palletizing bags at throughputs of up to 6000 bags/h. Plants for securing pallets for transport using shrinkwrapping and stretchwrapping technology.
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- conveyor systems
- silo and loading systems
- filling plants for solid and liquid products
- palletizing plants
- shrink film packaging plants
- stretch film packaging plants
- palletless packaging plants
- palletizing / depalletizing robots
- bag loading machines / systems
- fully automatic truck loading systems
- switchgear and control systems

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