

CSU expertise from NEUERO, a company with over 100 years in the bulk equipment industry



NEUERO Multiport M400.

Since 1914, NEUERO has been a major manufacturer of mechanical and plant engineering.

NEUERO is the renowned specialist in pneumatic ship-unloading and mechanical shiploading.

Following the 'Made in Germany' tradition, NEUERO boasts over 100 years of activity in the production of reliable and individualized conveyor systems.

NEUERO has over 5,000 built references of its systems in over 140 countries, and its shiploading and unloading systems handle several tonnes of grain worldwide every hour.

This article focuses on NEUERO's ship-unloading expertise. All of its machines are characterized by advanced, efficient, reliable and user-friendly design. The systems low maintenance and operating costs and thus ensure a fast return on investment.

NEUERO's ship-unloaders set standards worldwide. They protect the environment as well as the health and safety of employees through their innovative technologies.

NEUERO is ISO certified and has

guidelines on work safety, health and the environment. More than 300 customers already rely on NEUERO's expertise. Continuous unloading performance is guaranteed, even during residual cleaning. Lightweight designs make NEUERO's machines very safe and environmentally friendly for handling.

PNEUMATIC SHIP-UNLOADERS FOR FOOD, BIOMASS AND OTHER BULK MATERIALS

NEUERO designs pneumatic ship-unloaders for grain, feed, biomass, and many other dry bulk materials according to customer requirements. These can be used to unload many types of bulk goods, particularly from the food sector, as well as for products from the power plant and aluminium industry

PNEUMATIC SHIP-UNLOADING OF BULK GOODS

NEUERO's pneumatic unloaders use the flowing characteristics of bulk goods to feed the ship-unloader.

A key benefit is that NEUERO's pneumatic ship-unloaders can directly pick

up the material from the bottom of the hatch, like a vacuum cleaner.

This fact alone results in efficient unloading performance in pneumatic discharges.

The discharge capacity of NEUERO's pneumatic machines is 75–80% of the bulk material.

DUST REDUCTION

A significant advantage of pneumatic ship-unloading is the closed flow of product from receipt in the ship to discharge to downstream conveyors, ensuring that adjacent equipment and components are not polluted or contaminated. At the same time, deposits in this closed conveyor strand are hardly possible.

The fact that all areas with maintenance intervals are accessible via stages, the system's maintenance is possible without any problems and ensures high availability.

- ❖ dust free ship unloading with closed flow of products;
- ❖ high availability due to easy maintenance; and
- ❖ laying the boom on the ground.

Barge unloading with
NEUERO's Flexiport.



LOW NOISE EMISSIONS

Another advantage of NEUERO's systems is the low noise emission. NEUERO's pneumatic unloaders meet extremely high standards.

As a result of this, many clients choose NEUERO shiploaders and unloaders when operating close to residential areas.

In addition to the soundproofed machinery house and corresponding soundproofing on the blower, NEUERO can adjust more silencing measures on other components.

- ❖ low noise emissions;

- ❖ A-rated sound pressure level SPL <85dB at 1m from the discharge opening;
- ❖ and operation near residential areas.

SPECIFIC ADVANTAGES OF PNEUMATIC UNLOADING INCLUDE

- ❖ low weight;
- ❖ the pneumatic conveying of NEUERO requires relatively little steel to carry the material and thus less weight. As a result, fewer tyres can be used, resulting in leaner foundations and thus lower costs at the quayside;
- ❖ low cost — the slim design results in low acquisition costs;
- ❖ easy handling;
- ❖ with NEUERO's pneumatic unloaders, the residual cleaning in the hull of the ship becomes easy;
- ❖ easy replacement of spare parts is possible;
- ❖ NEUERO's pneumatic unloaders can be flexibly used for different ship sizes;
- ❖ thanks to NEUERO's pneumatic unloaders, nearly dust-free work is possible with hardly any grain fracture;
- ❖ high efficiency — due to the efficient



Pneumatic unloading of corn.

residual cleaning and continuous unloading, NEUERO's pneumatic conveyors have a high unloading power.

❖ In summary, the advantages of NEUERO's pneumatic unloading systems include the following points: Low investment costs, high efficiency, low-noise-emission, nearly dust-free unloading and consistently very good unloading capacity!

NEUERO'S CSU DESIGNS

NEUERO's designs are unique and tailored to the customer's requirements and local conditions. NEUERO distinguishes between three types:

MULTIPOINT

- ❖ unloading capacity up to 800tph (tonnes per hour), based on wheat;
- ❖ supply via the low or medium voltage;
- ❖ use of diesel generators possible;
- ❖ stationary, rail or rubber-tyred steerable wheels;
- ❖ broad coverage of the ship's hold by horizontal and vertical telescopic tube;
- ❖ auxiliary winch for residual cleaning on the boom for an excavator or front loader; and
- ❖ if necessary, with explosion protection concept following ATEX guidelines.

FLEXIPOINT

- ❖ pneumatic ship unloading for non-free-flowing materials;
- ❖ the vertical tube can be equipped with a rotating feeder to loosen up the product; and
- ❖ full coverage of the ship's hold due to additional extending and kick-in-kick-out movement of the vertical boom.

TOWER

- ❖ unloading services of up to 1,600tph, based on wheat;
- ❖ movable on rails;
- ❖ optional with a loading boom;
- ❖ integrated auxiliary winch per boom;
- ❖ two separate suction lines (50% each);
- ❖ integration of various conveyor elements, such as container scales, magnetic separators, etc.

SPECIAL FEATURES

Automatic suction nozzle

The NEUERO suction nozzle is characterized by an automatic electric side air control system, which allows the unloading power to be perfectly adjusted to the conveyed product and operating conditions. In addition, an automatic nozzle lowering can be used. This controls the immersion depth of the nozzle depending on the vacuum and thus ensures continuous suction operation with high average power.

Boom lowering

The ability to lower the boom to the ground offers a special advantage in the maintenance and possible replacement of individual parts, e.g. wear plates in the conveying elbow, rope winches, rope rolls, etc. This avoids the need for any potentially dangerous work to take place at large heights. Lowering the boom to the ground also reduces wind loads during typhoons.

Auxiliary winch

With the auxiliary winch on the boom, a small front-end loader or larger track excavators weighing up to 15 tonnes can be lifted into the ship's hold to support the residual cleaning. The winches operate at

two speeds and are protected by load cells.

Milling head

- ❖ upper swivel device with swivel bearing and external toothing as well as slewing gear drive, swivel range approximately 300°;
- ❖ kick-in/kick-out using cylindrical joint and hydraulic cylinders with up to 60° deflection;
- ❖ lower intake area with axial bearings and cutter, rotary bearings with electric swivel drive and bypass for suction wiring; with speed control of the cutter for better material flow control;
- ❖ and includes a special nozzle for residual cleaning.

AUGMENTED REALITY APP

NEUERO also offers an augmented reality (AR) application. Users can select the scale. At 1:1, the view is from underneath, and it is necessary to point the camera upwards to view. The simulator enables users to gain data on subjects including manoeuvrability, and the ability to unload the last grain from the ship's hold with the use of a bulldozer. With this simulator, users can even explore the inside of the machinery house with NEUERO turbo blowers, NEUERO automatic filter cleaning system, test drive and unload virtual grain using virtual thumb sticks: left for manipulating the boom and right for manipulating the pipes.

ABOUT NEUERO

NEUERO has been a major manufacturer of mechanical and plant engineering since 1914. NEUERO stands for mechanical engineering, innovation and maximum customer benefit.