

## The VIGAN rivers of unloading



*Hamburg  
Germany, one  
150tph/110kW  
NIV with a  
stationary  
gantry.*

In the past decade, fluvial transport has been intensively promoted throughout Europe. The goal has been to get more trucks from the continent's heavily congested road network. The recent jump in energy prices will only further increase this tendency.

To further promote fluvial transport and facilitate the unloading of the typical barge ship sizes from 500dwt to 4,000dwt, almost 30 years ago VIGAN developed its pneumatic barge unloader concept and has not stopped further improving it ever since. A lot of those machines are located on Western Europe's rivers.

### **VIGAN'S PNEUMATIC BARGE UNLOADER, A POWERFUL UNLOADING SYSTEM**

This type of machine is fully compatible with the scope above. It is generally mounted on a fixed gantry, although mobile systems are possible, whereas capacities can range from 100tph (tonnes per hour) to 600tph of grain, oil seeds, soyabean meal, or other types of cargo.

The heart of the system is the multistage VIGAN-designed turbine. The turbine is directly driven by a high-speed electrical motor with frequency inverter control. Thanks to this configuration, the energy consumption is kept low — recent systems have energy consumption records as low as 0.65kW/tonne grain unloaded.

*Merksem  
Belgium  
200tph/132kW  
on fixed gantry  
(cereals).*



The powerful vacuum created by the turbine sucks in the cargo at impressive tonnages per hour. To unload ships in the most versatile way, the barge unloaders consist of a horizontal and a vertical telescopic tube system.

At the near end of the vertical telescopic tube is the suction nozzle. It is an ingeniously designed coaxial tube system allowing air to come in from the outer ring above the cargo, making a turn in the cargo to the inner tube, thereby transporting the cargo through airlift into the vertical and subsequently horizontal telescopic tube.

The elbow between the vertical and horizontal tube is of the highest wearing resistance (records of more than ten million tonnes of grain with one elbow have been reported by VIGAN customers). Both the vertical and horizontal tubes are moved

by electrical hoists. The boom carrying the suction tube system is mounted on a receiving bin with a powerful self-regenerating filter: no dust emissions possible.

To maximize reach when unloading the hatches on the barge, the receiving bin is mounted on a slewing ring. The boom can be elevated by an ultra-safe hydraulic jack: no risk of breaking. By gravity, the grain is finally channeled through the air-lock system into a conveyor system, ready to be stored or processed directly by the customer.

This very versatile concept offers excellent wear durability.

- ❖ its operating height is adjustable through the mounting on a fixed or mobile gantry;
- ❖ the sucking capacity is adaptable to the need of the customer;
- ❖ good reach is provided through:
  - ❑ a range of boom lengths up to a maximum of 17.5m;
  - ❑ a rotating bin/filter cabin on a slewing ring;
  - ❑ a set of telescopic tubes that consist out of two or three segments, adapted to the boom length for maximum reach;
  - ❑ the use of specific alloys and/or steel finishing in the suction tubes;
  - ❑ the mounting of an extremely durable elbow in NI-Hard;





- ❑ smooth operation from a radio command control panel with one operator; and
- ❑ the possible use of an extra hoist on the boom to facilitate the use of a bobcat with the bottom cleaning of the ship.

**LOW DUST AND NOISE EMISSIONS**

Next to VIGAN pioneering its unloaders towards technical excellence, other tendencies also became clear over the last decade: people live closer to urban areas, move into former industrial areas or become more demanding in terms of quality of life.

Quality of life means the air that we breathe, the noise we hear and the view from our windows. VIGAN has worked hard to also reduce environmental impact of its equipment further:

- ❖ its auto regenerated filter system to prevent dust emission has extremely low dust permission specifications;
- ❖ its mounting of engine and turbine in an acoustically isolated (baffles) cabin and the use of acoustically insulated suction tubes minimizes noise emission to acceptable levels nearby urban areas.

All these aspects together have combined to put VIGAN among the preferred suppliers of barge unloading systems. In Germany, the Netherlands, France, and



*Roeselare Belgium 200tph/132kW (cereals).*

Belgium, together, VIGAN unloads an excess of ten million tonnes of cargo a year — with a combination of wheat, barley, corn, malt, rapeseed, soybean meal and even fertilizer. That is 330,000 truck transports annually counted at 30 tonnes each, versus 4,000 vessels annually at 2,500 tonnes each. Don't blame us for the traffic jams, we did our best!

*VIGAN machines in Germany, The Netherlands, Belgium and France.*

