



**Mechanical Ship and Barge
Unloading & Loading**

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Trends

- 1 Tightening regulations
- 2 Better working environment
- 3 Higher capacity loading and unloading
- 4 Higher operating efficiency

Grab unloaders

no longer viable solution...

- Legislation that stops the use of unloader to handle both food and non food products.
- Tougher pollution and environmental laws that prohibit the emission of dust.
- Zero tolerance on product spillage and losses.
- Reduction on noise pollution.
- Trending towards dedicated terminals that only handle grains and meet food safety laws.
- Trending towards solutions that are efficient and require less space.



Ship & Barge unloaders (200–1300 t/h)



**Bühler...
Portalink**

Portfolio overview

Portalink

Unloading

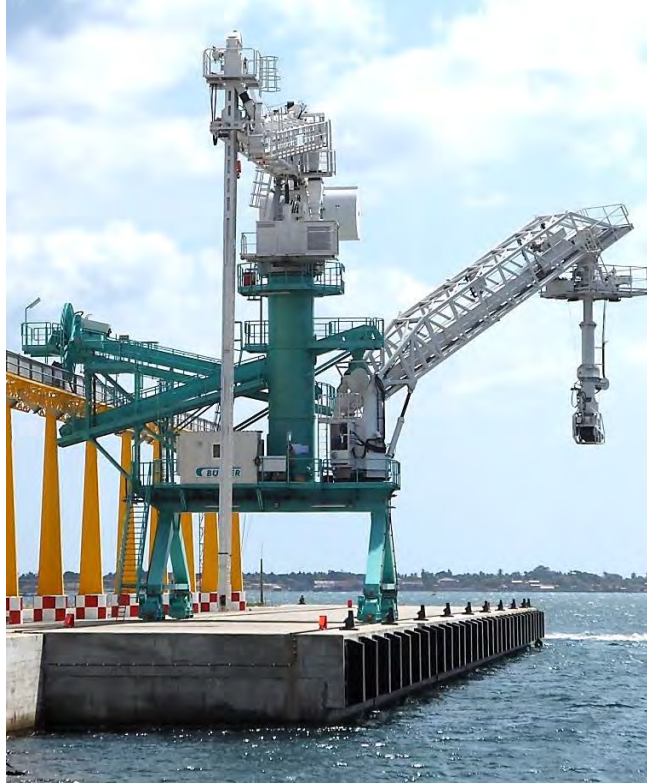
Energy efficient
and reliable operation



Portacombi

Flexible

Combination loading
and unloading



Portacombi

Transfer

Vessel unloading
and barge loading



Unloader range to match capacity and vessel sizes

Unloader Model	Nominal Peak Capacity	Boom Length	Typical Ship Sizes (DWT)
Portalino 300	300 t/h	20 m	3,000 to 30,000
Portalink 400	400 t/h	25 m	3,000 to 60,000
Portalink 600	600 t/h	25 / 27 / 32 m	10,000 to 120,000
Portalink 800	800 t/h	27 / 32 m	10,000 to 120,000
Portalink 1100	1100 t/h	27 / 32 m	10,000 to 120,000
Portalink 1300	1300 t/h	27 / 32 m	10,000 to 120,000

Safe and Flexible operation

**Wind, tides, waves
and other vessels
have an impact.**

- Unloader leg mounted on spherical suspension that compensates horizontal movements to prevent structural overload.
- Bühler auto-sink feature for optimal grain unloading depth.
- Auto-sink function will also compensate vertical movements to prevent structures overload.



Integrated Unloading & Loading *flexibility through combined systems*

- Flexible solution for unloading of large ships and loading smaller ships / barges
- Unloading to storage or direct loading
- Cost effective 2 in 1 solution.



Operator Cabin & Remote Control



Remote Control

- Operators panel
- Push buttons
- Emergency stop
- Control joysticks

Operator Cabin

- Panoramic visibility
- Full operational control
- Touch control panel
- Easy operation visualisation

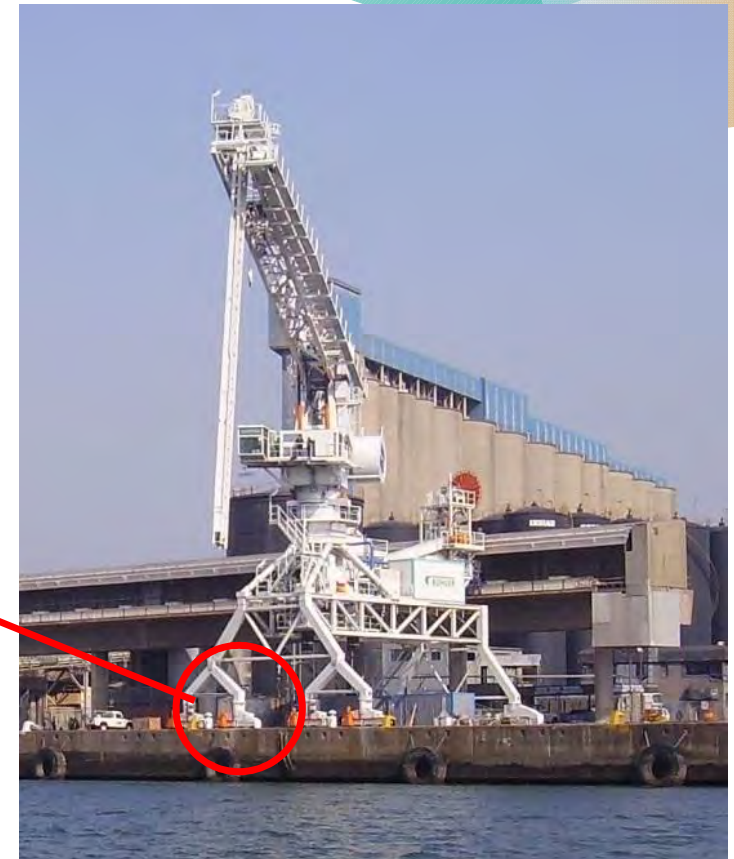
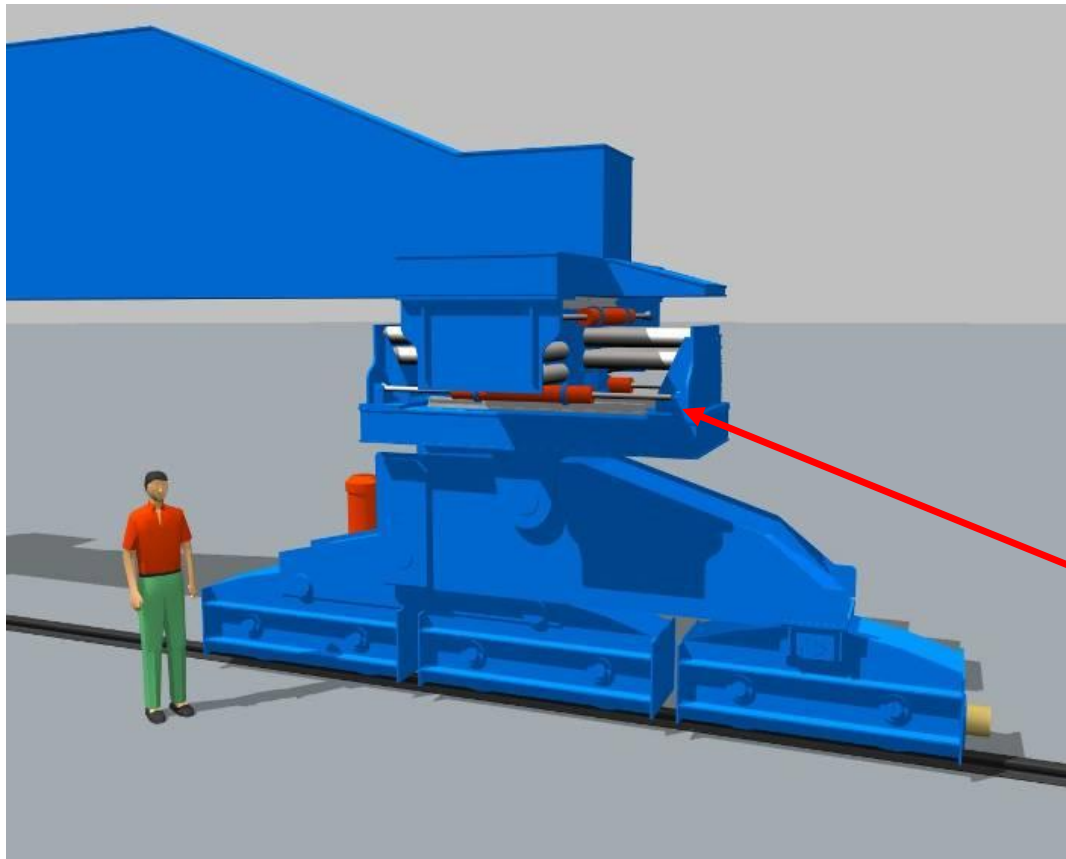


Truck Loading Spout(s)



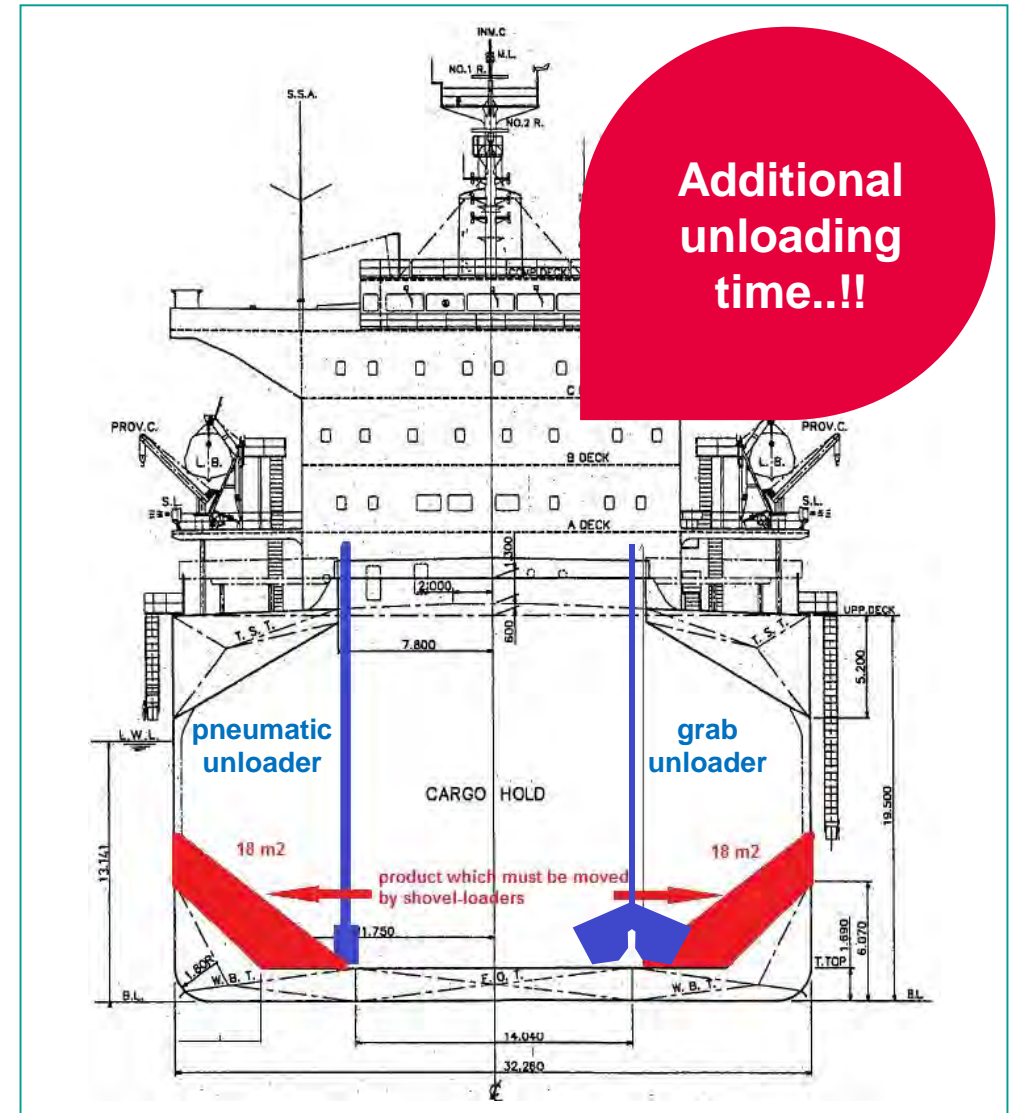
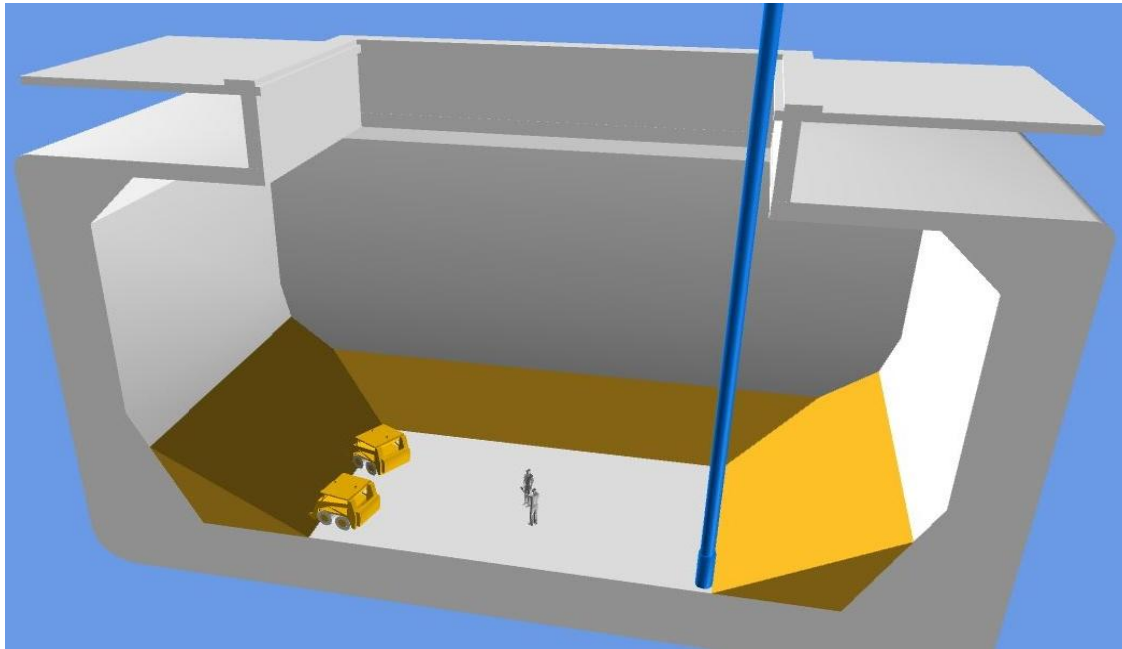
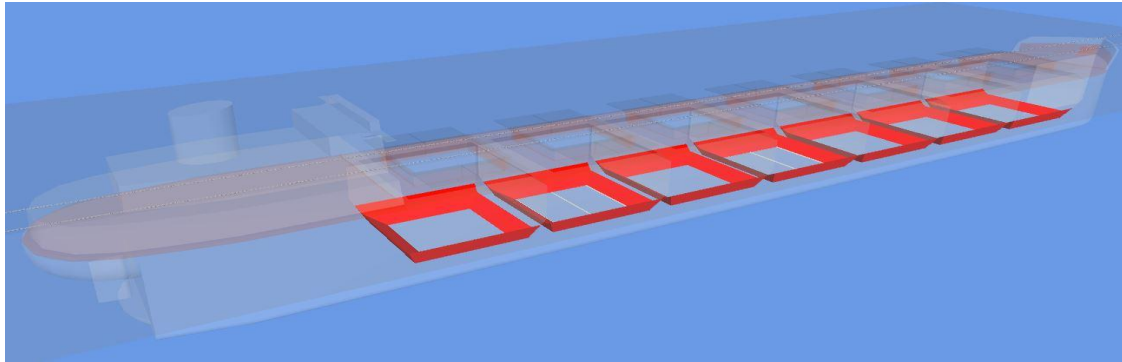
Earthquake Absorbers

seismic zones solution

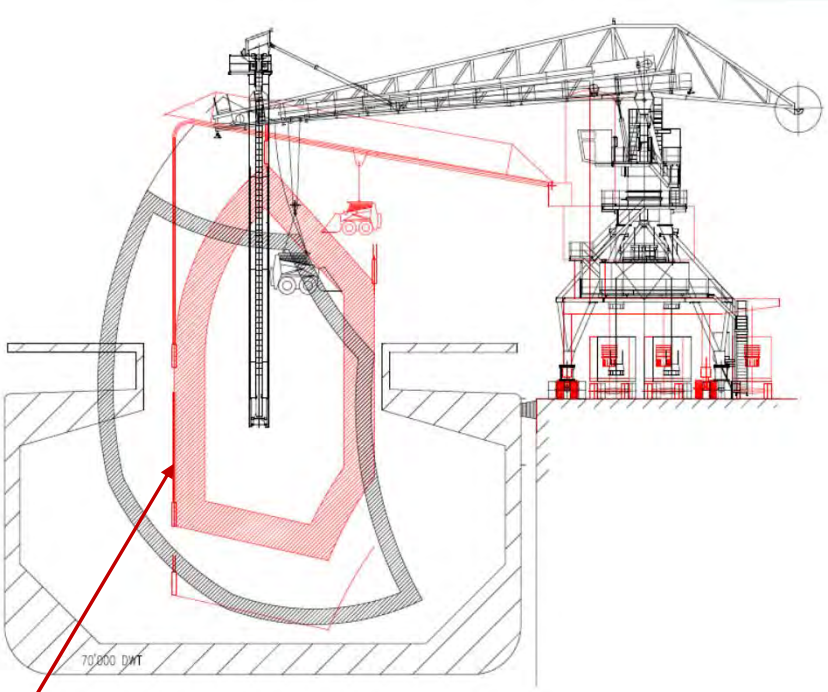


Unloading Efficiency

Influence of working range



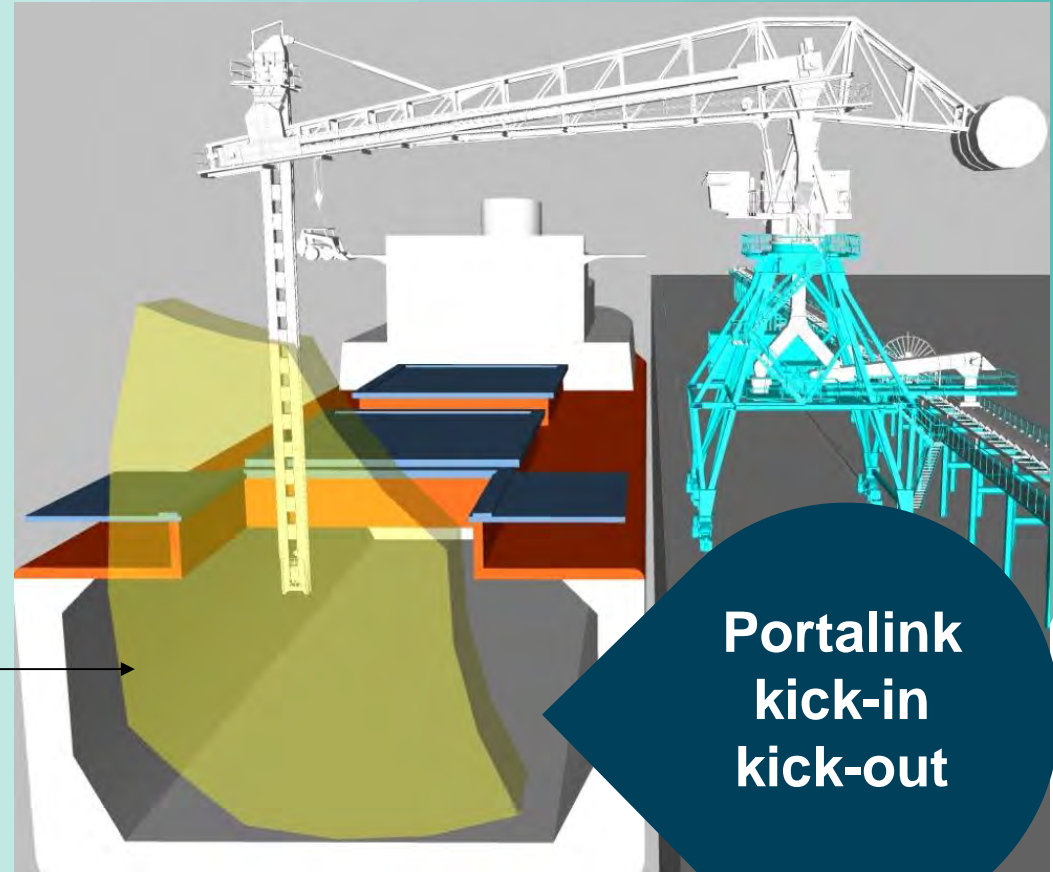
Bühler Kick-In / Kick-Out



Vertical Suspended Unloader

disadvantages :

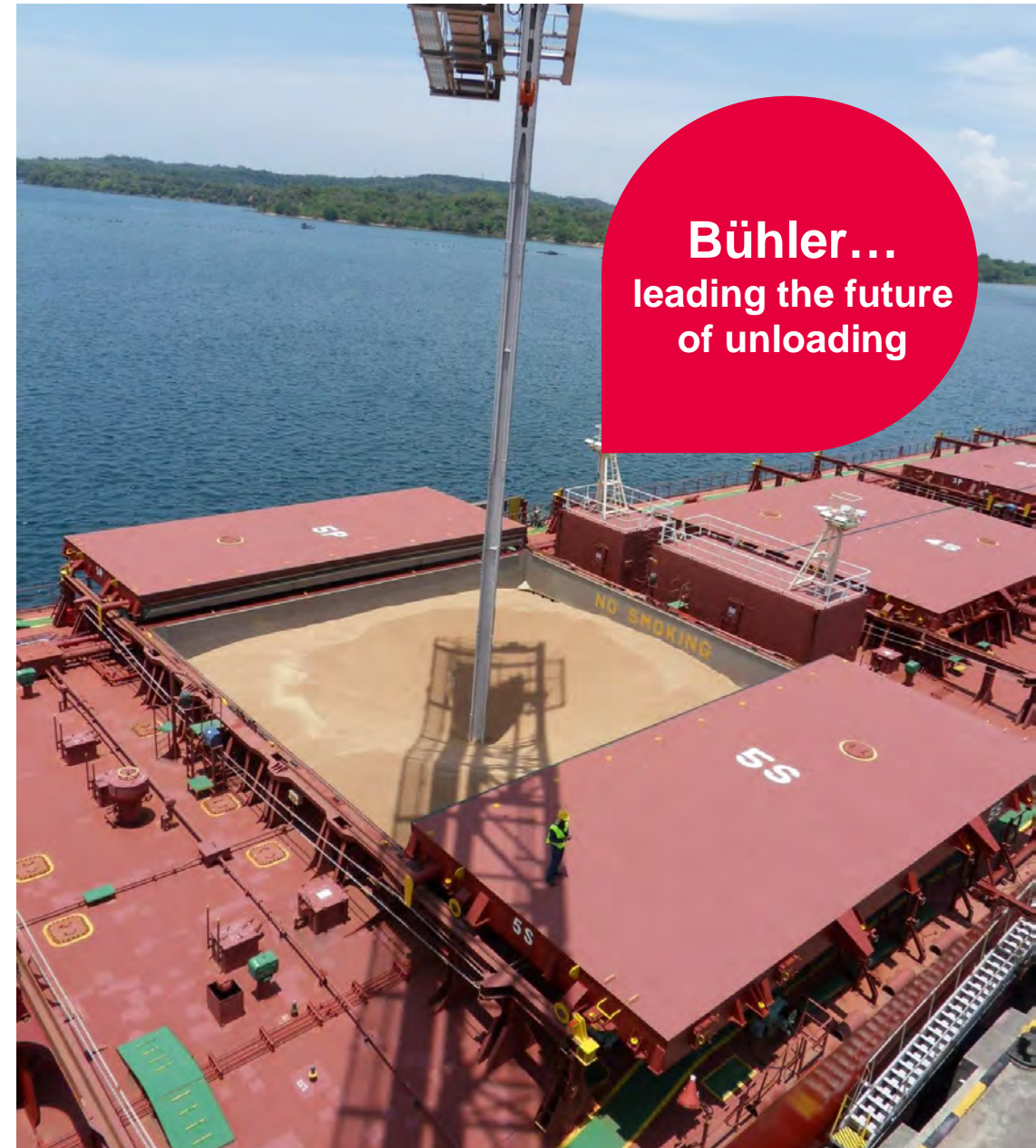
- Limited to vertical up and down movement
- Limited working range, no reach underneath hatch rim
- Bulldozer unloading process starts much earlier



Portalink
kick-in
kick-out

Portalink Mechanical Unloader

- **Efficient Unloading:**
Flexible slewing and luffing movements that achieve optimal reach into hatch.
- **Gentle Handling:**
Low speed column of product ensures minimum friction and product breakage.
- **Low Energy Consumption:**
Low product conveying speed results in low energy consumption per tonne.
- **Low operating costs:**
Few wear parts combined with low conveying speed and gentle movements result in reliable service and easy maintenance.



YOUR GRAIN - OUR PASSION !

