

ARDELT

PORT AND SHIPYARD

XL EFFICIENCY



MULTIPURPOSE AND GENERAL CARGO HANDLING. THE TUKAN M: THE VERSATILITY OF A DOUBLE JIB CRANE.

Multipurpose and general cargo handling are primary tasks in global goods handling. Multipurpose solutions are a requirement at any successful terminal – adaptation to the existing infrastructure is essential.

→ TUKAN M

The Tukan M (Multipurpose) is our professional all-rounder crane for efficient, versatile and reliable handling.

SHORT AND QUICK – THE IDEAL LOAD PATH

Ardelt invented the double jib principle for level luffing cranes in 1932. Since then, the company has built thousands of cranes based on that principle and has continued to develop it. The Tukan's double jib luffing system is the basis of its outstanding handling performance. It guarantees that the boom tip always remains at the same height and always close to the load, while achieving an almost horizontal load path. This it does purely mechanically, whatever the load. The lifting mechanism does not perform any additional, unwanted movements. This in turn saves lifting-mechanism energy. A crane could not be more efficient in the way it works.

THE CRANE FOR CRANE OPERATORS

Because of the geometry of the double jib, the cable between the boom tip and the load is extremely short. Thanks to a broad base, the cable is optimally routed, giving the crane operator the best possible control. A Tukan's load remains stable with an absolute minimum

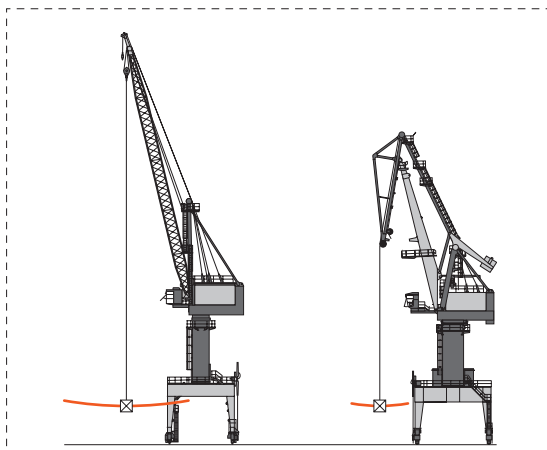
of bounce, swing or cable (field) rotation. The crane operator enjoys the best possible view of the load, the vessel and the quay. It is easy to pick up loads quickly and precisely, and put them down again with great accuracy. Tasks couldn't be easier for crane operators.

THE TUKAN SAVES MONEY

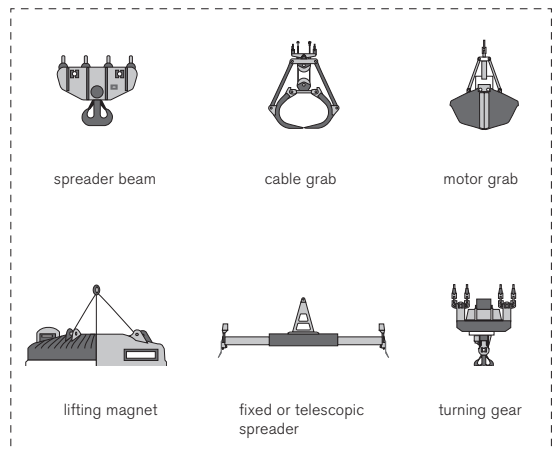
Ardelt has integrated more clever features into the Tukan's concept: its counterweight compensation system. Its four-part boom system is combined with a mobile counterweight which moves along an arc. When the outreach changes, the counterweight provides dead-weight compensation. The centre of gravity of the jib system remains near to the axis of rotation in every position and minimises load on the slewing joint. The effect of dead-weight compensation also reduces stress on the luffing mechanism. Both of these features mean minimal wear and reduced cost.

VERSATILE AND ECONOMICAL

With its modular building-block concept, the Tukan offers numerous possibilities and advantages. This concept encompasses various different gantries, lifting mechanisms and boom systems, load suspension devices and much more. Equipped with a high gantry, it is easy to drive under, and a rail-mounted chassis allows it to move under full load without outriggers. Its load suspension devices are quick to change and the Tukan adapts perfectly to the ambient infrastructure and the tasks given to it.



↑ Double jib principle: short cable length, reduced pendulum swinging



↑ Load suspension devices



↑ Tukan with an asymmetrical gantry

SHIPBUILDING.

THE KRANICH: FOR BIG MOVEMENTS.

Cranes operating at the world's shipyards have to adapt to the requirements of each location. Ardelt offers its shipyard cranes in a number of different versions to meet specific customer demands – the efficient double jib cranes as well as lightweight single jib models.

→ KRANICH: FLYING HIGH

The Kranich is Ardelt's all-rounder for the shipbuilding industry. It is a lightweight crane, which means it can be used on crane tracks that cannot withstand a lot of load. As an all-rounder it can be fitted with all kinds of load suspension devices: as well as the hooks typical of shipyards, it can carry a spreader and a lifting magnet. The Kranich plays a big role in shipbuilding, mastering extreme lifting heights and long reaches – crucial as vessels are getting bigger every year.

→ TUKAN S: ACCURATE HANDLING

The Tukan S (Shipyards) guarantees precision handling on account of its double jib principle with short cables and only minimal pendulum swing. Its positional accuracy makes it ideal for handling material and components that have to be set down with great accuracy – as is the case in shipbuilding.

The Tukan S differs from the Tukan M, B and K on account of its lighter construction and shipyard-compatible design, its working speeds suited to assembly and its optional auxiliary hoist.

The auxiliary hoist allows quick work under partial loads and enables the crane operator to align a component perfectly while still in the air and to turn smaller parts.



↑ Double jib level lifting cranes at Blohm + Voss shipyard in Hamburg/Germany



↑ The Kranich in action at a shipyard

CRANES FROM ARDELT FOR PROFESSIONAL BULK HANDLING. WHEN EVERY CENT PER TONNE MATTERS.

In bulk handling it is the efficiency of a crane that is crucial: in other words, how quickly can bulk goods be trans-shipped and at what cost? Environmental protection is also playing an ever greater role. Dust emissions have to be avoided and energy-saving methods are preferred.

→ TUKAN B

The Tukan B (Bulk) is Ardel's durable, efficient double jib crane designed especially for bulk goods, but not without the benefits of the Tukan M.

THE ECO-FRIENDLY, ENERGY-SAVING CRANE

Ardelt employs fully electrical drive concepts. The combination of the efficient double jib principle and fully electric drive engineering guarantees a high level of efficiency and the lowest possible maintenance levels. An innovative energy management system makes an excellent addition to this combination, enabling the Tukan to either utilise the energy generated by the lowering and braking processes itself to feed it directly back into the mains. A Tukan is especially economical. Its fully electrical drive concept means less maintenance and no harmful hydraulic oil. This energy-saving crane can save up to 30% compared to electrical systems without energy feedback. Diesel-driven slewing cranes need as much as 500% more energy. The crane is extremely quiet and produces no exhaust emission.

Ardelt has developed efficient dust protection systems for bulk handling. We offer a simple, but effective mechanical system for inhibiting dust, as well as active filter systems and spray mist systems.

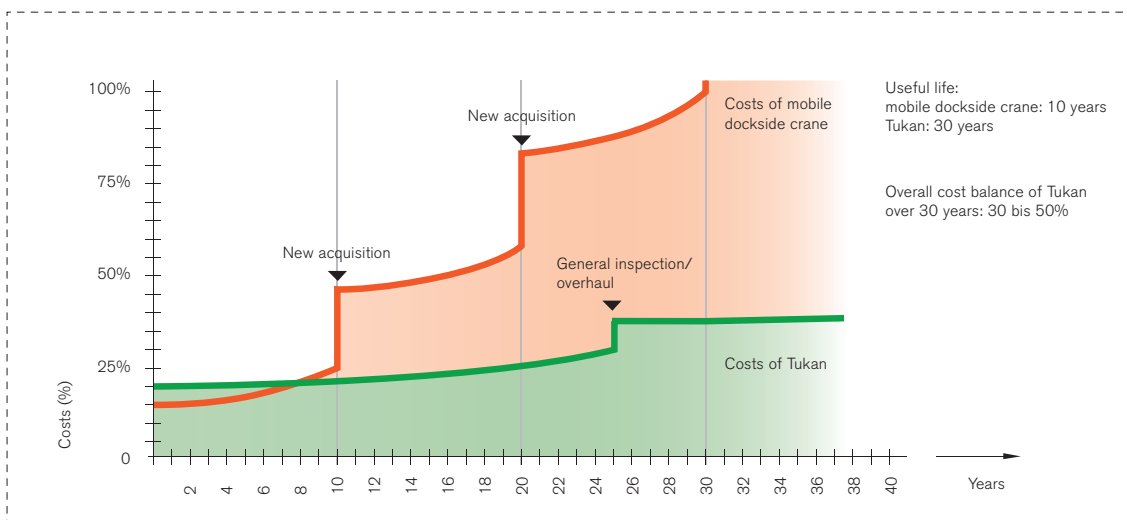
FOR A LONG AND EFFICIENT LIFETIME OF HIGH PERFORMANCE

The Tukan B is an eco-friendly, economical bulk crane. We use the highest-quality components and very high-grade steel structure and drives, guaranteeing that your acquisition will last for a long time and require little maintenance. Return on investment is quickly achieved.

→ KONDOR: SERVICE-FRIENDLY AND LONG-LASTING

The Kondor has a double jib combined with a block column. It is designed for locations where cranes have to be especially service-friendly. This applies, for instance, to areas in which there are fewer assembly cranes. What is special about the Kondor is that even after decades of carrying loads, the bearings on the rotating part of the block column can be replaced without dismantling the entire rotating mechanism – and this can be done without using an assembly crane.

More than 3,000 double jib level slewing cranes are currently in use – a number which speaks for itself.





↑ Tukan B with high gantry: handling coal with a grab

→ TUKAN K: PURE EFFICIENCY

The Tukan K is the solution for bulk handling. With a handling rate of up to 2,000 tonnes per hour and the lowest cost per tonne, it is a bulk-handling pro with an integrated hopper.

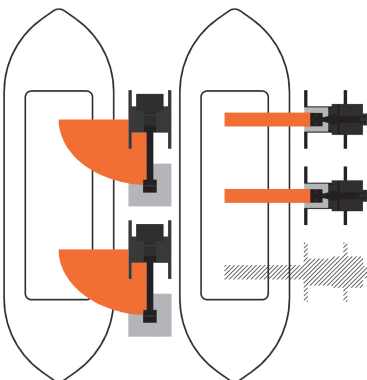
SHORT DISTANCES SAVE TIME AND MONEY

The integrated hopper has a key advantage in bulk handling: it provides the shortest possible path between the vessel and the hopper. Short distances save time and money. That also applies of course to the bulk goods onward progress when it is taken away on the quay.

The Tukan K's short load path, defined by its double jib, and the hopper integrated into its high gantry combine perfectly for efficient bulk handling. The Tukan K picks up the goods in the vessel and transports them into its hopper mounted out front. This means that the Tukan K does not need to turn. This is much less tiring for the crane operator who can always see the grab perfectly. Because there is no more slewing movement, the stresses such movements generate are eliminated. This is good for the Tukan's lifespan.

THE CRANE FOR OPERATORS

Its high gantry with hopper is ideal for an unrestricted logistical process on the quay. Mobile port cranes with outriggers, by comparison, block wharfage and tie up valuable space. The Tukan gantry crane with hopper provides uninhibited access for trains, trucks and similar traffic, which is hugely convenient when it comes to carrying away bulk goods by the shortest and quickest route.



↑ Perfect logistics and the shortest load paths with Tukan K cranes

As well as enjoying extremely fast handling and direct outwards transport, a terminal equipped with Tukan K cranes has the advantage that several Tukans can be lined up close to one another, as they do not have to turn. More Tukan K cranes can be used on a ship than comparable slewing or mobile cranes. As a result terminals with short quays can be upgraded into high-performance operations and, as with short distances, a short lay time saves a lot of money.

To reduce the time lost by changing grabs, Ardel has developed a grab-filling optimisation system. This ensures that the grab is always filled to the right level for the density of the bulk cargo involved. This prevents the crane shutting down due to overload and means you no longer have to switch between different sizes of grab.

THE TUKAN K: EQUALLING SHIP UNLOADERS

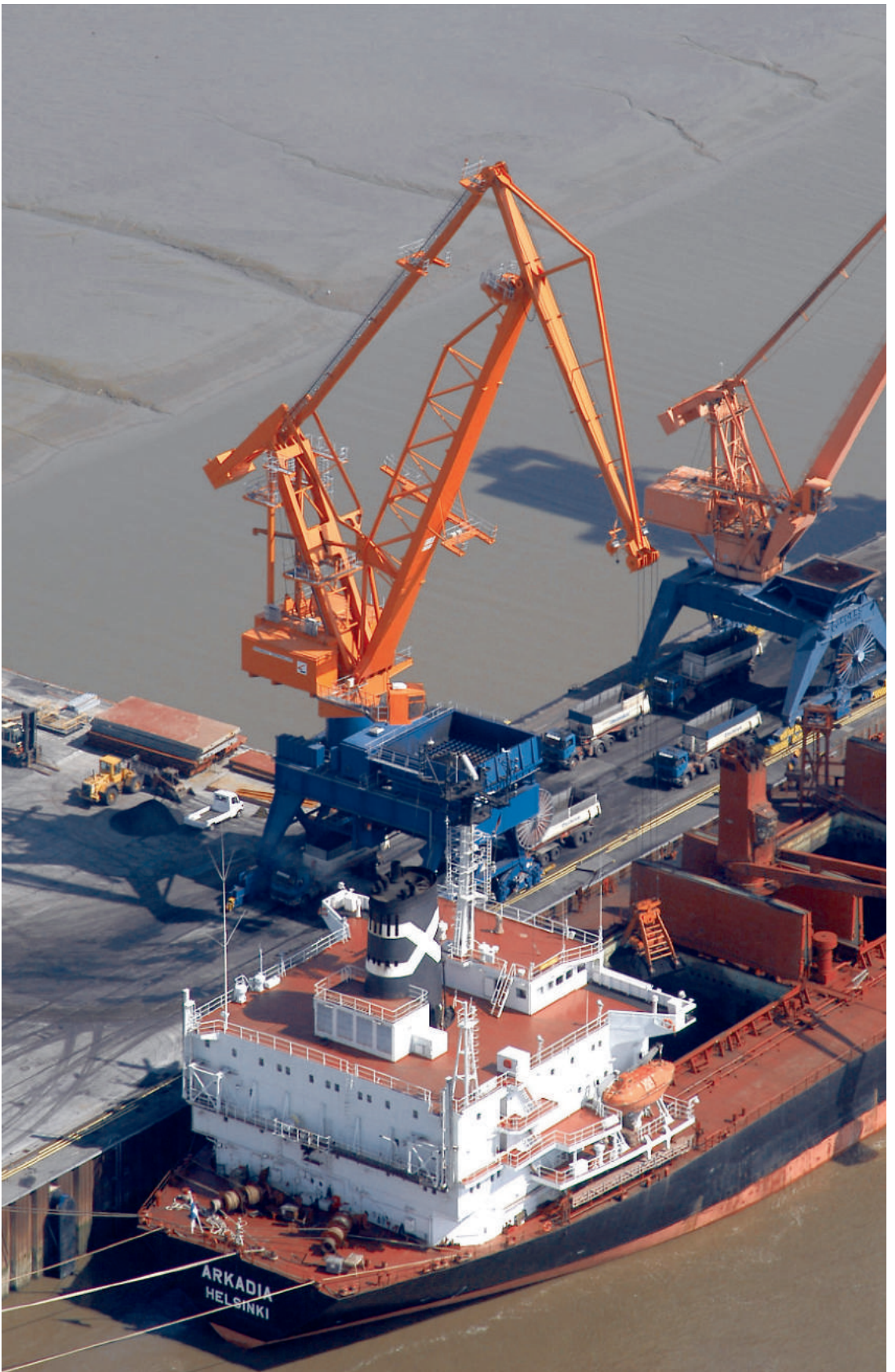
With a handling rate of around 2,000 tonnes per hour the Tukan K can easily keep up with ship unloaders, yet its investment cost is only around 70% and its operating costs are also much lower.

The Tukan K offers the shortest possible load path combined with perfect landside logistics and ultimate performance within a small footprint.

Categorised as A8, the Tukan K is our premium model and is the senior member of Ardel's Tukan product family.



↑ Ideal visibility on the Tukan K



↑ Tukan K cranes handling goods at Brunsbüttel/Germany

Not every solution and not every kind of handling demands a cable crane. A handling device which can transmit force directly between the arm and load suspension device is especially useful if you need to squeeze or press goods.

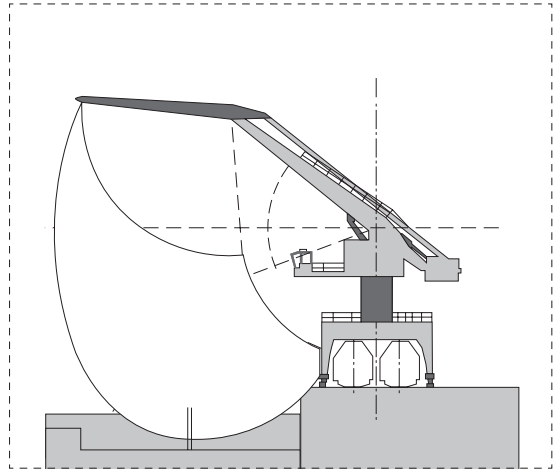
→ PELIKAN: PRECISION BENEFITS

The Pelikan is a handling system for bulk goods that have to be compressed and for goods that have to be positioned quickly and very accurately. It is a balancer handling system that Ardelt offers for low to medium handling rates of 200 to 800 tonnes per hour and for unit handling weights of between 4 and 25 tonnes.

The great advantage of the Pelikan is the direct mechanical connection between the jib system and the grab. This means there is none of the swinging experienced with cable cranes, in addition the grab can be utilised to compress material. This is essential when it comes to handling goods such as scrap. The Pelikan can move more scrap per cycle than other cranes. It is also ideal for loading and unloading bulky logs. Logs can be positioned accurately with the Pelikan and narrow passages don't present a problem.

SAVE ON BALANCE

Ardelt utilises a balancer principle for the Pelikan in which the jib's own mass is balanced by a mechanically coupled counterweight – entirely independently of the position of the boom tip. Energy is needed only for the movement itself – holding the boom system in place does not require any additional energy. This kind of balanced system requires less drive power and is an intelligent investment.



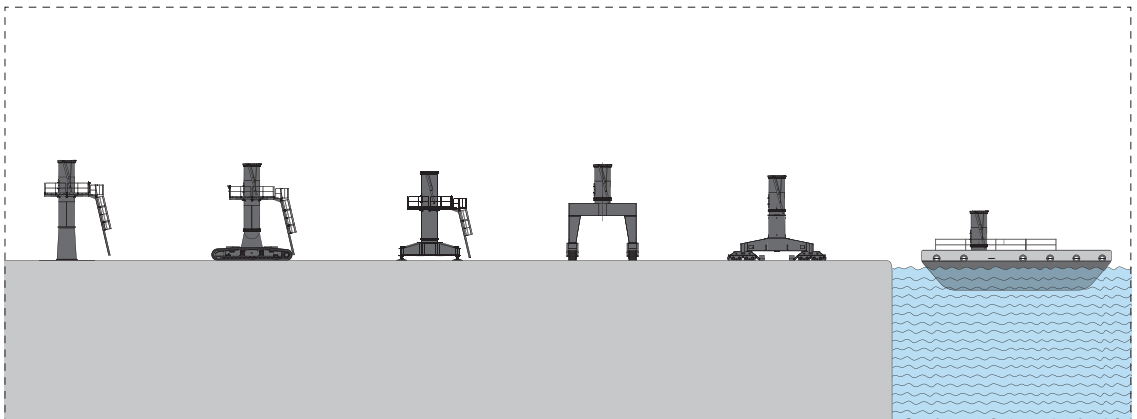
↑ The Pelikan: balanced across its entire working range

The Pelikan has a mechanical hybrid system and an electro-hydraulic drive system, making it a highly efficient device. We employ electrical drive concepts, meaning our systems are exhaust-free and quiet as well as eco-friendly.

FLEXIBLE AND ADAPTABLE

The Pelikan is an outstanding multipurpose system which can be adapted to a wide range of requirements, not only in terms of the load-carrying devices it can use but also in the choice of gantry and base.

The Pelikan benefits from the diverse range of modules available for our slewing cranes, as well as other devices made by Kranunion. We can offer the Pelikan on caterpillar tracks, gantries, pedestals and other types of support.



↑ Different types of gantry for the Pelikan



↑ The Pelikan at work

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