



KRANUNION

4th MED PORTS TANGER MOROCCO

APRIL 2016

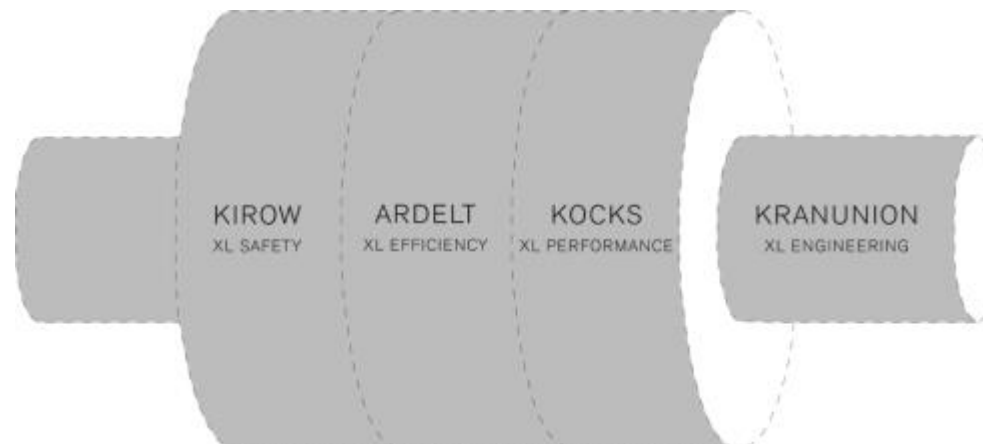
KRANUNION XL-ENGINEERING





PRESENTATION OF KRANUNION

Kranunion is an association of three crane manufacturers specialised in lifting and transporting heavy loads.



German engineering expertise, unites the three manufacturers. They differentiate themselves through specialisation giving the best benefit to the customer.

THE KRANUNION – WORLDWIDE REFERENCES

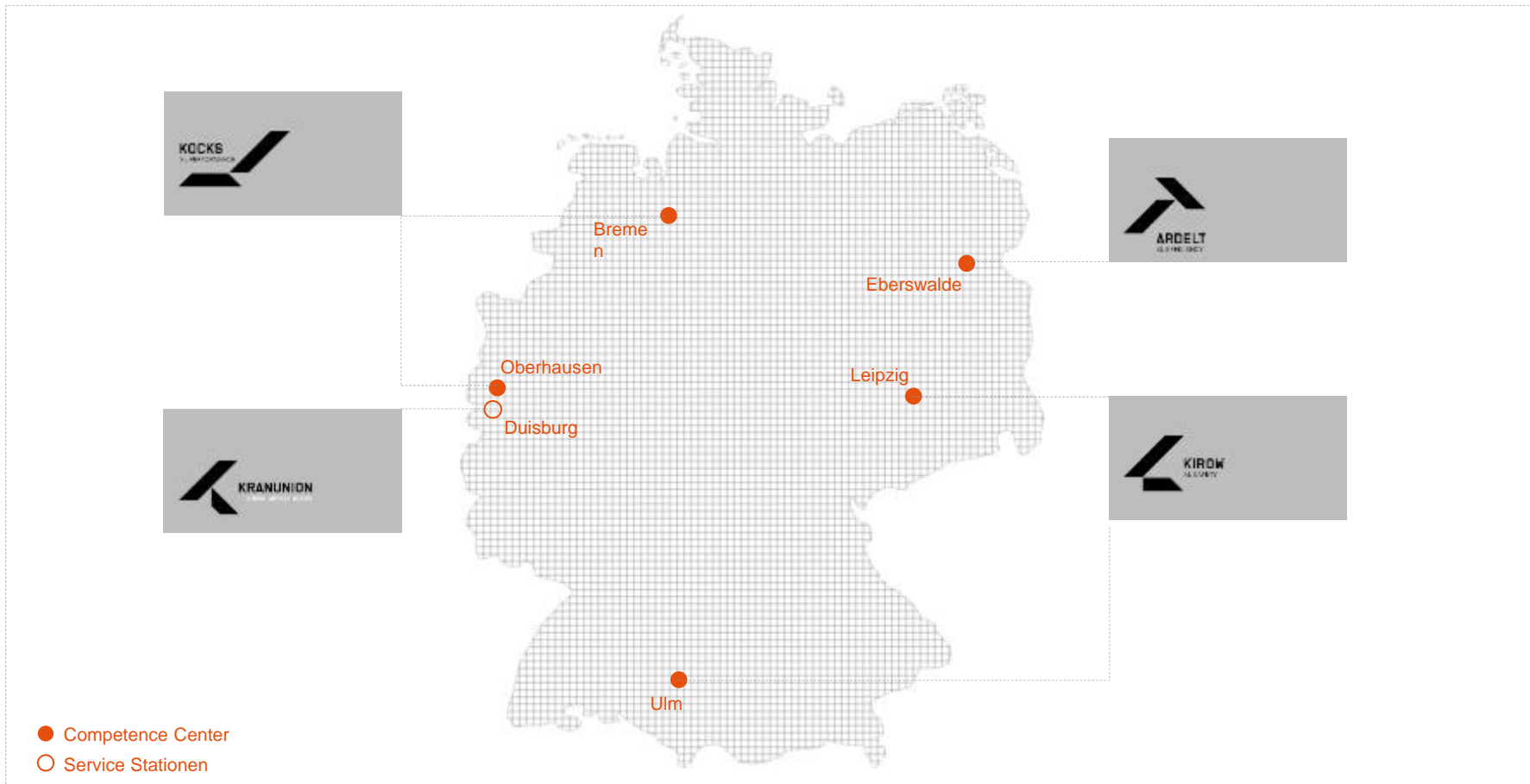


Kranunion is an association of three crane manufacturers, Kirow, Kocks and Ardelt, all are specialized in lifting and transporting heavy loads in the fields of railways, ports, shipyards and the steel industry.

As a supplier to the global market KRANUNION has references in all parts of the world. Through our five competence centres located in Germany we unite with combined logistics to design, manufacture and deliver our equipment.



KRANUNION PRESENCE IN GERMANY



PRODUCTION FROM COMPETENCE CENTRES



Our modern equipped centres of excellence for electrical assembly and steel structures are characterised by an experienced team with decades of collective knowledge and know-how. Our highest priority is the best possible workmanship delivered to schedule.

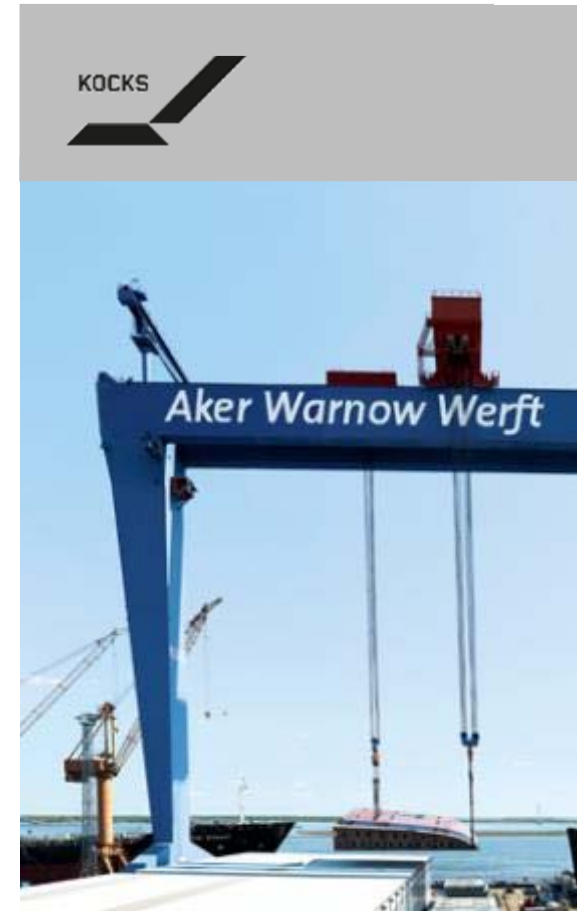


Electrical Hall, Eberswalde



Steel Construction Hall, Leipzig

THE MEMBERS OF KRANUNION



WORLD MARKET LEADERS UNITED



KIROW - Kirow is the world market leader for railway cranes and slag pot carriers.



WORLD MARKET LEADERS UNITED



ARDELT - is the world market leader for double jib level luffing cranes.



TUKAN KANGAROO MOROCCO, 03.05.2016, Seite 9



KIROW, ARDELT AND KOCKS ARE MEMBERS OF KLANUNION

WORLD MARKET LEADERS UNITED



KOCKS - is the world market leader for Goliath cranes and a pioneer in the development of container cranes.



SPECIALISED PRODUCTS FROM KRANUNION



KIROW

Multi Tasker



DESEC Tracklayer



Switch Tilter



Slag Taurus



Multi Flexus



Multi Mover



ARDELT

Tukan M & S



Tukan K & B



Tukan F



Kondor



Kranich



Pelikan



KOCKS

Boxer



Digger



Goliath



Feeder Server



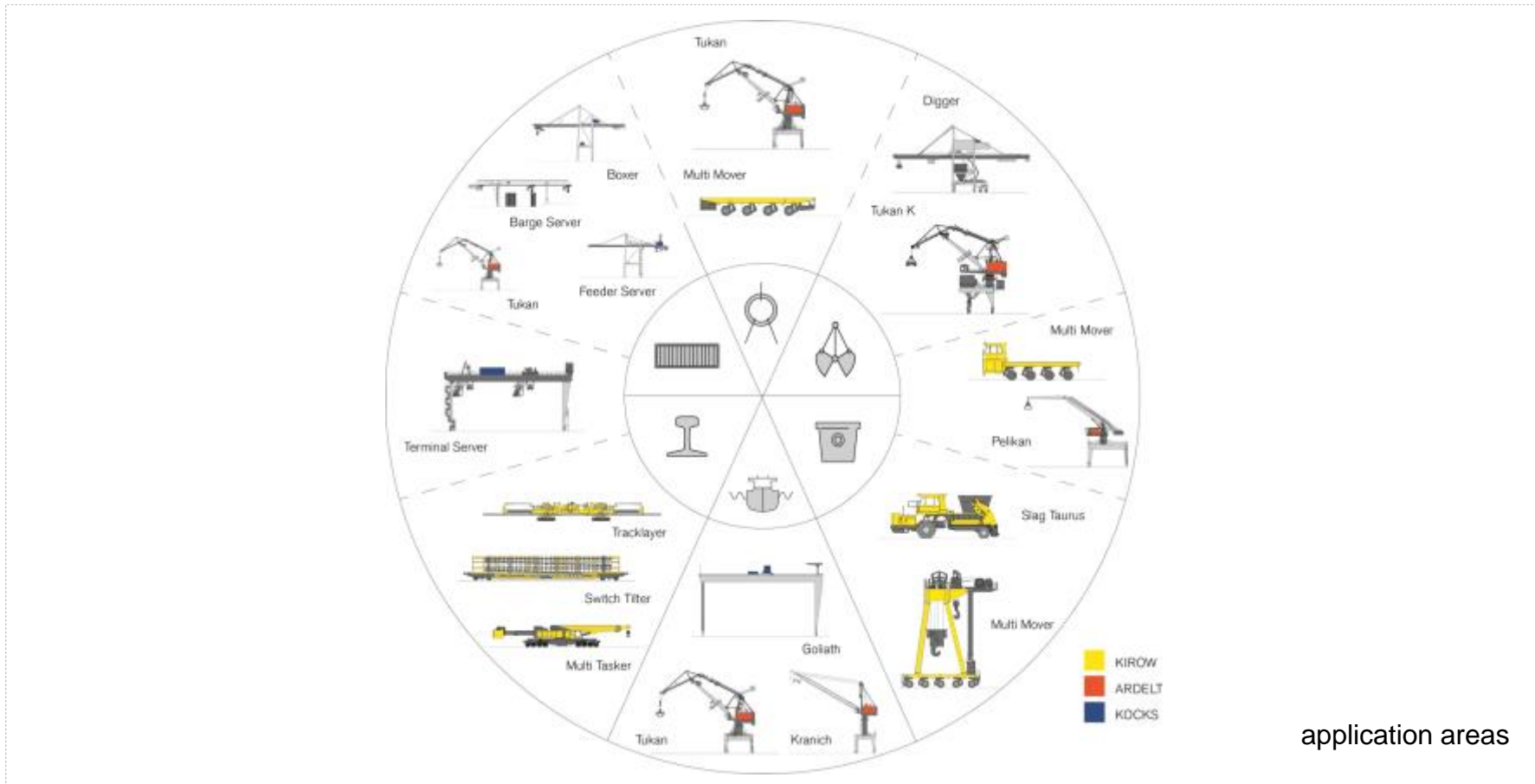
Barge Server



Terminal Server



PRODUCTS AND APPLICATIONS FROM KRANUNION



THE RIGHT PRODUCT FOR YOUR OPERATION

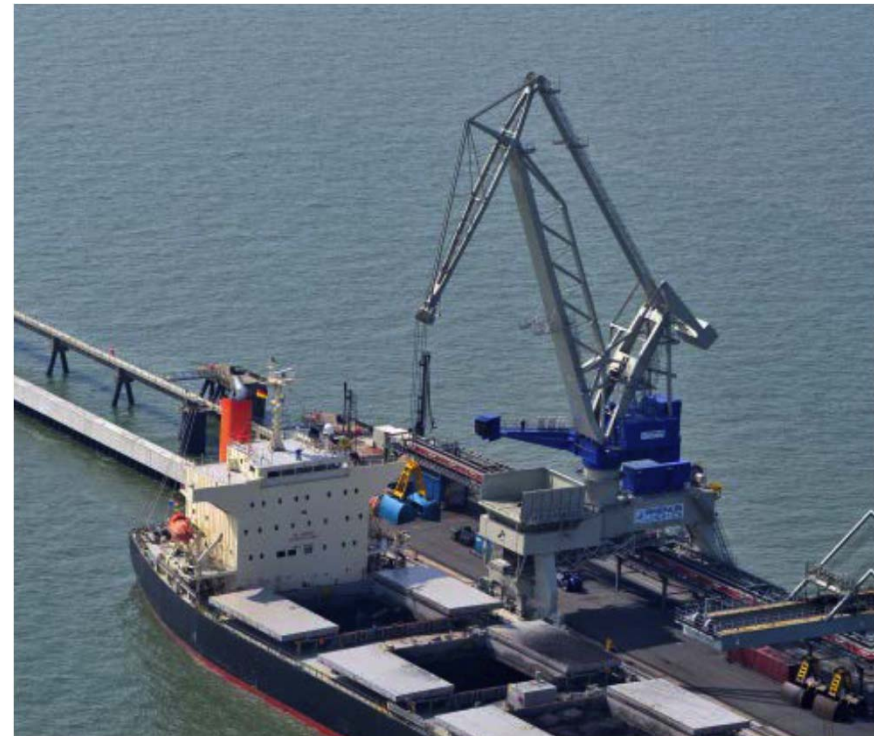


EXAMPLE: BULK HANDLING

Depending on the application and required handling capacity we can offer the ideal solution.



KOCKS: Digger



ARDELT: Tukan K

INDUSTRY FOCUS



EXAMPLE: SHIPYARDS

Depending on the application and product philosophy, we offer the ideal solution.



ARDELТ: Tukan



KOCKS: Goliath

IDEAL CONFIGURATION IN THE LOGISTICS CHAIN



EXAMPLE: HANDLING AND TRANSPORTATION OF SCRAP IN STEEL WORKS

The interaction of the Multi Mover M from KIROW and the Pelican from ARDELT increases efficiency and minimises total costs.



KIROW: Multi Mover

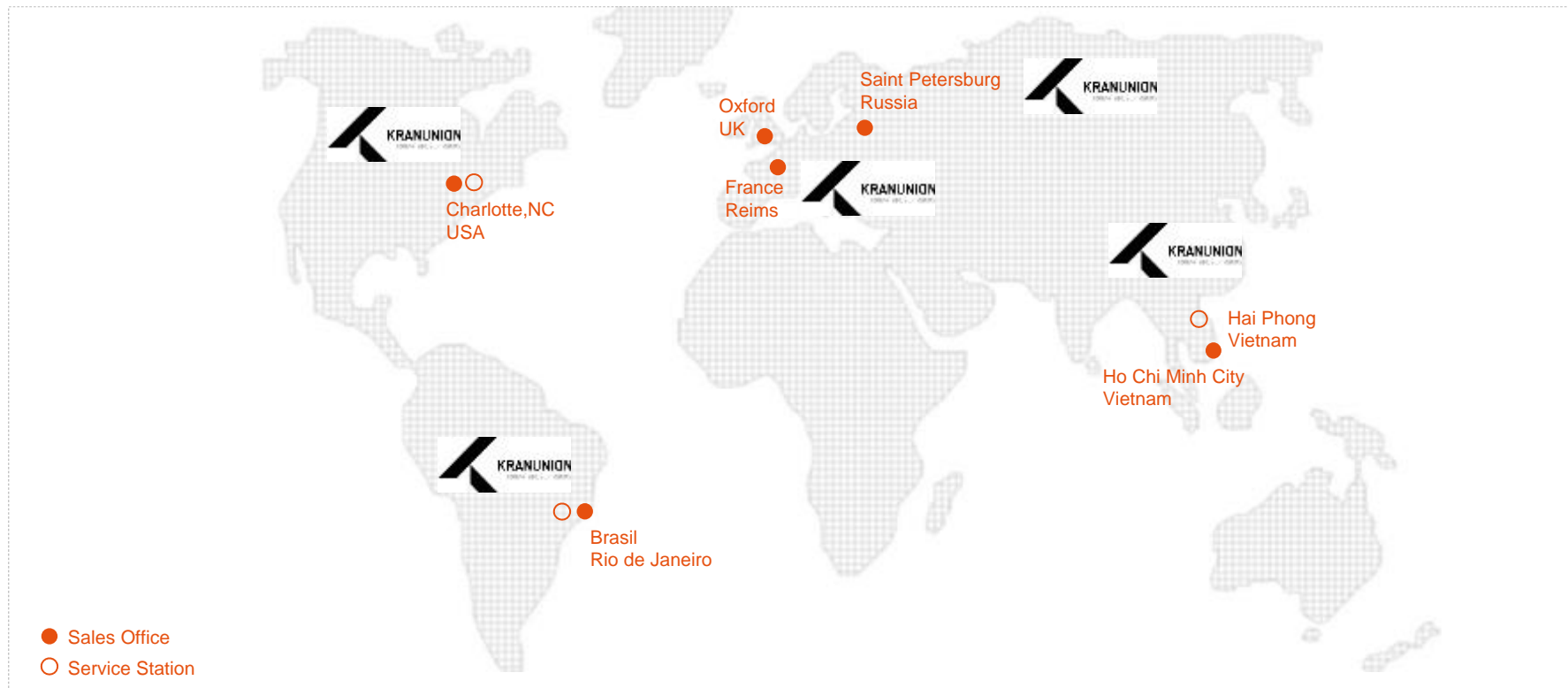


ARDELT: Pelikan

KRANUNION / INTERNATIONAL PRESENCE



For us, customer proximity means better customer understanding, better consultation and better service.



ARDELT



ARDELT PRODUCTS – OUR PORTFOLIO



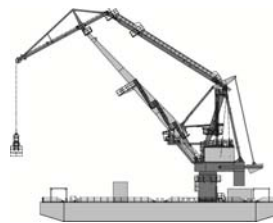
Tukan



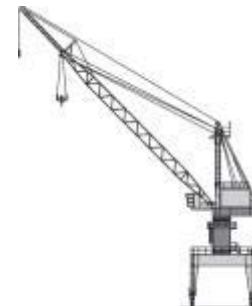
Kondor



Tukan F



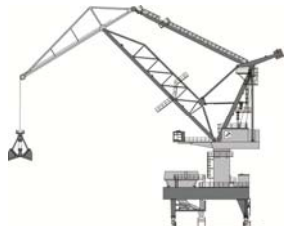
Kranich



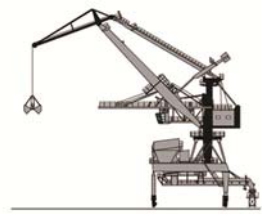
Pelikan



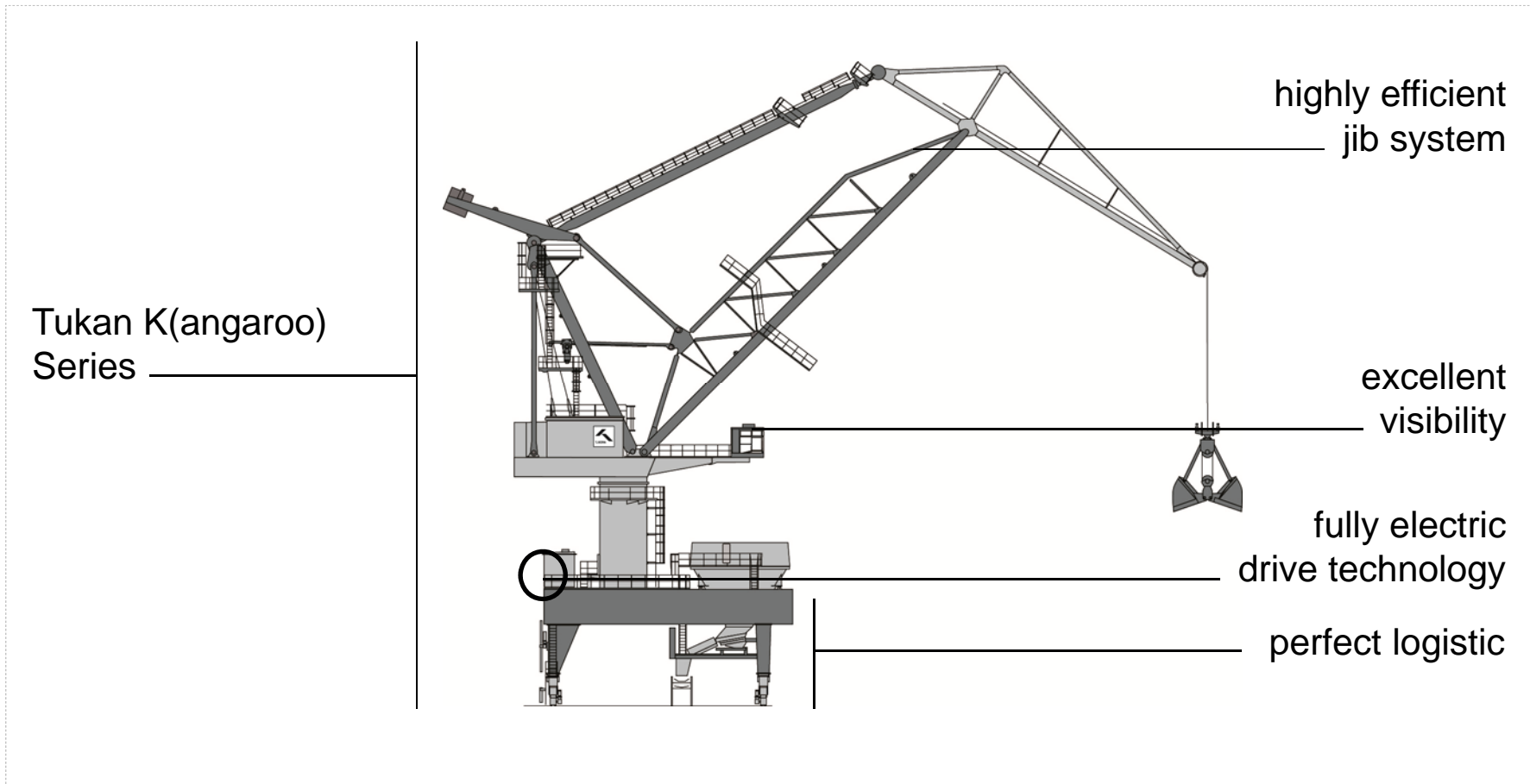
Tukan Kangaroo



Kondor Kangaroo



XL EFFICIENCY FOR BULK HANDLING TERMINALS

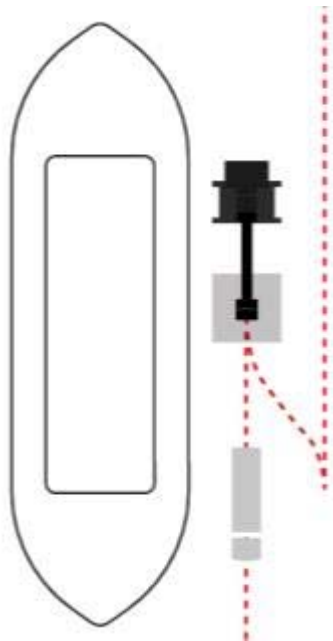




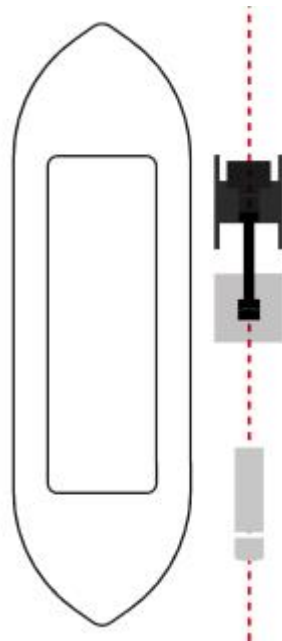
PERFECT LOGISTICS

Cranes with hopper and high gantry provide logistical advantages.

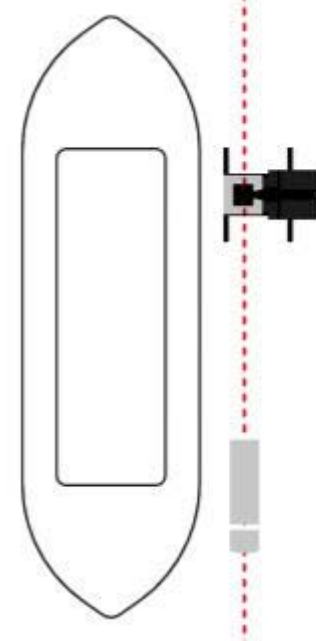
Tukan K - hopper integrated directly in the high gantry. Space-saving arrangement and barrier-free passage of vehicles.



single jib crane without high gantry



single jib crane with high gantry



double jib crane with high gantry

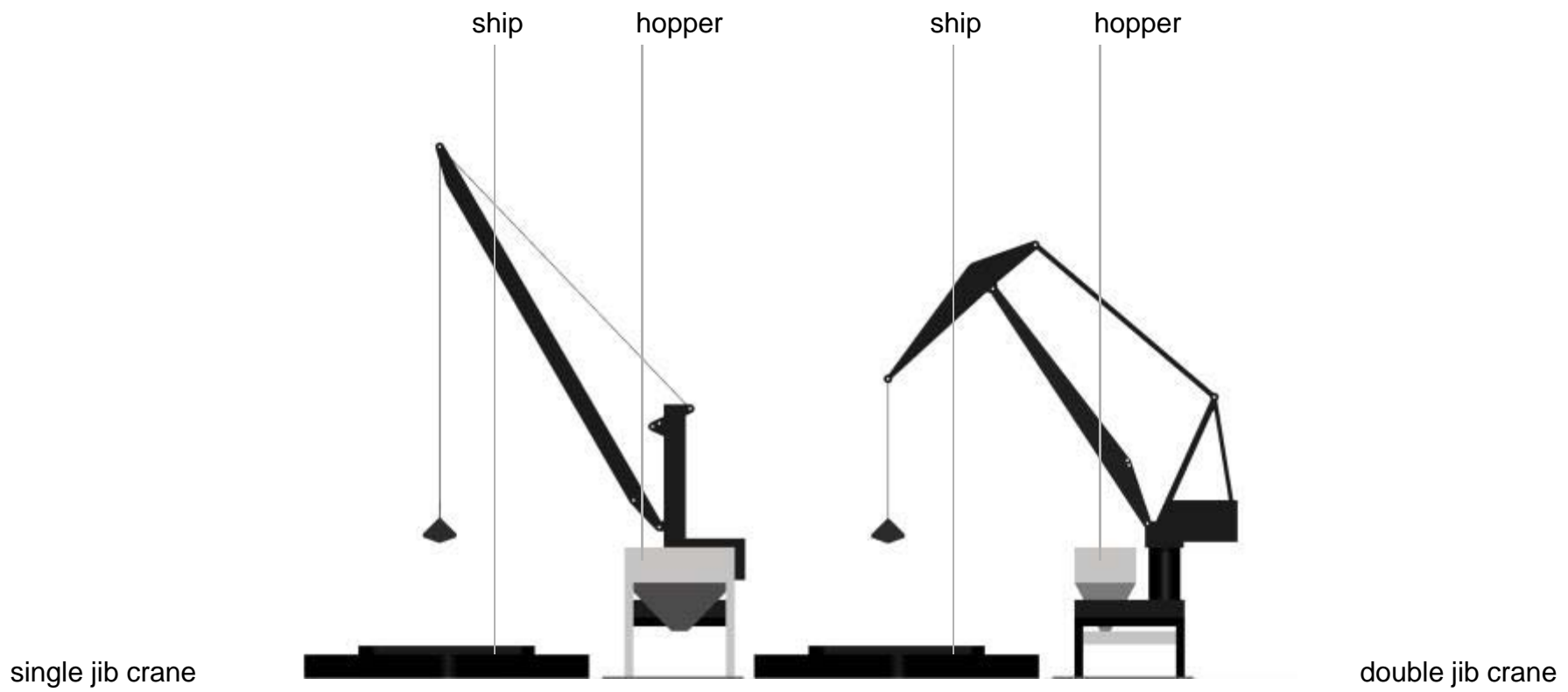
TUKAN KANGAROO



PERFECT LOGISTICS



Comparison of discharge concepts

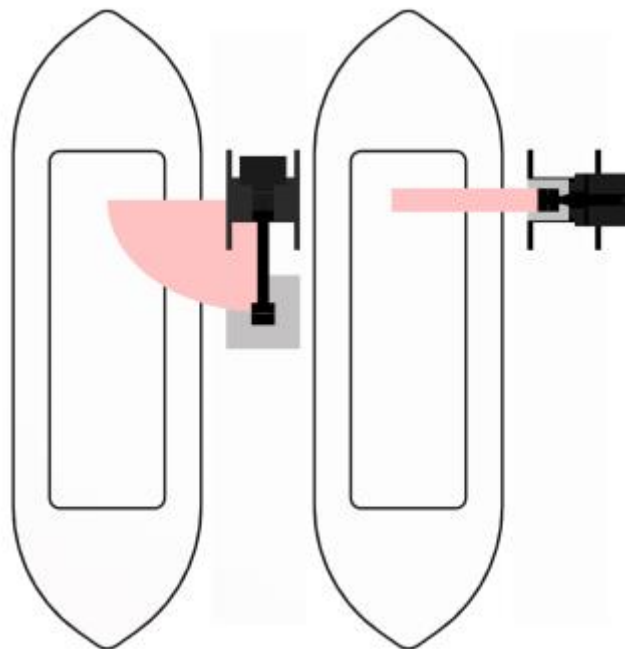


PERFECT LOGISTICS



Comparison of discharge concepts

- Tukan Kangaroo:
- no rotation movement
 - shorter load path
 - more load cycles



single jib crane

double jib crane

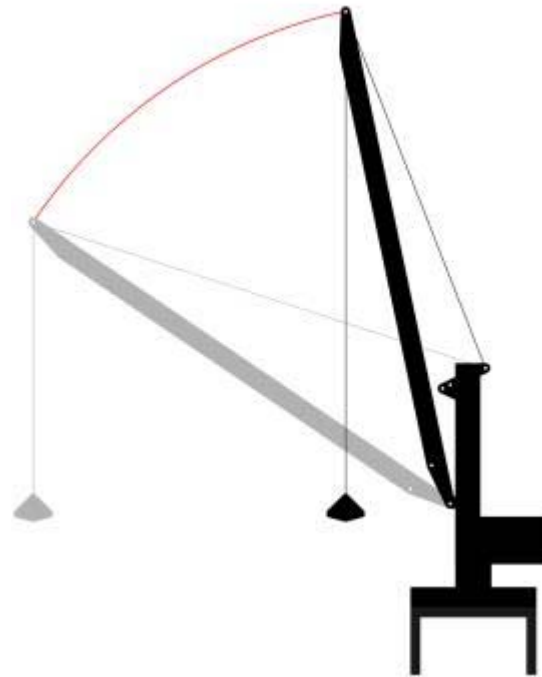
HIGHLY EFFICIENT MECHANICAL SYSTEM



2 different luffing systems

single jib luffing system:

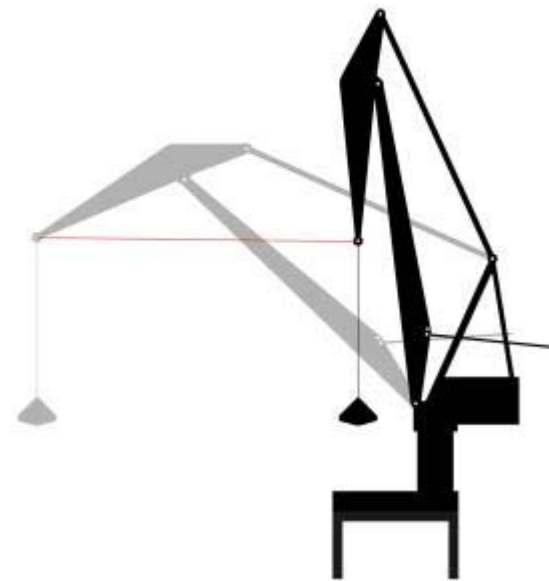
- the boom tip moves an arc around the boom foot point



single jib crane

double jib luffing system:

- the boom tip remains at the same level



double jib crane

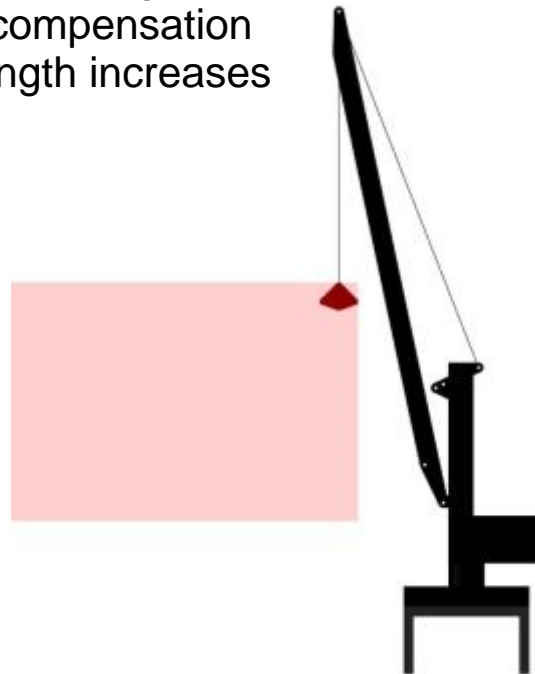
HIGHLY EFFICIENT MECHANICAL SYSTEM



Comparison of the load path

single jib system:

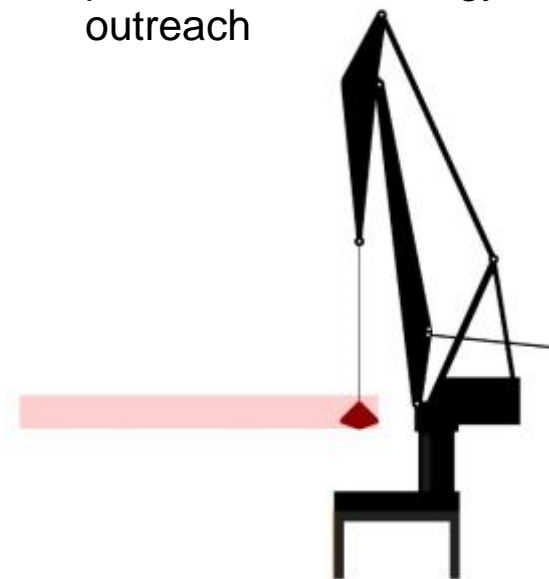
- constant hoist rope length & single reeving → load lifting
- needs rope compensation
- pendulum length increases



single jib crane

double jib system:

- load moves almost horizontally → saves energy
- single reeving and the constant hoist rope length → no load lifting
- balanced jib system, counterweight compensation, few energy need for changing outreach



double jib crane

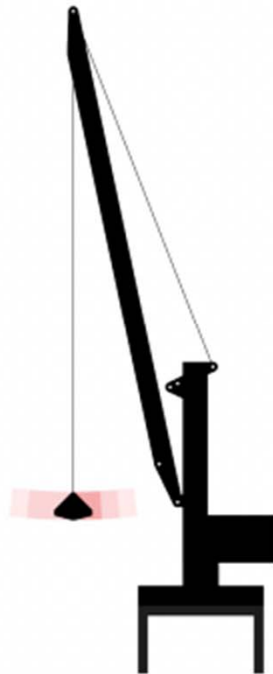
HIGHLY EFFICIENT MECHANICAL SYSTEM



Comparison of the pendulum way

single jib system:

- pendulum swings through longer hoist rope lengths (with a comparable load and speed)



single jib crane

double jib system:

- → shorter work cycles
- → efficient throughput



double jib crane

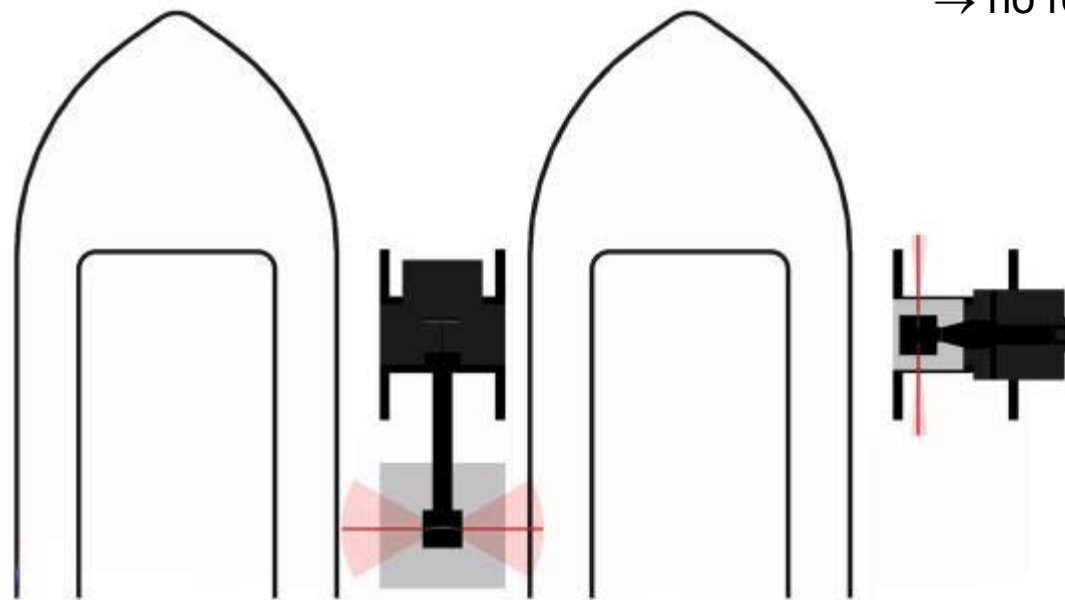
THE CRANE FOR THE USER USE OPTIMIZED



Grab rotation

Tukan Kangaroo:

- short pendulum lengths
→ stable rope span
- stable rope span
→ few torsional oscillations
- linear grab motion
→ no rotation momentum



single jib crane

double jib crane

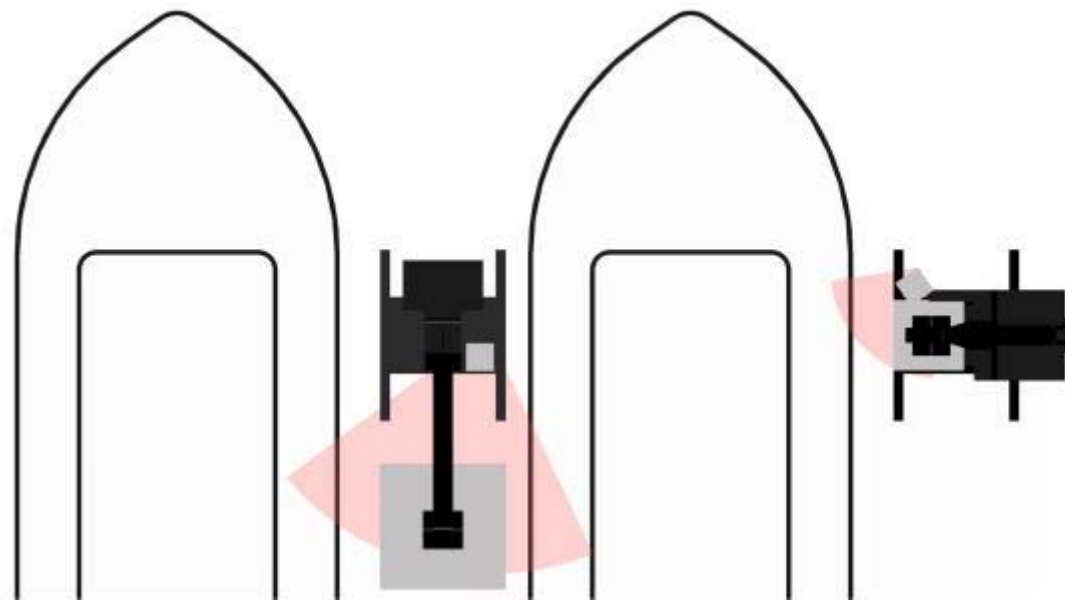
THE CRANE FOR THE USER USE OPTIMIZED



Comparison of visibility

Tukan Kangaroo:

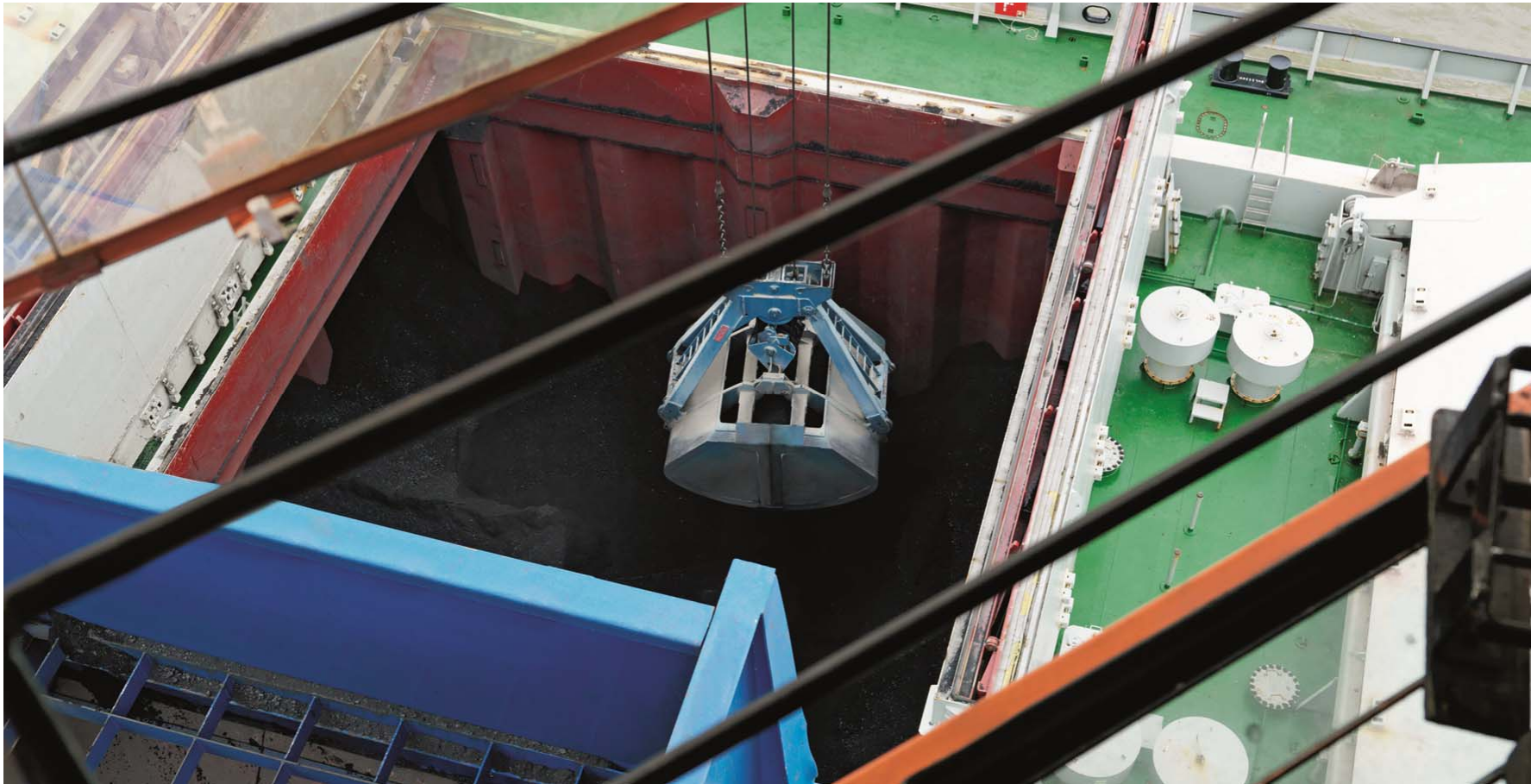
- excellent visibility to the hopper
- optimal position of the cabin, close to the bulk hopper
- working area and hopper are permanently in the view of the crane operator



single jib crane

double jib crane

THE CRANE FOR THE USER USE OPTIMISED



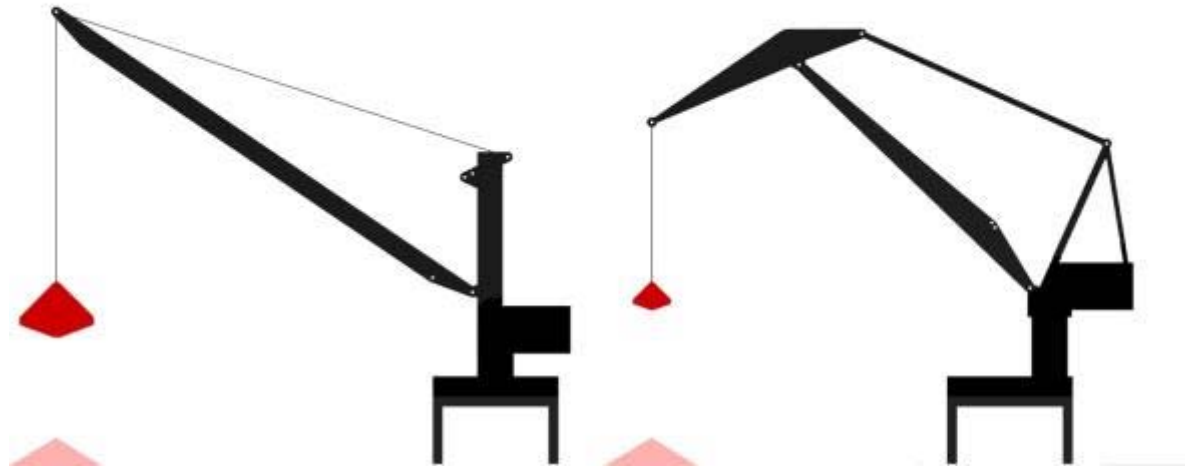
PERFECT LOGISTICS



Comparison - same handling rate

Tukan Kangaroo:

- use of smaller grabs → less dead weight transportation, less stress at the ropes and in the structural components
- less drive power necessary → reduction of operating costs



single jib crane

double jib crane



FULLY ELECTRIC DRIVE TECHNOLOGY

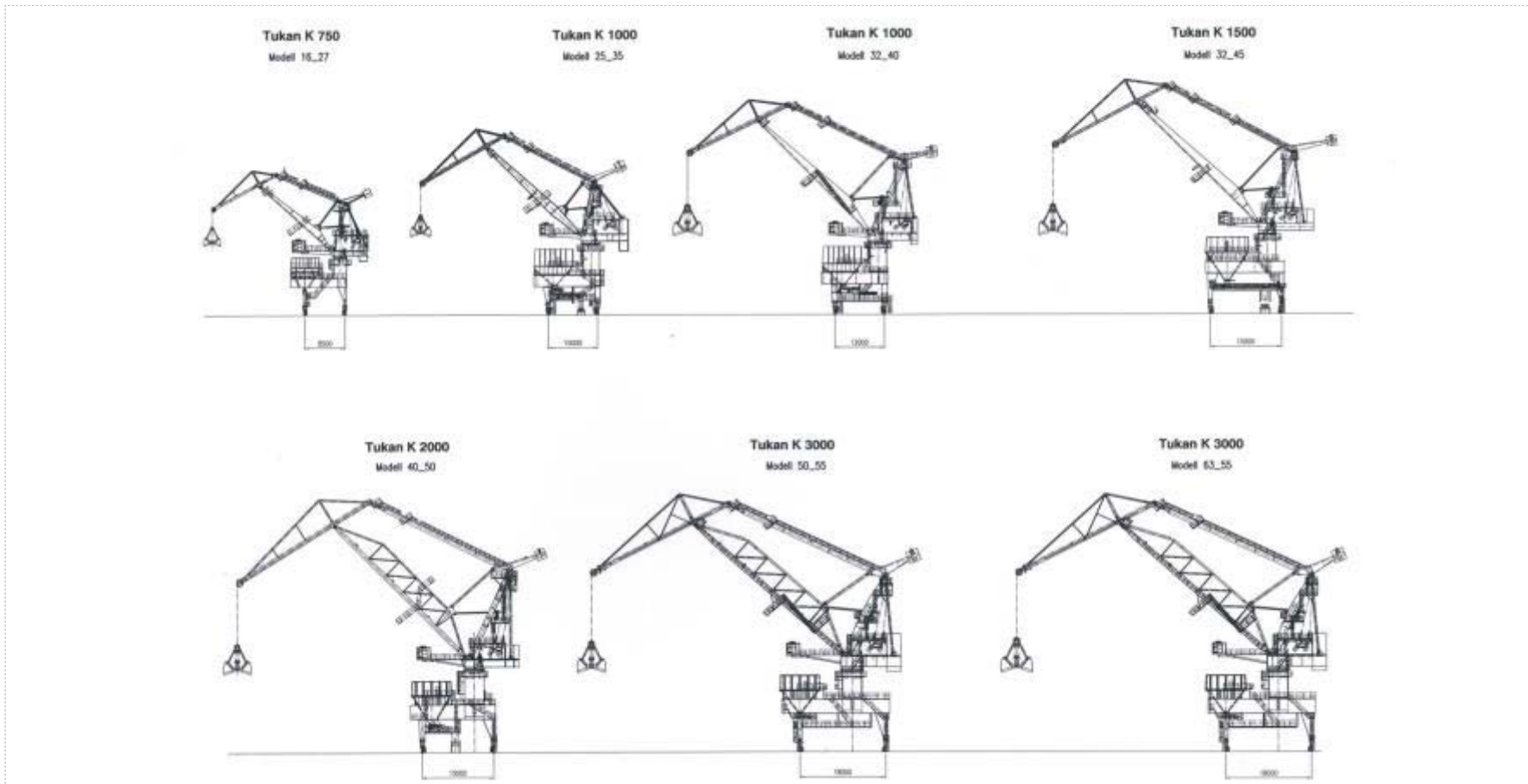
- use of electrical energy only
- energy recovery / back feeding system
→ energy exchange between the drives or back into the power grid



THE ADAPTABLE CRANE – THE TUKAN KANGAROO SERIES



THE ADAPTABLE CRANE – THE TUKAN KANGAROO SERIES

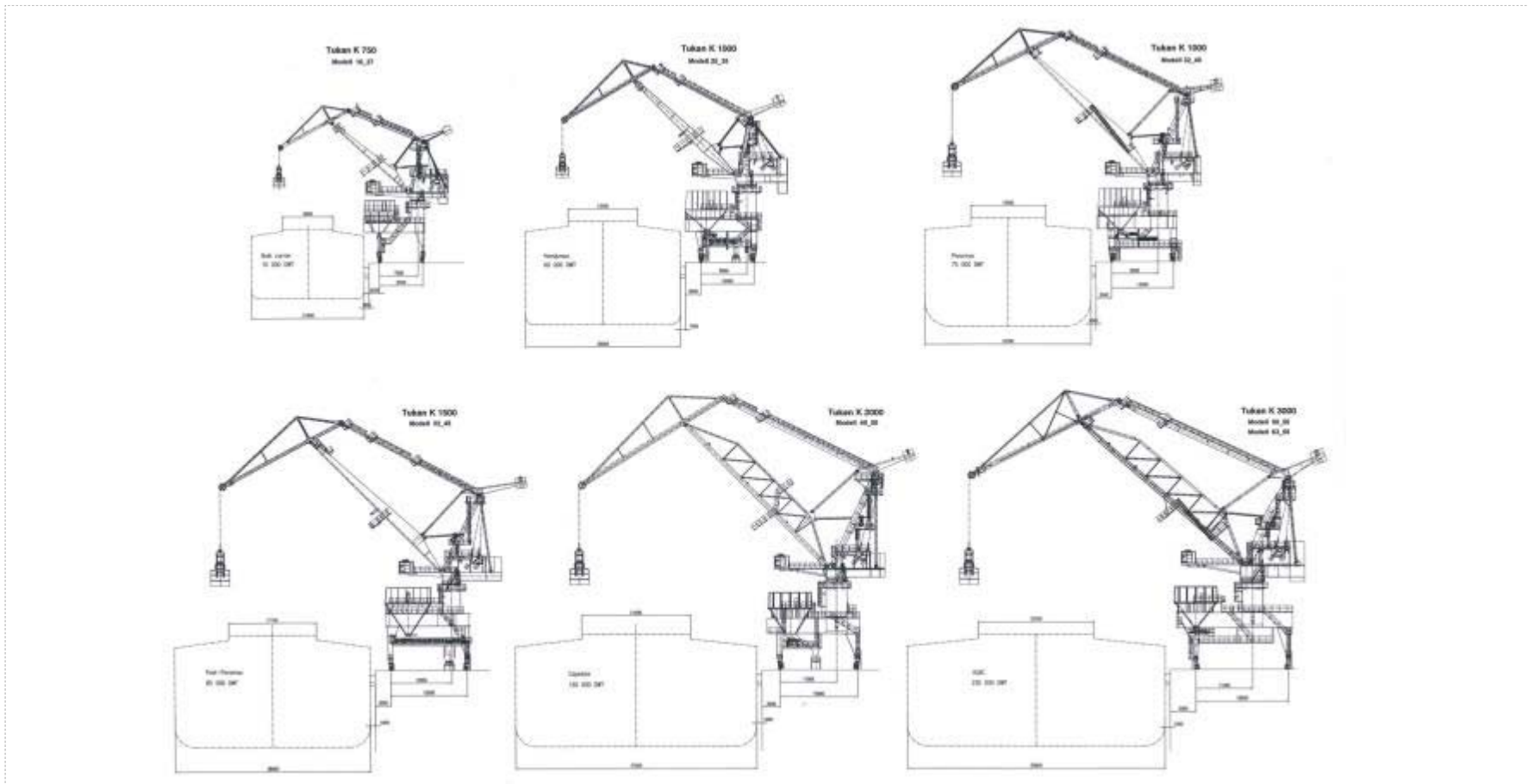


THE TUKAN KANGAROO SERIES – SELECTION AID FOR CUSTOMERS



CRANE TYPE	K 750	K 1000		K 1500	K 2000	K 3000	
model	16_27	25_35	32_40(P)	32_45	40_50	50_55	63_55(P)
outreach (m)	27...6,5	35...7	40...7	45...7	50...9	55...9,5	55...9,5
grab mode (t)	16...20	25...32	32...40	32...40	40...50	50...63	63...75
hook operation (t)	25	40	50	50	63	80	100
project load (t)	up to 50	up to 80	up to 100	up to 100	up to 125	up to 160	up to 200
ship dimensions	Useful combination						
free digging capacity (t/h)							
16.000 dwt bulk carrier max. capacity	yes 600	yes 1000					
60.000 dwt handymax max. capacity	-	yes 800	yes 1200	yes 1400			
75000. dwt panamax max. capacity	-	-	yes 1000	yes 1200	yes 1600	yes 2100	yes 2500
85.000 dwt postpanamax max. capacity	-	-	-	yes 1000	yes 1400	yes 1900	yes 2250
160.000 dwt capezise max. capacity	-	-	-	-	yes 1200	yes 1750	yes 2000
220.000 dwt VLBC max. capacity	-	-	-	-	-	yes 1500	yes 1750

THE TUKAN KANGAROO SERIES – ATTRIBUTION TO BULK CARRIERS



THE ADAPTABLE CRANE – THE TUKAN KANGAROO SERIES

Tukan Kangaroo 1500

Outreach: 40 m
Grab mode: 40 t

Year of manufacture: 2008
good: coal, limestone, iron ore
handling capacity: 1200 t/h
free digging (handymax)

customer: CSH Huachipato
place: Talcahuano Chile



THE ADAPTABLE CRANE – THE TUKAN KANGAROO SERIES



Tukan Kangaroo 2000

outreach: 40m
grab mode: 50t

year of manufacture: 2008
good: Gabbro
handling capacity: 1500 t/h free digging (panamax)

customer: Qatar Petroleum
place: Doha Qatar



THE ADAPTABLE CRANE – THE TUKAN KANGAROO SERIES



Tukan Kangaroo 3000

outreach: 50m
grab mode: 55t

year of manufacture: 2012
good: coal
handling capacity: 1750 t/h free digging (cape size)
1900 t/h free digging (post-panamax)
2100 t/h free digging (panamax)

customer: Rhenus Logistics
place: Wilhelmshafen Germany



HIGHEST HANDLING RATES AND LOWEST ENERGY CONSUMPTION



- short travelling ways due to integrated hopper
- slewing motion not necessary but possible
- only hoisting and luffing movement necessary
- semi-automatic mode possible
- no grab change necessary for different densities in a product as equipped with electronical digging depth optimization system,
- various load discharging systems possible as pant system for simultaneous feeding of different conveyors, truck loading stations inside or outside the gantry or combination of it
- as multipurpose crane available for hook and spreader operation
- energy recovering / back feeding system
- dust collecting equipment

„An efficient green solution for a clean environment“

THANK YOU FOR YOUR ATTENTION!

