E-CRANE® QUILIBRIUM

YOUR PARTNER IN **PERFORMANCE**

GENERAL INTRODUCTION

INTRODUCTION

TIMELINE

1990: OUR BEGINNING:

E-Crane starts as a small engineering firm located in the town of Eeklo, Belgium

1996: FIRST E-CRANE

Sold to CCB, part of Italcementi Group

1998: SALE OF FOUR E-CRANES TO USA

This opened up a big new market

2000: E-CRANE USA FOUNDED:

Increasing demand required a presence in North-America

2000: NEW/BIGGER OFFICE AND ASSEMBLY SHOP

Continued and steady growth led to moving to a new facility in Adegem

2005: CARINOX CRANES SOLD

One of the last greenfield steel mills in Europe. E-Crane helped design the scrap yard for optimal efficiency

TIMELINE (CONTINUED)

2009: BLOCKBUSTER!

With a weight of over 1200 tons this remains the largest hydraulic crane ever built

2012: E-TOWERS ACQUIRED

State of the art manufacturing facilities for steel structures for cranes & wind towers

2016: E-CRANE ASIA FOUNDED

With a large population of E-Cranes in Asia a local presence was required to better serve our clients

2018: E-CRANE INDONESIA FOUNDED

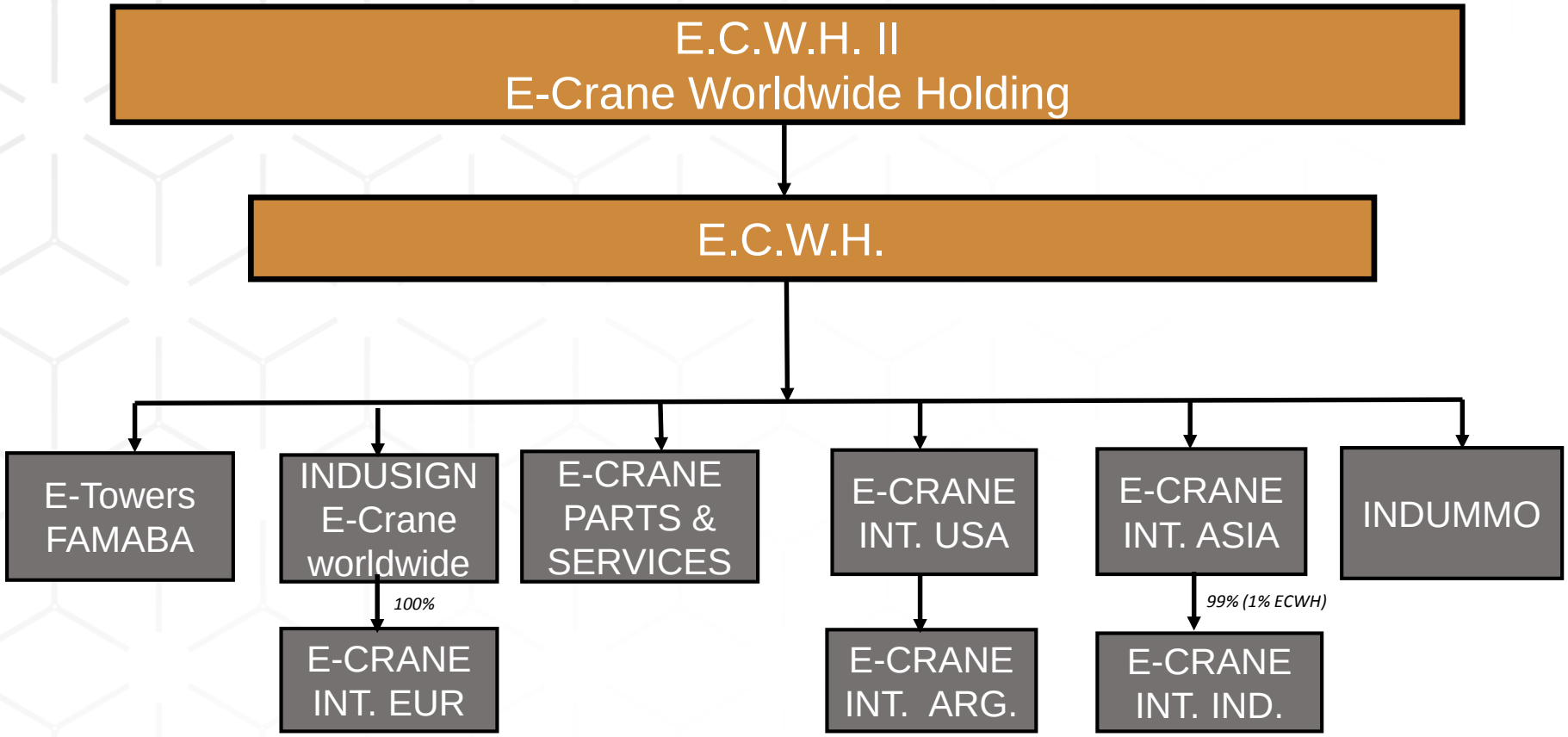
Service Centre for Indonesia & the SEA market

TODAY

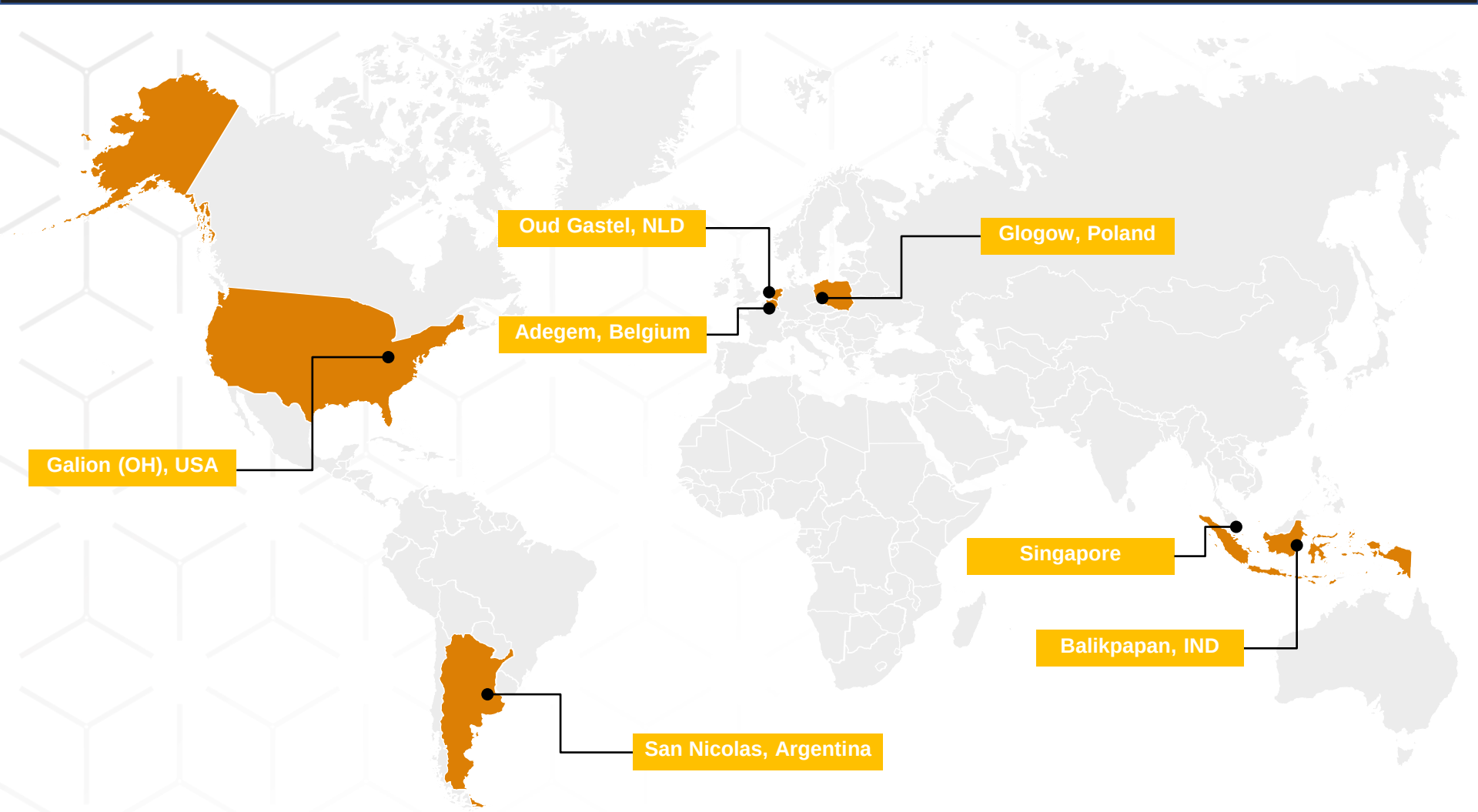
E-Crane has a global presence as the world leader in hydraulic balance cranes

Group employs >500 FTE

Organization chart



WHERE ARE WE?


Oud Gastel, NLD
Glogow, Poland
Adegem, Belgium
Galion (OH), USA
Singapore
Balikpapan, IND
San Nicolas, Argentina

THE PRINCIPLE OF EQUILIBRIUM

E-Crane - The best of both worlds

Excavator

- Fixed boom, fixed counterweight
- Diesel Hydraulic
- Rating based on Stability, Power
- NTE 75% tipping moment
- NTE 87% of hydraulic capacity

Lift Crane

- Lattice boom, fixed counterweight
- Diesel Mechanical
- Rating based on Service Life (Fatigue)
- FEM Class A8 – U7 or U8
- 2 million full load cycles

Best of Both Worlds

The Balanced Design for Energy saving

Balance is one of the key factors for any crane in the industry. Without the right balance, a crane will lose its stability. To avoid this, all cranes know the principle of the ‘counterweight’. In most cases this counterweight is at a fixed point on the crane.

Only E-Crane Finds True Balance

The balance crane provides a fail-safe system which guarantees that the crane will always be in balance. The link between the stick and counterweight creates a 4-bar mechanism, which ensures that the counterweight continuously balances the total weight of the steel structure along with half of the operational load. As the lifting radius is varied, the change in the load moment is automatically equalized by the moving counterweight.

Best of Both Worlds

The Physics

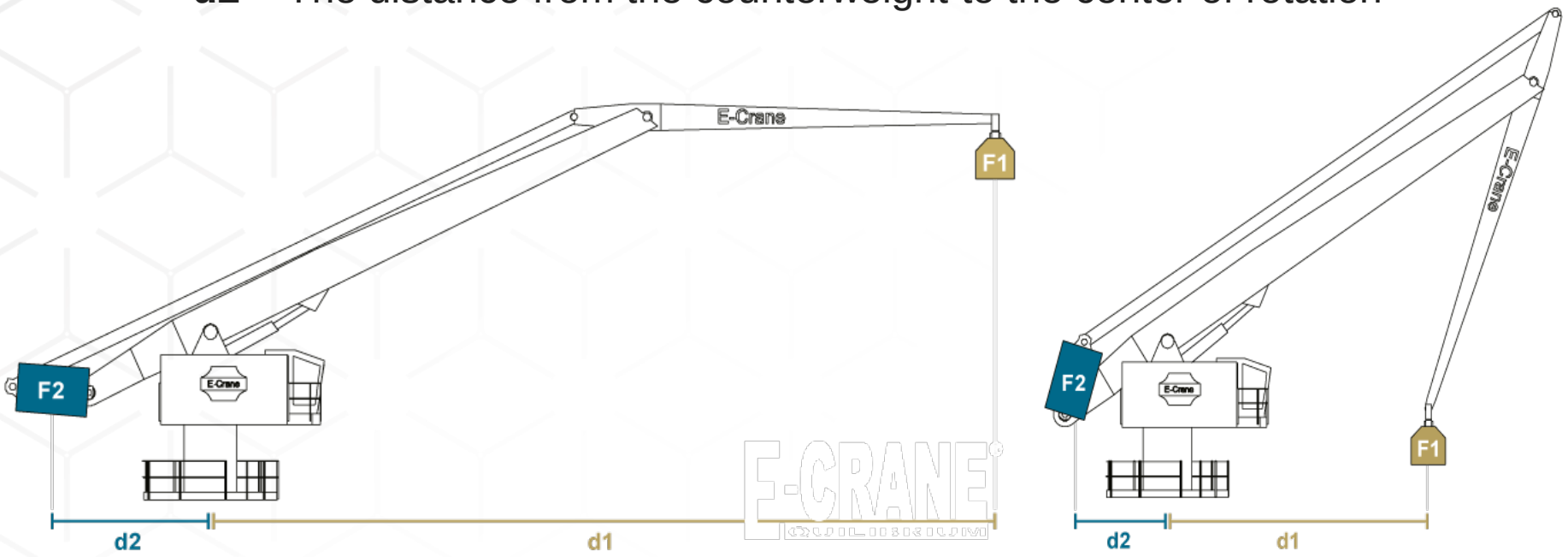
The balance or equilibrium of a crane can be described as: F1 x d1 = F2 x d2

Where **F1** = The load applied at the end of the stick

D1 = The distance from the load center of rotation

F2 = The load of the counterweight

d2 = The distance from the counterweight to the center of rotation



E-CRANE GENERAL INFO

E-Crane Fact Sheet

Modular Product Series
700B, 1000C, 1500C, 1800C, 2000C, 3000C, 4000C

Custom Built Lowers
Pedestal, Rail, Crawlers, Floating

Capacity
Up to 50 t

Reach
Up to 50 m

Production
Up to 3000 TPH

NEW PRODUCT RANGE

Series	Model	Crane Reach	Crane Lift Capacity (SWL)					
			Grab		Hook		E-Handlers	
		Max	Max (Sweetspot)	Min	Max (Sweetspot)	Min	Max	Adv. Cap. (Sweetspot)
		m	ton	ton	ton	ton	ton	ton
700B	4248	24,8	6,4	4,0	7,7	5,0	13,6	8,8
	4264	26,4	6,2	4,0	7,5	5,0	13,6	8,5
	4290	29,0	5,8	4,0	7,0	5,0	11,9	7,9
	4317	31,7	5,6	4,0	6,7	5,0	11,9	7,4
1000C	7290	29,0	10,0	7,0	12,5	9,0	20,3	12,9
	7317	31,7	10,0	7,0	12,0	9,0	20,3	12,5
	7359	35,9	9,0	7,0	11,0	9,0	17,3	11,2
	7382	38,2	9,0	7,0	10,5	9,0	17,0	10,8
1500C	10290	29,0	15,0	10,0	18,5	12,0	29,9	19,6
	9317	31,7	15,0	9,0	18,0	12,0	29,9	18,0
	9359	35,9	13,0	9,0	16,0	11,5	25,8	17,2
	9382	38,2	12,5	9,0	15,0	11,5	23,9	15,2

NEW PRODUCT RANGE

Series	Model	Crane Reach	Crane Lift Capacity (SWL)					
			Grab		Hook		Superlift (SL)	
		Max	Max (Sweetspot)	Min	Max (Sweetspot)	Min	Max	Adv. Cap. (Sweetspot)
		m	ton	ton	ton	ton	ton	ton
1800C	14317	31,7	20,0	14,0	25,0	19,5	44,4	26,5
	13359	35,9	18,0	13,0	22,0	17,0	37,0	23,4
	12382	38,2	17,0	12,0	21,0	16,0	36,2	21,6
	12421	42,1	16,0	12,0	19,0	16,0	31,4	19,9
2000C	15317	35,9	24,0	15,0	29,0	19,5	52,1	30,5
	14359	38,2	21,0	14,0	25,0	17,0	43,5	27,0
	13382	42,1	20,0	13,0	24,0	16,0	42,5	25,5
	13421	45,0	18,5	13,0	20,0	16,0	36,9	23,5
3000C	23359	35,9	34,0	23,0	42,0	28,0	72,0	42,2
	21382	38,2	32,0	21,0	39,0	26,0	70,5	40,1
	19421	42,1	30,0	19,0	36,0	25,0	60,0	36,4
	18450	45,0	29,0	18,0	35,0	23,0	60,0	33,5
4000C	30382	38,2	47,0	30,0	58,0	37,0	96,9	58,2
	28421	42,2	43,0	28,0	52,0	35,0	84,2	54,1
	27450	45,0	41,0	27,0	50,0	29,0	83,8	48,8
	26478	47,8	39,0	26,0	47,0	28,0	74,4	47,7

E-Crane Advantages

Balances means Low Energy Consumption

- Lower loads resolved by structure
- Less power means lower costs
- Quiet operation
- Longer component life
- Lower total Cost per Offloaded ton
- 50-75% less energy consumed compared to
- traditional material handlers

Electric Driven Hydraulics

- 132-630 kW Installed Power
- Load Sensing, Power Limiting Hydraulic System
- Integrated CAN-based control system
- Independent Closed Loop Swing with Dynamic Energy Regeneration
- Proven Suppliers of Hydraulic Components

E-Crane Advantages

Push Down Force

- The E-Crane can push down 50% of its duty cycle lift capacity
- Greatly improve grab fill factor
- Lightweight grabs allow for more Volume
- Increase production

Hydraulically Controlled Grab

- Continuous 360 degrees rotation
- Precise positioning
- Hydraulically opened and closed
- Boom Float Feature
- Pre-Engineered Lift Rings for lifting dozer

E-Crane Advantages

Low Maintenance Costs

- Simple Mechanical Design
- Oversized Pins and Bushings
- Modular Components
- Standard Automatic Lubrication System

Ergonomic for the Operator

- Elevated, Extended cab for optimal visibility into vessel
- Climate controlled cab
- Electronic controls with integrated display
- Very low noise levels
- Balanced machine with low vibrations

Applications: Barge Unloading

Maximum Efficiency and Flexibility

- The precise E-Crane can unload and fully clean barges without assistance
- Easily switch grabs for different commodities utilizing the E-Crane Quick Change system
- Long outreach and down reach allow for unloading any type of barge design

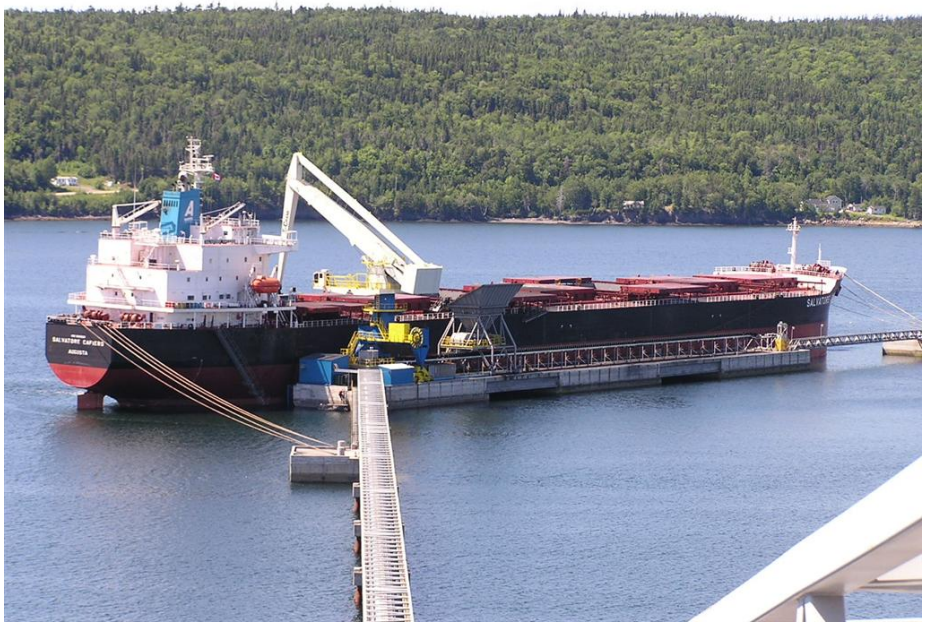
Applications: Ship Unloading

Low Cost Reliability

- The simple E-Crane provides owners the lowest cost-per-offloaded ton compared to dedicated unloaders or cable cranes

- The balanced E-Crane needs only a fraction of the dock infrastructure compared to dedicated machines

- Provide versatility for midstream operations ship-to-ship or ship-to-barge



Applications: Scrap Catering

Unmatched Versatility

- Unload from rail cars, trucks, barges or ship
- Feed shears, shredders or fill baskets
- E-Crane offers value added yard layout design services for scrap or steel mill applications
- Add real estate by utilizing unmatched outreach and lift height for stockpiling

Applications: Dredging

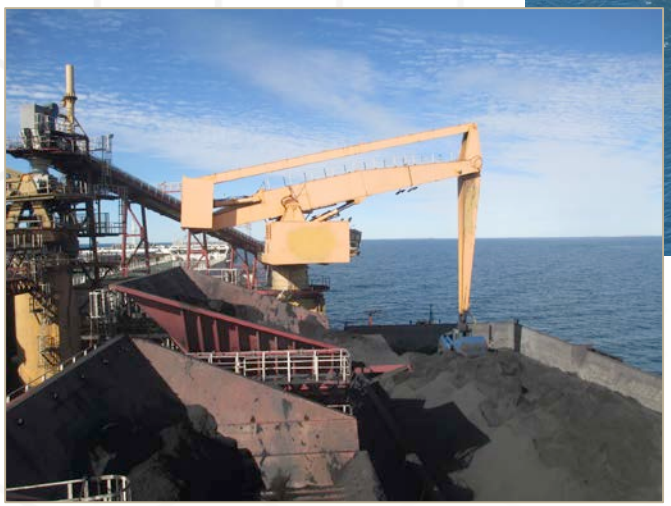
<u>A perfect fit for any Maritime application</u>

Maintenance dredging, dam reinforcements, salvaging, sea wall construction, reclamation or preservation

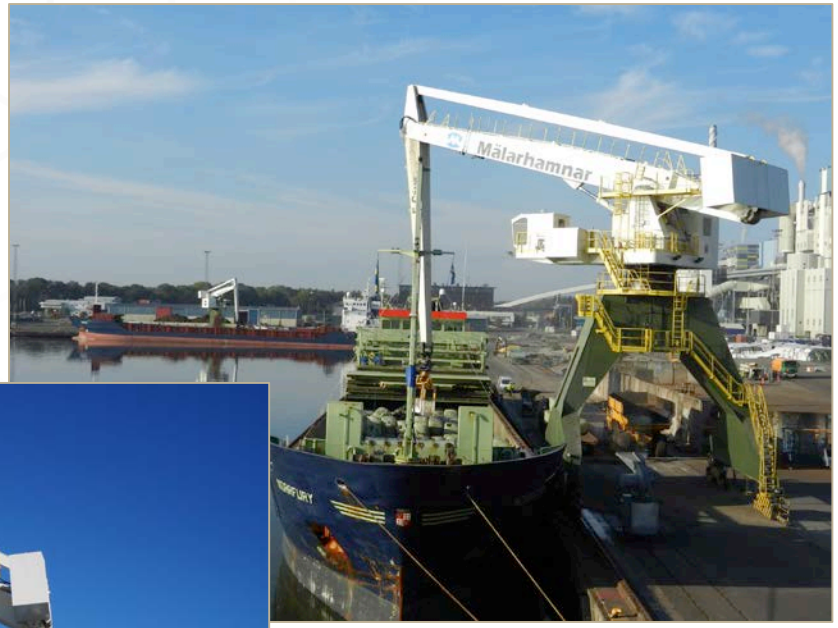
REFERENCE PROJECTS

Bayan Resources

CITIC PACIFIC Mining

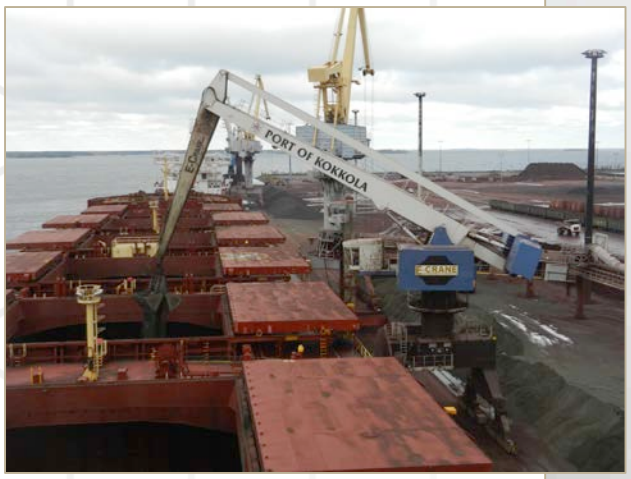


Mälarhamnar



Sherwin Alumina (Glencore)

Port of Kokkola



ArcelorMittal Bremen

Aperam - Carinox

With E-Crane, All is Possible

INSEE

GALLOO

bp

CITIC PACIFIC

Boskalis

emr

NUCOR

LD
LouisDreyfus
ARMATEURS

COFCO
AGRI

AEP
AMERICAN
ELECTRIC
POWER

Van Oord
Marine ingenuity

GLENCORE

BECHTEL

MURRAY ENERGY CORPORATION

DEME
Dredging, Environmental & Marine Engineering

LafargeHolcim

TISCO

WATCO
COMPANIES

HARSCO
METALS & MINERALS

ArcelorMittal

outokumpu

KINDER MORGAN

Tenaris

Cargill

GRUPO ANDRÉ MAGGI

WHAT WE DO

TO PROVIDE CUSTOMIZED AND DURABLE CRANE SOLUTIONS THAT HELP OUR PARTNERS WITH THEIR MOST COMPLEX AND HEAVY-DUTY HANDLING NEEDS, ALL WHILE HELPING OUR CUSTOMERS SIGNIFICANTLY REDUCING THEIR POWER CONSUMPTION, OPERATING COSTS, AND ENVIRONMENTAL IMPACT OFFERING CUSTOMIZED MATERIAL HANDLING SOLUTIONS BUILT AROUND THE E-CRANE

WE BUILD THE BIGGEST HYDRAULIC CRANES IN THE WORLD (WEIGHT 90 TO 1200 TONS)

MARKET LEADER FOR CRANES IN SCRAP CATERING IN THE STEEL INDUSTRY

THANK YOU

CONNECT WITH US TODAY @ **E-CRANE.COM**