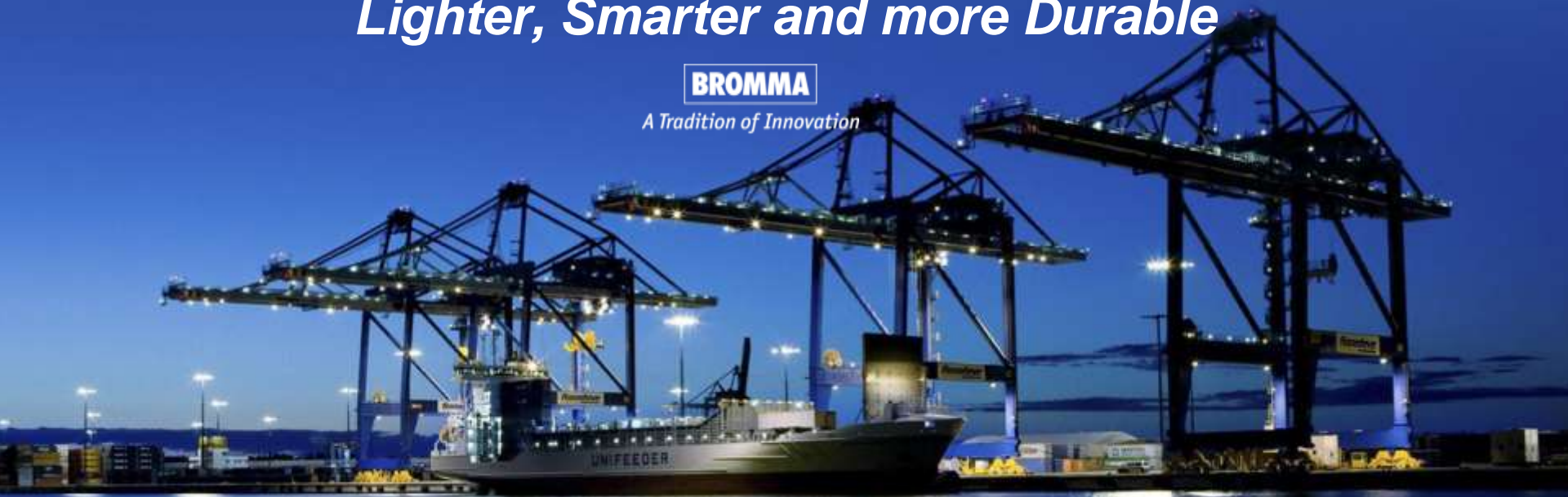


Optimized Spreader Performance

Lighter, Smarter and more Durable

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Introduction:

- Spreader Tare Weight
- Spreaders are getting smarter
- Material and durability
- Bromma R&D – Twistlock example
- What is good for the environment is good for business

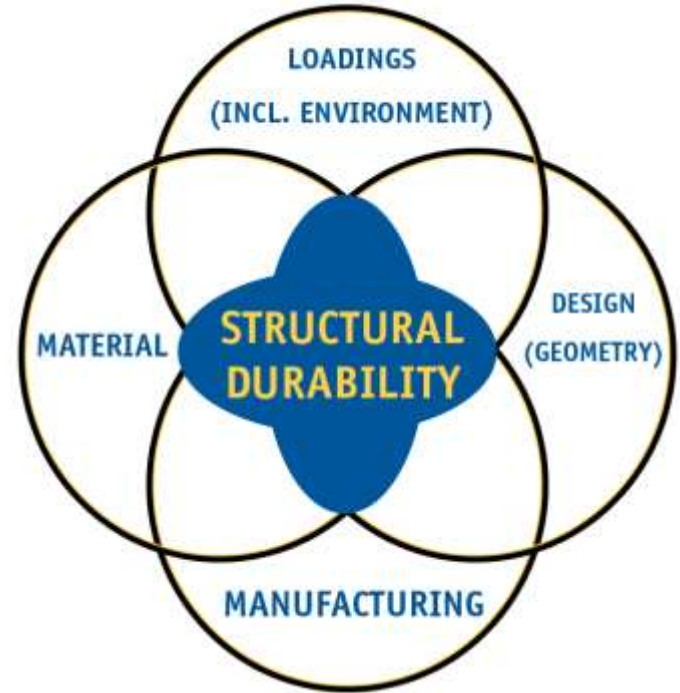




The spreader represents typically less than 2% of the investment of a Quay Crane.

Structural Durability

- The structural durability of a spreader and its sub-component depends on a few factors:
 - Design (Geometry)
 - Material
 - Manufacturing
 - Loadings (including environment)



Bromma Spreaders are Lighter

	Compared to other brands
STS45	1-2 tons lighter
YSX40E YSX45E	>0,8 tons lighter

Conforming to EN 13001; DIN 15018 H2B4,
FEM 1.001; British Standard BS 2573



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Effects

(per ton weight difference & 60 000 moves)

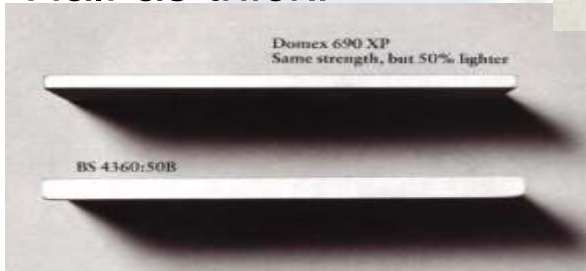
STS	
Energy consumption	1 500 USD / year
Crane life length	+ 8% (or 1,6 years on a 20y crane life)
Yard	
Energy consumption (electric)	400 USD / year
Energy consumption (diesel driven RTG)	1 000 USD / year
Crane life length	+ 12%

World class engineering

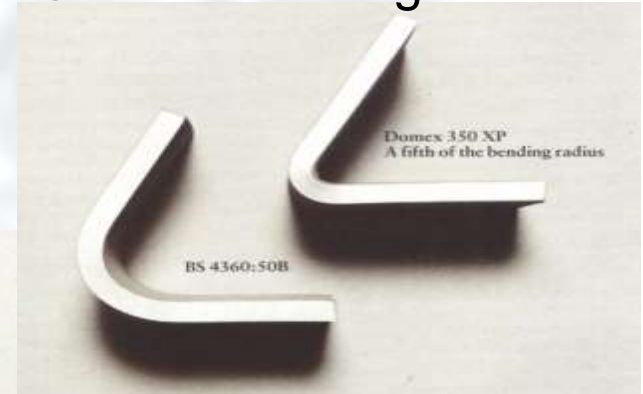
Twice as strong!



Half as thick!



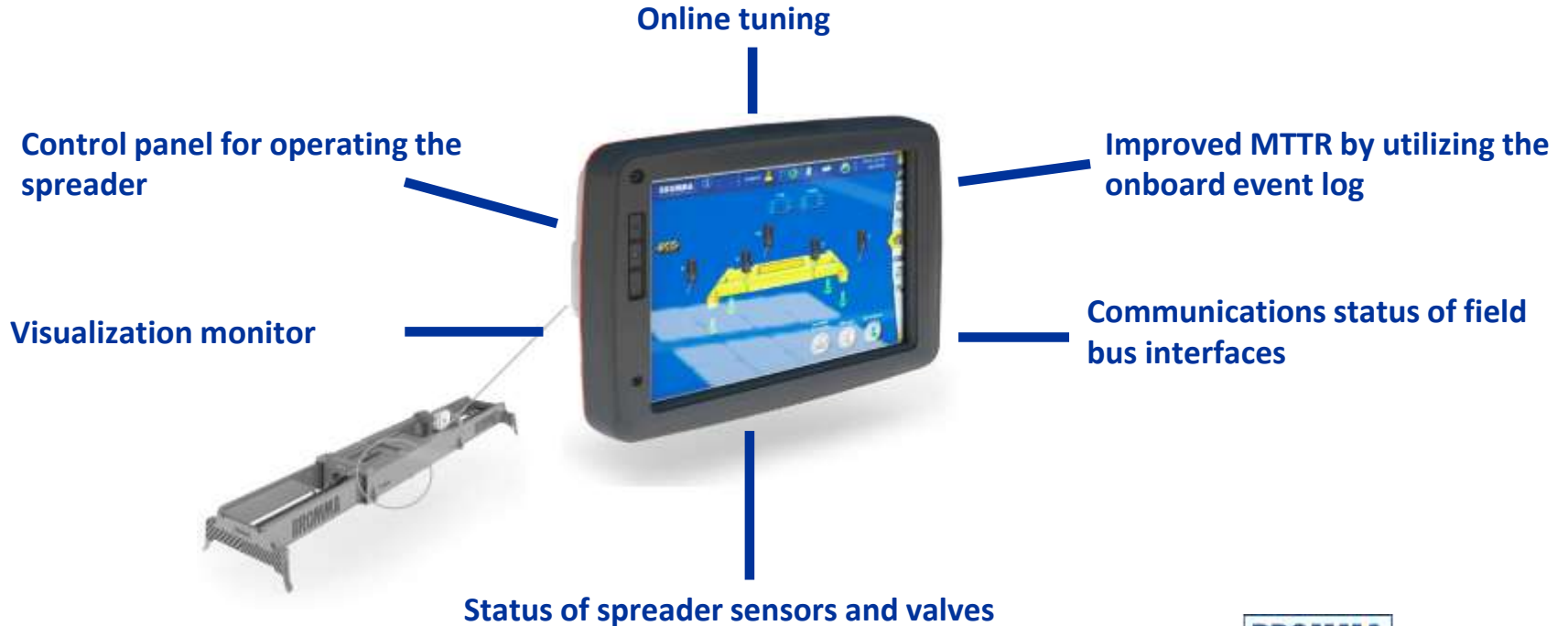
Smaller bending radius!



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Bromma Spreaders are Smarter



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Research & Development

Key values

- Safety
- Environmental responsibility
- Reliability
- Productivity

Tradition of innovation

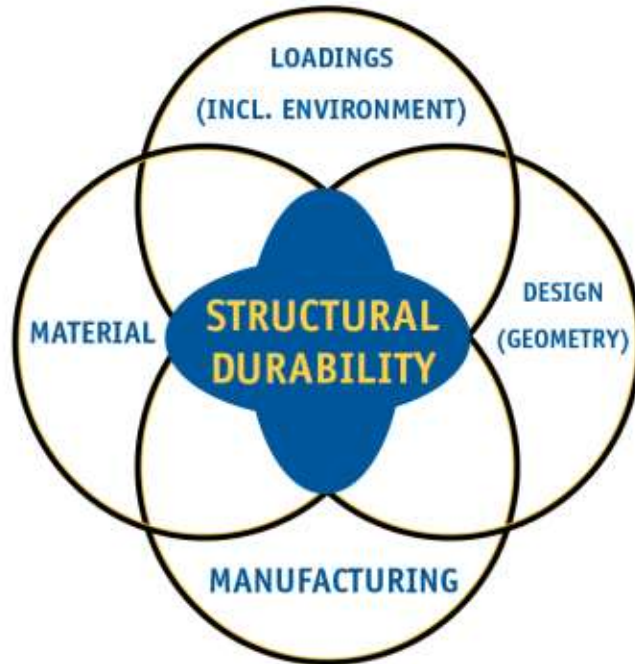
- Strong R&D organization
- Close to the customers
- SafePort™ solutions

In figures

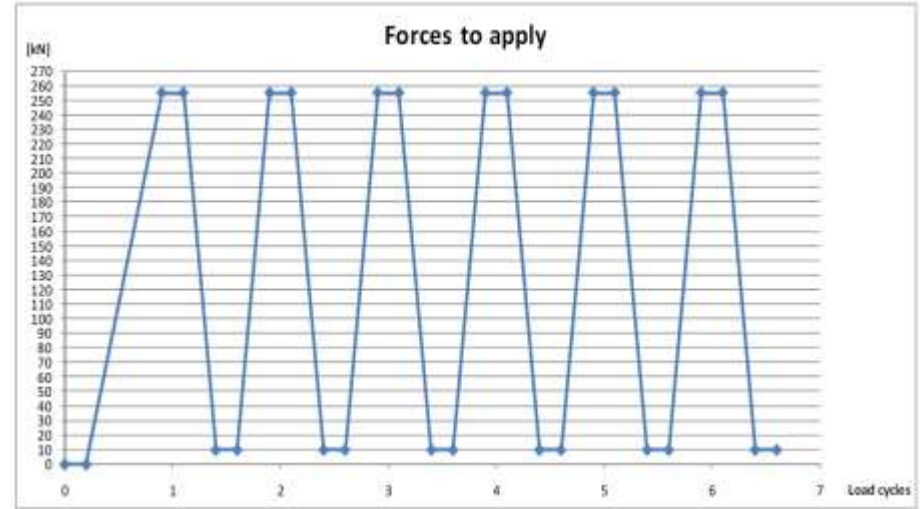
- R&D investment = 6.1%



More Durable Twistlock Pin example



Evaluation of twistlocks



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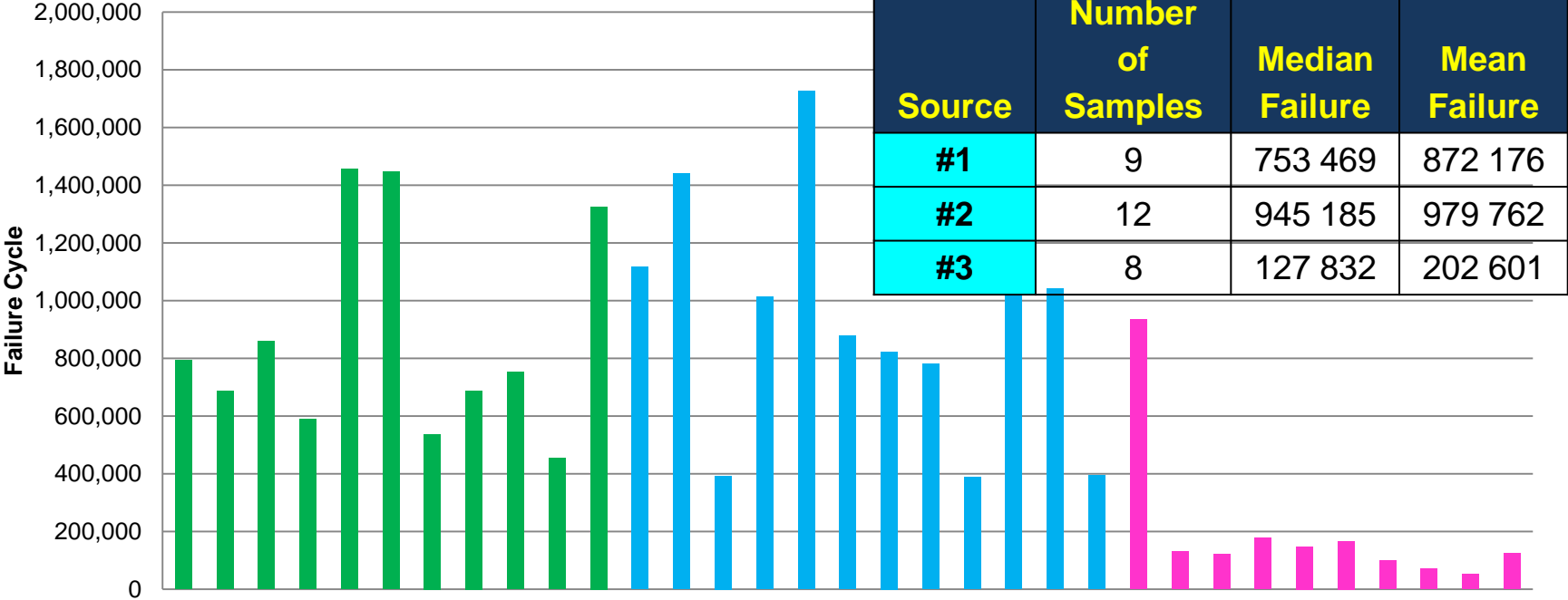
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Source 1 – Bromma Supplier 1

Source 2 - Bromma Supplier 2

Source 3 - Non Bromma

Results from twistlock tests



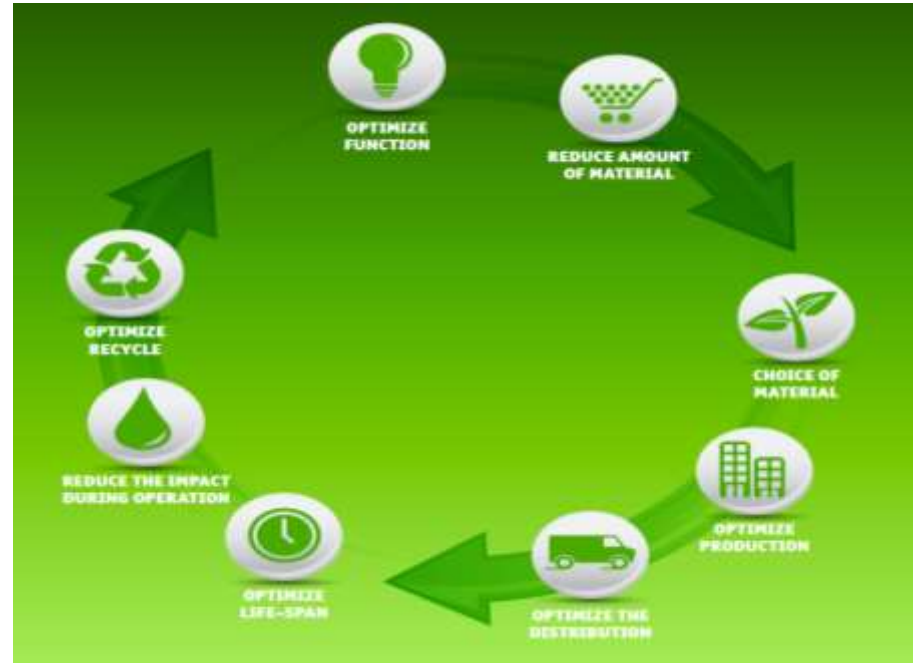
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Environmental leadership

- Bromma takes responsibility through the complete life cycle
- Proactive approach to environmental questions
- Environmental thinking is incorporated in all activities
- The environmental targets are clear – and not only focusing on CO₂

(To visualize the Bromma environmental ambition: [Read how the use of cleaner steel lowers emissions by 90%...](#))



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**CHCL – Container Handling Corporation Limited has recently invested in 4 ship to shore a 8 Yard spreaders manufactured by Bromma.
From all at Bromma we wish to thank CHCL for their continued support.**

The image features large, bold, blue letters 'BRÄ' on a yellow background. The letters are stylized, with the 'B' and 'R' having rounded, bulbous shapes. The 'Ä' is composed of two vertical bars connected by a horizontal bar at the top. A yellow rectangular box is superimposed over the middle of the letters, containing the text 'SWEDISH HERITAGE' and 'QUALITY ASSURED' in blue, sans-serif, uppercase letters.

SWEDISH HERITAGE
QUALITY ASSURED