ADVANCED DRIVE SOLUTION FOR MOBILE HARBOR CRANES

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Mobile Harbor Cranes
ADVANCED DRIVE SOLUTION FOR MOBILE HARBOR CRANES

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KONECRANES GOTTWALD MOBILE HARBOR CRANES

• Invented in 1956 – 60+ years ago
• Applied from the very beginning: (diesel-)electric drives
• Using the most favorable energy of the future
• Today:
  Marketed under the Konecranes Gottwald label
MOBILE HARBOR CRANE CONSTRUCTION KIT

• For quays and off the coast

• Seven types including:
  • Rubber-tired mobile harbor cranes
  • Portal harbor cranes
  • Floating cranes

• All types following same drive concept
DRIVE SYSTEM follows MOTION

- Electric hoisting
- Electric slewing
- Hydraulic luffing

➢ Allows for energy recuperation during lowering and slewing deceleration
ELECTRIC DRIVE CONCEPT

Electric drives

• Use most favorable form of energy
• Are the most eco-efficient drives in the market
• Are extensively used in ports
• Are used in Konecranes Gottwald Mobile Harbor Cranes since 1956
• Fit perfectly for hybrid solutions
• Make it easy to connect the crane to harbor mains (possibility to feed back recuperated energy into mains)
ECO-EFFICIENT – PROVEN HYBRID TECHNOLOGY COMBINED WITH A DOWNSIZED DIESEL ENGINE

Diesel generator

• Volvo Penta TWD16-series 625 kW six-cylinder diesel engine
• Optionally with SCR exhaust treatment for compliance with EPA Tier 4f and future EU Stage V

Electrostatic double-layer capacitors (ultracaps) as short term energy storage

• 125 kW modules
• Long lifetime
• Very robust
PROVEN HYBRID DRIVE TECHNOLOGY

Konecranes Gottwald hybrid drive

- Available as option since several years
- Reliable operation in various crane models
- Reduces fuel consumption up to double-digit percentage range*
- Avoids engine peak performance
- Lowers exhaust and noise emissions significantly
- Minimizes engine wear considerably

* depending on operating conditions and crane capacity
Perfectly Harmonized

Ultracaps match...
- ... form of energy
- ... cyclic operation
- ... average cycle time
- ... power demand
- ... energy demand
- ... demanding surroundings
MULTIPLE DRIVE CONFIGURATIONS

All drive configurations can be combined at one machine

• Diesel generator

• Hybrid drive

• External power supply
  – Low voltage
  – Medium voltage

• Most favorable when harbor mains are supplied with power from renewable energy sources
SUMMARY

• New standard drive solution for entire Konecranes Gottwald Mobile Harbor Crane portfolio

• Combines proven hybrid technology and a downsized diesel engine

• Use of only one engine type throughout whole model range

• Motor optionally with SCR technology for compliance with EPA Tier 4f and future EU Stage V

• Ultracap modules as required

• Combination with on-shore electrical power supply possible
**BENEFITS**

- Reduces fuel consumption
- Minimizes noise
- Simplifies service
- Lowers exhaust emissions
- Decreases engine wear