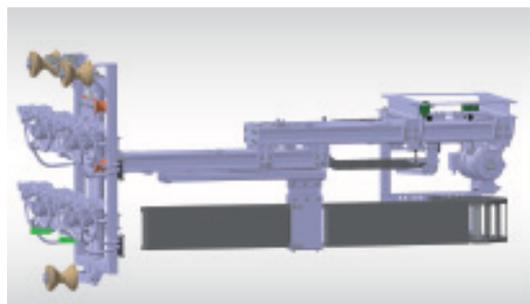
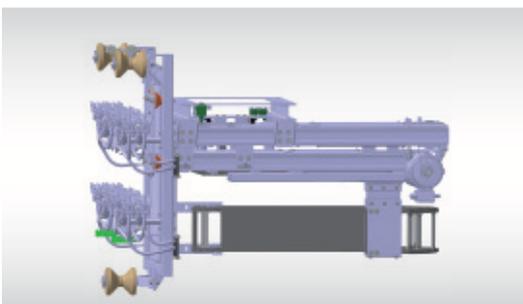


VAHLE

e-RTG Solutions





Your benefits from the RTG electrification system:

Cost effective

- savings up to 95% of diesel consumption
- reduction of maintenance and operation costs up to 70 %
- reduction of repair expense (diesel generator)
- no manual plugging

Efficient

- quick automated drive-in / drive-out
- individual solutions
- maximum utilization
- short entry zones

Ecological

- substantial reduction of environmental pollution (CO₂ emissions)
- noise reduction
- increasing safety in the terminal

► **amortization possible after only two years operation**



AUTOMATED CONNECTOR SYSTEM

The e-RTGs enter and exit the container aisles and engage the VAHLE conductor system in a completely automated operation. Additional innovative features include auto-steering and anti-collision.

Features of the fully automated telescopic arm

- fully electrical driven, no lifting cylinder
- max. horizontal stroke: 1700mm
- due to modular systems various sizes for particular customer needs
- robust design for use in container ports
- vertical track tolerances: ± 200 mm
- cable arrangement via energy chains
- reduction of wear parts
- control system of the telescopic arm with Siemens Simatic S7 PLC

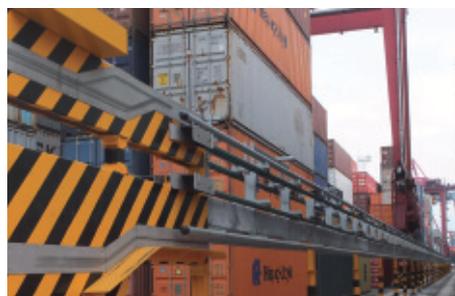
The most economical solution if:

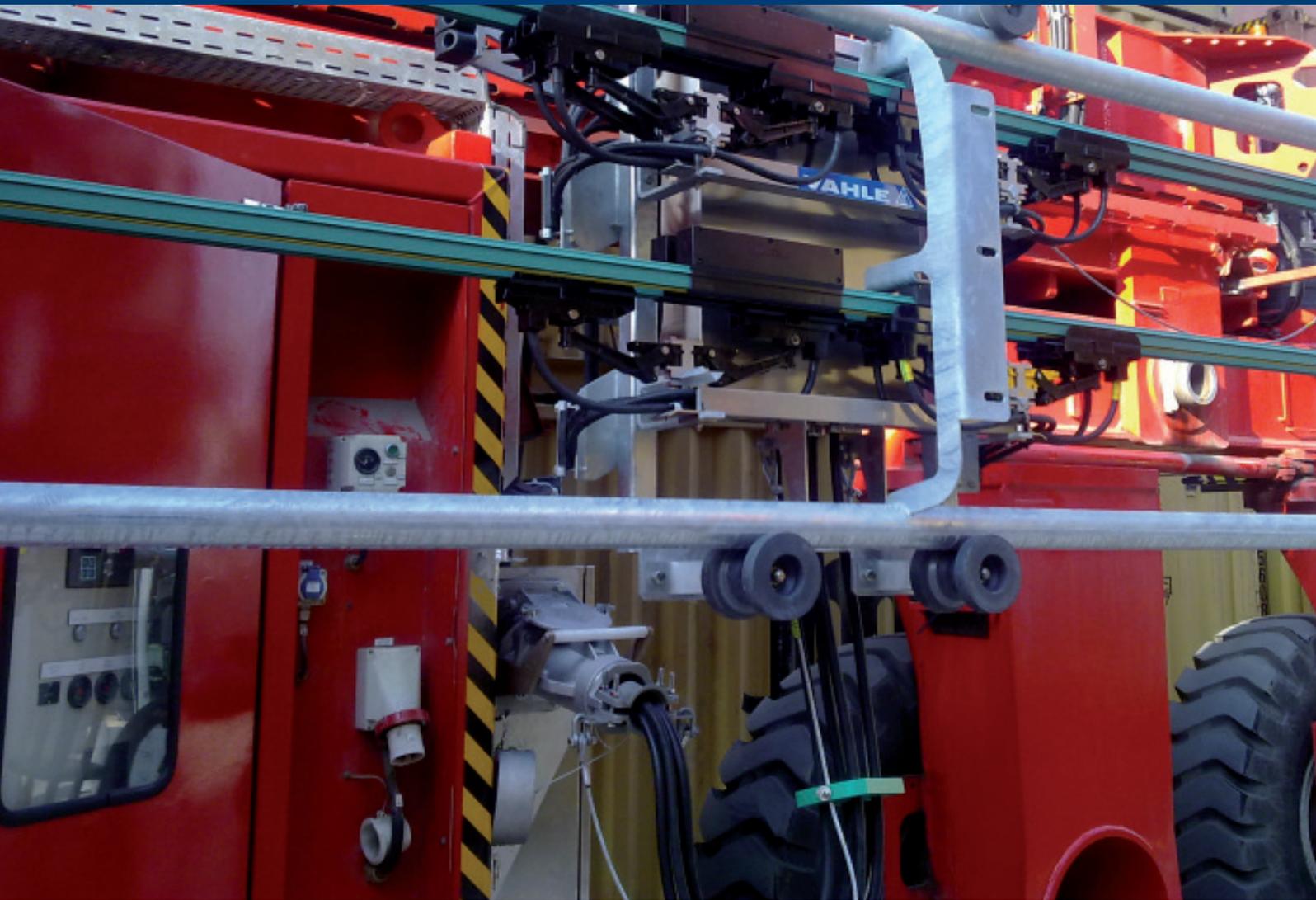
- the RTG changes aisles frequently
- several RTGs are used
- additional features should be added

“Diabolo” Rollers



Innovative Steel support structure





AISLE ELECTRIFICATION SYSTEM

Features:

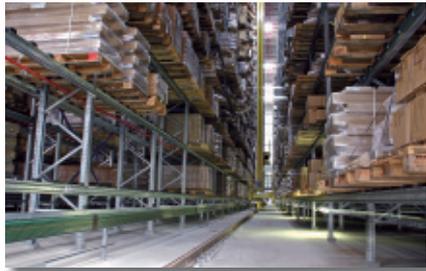
- space saving due to vertical arrangement (2+2 conductors)
- electrification of two aisles from one steel structure
- installation inside and outside the RTG track
- hot-dip galvanized steel structure
- lightweight and robust tubular steel structure
- “diabolo” roller design for multi-dimensional guidance
- rollers of heavy-duty engineered plastic
- minimized moving wear parts (3 rollers only)
- proven and reliable busbar systems - MADE by VAHLE
- heavy-duty components for tough port environment



Open conductor systems



Insulated conductor systems



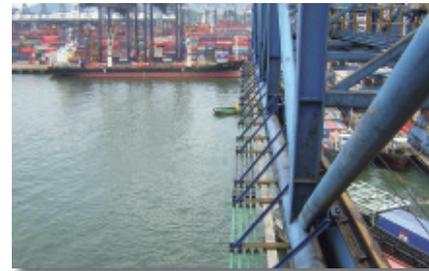
Compact conductor systems



Safety conductor systems



Contactless Power System (CPS®)



Data transmission systems



Festoon systems



Reels



MANUAL CONNECTOR SYSTEM

The RTG drives into the designated aisle. A current collector trolley (mounted at the VAHLE conductor system) is connected to the RTG using steel ropes and a special safety connector.

The VAHLE RTG electrification system supplies the required operating current and ensures environmentally friendly as well as economical operation of the RTG.

Features

- operator assisted drive-in / drive-out
- elimination of electrical hazards due to safety connector

The most economical solution if:

- only a few cranes are in operation
- the RTG does not frequently change the aisle
- PLC is not required (simple design)

Current collector trolley



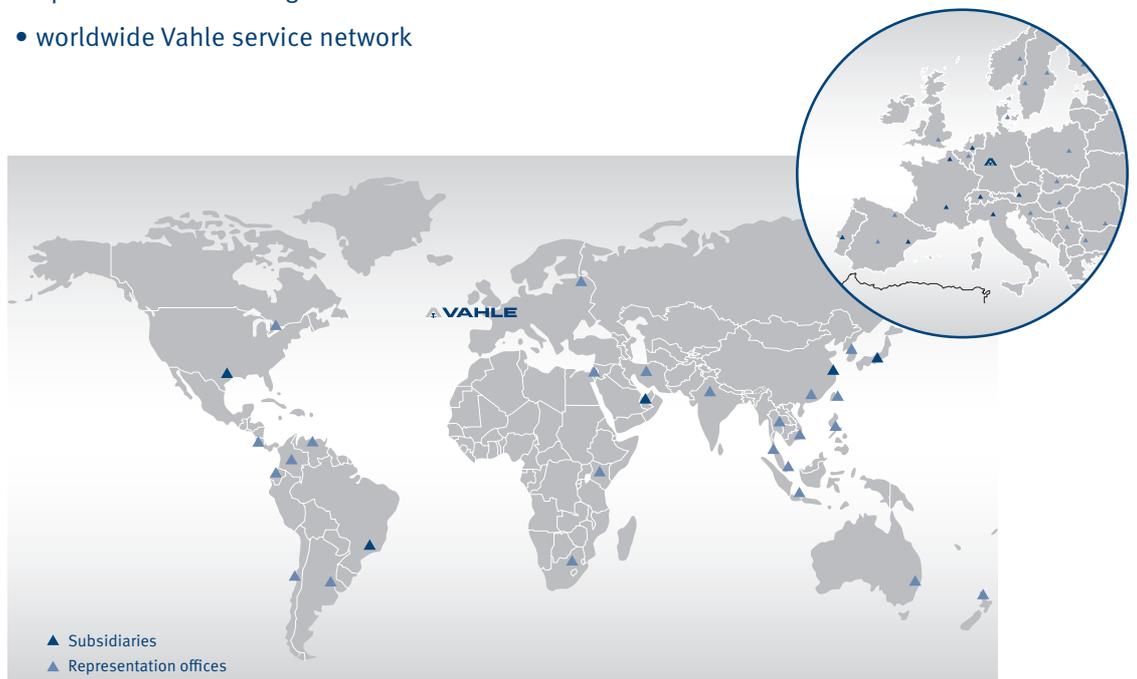
Safety connector





IMPLEMENTATION SOLUTIONS

- retrofit of existing RTG fleets
- new cranes (crane OEM)
- cooperation with your local crane service partner
- optional local sourcing of structural steelwork and installation services
- worldwide Vahle service network





ADDITIONAL E-RTG FEATURES:

- auto-steering system
- anti-collision system
- data communication system
- positioning system
- energy recovery system

MOBILE ELECTRIFICATION IN PORTS

VAHLE develops, manufactures and implements customized power and data transmission systems for various material handling applications including port technology. Here VAHLE provides a complete range of products that are required to electrify different crane types, such as STS and RTG cranes.

Vahle's product range comprises trench systems, cable reels, festoon systems, conductor rails and data transmission systems. The latest innovation is a fully-automated solution for RTG electrification.

