



# Power and Performance for the Port Industry



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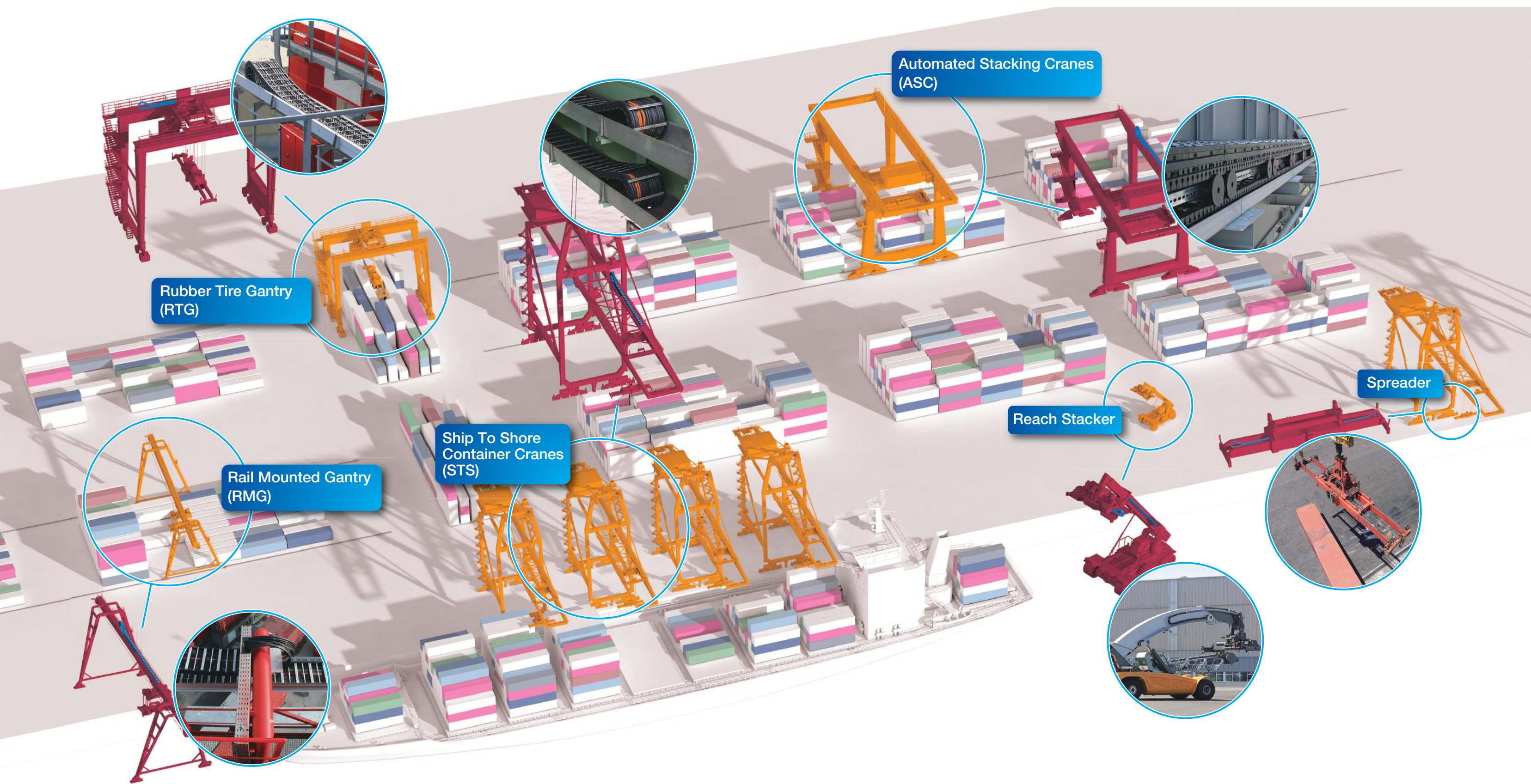
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# INNOVATIVE SOLUTIONS FOR THE PORT AND CRANE INDUSTRY

Time is money in the port industry, and every delay means less profit. High quality, high precision power transmission and conveyor components are a key part of your operations. With nearly a century of successful manufacturing know-how and technical

expertise, Tsubaki can provide the best solution to keep port operations running reliably and total cost of ownership down. Put the Tsubaki Advantage to work for you.



Rubber Tire Gantry (RTG)

Automated Stacking Cranes (ASC)

Spreader

Reach Stacker

Ship To Shore Container Cranes (STS)

Rail Mounted Gantry (RMG)



## INNOVATIVE SOLUTIONS FOR THE PORT AND CRANE INDUSTRY

Proven systems - tested under real conditions

### TRAXLINE®

#### High-Flex Crane Cables - 700 Series

##### Developed for

- Long travel length crane applications
- -35°C to +90°C
- Outdoor/indoor use
- High speed
- Offshore/onshore applications
- Very high electrical voltages
- Small bend radii
- High acceleration

##### Properties

- High-flex design
- Side force resistant
- Seawater resistant
- Ozone resistant
- UV-stable
- Crude oil resistant
- Flame-retardant
- Cut resistant
- Halogen-free
- Silicone-free
- CFC-free
- Conforms to RoHS II
- Marked in meters
- Mud resistant

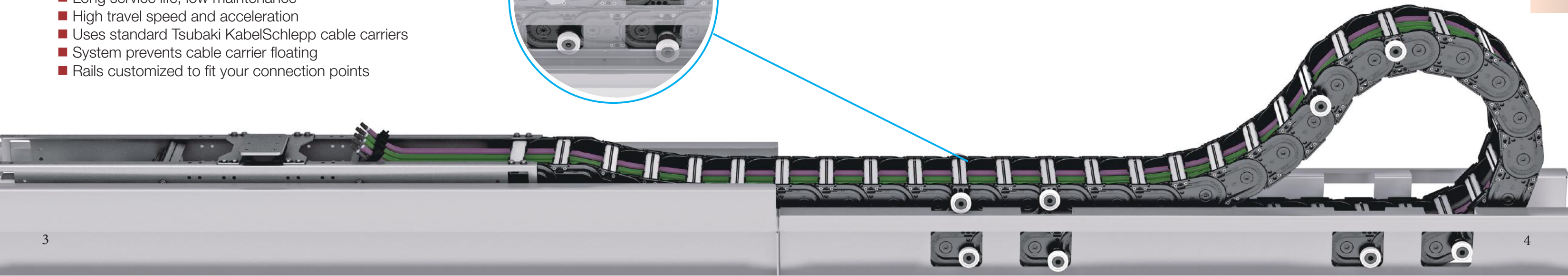
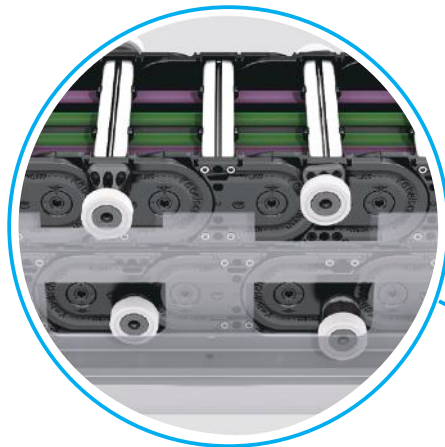


#### Testing facility for all cable carrier types

- Capable of testing two independent cable carrier systems
- Can test travel lengths over 100 meters
- Can test both gliding and rolling systems
- High speed (5m/s) testing

#### Features of Roller Supported Chain (RSC)

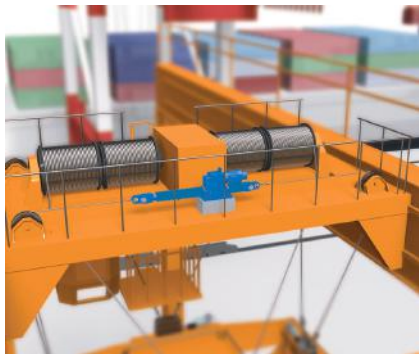
- 100% rolling cable carrier
- Suitable for any travel length
- Rollers decrease push/pull forces 90% on travel lengths of 50m and more compared to gliding arrangements
- Rollers do not contact each other
- Long service life, low maintenance
- High travel speed and acceleration
- Uses standard Tsubaki KabelSchlepp cable carriers
- System prevents cable carrier floating
- Rails customized to fit your connection points





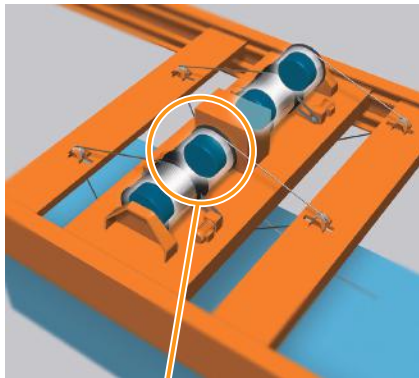
# Power Cylinders & Cam Clutches

Tsubaki Power Cylinders are all-electric linear actuators that can be run with simple wiring - there is no need to run expensive hydraulic lines to power them. The benefits of no oil leaks, lower energy costs and clean operations are driving more port users from fluid power to Tsubaki Power Cylinders worldwide.



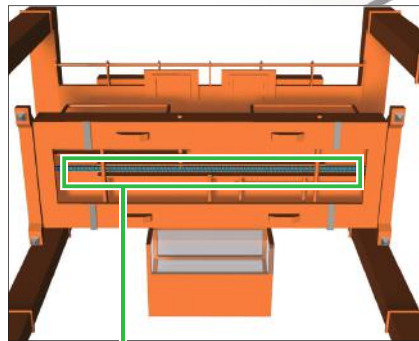
### Container Tilting

Adjusts container tilting (skew, trim, and list) by moving the hoisting rope.

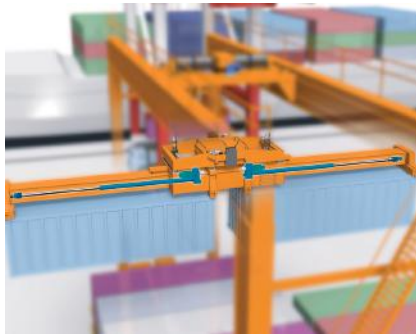


### Anti-sway Mechanism (Cam Clutches)

Tsubaki Cam Clutches are used widely in RTG cranes in the container anti-sway mechanism. Tsubaki offers special models for precise engagement and long life, thereby increasing available operating time and reducing down time.



Tsubaki roller chain drives and shuts the spreader arms.



### Arm Extension

Adjusts the length of the arm to match the size of the container (such as for double containers).

# Drive Chains

Tsubaki drive chains, including Roller Chains, heavy duty Super Chains, and Leaf Chains, can be found in port facilities around the world because they offer the best in chain performance. Port operators use Tsubaki drive systems because their excellent durability reduces replacement frequency from problems associated with breakage and wear.

## Transfer Cranes

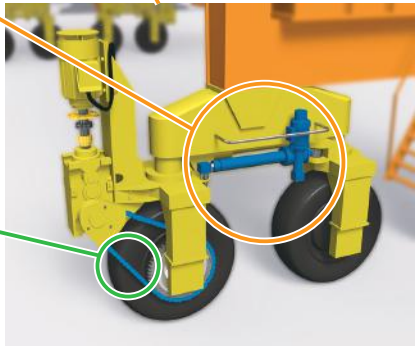


### Power Cylinders (for steering)

Power Cylinders turn RTGs by rotating the wheels 90 degrees.

### Driving

Super Chains drive the rubber tires.



### Lifting

Tsubaki premium leaf chains are used in container lift applications and offer high strength and long wear life. For maximum wear life, choose a recently released Tsubaki extended life leaf chain.