

Introduction of the Double Trolley Quayside Container Crane

Yoon-mi KIM & Kyung-yong KIM

The Division of Mechatronics Engineering & Ship Operating System, 4th Year
Korea Maritime University
1Beon-ji, Dongsam Dong, Yeongdo Gu, Busan, South Korea
hannara366@hotmail.com

Student Presentation

SUMMARY

With the recent advent of super post-panamax container vessels, which can carry more than 8000TEU, the increasing requirement of the improvement of container port productivity and efficiency has led to the adoption of the advanced type of cargo gears in container ports worldwide, including the port of Busan. A container crane functions as the most important and influencing factor on the process of cargo operation. The new technical trend of a container crane shows its improved promptitude and automation. We will hereunder introduce the double trolley quayside container crane, which has been newly selected by prospective hub ports.

The Double Trolley Quayside Container Crane has advanced characteristics in some aspects compared to other ordinary container cranes. The two trolleys, which consist of, a main trolley and a portal trolley are located and travel on the rails at different heights to the main trolley girder and portal beam without any interference. On the seaside sill beam, the crane has a switchboard to transfer a container between the main trolley and the portal trolley. While unloading, the main trolley transfers the container to the switchboard. The portal trolley then takes the container to the chassis (container vehicle), and the loading process is vice versa. The productivity of the double trolley container crane depends on the main trolley. The main trolley can return immediately after transferring the container from the vessel to the switchboard, which has a fixed position, so reducing take-off time during the twist lock operating cycle. This again raises the productivity of the main trolley and consequently elevates a whole container crane's processing rate. Also, there is a cab hung under the main trolley girder, and from the cab the driver aligns containers while hoisting up and down. Other main trolley operations such as traversing are all executed automatically, and the portal trolley uses a full automatic operating mode with no driver required.

In conclusion, by utilizing this kind of container crane which offers theoretical productivity of 60 containers per hour, it is expected that such prompt loading and unloading ability will be achieved and finally it will contribute to the winning of hub port status.

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