

TB-NIIGATA

70 YEARS OF EXPERIENCE IN ENERGY TRANSFER

CHOKUSEN

(means "straight" in Japanese)

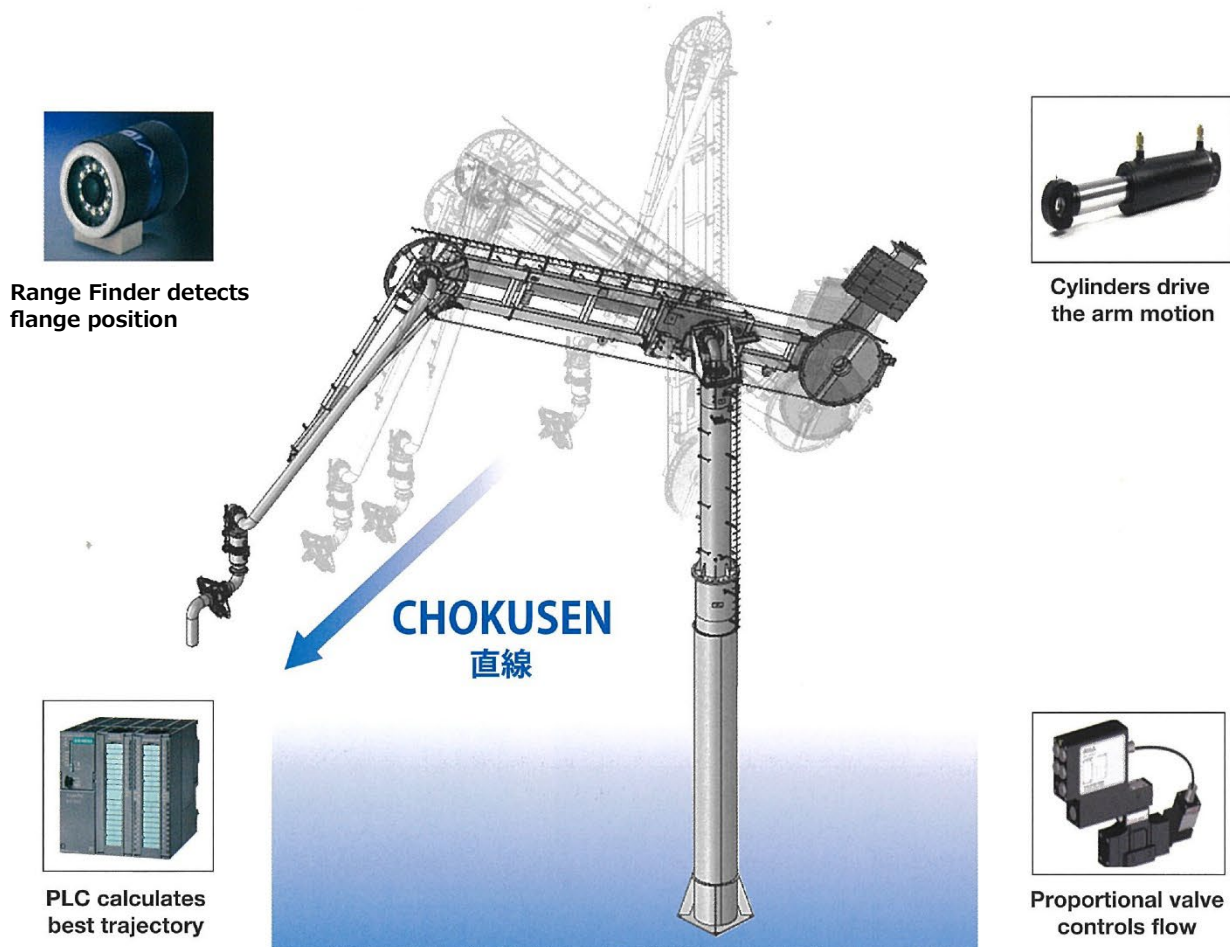
Contactless Automatic Connection System



Technologies for Ship to Ship Transfer, Safety enhancement and Labor savings

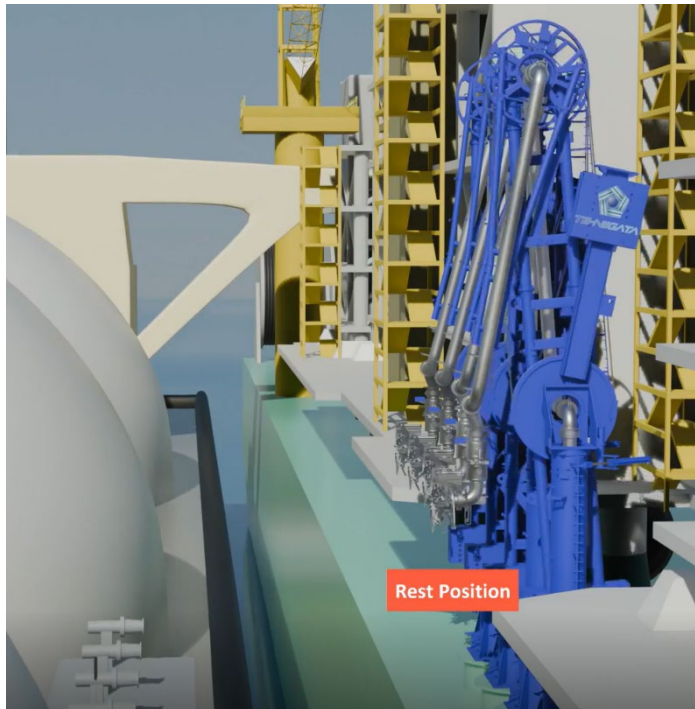
Contactless Automatic Connection

Originally, CHOKUSEN was developed to simplify and safely perform complex connection operations—which are difficult for humans to manage when both the FLNG and LNG tanker are in motion—without mechanical link between the FLNG and the LNG tanker

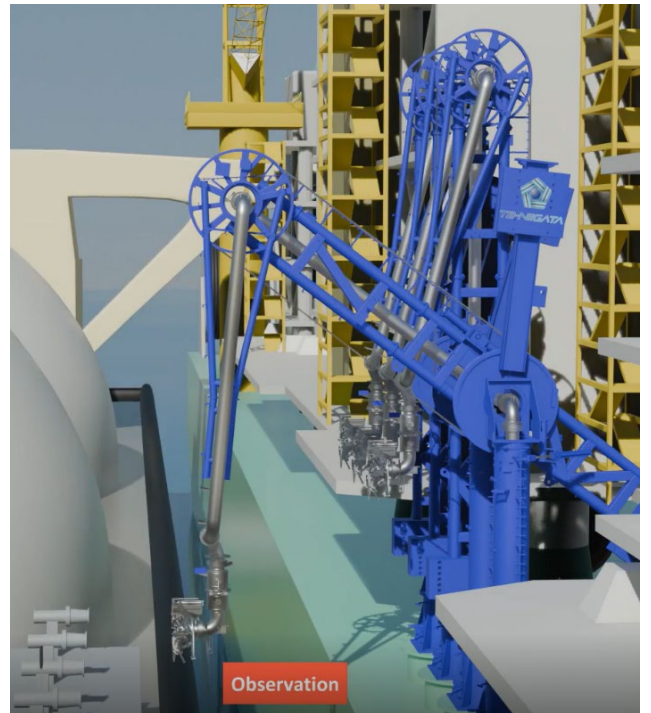


Furthermore, this system is a distinctive, enhanced system that contributes to improved safety and labor savings both onshore and offshore through its automatic connection function, which directly moves the loading arm to the mating flange of the vessel manifold.

CHOKUSEN AUTOMATIC CONNECTION



1. Start



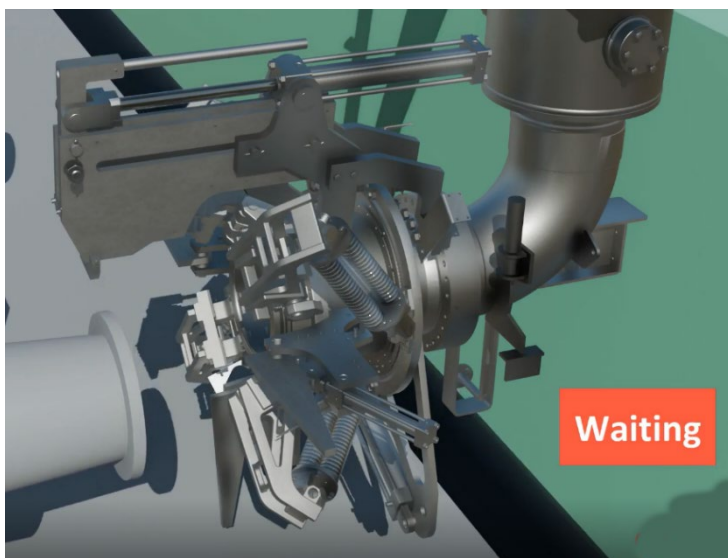
2. Observation

Analyzing movement of manifold

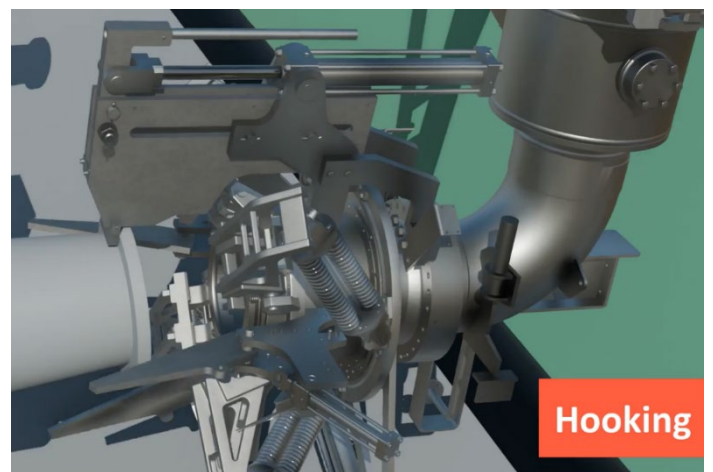


Range Finder View

3. Final Approach & Waiting
for the best timing to hook



4. Hooking and Clamping



Demonstration facility
Dynamic Test Bench
in Nagaoka (Niigata Prefecture) Factory

**Demonstration for contactless
automatic connection by full
scale 16" MLA and Dynamic
Test Bench with 3-dimensional
movement**



Dynamic Test Bench

Based on sea status, vessel characteristics and loading conditions, the Dynamic Test Bench, can simulate the tanker manifold motion anywhere in the world whether in the Pacific Ocean or in the Gulf of Mexico.



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