

# CASE STUDY

## MARINE LOADING ARMS HYDRAULIC TUBING UPGRADE AND REPLACEMENT

✉ [sales@ pressuredynamics.com](mailto:sales@ pressuredynamics.com)

🌐 [www.pressuredynamics.com](http://www.pressuredynamics.com)



### OVERVIEW

Pressure Dynamics was engaged to upgrade and replace hydraulic tubing on marine loading arms at an operational LNG facility. The project required a solution that maintained ongoing operations, with installation works carefully planned around tight shipping windows. By leveraging 3D scanning and modelling, the team developed a fully engineered solution that enabled efficient off-site fabrication and minimised disruption to critical loading activities.

### APPROACH

A detailed 3D survey was conducted to capture cloud point data of the existing jetties and loading arms, which was then converted into an accurate SolidWorks model. Using this model, new structural trays and tubing runs were designed to allow parallel installation of upgraded hydraulic lines. All materials were sourced, fabricated, assembled, flushed and pressure tested at the Bibra Lake workshop before being delivered to site as modular units. Installation was executed by a specialist team, with works carefully scheduled between LNG shipping windows to align with operational constraints and shutdown requirements.

### OUTCOME

The use of 3D modelling and modular fabrication enabled a significantly more efficient project delivery, reducing installation time from typical durations of up to 11 weeks down to approximately 5 weeks. The approach also de-risked site works, improved resource planning, and minimised unplanned costs.

This project highlights Pressure Dynamics' capability in delivering complex hydraulic upgrades through advanced design, off-site fabrication, and precise execution—while maintaining operational continuity in high-demand LNG environments.

