

Customer: Pacific Industrial Company
Location: Dampier WA
Project: Ship Loader
Date: January 2006



STEEL GIANT FOR IRON MINE

One of Western Australia's largest steel fabricating and construction businesses, Pacific Industrial Company (PIC), has recently manufactured a steel giant for global mining equipment company, Voest-Alpine. The 900 tonne ship loader is bound for Dampier, as part of Hamersley Iron's \$685 million expansion of its port operations.

The expansion will increase the capacity of the Dampier port from 74 million tonnes per annum to 116 million tonnes per annum. The first stage of the project began in January 2004, and works include relocation and modifications to stockpiles, extensions to the existing wharf, the creation of a new sea wall, and the installation of the new ship loader.





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George Petley, PIC's Business Development Manager



“The ship loader is essentially a massive steel dinosaur, which loads iron ore onto ships,” explains George Petley, Business Development Manager at PIC. “It’s designed to fill a ship at an enormous rate – over 8,000 tonnes per hour.”

A family-owned company, PIC specialises in all aspects of steel fabrications and construction, including design, engineering, procurement, installation, commissioning and related electrical, instrumentation and civil works.

PIC’s state-of-the-art facilities and proven expertise made them the logical choice to manufacture the new ship loader.

“We put together a detailed bid for the project, and this, combined with Pacific Industrial Company’s previous experience with this class of work, guaranteed our success,” says George.

“We have a good relationship with the client, Voest-Alpine,” he adds. “This type of machine is as complex as it gets – as well as being extremely large and heavy, the fabrication is incredibly technical, even by world standards. There are not many other companies around that could have taken this task on as successfully.”

For the project, PIC erected about 800 tonnes of individual steel components, such as the booms, control car, tripper car, slew deck, bogies, ladders and platforms, pulleys, hydraulic components, and mast, which were all fabricated and painted in Kwinana, WA.

The components were then transported to the Australian Marine Complex at Henderson, where the ship loader was assembled on the 15,000 tonne load out wharf, using PIC’s own 300 tonne crawler crane.

Electrical installation and testing was completed and the loader was transported 1800 km by sea to Hamersley Iron’s load out terminal in Dampier. The ship loader was transported in one piece on the deck of a heavy lift ship and placed directly on the wharf at Dampier by the ship’s cranes.



The overall length of the ship loader is 112 metres. The boom is 52 metres from the tip to the centre, and the loader stands 28 metres high. Fully assembled, the machine weighs 900 tonnes.

“This was a big job for us,” says George. “It was very complex in terms of steel fabrication, and required a lot of man hours, technical expertise, space, large capacity cranes, and intensive machining and testing.”

According to George, this particular ship loader represents the “Rolls Royce” of its kind. “It’s a huge investment for Hamersley Iron. It’s expected to last for over 25 years and work round the clock, loading millions of tonnes of ore per year. It’s also situated in a very corrosive environment. So it was crucial that the loader consisted of the very highest quality material.”

Above right: PIC is one of the few companies with the expertise to take on the huge ship loader fabrication task.

Above: The ship loader is expected to have a working life of 25 years.

"We only buy from BlueScope Steel. For jobs like this, we can't afford to take the risk with overseas steel. The quality of XLERPLATE® steel is exceptional – it sets the benchmark worldwide."

George Petley, PIC's Business Development Manager



Which is why they chose XLERPLATE® steel, a brand of high quality hot-rolled steel from BlueScope Steel. 800 tonnes of 350 grade XLERPLATE® steel was used in the ship loader's fabrication.

"350 grade XLERPLATE® steel was selected to meet Voest-Alpine's exacting criteria – providing strength, while remaining light," says George. "Keeping the weight of the loader down was integral to reducing transport costs and minimising wharf loadings.

"The work proceeded very well, thanks to our 300 tonne Demag crawler crane, and an experienced workforce. The major challenge on the project was the sheer technical nature of the work.

"It required very precise intensive welding, which required a lot of skill. All components were very large, and had to be machined in situ – and we were working with machining distances of up to 12 metres and extremely tight tolerances."

A good supplier is critical to PIC's operations, says George. "All of our projects run to very tight timeframes, so it's essential that our suppliers are capable of working to our level of demand.

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He says that XLERPLATE® steel was selected because it was the best plate to satisfy the client's demand for quality and strength. "We only buy from BlueScope Steel. For jobs like this, we can't afford to take the risk with overseas steel. The quality of XLERPLATE® steel is exceptional – it sets the benchmark worldwide."

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