



# Steel giant for Dampier upgrade

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

The expansion will increase the capacity of the Dampier port from 74 million tonnes to 116 million tonnes per annum. The first stage of the project commenced 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.

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

A family owned company, Pacific Industrial specialises in all aspects of steel fabrication and construction, including design, engineering, procurement, installation, commissioning and related electrical, instrumentation and civil works. Pacific Industrial's state-of-the-art facilities and proven expertise made the company a logical choice to manufacture the new ship loader.

"We put together a detailed bid for the project, and this, combined with Pacific Industrial's previous experience with this class of work, guaranteed our success," says George. "We have a good relationship with the client, Voest-Alpine. This type of machine is as complex as it gets. As well as being extremely large and heavy, the fabrication is incredibly technical. There are not many other companies around that could have taken this task on as successfully."

For the project, Pacific Industrial 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 Pacific Industrial's own 300 tonne crawler crane.

Electrical installation and testing was complete by the end of February, and the loader was transported 1,800 kilometres 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.

**Location:** Dampier WA  
**Client:** Voest Alpine  
**Steel Fabricator:** Pacific Industrial  
**Project size:** 900 tonnes

"This was a big job for us," says George. "It was very complex 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." Which is why they chose XLERPLATE® steel, a brand of high quality hot-rolled steel from BlueScope Steel. 800 tonnes of 350 Grade XLERPLATE was used in the ship loader's fabrication.

George said that BlueScope Steel provided excellent service. "Communication with BlueScope Steel is excellent, we talk to them all the time, and their representatives often visit.

"We selected 350 Grade 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."

The ship loader is a strategically important element to the upgrading of Dampier port.