

study

Design, Manufacture and commissioning of specialised Lid Lifter

case

Utilising Fluid Power Engineering Solutions in-house Excel Hydraulic and Design capabilities, a turnkey motion control hydraulic system was created for ISG's lid lifter application.

- Intermodal Solutions Group (ISG), an Australian mining company that design and manufacture specialised bulk shipping containers.
- ISG are world leaders in their industry.
- ISG have Patented sealed containers that take mined product from pit to directly inside the ship.

Challenges

Before ISG's involvement, product was transported from pit to ship via various open top trucks, stock piles, loaders & grabs. This lengthy handling process lead to theft, loss of product and dust implications.

ISG approached Fluid Power Engineering Solutions (FPES) to create a solution to these issues, and the patented Lid Lifter tool was created.

The Project

FPES engaged their head Project Manager Kevin McCaffrey from its Excel Hydraulics team to design a hydraulic and control system for a piece of apparatus used to install and remove container lids at the pit. The hydraulic equipment and control system were then sent over to China, where CIMC China manufactured and fabricated the lid lifter frame.

- Functionally, the Lid Lifter tool uses hydraulic flow from the lift truck.
- Four hydraulic cylinders were placed in each corner along with electrical sensors to indicate the full extension and retraction of the locking cylinders.
- Four landed electrical sensors were placed in each corner that indicated the correct position of the lid lifter.
- The sensors signified when the lid was ready to be lifted or released, and this insured that the lid was perfectly placed each time.
- The Parker IQAN control system assured the lid could not be lifted or dropped without the sensors being in the right state.
- A control IQAN display system mounted in the lift truck provided the operator with a visual display of the lid lifter status.



Customer Benefits

- FPES total ownership of the project allowed a versatile system design that can work with many different lift trucks
- Dedicated project manager ensured proper integration of the hydraulic system
- ISG was able to use the tool for ongoing projects and improve their patented container systems
- This patented system completes the entire 'Pit to ship' solution, minimising product loss and maximising handling efficiencies



Kevin McCaffrey trialling the hydraulic lid lifter onsite in China

If you have a new project or application which requires a full turnkey solution in design, fabrication and hydraulic knowledge contact the Excel Hydraulics team at Fluid Power Engineering Solutions.

For more information, visit www.hydraulic.com.au

Excel Hydraulic Solution

- A turnkey motion and control hydraulic system was created
- Versatile design that can work with many different lift trucks
- Design tool adaptable for ongoing and future projects

Project Management

Ensuring the hydraulic and control systems were tested and operational as per design parameters, FPES deployed their Project Manager and Hydraulic Engineer Kevin McCaffrey to Nantong, China. This highlights FPES commitment to partnering our clients, providing peace of mind for ISG, knowing the project was managed from concept to implementation.



Parker IQAN MD3 & XC10 controllers used to maneuver accurate control of lid lifter operation



For more than 20 years, Excel Hydraulics™ have been selling world-best parts, designing custom parts and systems, providing maintenance, servicing and repairs, and responding to emergency call-outs.

For more information, visit www.excel.com.au.

- Parker Hannifin Premier Distributor and service centre
- Sterling Hydraulics products
- SPX Fluid Power manufactures of Hydraulic service tools
- FluidCare Technology™
- Zero DownTime™ (ZDT™) maintenance program