

Warner Electric

Boston Gear

TB Wood's

Formsprag Clutch

Wichita Clutch

Marland Clutch

Industrial Clutch

Bauer Gear Motor

Svendborg Brakes

Nuttall Gear

Warner Linear

Delroyd Worm Gear

Stieber Clutch

Ameridrives Couplings

Inertia Dynamics

Matrix International

Huco Dynatork

Bibby Turboflex

Twiflex Limited

Lamiflex Couplings

Kilian Manufacturing

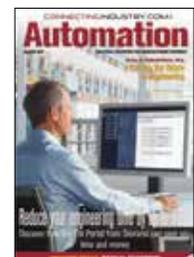
Guardian Couplings

Ameridrives Power
Transmission

Altra Industrial Couplings Manufactures Custom Grid Coupling for 10,000 Ton Press Pump



As seen in
Automation
March, 2013



An Altra Industrial Motion Company

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The grid coupling on a large water pump at Sheffield Forgemasters Engineering Ltd. (S.F.E.L.) was coming to the end of its operational life. To avoid costly re-engineering of the pump, S.F.E.L. wanted to commission a custom coupling to match the original's footprint. While most suppliers were unable to produce a coupling to the right size, Altra Industrial Couplings was able to match the design of the original and work in partnership with S.F.E.L. to produce it.

S.F.E.L. is the manufacturing arm of Sheffield Forgemasters International, a company that specializes in steel production and machining for global supply. Using steel supplied by a sister company, it produces some of the world's largest steel castings (1 to 350 tons), steel forged items (up to 280 tons) and forged steel bars. Its unique manufacturing facilities include a 10,000 ton press pump which is capable of moving over 6,500 liters of water every minute.

To keep such a large pump flowing a coupling is required to transfer the 6,000 HP produced by the motor at speeds of between 70-83 RPM. Pump applications are notorious for high levels of shock loading and vibration, meaning a coupling was required that could deal with these stresses. Grid couplings provide the ideal solution as the metal grid which connects the hubs to the shaft allows for small amounts of movement which smoothes out torque spikes and minimizes the negative effects of misalignment.

During a recent site inspection, it was decided that the current coupling was approaching the end of its operational life and a replacement would be needed to prevent a breakdown. To avoid a costly and time-consuming re-engineering project to the pump, S.F.E.L. needed to source a new coupling that would match the dimensions of the outgoing coupling. Most of the coupling manufacturers that it approached didn't have the facilities to manufacture a coupling of the required dimensions.

David Bartholomew, Engineering Manager at S.F.E.L., comments: "The outside diameter of the coupling is 1,620 mm and its width is approximately 650 mm. While some manufacturers could meet the load requirements for the project, none could offer a grid coupling which met these dimensions. The original coupling was



manufactured by Bibby, now part of Altra, so we asked if its coupling division would be able to help with a replacement. It was able to use the original design to manufacture a custom coupling which matched our criteria exactly.”

Bibby was one of the original pioneers of grid coupling technology and has long been known as a leading manufacturer of large, high-performance, flexible couplings. Using the design for the pump’s original coupling, which was manufactured in the 1970’s, as a starting point, Altra engineers were able to use the company’s high-tech manufacturing facilities to produce a new grid coupling. The new unit matches the same performance envelope as the original, but employs modern materials and the latest grid profile to provide the flexibility and also the longevity required by the application, all on a very short lead time.

David Proud, Sales Director for Altra Industrial Couplings, adds: “It is extremely rare that a grid coupling is required of this size, and there aren’t many manufacturers with the means and experience to complete the project. Fortunately Altra Industrial Couplings has the capabilities to make couplings of almost any size. To make this project even more special, Sheffield Forgemasters Engineering Ltd. acted as a supply partner for the couplings hub material. Working with our customer as a manufacturing partner helped us to ensure that this coupling will keep turning for another 40 years.”

Altra Industrial Couplings is the couplings division of Altra Industrial Motion, a leading transmission component specialist. The division represents some of the oldest and best known names in the coupling industry, including Bibby, Huco, TB Wood’s and Ameridrives. Altra is able to offer coupling solutions for almost any industrial application thanks to each brand’s unique knowledge and expertise in differing fields.



About Altra Industrial Motion

Altra Industrial Motion (NASDAQ:AIMC) is a leading multi-national designer, producer and marketer of a wide range of electromechanical power transmission products. The company brings together strong brands covering over 40 product lines with production facilities in nine countries.

Altra's leading brands include Boston Gear, Warner Electric, TB Wood's, Formsprag Clutch, Wichita Clutch, Industrial Clutch, Ameridrives Couplings, Kilian Manufacturing, Marland Clutch, Nuttall Gear, Bauer Gear Motor, Svendborg Brakes, Stieber Clutch, Twiflex Limited, Bibby Turboflex, Matrix International, Inertia Dynamics, Huco Dynatork, Lamiflex Couplings, Ameridrives Power Transmission, Guardian Couplings, Delroyd Worm Gear and Warner Linear. For information on any of these technology leaders, visit www.AltraMotion.com or call 815-389-3771.



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