

Case Study



Jaguar Inverter Drive *Concrete Manufacturing Solution*



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Concrete Manufacturing Solution



Application: To solve two production problems of giving greater control to a slip ring motor on a crane long travel drive, and a dimensional saw, and improve safety on the woodworking saw, and to provide smoother and greater control on the crane

Equipment: Jaguar VXM AC Variable Speed Drive

IMO Jaguar AC drives have solved two production problems for Trent Concrete, one of the UK's most prestigious producers of high quality bespoke architectural cladding and structures. The Jaguar drives have been applied to a slip ring motor on a crane long travel drive, and a dimensional saw, providing increased productivity and superior positioning control (on the crane), and improved safety as a result of much faster braking on the woodworking saw.

Trent Concrete is a UK success story. The company is consistently recognised for the quality of its work, having been involved on some of the most prestigious UK projects of recent years, including The Scottish Office, Toyota GB Plc and Thames Water headquarters. Trent's most recent success is the contract for the design, detailing, manufacture and installation of the reconstructed stone cladding and features on the Barton Square Development, part of the new expansion programme at the Trafford Centre buildings in Manchester.

Central to the production facilities operated by Trent Concrete in Nottingham is a large gantry crane for handling stone and steel sections. The crane is controlled by an 11kW motor, which, until recently, used resistors for speed selection. Unfortunately, this method was becoming increasingly imprecise with age, leading Andy Owen, Trent's Chief Electrical Engineer to seek a solution.

"I thought that the age of the slip ring motor would mean that we had to replace it completely, which was not something we were not keen to do," commented Mr Owen. "We talked to a local drives company who referred us to IMO. One of their engineers came out and viewed the application. He checked the motor over and said that it would be ideal for control via one of IMO's Jaguar drives. Because this was our first experience with inverter drives we were a bit reluctant at first to go with this technology, but a bit of phoning around convinced us that IMO knew what they were talking about. We have not regretted the decision; the Jaguar VXM has been installed now for over 12-month's and we have not had a single problem."

"The drive has performed faultlessly and the service has been excellent. What's more we are now benefiting from much smoother and precise control on the crane, allowing us to better position large sections of stone and steel with excellent precision, even when we are undertaking tandem lifts."

"The success of the crane application gave us the confidence to look at another area of our production; a dimension saw in our woodworking shop. To comply with regulations for woodworking machines the saw had to be able to stop within 10-seconds. However, the method we were using to achieve this, DC Injection Braking, was causing motors to burn out; two in quick succession. Once again we turned to IMO for a solution. They provided one of their Jaguar VXR drives fitted with a small resistor. This completely solved the burn out problems; we now have really smooth acceleration and more importantly extremely fast and smooth deceleration well within the target 10-seconds. In fact, in a test to determine just how quickly we could stop, we registered a braking time of less than 2-seconds. Importantly, this was achieved within the motor-rated current, so we had no problems with the saw motor."



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