

# AllTorque

The very latest from Twiflex Ltd. and Wichita Clutch



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Celebrating 50 years of Innovation and Service at Wichita Clutch in Bedford!

The Wichita story begins shortly after WWII, with the vision of John Wilson and Charlie Warman. These gentlemen had the insight to promote a pneumatic “air tube” clutch, which would revolutionise the power transmission industry. And so Wichita Clutch was born. In 1959 a Wichita plant was established in the UK to satisfy ever increasing demand in Europe. We’re now into our sixth decade of manufacturing in Bedford! Product innovation, continuous investment, consistent high quality and sound customer service have all been contributors to our growth and success during the last 50 years. But most of all, we owe it to the loyalty of our customers, many of whom have been placing their business with us since we assembled our first clutch here in 1961.

Wichita site 1961



Wichita site 2011



## Twiflex Limited doubles in size

Its been a great year for the Wichita and Twiflex brands. The combined order book is at a record high and we have invested heavily in the site at Bedford to improve quality and efficiency. Employment levels have returned to record levels and we are one of the few companies in the region that have been recruiting throughout the year. New product development continues to set us apart from our competitors and we will share with you some of the highlights from 2010 in this edition of AllTorque.

In 2009 Altra Industrial Motion Inc. made the decision to create one centre for manufacturing excellence within the UK for products belonging to the “Heavy Duty Clutch Brake” platform. With extensive planning and more than \$1.5 million of investment Wichita and Twiflex came together in 2010 under the “Twiflex Ltd” banner, effectively doubling sales on the site.

Manufacturing and supply of quality Wichita and Stieber products continues from the Bedford site, and a new southern office has been established to service our Twiflex brand.

**N.G Wright**  
**Managing Director**

[www.twiflex.com](http://www.twiflex.com)  
[www.wichita.co.uk](http://www.wichita.co.uk)

## Prestigious new southern offices

Twiflex Limited have opened new offices in Twickenham. The new facility boasts state-of-the-art conferencing facilities that will be made available to all of our partners who from time to time need the use of a London meeting area.

All of the previous contacts for Sales and Applications are now contactable at the following address:

**Twiflex Limited**  
**9 Briar Road**  
**Twickenham**  
**TW2 6RB**  
**Tel: +44 (0) 20 8894 1161**



For further information please visit [www.twiflex.com](http://www.twiflex.com) or call the sales office on **+44 (0) 20 8894 1161**

## \$1.5 million investment in new machines

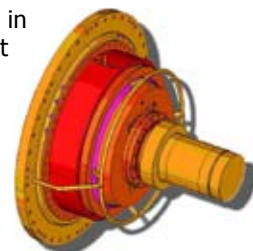
Altra Motion Incorporated are not afraid to invest for the future. This CNC vertical borer, valued at \$750k was installed in September and has a capacity for turning up to 1 metre diameters. Targeted at both Wichita and Twiflex brands, the company expects to be able to offer even higher quality and more flexible lead times to our customer base on the large more bespoke products. This is just one of a number of new machines installed during 2009 and 2010. Others include this Colchester Mastiff CNC lathe and a Hartford Dual-Y Machining Centre.





## Innovation and new product development sets us apart from our competitors

The European Marine Energy Centre (EMEC), situated in Orkney, Scotland, is at the forefront of the development of marine-based renewable energy – technologies that generate electricity by harnessing the power of waves and tidal streams. As the first centre of its kind to be created anywhere in the world, it offers developers the opportunity to test full scale grid connected prototype devices in unrivalled wave and tidal conditions.



So far we have tendered for three Tidal Turbine brake packages to companies developing pre-commercial demonstrators for installation at the EMEC test facility. Our most successful story is our Wichita brake and hydraulic control package which is fitted on a 1.2 MW Tidal Turbine (the worlds largest to date). The turbine is in its final stages of assembly and is due to be commissioned at EMEC in August this year. The first application is our HBS 42-14 wet brake that has been installed and is due to be tested at EMEC. This is a wet brake – torque is provided through oil shear. The brake is mounted on the turbine rotor shaft, hence the large diameter and torque capacity of the unit. We also provided the hydraulic power unit to assist with a closed loop controlled stop. We look forward to being part of the design and development of these sustainable marine renewable energy sources and we hope they will soon be providing all of us with clean and green power for the future.

## Safe stopping with new Twiflex VCS Mk.4 Brake

When talking about safety braking typically this means brakes which are spring applied, and then released either hydraulically, pneumatically or electrically. Being spring applied is the key to these brakes offering a fail-safe function, as no power is required to apply the braking force.

Offering the best possible performance in demanding applications, the new VCS Mk.4 from Twiflex is a spring-applied, hydraulically-released caliper brake, employing the same basic technology as Twiflex's well proven VCS Mk.3 caliper brakes, which have demonstrated their reliability and consistent performance over many years service in the most demanding applications worldwide. The VCS Mk.4 has been designed to provide a 50% increase in pad area, providing improved stopping and holding. The design also features increased service factors, modular construction for easy assembly and maintenance, plus precision monitoring options, and improved sealing and full compatibility with existing VCS mounts and controlled braking systems.



Twiflex VCS Mk.4

In common with other Twiflex modular brakes, the VCS Mk.4 brake is a standard two-module design. The brake is provided as a complete unit with two pre-fitted brake pads. Additional items such as mounting bolts (tie rods), optional finishes and monitoring switches are available options. Optimising the operation of the VCS Mk.4 safety brakes is Twiflex's "MP" (Modular Range) of Electro Hydraulic Power Units. These provide an advanced and flexible means of brake control in the most arduous of operating conditions; typically, mining steelmaking and container handling. The "MP" unit is essentially an assembly consisting of a base unit, a hydraulic circuit and various auxiliary options.

In addition to preventing damage to associated drive train components in the event of a jam or crash, or to damage caused by a falling load, the combined use of torque limiters and calliper brakes also helps to ensure operator safety by providing a controlled shut down in the event of a power failure. Therefore torque limiters and safety brakes are essential machine protection technologies, giving companies the assurance of increased machine availability and reduced downtime – critical in today's competitive production environment.

## A patently superior design: the versatile wet “HC” clutch

Whilst developing the HC clutch, Wichita created an interchangeable product with the former Eaton CH range (now manufactured by Logan Clutch). Typical Applications include Drawworks, Tugboats, Main Propulsion, Marine Towing and Mooring Winches.

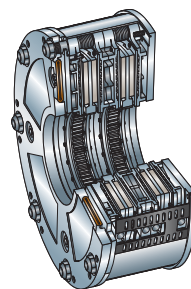


The design has been improved, incorporating extra features for ease of maintenance and installation, improving reliability and extending service periods. This includes a patented shaft seal design, allowing for ‘hot swapping’ of the shaft seal whilst the unit is still installed, saving hours of installation time.

## Innovation makes light work for service engineers

The AquaMaKKs range of water-cooled clutches and brakes sets a new standard in heavy duty continuous slip tensioning applications, for use in demanding sectors such as mining, logging and forestry operations, metal processing and metal forming, oil and gas, water/wastewater and offshore/marine.

Now Wichita has borrowed technology from the aerospace industry to create composite water jackets for the AquaMaKKs water-cooled units. Units with composite water jackets weigh much less than those with iron jackets, particularly important in mobile uses. For example, the 36-in. AquaMaKKs cast-iron water jacket weighs 170 kg while the composite version weighs no more than 45 kg. This makes service and installation simpler as heavy lifting equipment can be eliminated.



The patented water jacket design with its proven water flows now combines with this lightweight salt proof water jacket to enhance the already impressive heat dissipation capabilities and formidable stopping power. Prior to this, clutches and brakes typically incorporated cast-iron water jackets. In salty marine environments, however, cast-iron jackets corrode and wear out quickly. Water with a high PH causes similar problems. Moreover, water-jacket iron tended to get hot during operation and acted like a radiator, heating up the rest of the clutch/brake parts as well. In contrast, the new polymer jackets are insulators so adjacent parts don't get warm. They are also as strong as the original iron parts; in tests, AquaMaKKs 36-in. diameter composite water jacket withstood stresses more than four times greater than the maximum design load.



To find out more, go to: [www.wichita.co.uk](http://www.wichita.co.uk) and click on the AquaMaKKs link.



## Pirate parts cause havoc again!

Genuine Wichita spares are always more cost effective in the long run.



For many years one of our competitors has made repeated attempts to supply Wichita equivalent parts at lower prices to Wichita customers. In this instance Caparo Merchant Bar reported that in 2008 their works engineering gave approval to the stores supervisor to try their product. The items purchased were a Steel Hub for an 18-inch Clutch plus a Roto Coupling & QEVs.

The problems started when they came to use the hub, as it was physically the wrong size and clearly of a different design and therefore could not be installed. This was a disaster for the customer who, having scheduled downtime, suddenly found themselves unable to proceed. Soon afterwards we got the call, and Wichita went into motion supplying a Cast Iron Hub (pilot bore) overnight, prior to receiving a further order for a Steel Hub. This process cost Caparo thousands of pounds in lost production time, works labour, administration and parts costs. In statements from Caparo about the company in question, they said “never again, they will not be allowed on site”.

**Wichita recommends customers use Genuine parts - they won't let you down!**