



Hill Engineering Ltd

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TEFRA wins prestigious Queens Award for Innovation

Newry based Hill Engineering has been awarded the 2014 Queen's Award for Enterprise in Innovation, which recognises excellence in UK business enterprise, having designed, developed and globally marketed ground breaking engineering equipment.

Hill Engineering designs and manufactures couplers for the excavator industry and was recognized for TEFRA - a double locking hydraulic coupler which has helped to transform health and safety procedures on construction sites. The system which is patented by the company and exported across three continents, has been the catalyst for Hill Engineering to double its Newry based workforce.

The TEFRA is suitable for excavators ranging from 3ton to 120ton and is fully compliant with all expected key provisions of the forthcoming new European (EN474) and proposed global ISO 13031 safety standards.

Hill Engineering Managing Director, Ian Hill said "I am delighted that our innovation and commercial success has been recognized with a Queen's Award. It reflects our commitment to innovation and clearly demonstrates that Hill Engineering is a global player with innovation at the heart of the company. It is a tremendous achievement for the company, especially in our 20th year.

Safety is a huge issue on construction sites with numerous fatalities and many serious accidents attributed to the incorrect use of semi-automatic couplers in the UK and Ireland. Our innovative TEFRA, which is fully automatic, has been designed to eliminate such accidents.

The innovation behind TEFRA is the clever and uncomplicated design of the product which has improved the safety of excavator machines on construction sites and with only 3 moving parts, has made this coupler the most reliable and robust on the market. The innovative technical features of the product have raised the safety benchmark for the industry and TEFRA will ultimately help prevent unsafe working practices."

The TEFRA has led to 30% year on year growth for Hill and with further significant growth projected we expect an additional 30 jobs to be created this year.

Since launching the product in 2011, Hill Engineering has achieved phenomenal sales in Europe, Australia and USA.

Neal Loughran, Engineering Manager, Hill Engineering, explained more about the innovation behind the product, "the innovation behind the TEFRA technology lies in bringing together 5 individually engineered elements that each provides its own unique safety features:

The two cast coupler hooks have unique 'curved' designs that work together to fully enclose both attachment pins providing positive self-locking in all operating conditions.

"This patented load bearing design has the inherent strength specifically in cast components to take the weight of the attachment in failure mode or if the operator misconnects the rear hook.

A single hydraulic cylinder operates both hooks thus eliminating unnecessary complexity and reducing the number of moving parts. A brand new design to meet Hill's specific requirements, this cylinder incorporates the



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patented Hill Smart Valve technology. There is no external pipe work and as such no risk of damage or failure. The hydraulic hose connections feature different thread sizes to eliminate the risk of incorrect installation.

“The Hill Smart Valve is a unique safety feature which prevents attachment removal in unsafe conditions. It works by recognising the correct/safe coupler orientation before permitting the release sequence to commence. The Smart Valve is totally enclosed within the cylinder and as such cannot be affected by contamination and requires no routine maintenance.

The Active Protection System is a fully Independent secondary locking system comprising two component parts. A coil spring around the cylinder ensures that the rear hook remains in the correct position in the event of a hydraulic failure. A leaf spring on the front hook acts to maintain it in the correct position in the event of a hydraulic failure. The springs do not take the weight of the attachment, this is done by the coupler hooks, they are there solely to keep the hooks correctly located. In addition, the pressure exerted by the springs provides a ‘Return to Safe’ feature ensuring that the hooks always remain in, or return to, the closed position. This combination of safety features is unique within the attachment industry and now provides excavator operators with the safest coupler on the market today.”