



# GLOBAL LEADER IN EXCAVATOR ATTACHMENT TECHNOLOGY





**WE'VE ALWAYS  
BEEN BIG ON  
SETTING NEW  
STANDARDS.**

The world's first. A pioneer in innovative thinking. A global leader. In the construction industry, there are many companies who describe themselves in such glowing terms. But with Hill Engineering, it's all true.

Since 1994, we've focused on one thing and one thing only: designing and manufacturing hydraulic quick couplers for excavators. So much so, that in 2010 we were the first to create a double locking hydraulic coupler that complied with what was initially only an outline international standard; the TEFRA was ahead of the entire industry then, and still is today.





# BIG ON INNOVATION

We're always looking for ways we can improve not only our products, but also ways we can work smarter and safer.

We are continually researching and developing new products to add to our pioneering range, meeting stringent safety standards and delivering exceptional quality, synonymous with the foremost manufacturer in our industry - leading the way for others to follow. We've set new standards with our products through relentless quality, innovation, reliability and safety. But as our customers will tell you, there's so much more to Hill Engineering than just our excavator attachments.



# BIG ON DOING THINGS THE RIGHT WAY



Our CNC Department accurately bores each Hill Coupler for a precision fit on any machine.

Like the products we manufacture, the values we work to are uncomplicated but deliver absolute confidence.

We're uncompromising, both in our exceptional production standards and our quest for new innovations. Like our customers, we demand perfection at every stage from the materials we use to every person involved - that's why we have such a reputation for excellence.

We're fully committed to not only delivering world class products but also to maintaining new levels of safety and compliance, born out of our unquestionable and comprehensive knowledge of our industry, combined with a healthy dose of logic and common sense.

And we're restless, constantly challenging ourselves to improve our products and finding new ways of working that can benefit our customers and our industry.



# WE'RE BIG ON SUPPORT TOO



Our comprehensive stock of spare parts are available in 24 hours

We work closely with our customers. We put their needs and their safety, above everything else. That's why so many trust us.

Right from the start, our support is intuitive and friendly; if you need application advice, we can help. We work pro-actively with you to make sure you have the most durable, cost-effective and safe products you need, when you need them. And if they need to be unique for your application, then with our huge experience in designing and building couplers, that's no problem to us.

Our After-sales team is available whenever you need us too, committed to helping you in any way we can, whether you need technical support, parts or just no-nonsense advice. We're a trusted partner to every customer and have built life-long relationships with many of them – because they know that because we excel at our job, they'll be able to focus on theirs.



# HARDWORKING PRODUCTS THAT ARE BIG ON DURABILITY.

We're the global leaders in excavator attachments. We supply OEMs including Hitachi, JCB, Komatsu, Volvo and Caterpillar, and our products have won many awards around the world.

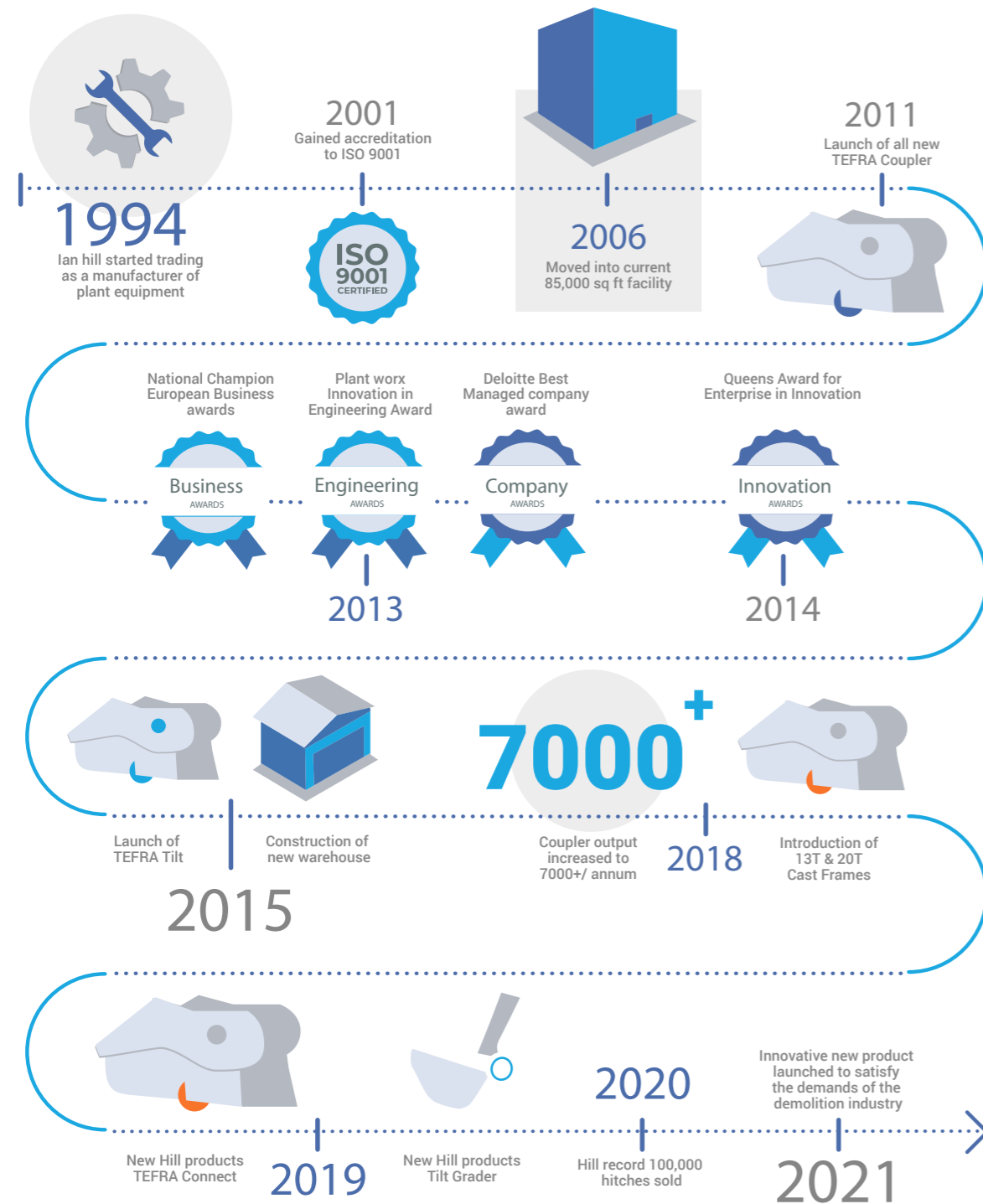
We also supply direct to businesses in construction, civil engineering and demolition, with our TEFRA range of fully automatic quick couplers to suit excavators ranging from 2 Tons to 120 Tons and our TITAN excavator buckets which offer the highest levels of durability and reliability and are manufactured for the most extreme applications.

Pictured above is a Titan HDX Rock Bucket on a Doosan DX800. Weighing 4882kg with a capacity of 4.9m<sup>3</sup>. This bucket is equipped with FC600 teeth and F40 Heel Shrouds.



## CELEBRATING ALMOST 30 YEARS IN BUSINESS

Hill Engineering was started in 1994 by Ian Hill (Managing Director). Today, Hill Engineering serves a Global market and employs over 70 people in a purpose-built factory in the city of Newry. Our people are our core strength and the business growth is a reflection of their dedication and commitment.



# OUR PRODUCT RANGE

Hill Engineering is a UK based manufacturer and global exporter of award-winning excavator attachments and leads the industry in innovation and safety.

All our products are manufactured at our purpose-built facility in Northern Ireland, where we make the TEFRA and TEFRA TILT fully automatic quick couplers for excavator size classes from 2 Ton to 120 Ton. We also make TITAN HD buckets, for regular work and TITAN HDX versions for the most extreme applications. Finally, we have complementary products to enhance product life and warning systems to enhance bystander safety.



 Made in Northern Ireland

## Primary Locking System

TEFRA is an industry first. The dual safety features of TEFRA are unique within the attachment industry.

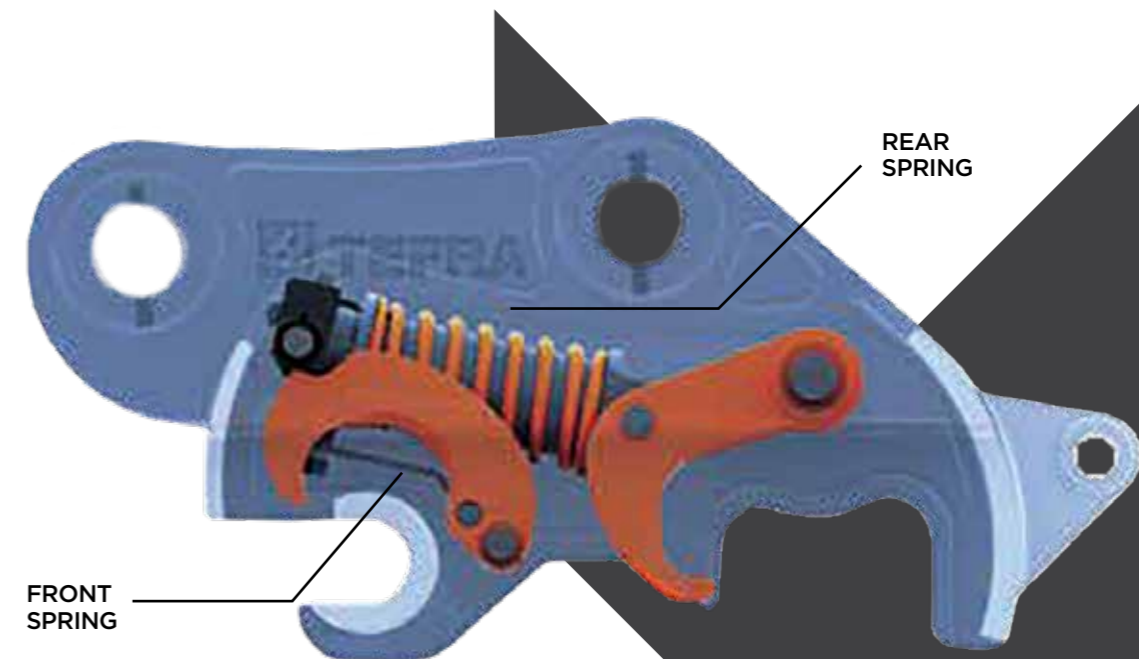


The primary safety system consists of a uniquely designed set of hooks powered by a single high specification hydraulic cylinder. The cylinder works together with a dedicated solenoid valve, locking the attachment securely into place.

The intrinsic feature of the hooks is their shape - they are individually designed to tightly hold their respective pins against the body of the coupler. This secure and fail-safe retention means the attachment stays in place in all orientations and operating conditions.

## Secondary Locking System

Our Active Protection System (Hill APS) consists of 2 separate powerful springs that apply pressure to the hooks to ensure attachment retention at all times.



A single leaf spring applies constant pressure to the front hook. This compact and durable spring ensures the hook stays in place at all times.

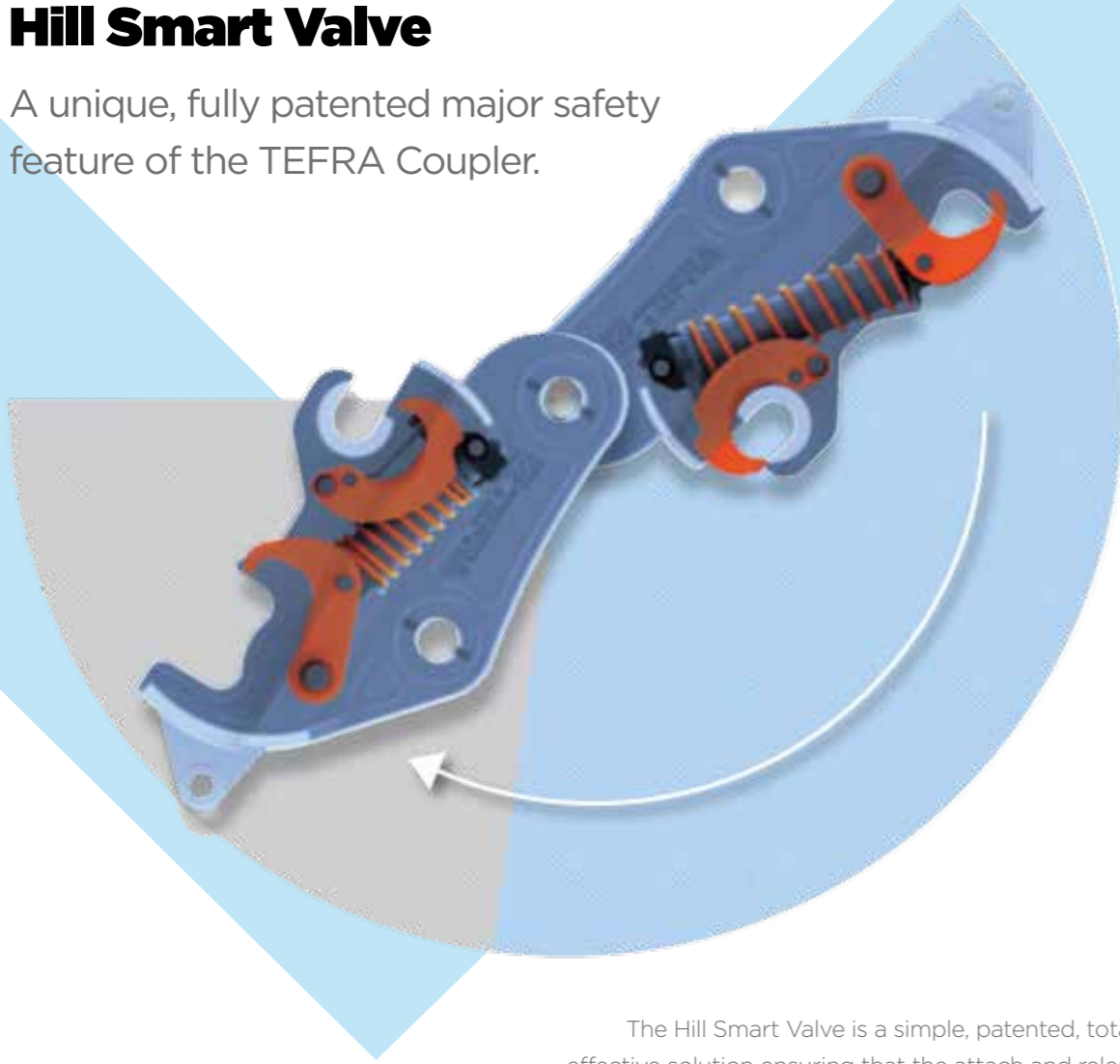
A coil spring serves exactly the same function in relation to the rear hook.

Both springs are individually rated far in excess of any strength and safety requirements, and have undergone stringent testing to ensure durability and reliability in the field.



## Hill Smart Valve

A unique, fully patented major safety feature of the TEFRA Coupler.



### Permitted Release Zone.

The Smart Valve will allow oil to flow into the cylinder so that the release procedure can commence.

### No Release Zone.

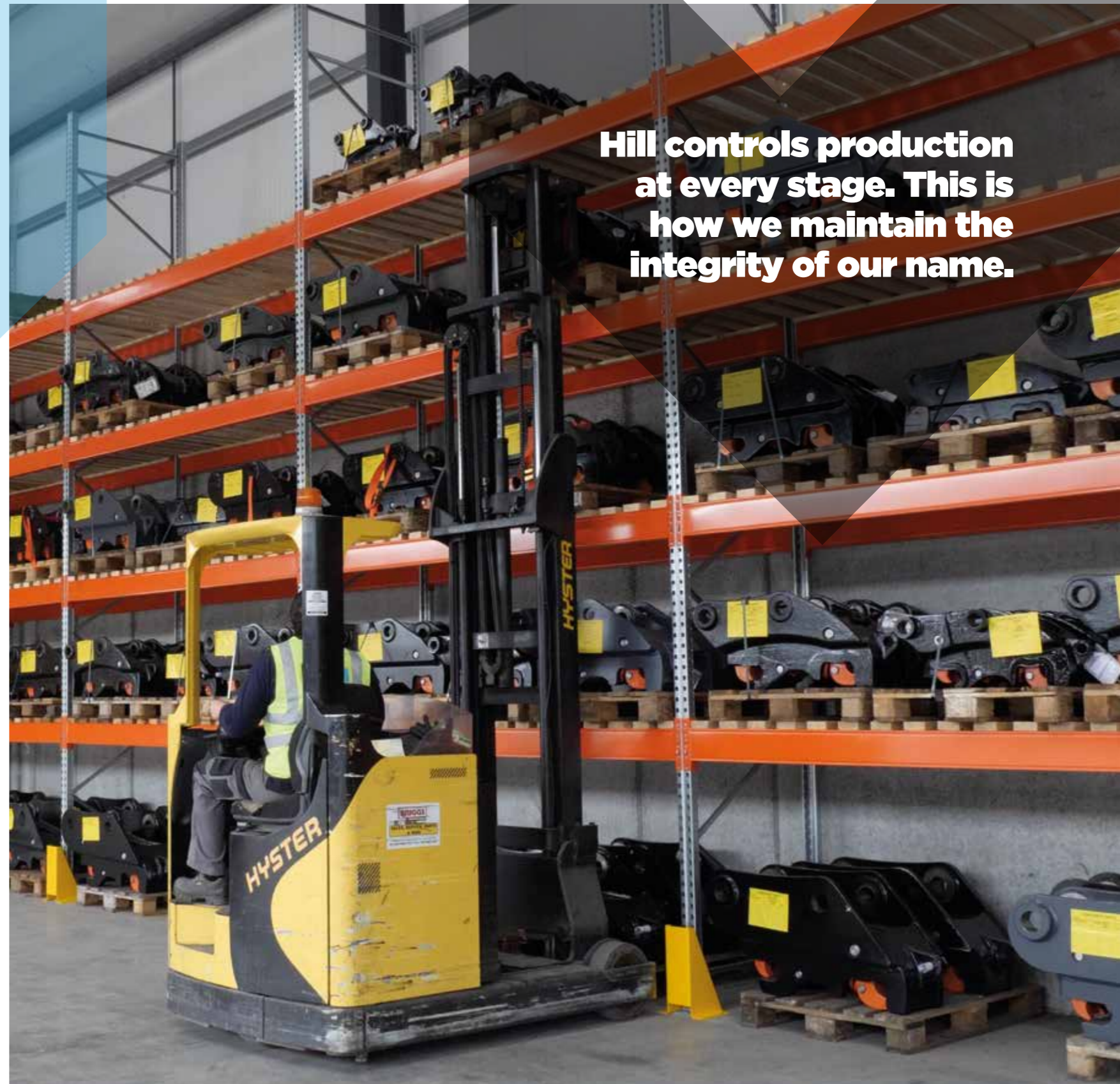
The Smart Valve will stop oil from flowing into the cylinder, thereby preventing the release procedure.

The Hill Smart Valve is a simple, patented, totally effective solution ensuring that the attach and release sequence cannot be performed until the coupler is orientated towards the operator in a crowded position. This prevents the operator from releasing an attachment in an unsafe position.

The Hill Smart Valve is an integral part of the cylinder design. As it is protected within the cylinder, it is not susceptible to external damage or contamination from material entering the coupler during use.

It requires no routine maintenance and is compatible with other warning systems such as audible indicators to ensure a safe and easy operation.

**Hill controls production at every stage. This is how we maintain the integrity of our name.**





## Hill TEFRA Couplers for mini excavators

To complete the TEFRA line-up, the innovative TEFRA coupler is available to fit most mini and midi (2 ton to 9 ton) excavators. These couplers have cast steel frames, for maximum strength and minimum weight, which is crucially important when installing a coupler onto smaller sizes of excavator.



### Featuring the innovative TEFRA internal design:

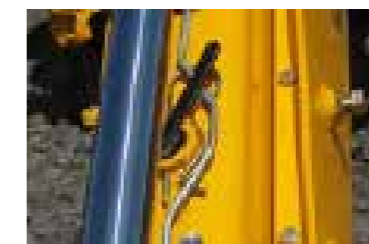
- Cast steel front and rear hooks
- Single cylinder for secure primary attachment locking & retention
- Hill APS secondary locking system
- Hill smart valve to ensure safe attachment and release activity

Hill can uniquely offer the fleet owner a single source of fully compliant, automatic, double locking pin grabber couplers, which are:

- **Exceptionally safe** - through the use of Hill APS attachment retention and locking systems and the innovative Hill Smart Valve
- **Extremely flexible** - with extensive pick up range
- **Highly durable** - purpose designed components and fewest moving parts
- **Compliant** - fully meets BSEN 474 and ISO 13031 global standards

## Hill TEFRA BHL Couplers

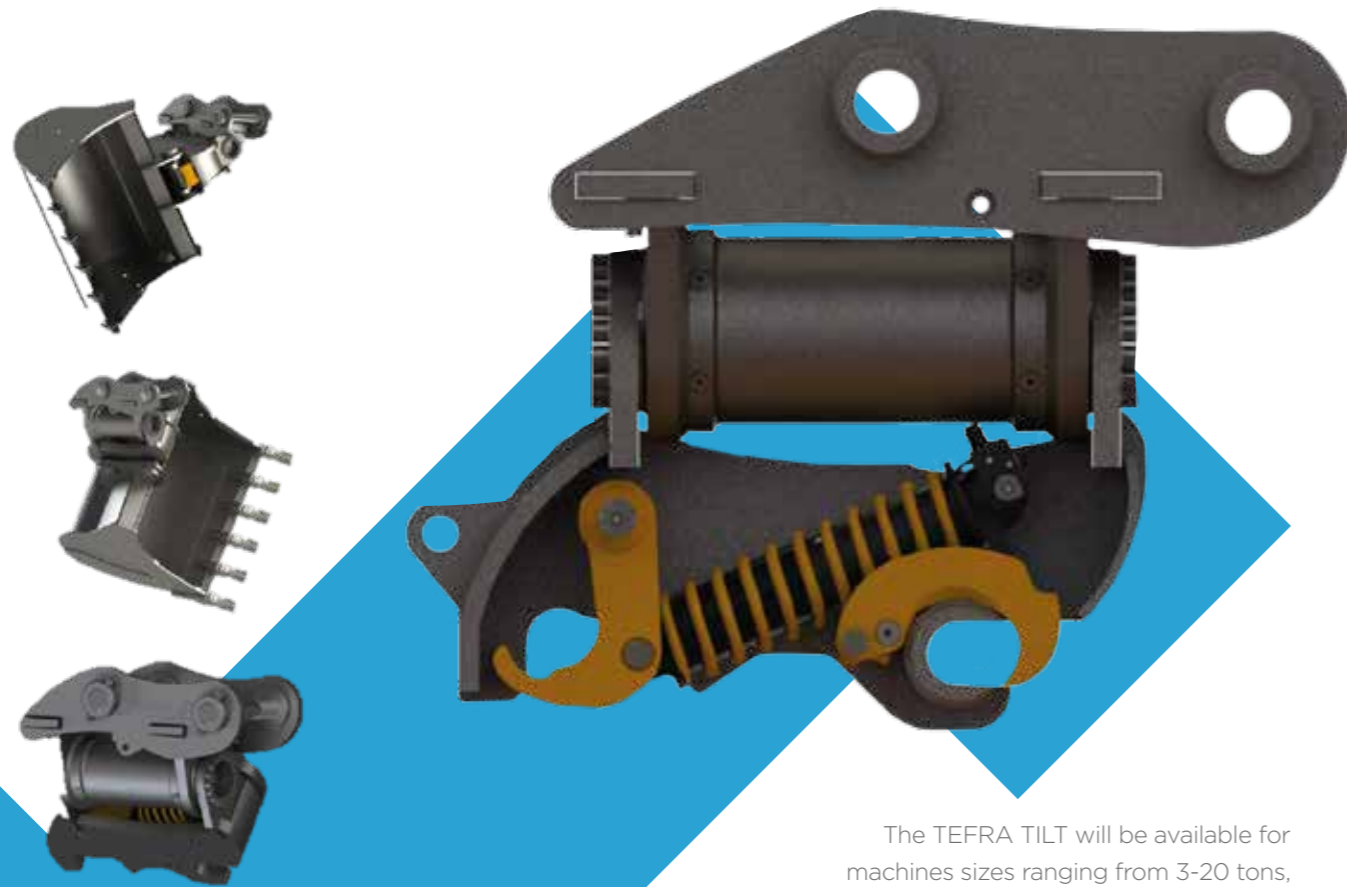
Our special range of BHL couplers effectively minimise the loss of breakout force, whilst ensuring optimum material retention in the bucket, without the bucket fouling on the dipper arm. Suitable for Backhoe loaders from most major OEM.





## TEFRA TILT

The TEFRA TILT takes all the advantages of the award winning TEFRA Coupler, and provides our customers with the added benefit of increased productivity and versatility in multiple applications.



The TEFRA TILT will be available for machines sizes ranging from 3-20 tons, and like the TEFRA Coupler, it's been specifically designed to be essentially maintenance free. The heavy duty motor is self-lubricating and wear free so that you are able to concentrate on the important tasks. The robust design of the individual components made from high strength, surface hardened materials, allows up to 180° rotation almost without play even after prolonged operation.

## Special Options

### The Hill AWS (Automatic Warning System) - monitoring and warning device

Following extensive research we have developed a product that continuously monitors the hydraulic system of the coupler, helping to prevent common failures and incidents.

AWS actively monitors the excavator and coupler hydraulics to ensure that they are functioning as intended. Advanced early warning is given to indicate any changes in system performance, ahead of conventional signs of failure, such as external oil leaks or loss of coupler engagement forces.

The sophisticated new AWS hydraulic solenoid monitors not only hydraulic pressure but critically, oil flow. Possible problems are identified, long before they become visible to the operator.

The valve is connected to the control system, which triggers an audible warning. The audible warning alerts the machine operator and all persons at risk working in the vicinity of the excavator - in the critical area in front of the machine, where the attachment is being used.

#### Universal Application

AWS has been developed to be installed on excavators, fitted with any type of hydraulic coupler, irrespective of the original manufacturer.

#### AWS Detects & alerts:

- Internal hydraulic oil leaks, not visible externally, for example, the seals within the coupler cylinder
- External hydraulic oil leaks in cylinders or hoses
- Faulty solenoid valve
- Failure of the primary engagement system
- Incorrect use due to insufficient operator training



## Special Options

### The Hill ECS (External Coupler Sounder) - warning device

Alerting individuals in the area that an attachment change is taking place.



Using the same external sounder as the superior AWS system, the ECS monitors coupler pressure only, alerting individuals in the area that an attachment change is taking place, without the constant monitoring of the excavator and coupler hydraulics.

#### ECS Detects & alerts:

- Major external hydraulic oil leaks in cylinders or hoses
- Complete failure of the primary engagement system
- Incorrect use due to insufficient operator training

## Special Options

### Reverse Hose System

A simple solution to a common problem.



It's long been an issue that coupler hoses are vulnerable due to their location. They can easily become entangled in the excavator linkage, causing rapid wear and tear, often causing major damage to the hoses.

But, when the hoses are between the bucket link they can't be damaged. It's simple.

They can easily become entangled in the excavator linkage, causing rapid wear and tear, often causing major damage to the hoses.

The only logical solution is to prevent the hoses from moving out of position in the first place.

The Hill Reverse Hose System consists of a specially designed manifold block and hoses encased in a protective sleeve that ensures they stay in the correct position at all times.



#### TITAN HD



#### TITAN HDX



#### DITCH CLEANING OR GRADING BUCKETS



## TITAN Buckets

Hill buckets are a simple, no-nonsense solution, meeting the needs of reliable, long lasting earth moving equipment.

Our buckets feature a double radius design, which gives superior digging performance due to the low drag factor. This also means that they fill quickly, meaning more productive digging and loading operations. Our Titan buckets have an enviable reputation for build quality, excellent digging performance and long service life.

They are built to conform to Original Equipment Manufacturers dimensions and have the option of fixed pin or bossed attachment points.

We have two options in the Titan Range - the HD and HDX style

Our HD range is available in widths between 450mm (18") and 3000mm (120"). The HD range is our standard duty bucket, which we build to a higher specification than a normal standard bucket, thereby enabling the user to enjoy a longer bucket lifespan. Our HD buckets can be ordered with teeth, blade or BORCE.

The HDX range is also available between 450mm (18") & 3000mm (120"). We manufacture these special buckets for the toughest applications, using Hardox, and other similar high strength and wear resistant steel types. These buckets can be ordered with heel shrouds, lip shrouds & side cutters. They are intended for long term use in the toughest applications, including demolition and quarrying. Your HDX bucket can be as unique as your application demands.

We also manufacture other types of buckets, such as V shape and riddle buckets. We also make Ripper teeth, Forks and Hydraulic Thumbs, which are specially designed to complement the Tefra coupler range.

**The Hill Engineering name has long been synonymous with superior safety delivered with absolute confidence.**





## The Queen's Award

Hill Engineering has been awarded the 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 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. The TEFRA has led to 30% year on year growth for Hill, with further significant growth projected.

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

**We establish life-long relationships with customers who can focus on excelling at their job, because they know we excel at ours.**







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