

**James Walker® RotaBolt**

Intelligent tension control...



Tension control at your fingertips



# Global Manufacturing for Local Solutions



## James Walker RotaBolt

World leaders in bolted joint technology and tension control.

Our range of tension monitoring systems and our unrivalled technical expertise have established us as a global centre of excellence for bolting technology.

Working closely with our clients, we are at the leading edge of pioneering bolted joint integrity across a wide range of industries.

Tension control is the critical factor for the reliability and safety of bolted joints, and the award winning RotaBolt® is unique. It delivers tension control at installation and throughout the life of a bolted joint.

The development of the original RotaBolt design has led to a comprehensive range of market leading products and we continue to pioneer new joint integrity systems that are technology-driven.



James Walker RotaBolt is a member of the James Walker Group, a dynamic global manufacturing organisation that supplies an extensive range of specialised sealing products and services to virtually every industrial sector.

James Walker Group has in excess of 50 production, engineering, distribution and customer support facilities worldwide – supported by extensive IT networks, e-commerce systems and logistics operations – to serve customers in over 100 countries.

Amongst its world-leading areas of expertise are high performance sealing and bolting technology. To maintain this position in the global market, James Walker is committed to continuous R&D in materials and applications arenas, both in-house and field-based, with blue chip client organisations.

# Delivering Safety, Reliability & Cost Benefit



The leading operators in industries such as oil and gas, chemical processing, power generation, civil engineering, environment, transport and defence are all achieving higher standards of safety and reliability with RotaBolt®.

Incorporating RotaBolt technology in product design and equipment build has been shown to deliver cost savings through reduced maintenance and down time, as well as delivering significant benefits from health & safety and environmental perspectives. In addition, the installation of RotaBolt on-site is delivering the same results and, increasingly, operators are seeing the benefits of maintaining operational reliability through RotaBolt's technology-driven assurance.



## Across the World's Industries

### Offshore Exploration & Extraction

RotaBolts can be found on a wide range of applications – from sub-sea oil & gas pipelines to CALM buoys; from crane slew rings to boom connections; from platform risers to Christmas trees.

### Refining, Chemical Processing & Power

Our technology is being applied wherever joint integrity is of paramount importance – from pressure vessels to heat exchangers; and in power generation, on everything from pumps to wind turbines.

### Civil Engineering

RotaBolt® products and expertise have been used on projects as diverse as Dublin's Millennium Spire and on the Falkirk Wheel – the world's first and only rotating boat lift.

### Defence

RotaBolts are being used across a range of specialist defence applications – on submarine and other extreme military environments such as battlefield structures.

### Transport

RotaBolts have been fitted extensively and proved their reliability within the rail industry on critical applications such as holding the brake trip mechanism – a safety device that applies the brakes if a driver passes through a red light. In addition, they are also fitted to other key applications in trains, on tracks and the London Underground rolling stock.

Wherever joints are subject to fatigue, vibration, pressure containment or structural slippage, RotaBolt technology is the solution.

# The Tension Control Solution



RotaBolt® 1

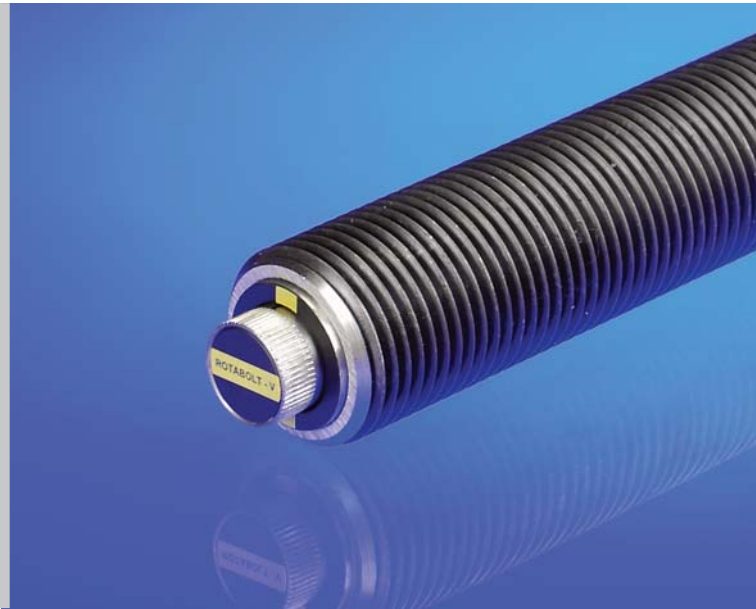
Bolted joint integrity relies on 3 factors – **joint design**, **bolt quality** and **tension control**. It is tension control that is critical to the reliability and safety of bolted joints. Traditional tightening methods measure torque or hydraulic pressure – they do not measure tension!

RotaBolts uniquely deliver tension control at installation and throughout the life of the bolted joint. They give a simple, accurate and continuous measurement.

No other product in the marketplace provides this tension control assurance which is vital to bolted joint integrity.



RotaBolt® 2



RotaBolt® Vision

## Tension Control Systems

The RotaBolt® range provides either finger-tip, visual or remote measurement of tension throughout the life of the bolted joint. They are easy to use, reliable and highly cost effective. Our continuing investment in research and development has seen our market leading range extended to include specialist products.

### RotaBolt® 1

The original RotaBolt design incorporates internal air-gap technology and 100% load test calibration.

Standard bolts are converted by inserting the RotaBolt indicator. Component materials are compatible with the parent bolt to nullify in-service thermal and galvanic effects.

Before bolt installation the special rotacap spins freely. As the bolt is tightened, it stretches elastically and the rotacap locks at the specified load test calibrated tension value.

As soon as tension reduces, the rotacap immediately rotates freely, to give a clear indication of tension loss.



IndicatorBolt

## RotaBolt® 2

RotaBolt® 2 provides an even greater range of tension control on installation tightening and in-service checking, by offering two tension settings in a single sensor.

It features a dual load indicator cap – the outer cap for high tension setting and the inner cap for low tension – giving the choice of an operational tension range, either for overload or maintenance control.



BreakBolt

## RotaBolt® Vision

RotaBolt® Vision is the world's first safety bolt to give a clear, visual indication of loss of tension across the bolted joint.

It operates on the same internal air-gap technology as the original RotaBolt, but instead of a tactile, finger-tip indicator, the Vision has a specially developed indicator which appears as an unbroken yellow line across the head of the bolt.

As soon as any tension is lost across the bolt, the indicator instantly rotates by ninety degrees to show a distinct right angle break in the yellow line. This is clearly visible up to 25 metres away and can easily be checked by binoculars over much greater distances.

The Vision is ideally suited for bolted joints in locations where access is restricted and close inspection difficult.

## BreakBolt

BreakBolt is a tension monitoring bolt that is deliberately designed to fail at a predetermined tension level. It successfully delivers an accurate breakaway mechanism as a primary safety feature and has been used on specialist sub-sea applications.

# Extended Technology

## IndicatorBolt

The IndicatorBolt is a special system based on the ASME recognised Indicating Rod Bolt. By incorporating advanced RotaBolt technology and 100% load test calibration, the reliability and accuracy of traditional direct extension measurement is significantly improved.

# A Centre of Bolting Excellence



Since the development of the original RotaBolt® in 1983, we have become established as the global leaders in tension monitoring and bolted joint technology. Our expertise is unrivalled – our culture is technology driven and assured.

As a centre of excellence for bolting technology, we have a continuous programme of research and development and deliver a range of technical support and consultancy services.

Working closely with our clients to develop joint integrity solutions in challenging environments, we deliver assurance, peace of mind and increased profits through the provision of cost effective solutions.



## Working to the highest quality standards

### BSI Accreditation

RotaBolt is BSI accredited to BS EN ISO 9001:2000.

Our processes and procedures are geared to assured product quality, continuous improvement, employee development and customer satisfaction.

### Germanischer Lloyd Wind Energy Assurance

Germanischer Lloyd, a leading and independent approvals and certification organisation, has approved RotaBolt control for general industrial usage.

RotaBolt was tested for accuracy and repeatability, fatigue strength and resistance to dynamic and temperature loading.

### Corrosion Testing

Following 28 days of exposure to a salt spray and acid environment, during corrosion testing carried out by the UK based Defence Research Agency which formed part of the Germanischer Lloyd approval process, RotaBolt's reliability and performance was shown to be unaffected.

### Total Service

We provide a full range of bolted joint support services geared to local customers in a global market.

From joint and bolt design through to metallurgy, alloy selection and application engineering.

Our depth of experience in project management and implementation means that we can also deliver bolted joint management and technology training, on-site installation and site surveys, LDAR and tightening selection.

Wherever it is necessary to accurately maintain and monitor tension across a bolted joint and where joint integrity and safety are of paramount importance – RotaBolt® is the service solution.



# Some of Our Clients

Acordis Acetate	Conoco Phillips	Marathon Oil
Alstec	Cooper Cameron	Metronet Rail BCV
Alstom	Corus	Mitsubishi Heavy Industries
Alvis	David Brown Vehicle Transport	MOD
AMEC	Dow Corning	National Oilwell
Applied Materials	Dupont	New South Wales State Rail
Associated British Ports	Exxon Mobil	Nippon Oil
Aughinish Alumina	Favelle Favco Cranes	NTL
Avesta Polarit	FMC	Petronas
Balfour Beatty	Halliburton KBR	Petroplus
BASF	Huntsman Tioxide	Powergen
BL Pegson	Ineos Chlor	Shell
Bluewater	Jaguar	Sparrows Offshore
BNFL	Kemira GrowHow	Suzlon Energy
Bombardier Transportation	Kenz Cranes	Terex Comedil
BP	Kvaerner Oil & Gas	Vetco Gray
British Energy	Liebherr	Vestas Wind Systems
Butterly Engineering	Lindsey Oil Refinery	WFEL
Cegelec	MAN B&W Diesel	



# James Walker<sup>®</sup> RotaBolt

**James Walker RotaBolt**  
Peartree Business Park  
Peartree Lane  
Dudley  
West Midlands DY2 0UW  
United Kingdom

Tel: +44 (0) 1384 214442  
Fax: +44 (0) 1384 455186  
Email: [sales@rotabolt.co.uk](mailto:sales@rotabolt.co.uk)

For further information on  
James Walker RotaBolt and  
our products please visit:

**[www.rotabolt.co.uk](http://www.rotabolt.co.uk)**

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