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PRESS RELEASE

Forth Ports rolls out Reactec's innovative HAVwear system across all UK ports

Forth Ports, one of the largest Port Groups in the UK, has rolled out Reactec's innovative wearable system which monitors the vibration exposure experienced by power tool users to reduce the risk of developing the incurable HAVS* condition.

The investment of around 100 HAVwear watches, to upgrade their existing Reactec HAV management technology, demonstrates Forth Ports' continued high level of commitment to Health and Safety across their business. HAVwear, is a wearable wrist worn device that determines in real time an individual's exposure to vibration during every day use of power tools which are used at the ports.

Forth Ports own and operate eight commercial ports in the UK - Tilbury (London), Grangemouth, Dundee, Leith, Rosyth, Methil, Burntisland and Kirkcaldy – and implements a 'Safety F1rst' culture at all levels across the business to protect employees, customers and visitors.

Forth Ports has its own in house engineering teams who maintain port equipment including very large container cranes, straddles carriers and fork lift trucks. The Reactec team supported the implementation of the HAVwear watches and provided onsite train the trainer sessions to allow instructions to be disseminated across the group. The tools used across the business range from small battery screwdrivers to impact wrenches, with grinders, hammer drills and many other tools in between.

Dr Derek McGlashan, Group Health, Safety & Environment Manager for Forth Ports said: "As a major employer across the UK, the health and safety of our workforce is at the core of our values with safety being our top priority. We have worked with Reactec for a number of years,

reviewing and commenting on their scientific studies and have been impressed with their commitment to seeking innovative ways to reduce the risk that over exposure to vibration can cause people in the workplace. Our roll out of HAVwear is now complete and the feedback from our engineering teams has been positive.

Sadly, all too often in Safety we focus on events that have occurred, this is one of a number of pro-active actions we continue to invest in to ensure the health and wellbeing of our employees to prevent them being injured at work. This system fits neatly into our Safety Management System and our existing Occupational Health Surveillance Programme. Where employees are potentially exposed to vibration, all organisations should take vibration management and monitoring seriously, as the impact of poor vibration management can have life changing consequences for tool users."

Jacqui McLaughlin, Chief Executive of Reactec said: "It's great to work with Forth Ports who have a strong safety culture across their ports. With HAVwear Forth Ports can now confidently determine real time vibration exposure which will ultimately help reduce the risk of their workforce being exposed to HAV and developing the incurable HAVS condition. We designed and launched HAVwear three years ago to ease the assessment of HAV exposure and help employers reduce the risk faced by a workforce using vibrating tools and in recent published research in the International Journal of Industrial Ergonomics** our data has been independently validated." (**see notes to editors for more).

Launched in 2016, HAVwear is a wearable wrist device that monitors in real time an individual's exposure to vibration when using power tools. Reactec's analytical platform provides cloud-based reporting which allows dynamic risk assessment and exposure reduction. HAVwear has enjoyed significant sales since its launch and is in use by a number of leading companies in the UK, including British Airways, Murphy Group, Morgan Sindall, Balfour Beatty, the Environment Agency, Siemens and Babcock. Reactec is also targeting other industry sectors both in the UK and internationally.

* Hand Arm Vibration Syndrome (HAVS), which is also known as Vibration White Finger, is one of the most common industrial diseases in the UK. The condition is usually caused by the prolonged use of power hand tools, whose vibrations can damage the blood vessels, nerves, muscles and joints of the hand, wrist and arm. 300,000 people in the UK suffer from the condition, for which there is no known cure, only prevention.

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Notes to editors:

About Forth Ports:

- Forth Ports Limited is intrinsically connected to the success of the local and national economies in which they operate. They own and operate eight ports in the UK Tilbury (London), Grangemouth, Dundee, Leith, Rosyth, Methil, Burntisland and Kirkcaldy. All of the commodities which they handle, export, import or distribute allow the economy to thrive and trade, and enhance the quality of life of many people in the UK and countries around the world. The business strategy is to invest in supply chain solutions, infrastructure and technology to deliver an excellent service to customers across a wide range of key sectors.
- Within and around the Firths of Forth and Tay, Forth Ports manages and operates an area of 280 square miles of navigable waters, including two specialised marine terminals for oil and gas export and provides other marine services, such as towage and conservancy. www.forthports.co.uk @forthports

About Reactec

- Reacted is the award-winning UK market leader in the provision of monitoring devices and a management
 information reporting platform of Hand Arm Vibration (HAV) risk the cause of one of the most common industrial
 diseases in the UK, Hand Arm Vibration Syndrome (HAVS) also known as Vibration White Finger.
- Reactec's Analytics Platform which includes the HAVwear is an automated solution for employers to monitor and
 manage vibration exposure risks. The HAVwear is worn on the wrist of the tool user and exposure and tool data
 is transmitted online to provide companies with digital reports of their workforce exposure to potentially harmful
 levels of vibration. This product has c.50% market share of HAV monitoring devices sold in the UK.
 www.reactec.com @reactec
- Reactec has recently released a whitepaper documenting the results of their performance tests of HAVwear –
 http://www.reactec.com/article/download_new_reactec_white_paper_

What is HAV / HAVS?

- Hand Arm Vibration (HAV) is the cause of one of the most common industrial disease in the UK, Hand Arm Vibration Syndrome (HAVS) also known as Vibration White Finger with estimates that over 1 million UK workers are currently exposed to vibration over the HSE limit (source: HSE).
- There is no cure for HAVS, there is only prevention (source: HSE).
- 2 million* people in the UK are at risk of HAVs. But currently there are under 100,000** using monitoring systems, around 5% (source: *HSE **Reactec).
- 139% surge in disease related employee personal liability claims (2011 2014, Weightmans)
- 42% rise in the number of 'Hand Arm Vibration' non-compliances recorded through 20,000 site inspections in 2016 (source: BSG).
- There are 300,000 people suffering from HAVS in the UK (source: HSE).
- Successful HAVS related industrial disability claims have increased by 69% in last eight years (Industrial Injuries Disablement Benefit).

**The International Journal of Industrial Ergonomics

- Objective of the report: recent Improvements in battery and accelerometer technology have allowed for the
 development of a wearable device for the purpose of assessing hand transmitted vibration. The nature of a
 wearable sensor enables it to capture the effects different operator interactions have on transmitted vibration
 and address some of the limitations listed within Annex D of ISO 5349. The authors therefore seek to investigate
 the degree to which vibration exposure captured on the wearable sensor correlates with the human response to
 vibration as determined through temporary threshold shift (TTS) in vibrotactile perception.
- The test results demonstrate that the assessment of vibration transmitted to the tool operator using a wearable device of the proposed methodology is positively correlated with the human subjects' response to vibration. The research further demonstrates that the principle of a wrist worn wearable device as an indicator of HAVS health risk is valid and can address a number of limitations identified with the use of tool emission data. Utilising data from this technology it is apparent that reliance on conventional methods can significantly underestimate the risk faced by the most exposed individuals.
- For more information on this and to read the journal paper in full please go to: https://www.reactec.com/assessing_correlation_of_human_response_to_vibration