

# Reactec Analytics Platform

*Wearable & online technology to personalise monitoring and develop effective risk reduction activities.  
Onsite & mobile worker solutions*



**Supports  
the Control  
of Vibration at  
Work regulations  
2005 & HSE  
compliance**

**REACTEC**

INFORM : PROTECT : DEPLOY

**Inform, protect & deploy resources and assets to effectively manage HAVS risks**

## Ground-breaking system to more easily and accurately assess and mitigate vibration risk.

The Reactec Analytics Platform integrates wearable & online technology to personalise monitoring and reporting of hand arm vibration (HAV) exposure risk. By providing a trigger accurate and real-time assessment of exposure, associated risks can be more easily and effectively identified, reduced and designed out, based on fact-based data instead of estimations.

*Supports positive behavioural change towards HAV risks.*

### Continuous monitoring for continuous improvement

The HAVWEAR is a wearable wrist device which tracks & calculates in real-time an individual's HAVs exposure, informing the wearer of their personal exposure points and thresholds. The HAVwear uses a tools pre-defined vibration magnitude and length of time the tool is in use to calculate exposure points in accordance with The Control of Vibration at Work regulations 2005 and in accordance with HSE guidance.

A Bluetooth enabled HAVwear combined with the Reactec mobile App monitors real-time work situations. Team leaders and employees responsible for worker welfare can identify and address exposure risks on the ground, and not later. These interventions are an essential part of a company's continual risk reduction plan. Never before have employees been as proactive in improving their personal and colleague HAVs welfare.

### Reports real-time vibration in the field

The HAVwear also has a unique ability to further improve protection against exposure risk by determining the real-time vibration exposure experienced by the wearer. Due to the high level of variability of exposure from tool application and operator technique in the field this unique information helps employers further reduce risk with evidence-based controls.

Both exposure data from the pre-defined vibration magnitude and the real time vibration are stored in the Analytics online reporting platform to be reviewed and compared as required. This added insight helps develop more effective controls to reduce HAVS exposure risk, by highlighting issues previously undetected by static and generic risk assessments.



Mobile & on-site install solutions

# HAVWEAR

## Personal HAV protection

- Wrist mounted to track tool use with no impact on the comfort or productivity of the wearer.
- Realtime calculation and display of personal HAV risk exposure points.
- Personal & constant monitoring supports positive employee behavioural change towards HAV risks.
- Operator alerted when personal EAV and ELV exposure values are exceeded.
- 15 minute daily charge or 1hr twice a week.
- Easily install into a vehicle, office or on-site.

## Improves worker protection

- Personal & constant exposure monitoring increases workforce awareness & safety.
- Greater accuracy of exposure monitoring supports long-term health management.
- Real-time vibration monitoring to identify unexpected exposure risk due to poor tool use or performance.
- Supervisor rapid intervention with field mobile App, automated emailed reports & alerts.



## HAVWEAR display & alerts

### Latest tool used

Last 4 characters of tool model number.

### HSE points

Vibration exposure points

### Operator initials

First name initial and first three characters of last name

### Exposure action values

Indicates exposure thresholds reached

**The HAVWEAR beeps and vibrates to alert the operator**

**Below action value**

**EAV exceeded**  
Split into 3 equal sections to indicate incremental exposure

**ELV exceeded**

2 sec. alert

5 sec. alert

10 sec. alert

20 sec. alert

## Data driven controls to reduce HAVS exposure ALARP

- Supports behavioural change and helps involve all duty holders
- Measure the effectiveness of controls to aid design changes
- More accurate assessment of exposure.
- Unique information to help deploy the most effective measure of controls.



## Why constant monitoring?

Without accurate knowledge of operator daily exposure, the likelihood of safely applying controls to keep HAVs exposure below required levels is extremely low. This is due to the unpredictability of most work processes across sectors from landscaping to engineering.

It is also widely accepted that manual assessments of exposure in the workplace, following regulations, will have a high level of uncertainty. This can influence actions to reduce risk as well as assessing their effectiveness at a later date.

## Reactec Analytics Reports

The Analytics online reports are easy to use and help companies develop more effective controls to reduce HAVs exposure risk. Fully hosted by Reactec employers can view reports online or receive them automatically by email. Alerts can also be set to inform managers of threshold breaches.

The reports include individual worker exposure and related tool use to pinpoint exposure hot spots. Also over the longer term the Reactec Analytics Platform can be used to manage the exposure of the whole works force and so impact positively on health management.

### Reduce risk ALARP with evidence-based solutions

#### Alternative work methods

The reports more accurately identify areas of risk and where to look for alternative work methods to design out risks.

#### Equipment selection

Tool usage reports highlight the most suitable equipment for tasks. Compare tool vibration magnitudes in the field to help select the lowest vibration tools that are suitable and can do the work efficiently.

#### Maintenance & purchasing policy for replacing old plant

View how long tools have really been used. This can help maintenance scheduling, plan replacements and identify poor tool use. Also monitor actual tool vibration to predict tool failure or poor use.

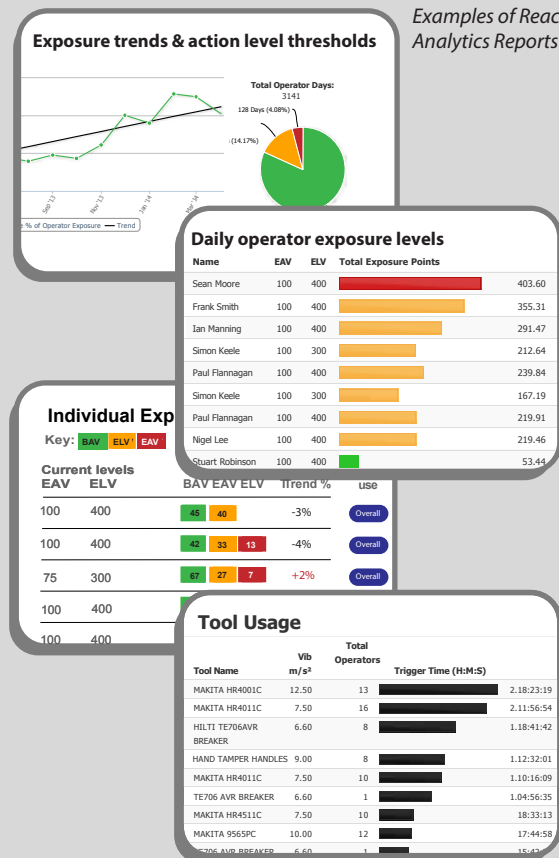
#### Work schedules

A clearer understanding of tool use and related exposure identifies individuals over exposed and re-structure of work rotas across projects, departments and working groups.

#### Measure effectiveness of controls

Accurate and continuous monitoring is imperative to risk assess, deploy and measure the effectiveness of controls.

Examples of Reactec Analytics Reports



## Robust defence against civil litigation

- Continuous monitoring provides conclusive exposure records.
- 1 click download of reports reduces preparation time and paper work.
- Auditable, accurate & tamper data provides a more robust defence.
- Reduced risk helps secure lowest insurance premiums.



# How it works

## Inform & protect

At the start of a shift each an operator signs out a personalised HAVwear which informs them of their exposure points and action level thresholds.



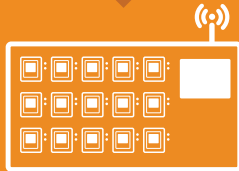
## Manage

The Reactec mobile App monitors real-time work situations, so team leaders and employees responsible for worker welfare can identify and address exposure risks on the ground, and not later.



## Collect

At the end of a shift the operator returns their HAVWEAR to a docking station to recharge and transmit data.



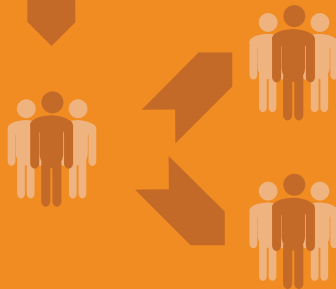
## Reduce

Analytics online reports help companies develop more effective controls to reduce HAVS exposure risk. The reports include individual worker exposure and related tool use to pinpoint the source of exposure.



## Share

Online access to data ensures all duty holders are involved in addressing the risk to employees of HAVS. Securely hosted by Reactec, companies can centrally manage employee access to specific reports.



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## Programming tool tags and ID cards

Reactec provide free software applications to enable employers to program RFID cards and tool tags. Simply place a Tool tag or ID card onto the RFID read/writer to input or edit employee's exposure thresholds into the cards and tool data into the Tool tags. The system supports RFID cards, and many other commonly used identity cards including the Construction Skills Certification Scheme (CSCS) card.

An individual's exposure thresholds programmed by an employer on the card is encrypted and accessible only by that employer. By simply placing the ID card onto a Docking station the employee can collect a HAVwear for that shift personalised with their exposure thresholds.

The RFID read/writer and software can be installed onto a PC to program Tool tags and ID cards.



## Optional tablet system requires no software installation

The system includes a tablet with pre-loaded software and an RFID read/writer. Simply connect the tablet to your Wifi network, plug in the RFID read writer and the easy to use software will enable you to program Tool tags and ID cards in minutes.



## Testimonials

Reactec's system saves time and money which was spent on the old cumbersome paper-based system, and it improves worker efficiency".

*Carillion*

"Safety has increased and also productivity – a double win".

*Wilmott Dixon*

We have been able to apply resources and measures more effectively to address our vibration risk".

*Murphy Group*

"Daily monitoring has provided robust exposure data to support the defence of employee litigation of HAVS exposure on recent claims where claimant payments have been considerably reduced".

*Stirling Council*

"Continuous digital monitoring goes beyond the directive and establishes a useable management tool to raise awareness and educate tool users".

*Morgan Sindall*

"Overall we have already seen a dramatic drop in exposure since we deployed the Reactec Analytics Platform. It made tangible an invisible risk and helped us immediately refine and better design our measure of controls".

*Sir Robert McAlpine*

"...invaluable both to our employees as individuals, in terms of their health and wellbeing and to Skanska from a business operations perspective".

*Skanska*

**10%**  
of workers

## Hand Arm Vibration Syndrome (HAVS)

Dose-response data indicates that "10% of individuals will have finger blanching symptoms after 12 years if exposed at the action value of 2.5m2 A(8) [100 HSE exposure points] or after 6 years if exposed at the limit value of 5m2 A(8) [400 HSE exposure points]".

"Exposure below the Action Value cannot be considered safe..." (HSE)

Any level of vibration exposure is unsafe so deploying controls as robustly as possible no matter the level of risk is essential. The Reactec Analytics Platform will support reduction activity to make what was once difficult or inaccurate, reasonable and practical.



The Reactec Analytics Platform includes

**HAVWEAR HAVMETER**

**REACTEC**

INFORM : PROTECT : DEPLOY

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