### HAND ARM VIBRATION SYNDROME

#### **Health Effects**

- ► Hand-Arm Vibration Syndrome (HAVS) causes white fingers, loss of grip strength, sensory loss
- Carpal Tunnel Syndrome (CTS) causes numbness, tingling, motor function loss

#### **Quality of Life Impact**

- ▲ Loss of dexterity and strength impact work skills
- ▲ Difficulty working in cold or damp conditions
- ▲ Pain & inability to perform fine tasks like fastening buttons
- Difficulty sleeping

Symptoms may come and go but with continued exposure can become permanent. Damage can start in as little as 6 months.



















### HOW LIKELY ARE YOU TO DEVELOP HAVS?

1 in 10 people exposed to 100 points a day, will develop HAVS within 12 years

1 in 10 people exposed to 400 points a day, will develop HAVS within 6 years



### HAVS MONITORING – EXPOSURE LIMIT EXPLANATION

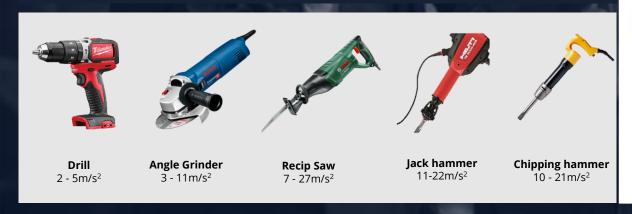
### **Globally Recognized Vibration Exposure Thresholds**

#### **Action Value (EAV) – 100 points**

- ▶ 100 points = 8 hours of trigger time on a tool with 2.5m/s²
- ▶ Take Actions to reduce exposure
- ▶ 1 in 10 develop HAVS in 12 years at this level

#### Limit Value (ELV) – 400 points

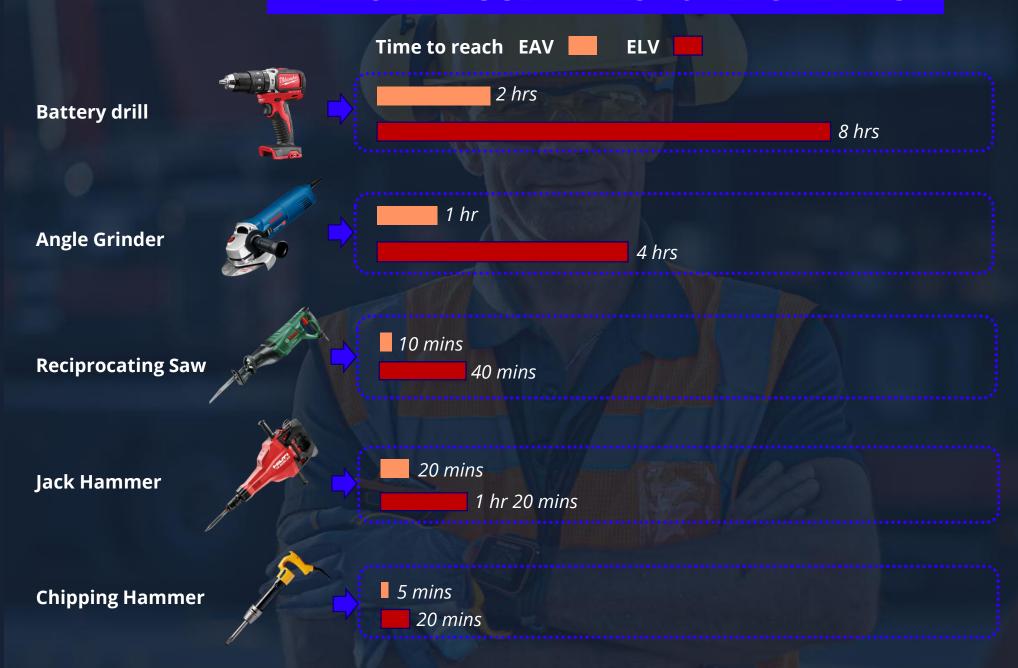
- $\blacktriangleright$  400 points = 8 hours of trigger time on a tool with  $5m/s^2$
- Don't work above this level
- ▶ 1 in 10 develop HAVS in 6 years at this level



40	265	800	Ī							
30	150	450	900							
25	105	315	825	1250						
20	67	200	400	800	1200	ľ				
19	60	180	360	720	1100	1450				
18	54	160	325	650	970	1300				
17	48	145	290	580	865	1150				
16	43	130	255	510	770	1000				
15	38	115	225	450	675	900	1350			
14	33	98	195	390	590	785	1200		2001	
13	28	85	170	340	505	675	1000	1350		_
12	24	72	145	290	430	575		1150	1450	
11	20	61	120	240	365	485	725	970	1200	1450
10	17	50	100	200	300	400	600	800	1000	1200
9	14	41	81	160	245	325	485	660		970
8	11	32	64	130	190	255	385	510	640	770
7	8	25	49	98	145	195	295	390	490	500
6	6	18	36	72	110	145	215	290	360	455
5.5	5	15	31	61	91	120	180	240	395	365
5	4	13	25	50	75	100	150	200	250	300
4.5	3	10	21	41	61	81	120	160	205	245
4	3	8	16	32	48	64	96	130	160	190
3.5	2	6	13	25	37	49	74	98	125	145
3	2	5	9	18	27	36	54	72	90	110
2.5	1	3	6	13	19	25	38	50	63	75
2	1	2	4	8	12	16	24	32	40	48
1.5	0	1	2	5	7	9	14	18	23	27
1	0	1	1	2	3		6	8	10	12
	5 min	15 min	30 min	1 hr	1.5 hr	2 hr	3 hr	4 hr	5 hr	6 hr
	30 25 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5.5 5 4.5 4 3.5 3 2.5 2 1.5	30 150 25 105 20 67 19 60 18 54 17 48 16 43 15 38 14 33 13 28 12 24 11 20 10 17 9 14 8 11 7 8 6 6 6 55 5 5 6 4 45 3 4 3 35 2 25 1 2 1 15 0 1 0	30	30         150         450         900           25         105         315         825           20         67         200         400           19         60         180         360           18         54         160         325           17         48         145         290           16         43         130         255           15         38         115         225           14         33         98         195           13         28         85         170           12         24         72         145           11         20         61         120           10         17         50         100           9         14         41         81           8         11         32         64           7         8         25         49           6         6         18         36           55         5         15         31           5         4         13         25           45         3         10         21           4         3	30         150         450         900           25         105         315         825         1250           20         67         200         400         800           19         60         180         360         720           18         54         160         325         650           17         48         145         290         580           16         43         130         255         510           15         38         115         225         450           14         33         98         195         390           13         28         85         170         340           12         24         72         145         290           11         20         61         120         240           10         17         50         100         200           9         14         41         81         160           8         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12         24         72         145         290         430         575         885           11         20         61         120         240         365         485         725           10         17         50         100	150	30

Exposure Time (T)

### TYPICAL TRIGGER TIMES TO REACH LIMITS



### WHAT CAN MAKE A DIFFERENCE?



**Tool Condition** 



Grip & force on the tool



**Tool Selection** 



Adequate tool use training

### R-LINK - THE KEY COMPONENTS



#### 1. R-Link Watch

Watch module independent of strap. R-Link is electronically assigned to individuals using RFID cards.



#### 3. ID Cards

ID cards are assigned to workers to personalise data.



#### 2. Charging Station

Charging station charges watches & Gateway automatically sends data to the Analytics.



#### 4. RFID Tags

RFID tags are programmed with tool information to support tool performance & utilisation insight.

## USER GUIDE FOR HAV MONITORING USING R LINK WATCH



### R-LINK WATCH DISPLAY

4<sup>th</sup>alert 20 sec

3<sup>rd</sup> alert 10 sec

2<sup>nd</sup> alert 5 sec

1<sup>st</sup> alert 2 sec

Alerts
Beeps & vibrates

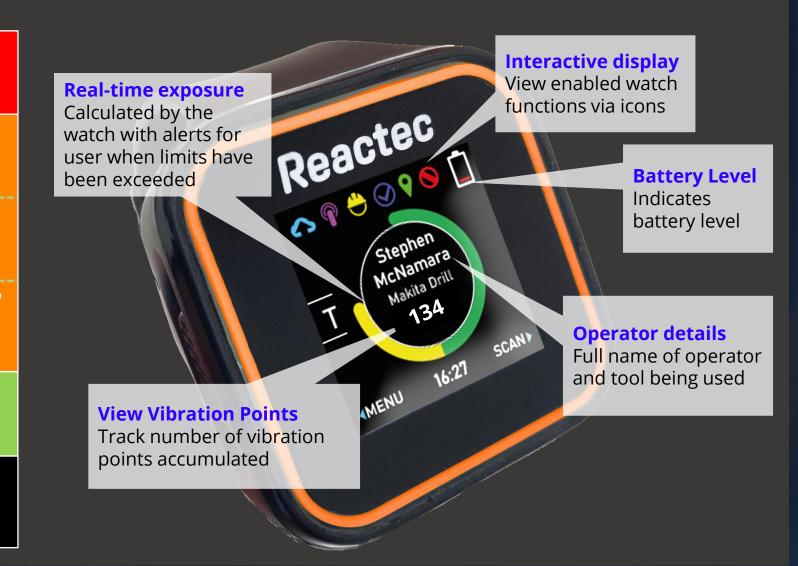
Upper limits exceeded

Limits exceeded

Split into 3
equal parts
to display
incremental
increases in
exposure.

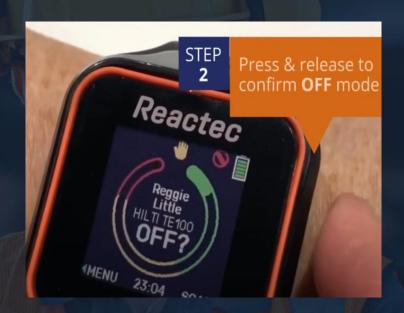
**Below limits** 

Colour bar displays threshold levels



### SWITCHING THE WATCH OFF





# When not using vibrating tools the watch can be put into OFF mode

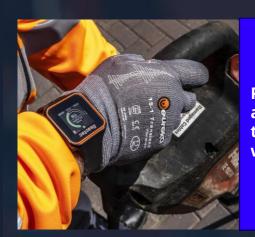
- 1. Press and hold the right hand side button for 3 seconds
- 2. When the screen displays "OFF?" Release the button briefly, then press again to confirm





Alternatively, you can create an OFF Tool Tag with a vibration value of 0.0m/s<sup>2</sup>

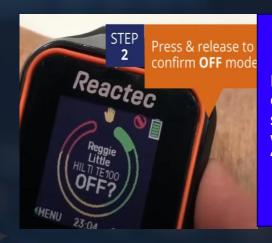
### WHAT YOU SHOULD KNOW



Pay attention to watch warnings!



If tools have RFID tags connect to tags!



If moving off tools, switch watch "off"



Wear the watch until the end of your shift



Return watch to charger at the end of the day

## AND FINALLY...

As with all tools, the watch should be handled with care. The following video outlines helpful advice and tips on good watch care and maintenance.