

Hand Arm Vibration Syndrome (HAVS)

What is HAVS?

HAVS occurs when people are exposed to excessive vibration. Vibrating tools such as breakers, drills & grinders can cause conditions including 'vibration white finger' and may also cause disorders of bones, muscles, joints & sensory nerves.

How long can I use a tool for?

The amount of time you can safely use equipment varies depending on the type of tool, its condition, the materials you are working with and the job you are doing.

It is essential that you check carefully

to ensure you are not facing the risk of developing a hand arm vibration-related disease, such as 'vibration white finger'.

Preliminary checks

- Use data based on the actual materials you are drilling or cutting, for example, safe periods for tarmac verses concrete may differ.
- Make sure you use the right type, size and shape of tool to reduce risk.
- Look after tools and maintain them properly to reduce unnecessary risk.
- Keep all blades and points sharp.

Calculating risk limits

The length of exposure to hand-arm vibration is measured in metres per second squared (m/s²). You are at greater risk if you use a tool rated above 2.5 m/s² throughout an 8 hour working day.

Continuous use of a tool rated above 5.0 m/s² represents a dangerously high risk. If using a variety of tools see table below.

HOW TO USE THE HAVS RISK CHART:

- Look on the left-hand scale for the vibration output (m/s²) of the tool you are using (Tool list on pages 36 and 37). Read across the exposure time column to identify HSE points.
- Add the HSE Points for each tool used in a day as a guide to risk. Do not exceed 400 points.
- For example – using a tool rated 13 m/s² for half an hour will result in 170HSE points. Using a second tool rated at 5 m/s² for a further 2 hours will add another 100 HSE points giving a total of 270 HSE points.

TOOL VIBRATION IN M/S ²	25	315	625	1250						
	20	200	400	800						
	19	180	360	720	1450					
	18	160	325	650	1300					
	17	145	290	580	1150					
	16	130	255	510	1000					
	15	115	225	450	900	1350				
	14	98	195	390	785	1200				
	13	85	170	340	675	1000	1350			
	12	72	145	290	575	865	1150	1450		
	11	61	120	240	485	725	970	1200	1450	
	10	50	100	200	400	600	800	1000	1200	
	9	41	81	160	325	485	650	810	970	1300
	8	32	64	130	255	385	510	640	770	1000
	7	25	49	98	195	295	390	490	590	785
	6	18	36	72	145	215	290	360	430	575
	5.5	15	30	61	120	180	240	305	365	485
	5	13	25	50	100	150	200	250	300	400
	4.5	10	20	41	81	120	160	205	245	325
4	8	16	32	64	96	130	160	190	255	
3.5	6	12	25	49	74	98	125	145	195	
3	5	9	18	36	54	72	90	110	145	
2.52	3	6	13	25	38	50	63	75	100	
2	2	4	8	16	24	32	40	48	64	
1.5	1	2	5	9	14	18	23	27	36	
1	1	1	2	4	6	8	10	12	16	
	15m	30m	1h	2h	3h	4h	5h	6h	8h	
	EXPOSURE TIME									

Vibration Risk Colour Coding

The Construction Federation and Hire Association Europe in partnership with the HSE have developed a simple 'traffic light' system of colour coding to show the vibration risks associated with tools and equipment.

All equipment in this catalogue with a vibration risk follows the traffic light system.

High Vibration Risk Equipment

Covers products over 5m/s² or 400 points. this equipment could cause vibration injury even when used for a short time each day. Specific risk assessment will be required.

Medium Vibration Equipment

Cover equipment that may be used for two hours maximum each day with out further assessment. Products at the low end of the amber range may be used for longer periods but must be justified by a risk assessment.

Low Vibration Risk Equipment

Covers equipment that may be used intermittently throughout an eight hour day with a low risk of vibration injury.

Hand Arm Vibration Syndrome (HAVS) Chart

EQUIPMENT NAME	MODEL NO	HAV
BREAKING & DRILLING		
Breaker Lt	HM0860C	11.5
Breaker Med	TE700	10
Breaker heavy	TE1000	6.5
Breaker Super heavy	HM1800	11.2
Breaker Mega	TE3000	7
Breaker Heavy Hydraulic	20-140	5.7
Cordless 3/8 Percussion	PSB 9.6v	2.5
Cordless drill/driver 1/2"	BDF451SPE	2.5
	DV18DSFL	2.5
Cordless percussion drill 1/2"	GSB24-VE2	14.6
	BHP453RFX	10
Cordless roto hammer	GBH24VRE	11
	GBH36VLI	20
	TE6-A36	9
Diamond Drill	DD100	2.5
	DD150	3
	DMB131	3.5
	8406C	6.5
Drill Percussion	GSB16RE	16
	GSB20-2RE	15
	GSB22-2RE	14.6
	8419B-2	15
	HP2030	8.5
Drill Rt angle 10mm (3/8")	DA3000	2.5
Cordless	GBH18V-LI	13
Drill Rt angle 12mm (1/2")	6300LR	2.5
Drill Gutbuster 3/4"	MB723S	U/K
	B4-32	U/K
Percussion Drill 3/8"	GSB16RE	16
	GSB20-2RE	15
	GSB22-2RE	14.6
	8419B-2	2.5
	HP2030	8.5
Roto-Hammer Lt	GBH2-18RE	2.5
	GBH2-20SRE	14
	TE2	14.2
Roto-Hammer Med	GBH 2SE	14
	GBH 24DSE	17
	GBH2-24DSR	17
	GBH 4/32DFR	10
	HR2020	15.5
	HR2450	13.5
	HR2340	15.5
	TE30C	11
Roto Hammer Heavy	HR3000	18.5
	GBH5-3BD	10.5
	HR3540C	11.5
Roto Hammer Superheavy	TE76ATC	17
	TE80	8.8
	Magic	9.8

CLEANING		
Floor Polisher/Scrubber		2.5
Floor Scrubber/Drier	TT4045	2.5
	Scrubtec 343.2	2.5
Floor Sander/Scrubber	NMD100S	2.5
Pressure Washer cold elec	Storm	3
	RE125	3
Pressure Washer cold petrol	KPE20	3

EQUIPMENT NAME	MODEL NO	HAV
CONCRETING/SURFACE PREPARATION		
Disc Cutter Petrol 12"	K760	2.4
14"	K750	5
Disc Cutter Electric 12"	GND24-300	5.5
Floor Grinder H/Duty Elec	PD23	6.5
Floor Planer	FS200	9.8
Floor Saw 18"	BFS1345	7.5
Floor Tile Remover		8.5
Masonry Sawbench	TS350E	7
	3EDW350p	4.5
Needle gun Air	VLI203	6
Plate Compactors Lt duty	VP1030	4.7
	VP1135A	4.62
	WP1235	4.5
	PCLX320	3.2
Plate Compactors med duty	PC400	3.4
Planer	KP0810K	3.5
Poker Hi Frequency 45mm	IRFUN45	4
Power Float		6.8
Roller Vibrating Single drum	BW71	5.5
Roller Vibrating 22" petrol		7.4
Roller Vibrating Twin Drum	BW80	2.5
Screed 1 MAN 2 & 5m petrol	EASYSCREED	8.6
Trench Compactor	RT66	22.63
Vibrating Poker 25mm		5.6
Vibrating Poker 75mm		10

GARDENING & LANDSCAPING		
Brush Cutter 2 stroke	FS55	5.5
	FS90	6.1
	FS200	4
	FS300	5.3
	KM55/90R	9
Hedge Trimmer 240v	HE700	2.5
	AHS55	4
Hedge Trimmer petrol	HS80	6.5
	HS45-24	10
Hi-Lift Tracked Wheelbarrow	HT1100	5.24
Lawn Aerator	BANNERMAN	5.4
Lawn Mower,	GMP21	12
	HRG466PKEAIZZY	3
Lawn Rake	ALR900	2.5
Lawn Scarifier Elect		2.5
lawn Scarifier petrol	LS42	6.2
Log Splitter	ALKO LHS6000	2.5
Powersythe 1m		7
Post Hole Borer 1 MAN	BT121	2.2
Post Hole Borer 2 man	BT360	8.4
Power Wheelbarrow	MUCKTRUCK	5.8
Power Wheelbarrow TkD Hi Lift	HS1100	5.24
Rotovator L/duty petrol	Tiller C2000	5.8
Rotovator M/duty petrol	C8	5.12
Rotovator H/duty petrol	C13	6.7
Shredder Petrol 3"	TW13/75G	2.5
Shredder Elect 40mm cut	GE250	2.5
Stump Grinder petrol	C500	10
	HSEP4224	9.3
Turf Cutter	GMTC	2.1
Vacuum & Blower Elec	ES40	1.2
Vacuum & Blower 2 stroke	SH56C	8.5

Hand Arm Vibration Syndrome (HAVS) Chart Continued

EQUIPMENT NAME	MODEL NO	HAV
PAINTING AND DECORATING		
Paddle Mixing drill	MM305	1.7
	GRW11E	2.5

FIXING		
Autofeed Screwdriver	6834	2.5
Cartridge Nail Gun red cart	DX460	1000
black cart	DX460	600
Impact Wrench elec 1/2"	14367	16.5
3/4"	6906	14
Paslode Nail Gun	IM350/+	2.6
Paslode brad nailer	IM65	3
	IM65A	3
Tek Gun	680-2BV	2.5

SANDING		
Artex/Paint Stripper	P/Prep EPO180	2.5
Artex/Paint Stripper diamond	P/Prep Diamond	4.5
Belt Sander	9403	2.5
Finger Sander	9030	2.5
Biscuit Jointer	3901	2.5
Delta sander	MSXE6361/2	15
Floor Edge Sander	HT7	2.7
Floor Sander	HT8Ω	2.5
	SANDGLIDER	9.2
Orbital Sander	9035kb	7.5
Orbital Sander h/d	GSS28A	4.5
Palm Sander	BO4553	3.5
Random Rotary Sander	GEX150ACE	4
	BO6030	4

SAWING & CUTTING		
Alligator Saw	GFZ16-35AC	7
Angle Grinder 4.5"	GWS7-115	6.5
	GWS8-115	6.5
	9564H	10
Angle Grinder 5"	GWS9-125	5
	9005B	2.5
Angle Grinder 7"	9607b	U/K
Angle Grinder 9"	GWS22-230	8.5
	9069S	4
	GA9020	5.5
Chasing Machine	DC-SE20	4.5
	GEX150ACE	4
Circular Saw 5"	AEG TKS42/45	U/K
Circular Saw 7"	GKS 65	3
	5703R	3.5
Circular Saw 9"	GKS85S	3.5
	5903R	3
Cut-off bench saw	2414B	4
Die Grinder	GG527L	8
Door Trimmer saw	KDT184	U/K

EQUIPMENT NAME	MODEL NO	HAV
SAWING & CUTTING		
Jigsaw Med	BSPE60	U/K
Jigsaw H/D	GST100BCE	3
	WSJ110	2.5
	4304T	7
	GST135BCE	3
	WSJ750	10
Mitre Saw	2400B	4
	LS1013	2.5
	LS1030	2.5
	DW708LX	3.8
	LS1016	2.5
Nibblers	GNA1531	2.5
	RSS636-2	4.6
Reciprocating Saw	JR3000v	13
	JR3050T	22
	Tiger ANC	28.3
	CR13VA	16.8
CORDLESS	BJR182	14.5
Router H/duty	GOF 1300ACE	3
	GOF1700E	5.5
	M12V	4.5
Tilesaw, Electric	TCS230M	0.6
	COMBI 200	1
	TCS181A	1.5
Tilesaw, Electric	TR250H	0.9

PLEASE NOTE:

In most cases vibration figures for use in the Traffic Light System have been declared by the respective manufacturers, the values may not reflect the vibration emission of the tool in real life conditions. Please note that the vibration symbols should not be used as a substitute for your own risk assessment.

For practical HAVS data, further information is on the Operc website: www.operc.com/havtec/