CNC Research

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CNC Research

A place for generic research notes related to CNC routing

Install and OH&S

Noise

From the Safe Work Australia [1] documentation

The national standard for exposure to noise in the occupational environment is an average daily exposure level of 85 decibels. This is consistent with overwhelming scientific evidence which indicates that exposure levels above 85 decibels represent an unacceptable risk to the hearing of those exposed.

It also states:

The levels specified in the national standard are the maximum acceptable exposure levels for noise in the workplace. However, over long periods, repeated noise exposure at between 75 and 85 decibels may be a small risk to some people. With progressively increasing levels, the risk becomes greater. Workplace noise levels lower than 85 decibels are, therefore, desirable, if practicable.

NoiseExposure Level	**Duration Time**		
(dBA)	Hours	Minutes	Seconds
80	25	24	
81	20	10	
82	16		
83	12	42	
84	10	5	
85	8		
86	6	21	
87	5	2	
88	4		
89	3	10	
90	2	31	
91	2		
92	1	35	
93	1	16	
94	1		
95		47	37
96		37	48
97		30	

NoiseExposure Level	Duration Time		
98		23	49
99		18	59
100		15	
101		11	54
102		9	27
103		7	30
104		5	57
105		4	43

Multicam Noise Levels

According to the specs [2] the base level of the extractor is 82 dbA. We can assume that the router itself is going to vary depending on material between 70 - 105 dbA. This means the *constant level* will be at least 82 dbA, rising to 105 dbA.

If we assume this is measured at one metre, we are looking at a level of approx 75 - 95 dbA in the kitchen. Consulting our table, this means that without sound treatment, hearing damage would occur within 1 hour if sitting in the kitchen.

Multicam_Commisioning

Research

After discussion with Albert Maberley - technician at RMIT advanced manufacturing Institute. All machines on their shop floor have enclosed beds with externally vented extraction to take care of small particle dust (10 micron or smaller). These were his comments.

- Noise - reccommended personel wear ear protection at all times, and do a noise dosimeter servey.
- Public Access - No public access to machine shop floor
- Dust - wearing dust masks during machine operation. External venting of small particulates advised.
- expect severe head crashes to occur regularly - at least 1/year with 5 hours use/week per operator- plan for operator safety with shielding
- expect bit breakage to occur = at least monthly with 5/hours week per operator.
- pre-flight cut simulation is essential to catching errors in programming before cutting
- machine bed will need re-surfacing or replacement.

1) http://www.safeworkaustralia.gov.au/sites/swa/about/publications/Documents/278/NationalStandardForOccupationalNoise_NOHSC1007-2000_PDF.pdf

2) http://www.multicam.com.au/accydust.html