



## CUTTING STATION TECHNICAL DATA SHEET



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# CUT THE CHASE

Product code	30ASS7
Internal dimensions	Top (with extended back): 1125x955x1000mm Bottom: 1125x710x550mm
External dimensions (including protrusions)	Standard: 1390x780x1900mm Extended: 3225x1090x1900mm
Weight (kg)	175
Colour	Charcoal grey; RAL-7021, Pillar box red; RAL-3020
Finished Coating	Powder Coat Steel
Material	Steel
Material Thickness	1.5mm
Locking mechanism	Highly Secure, keyed alike 5-Lever Deadlock
Does it have Forklift Skids?	Yes
Does it have Gas Arms?	No
Safety stay	No
Quantity of keys supplied	2 keys
Optional Extras Available	SS7X, SS7C, CLEK
Quantity of Shelves as standard	0
Are Castors standard or optional extra	Standard - heavy duty
How are the Castors fitted?	Quick-fix bolt on Castor kit. Extra Heavy-duty Castors using Armorgard castor plates.
Fire resistant?	Yes - fire resistant foam

## FEATURES:

- A multi-purpose cutting platform, with a secure cabinet beneath the workbench area
- Recessed 240V inlet power supply
- 2 x 110V internal sockets
- Extendable support arms with 4 configurations
- Heavy-duty all-swivel wheels for easy moving
- Extendable back panel provides extra workspace for mitre saws
- Sound deadening fire-rated foam to reduce noise pollution
- Rubber mat to reduce vibration
- European Patent Application Number EP17183824.6
- European Community Design Registration Number 004511525

## **PRACTICAL METHODS FOR REDUCING CUTTING NOISE LEVELS**

Partnered with a power tool manufacturer and with a noise testing expert from construction product distributor VJ Technology to look at practical options for reducing noise when cutting metal. In this instance the test will be carried out on M10 studding and 41 mm galvanised steel U-channel.

The reference condition was a Makita cut-off saw with a standard 78-tooth metal cutting blade mounted on an open bench. This is typical of the arrangement used on site by many Mechanical and Electrical contractors.

Noise levels for around 350 cutting operations were measured at various locations around the cutting tools. Tests were carried out with and without the CuttingStation using different cutting tools and blades.

The CuttingStation was found to significantly reduce noise emissions in all three directions screened by the closed sides of the enclosure without increasing the noise exposure to the operator.

Optimising the power tool and blade to suit the task was also beneficial. Using a bandsaw rather than a TCT saw significantly reduced noise exposures by cutting somewhat more slowly, but much more quietly than the TCT saw. Using a higher specification TCT blade was also found to reduce noise exposures mainly by increasing the speed of the cutting operations.

Combining the benefits of the CuttingStation with quieter tools gave some substantial noise level reductions.

As an example, using the CuttingStation with a bandsaw rather than a TCT saw when cutting channel gave a 19 dB(A) noise reduction at 1 metre from the tool on the (closed) side opposite the tool the operator.

The measured noise level at this location decreased from 97.1 dB(A) to 77.9 dB(A). This would increase the time to reach the 80 dB(A) daily Lower Noise Exposure Action Value (LEAV) given in the Control of Noise at Work Regulations from under ten minutes to more than eight hours of continuous operation.

Note: The tables below show some of the individual measurements taken. Noise levels were recorded consecutively at each location and averaged over three cuts carried out quickly one after the other. The overall findings reported in the conclusions are based on non-parametric statistical analysis of all measurements taken.

## NOISE LEVEL RESULTS

		Channel - TCT Saw	Channel - Band Saw	Stud - TCT Saw	Stud - Band Saw
OPEN BENCH	FRONT	00:15	02:39	02:34	05:00
	SIDE	00:13	01:08	01:01	01:14
	BACK	00:09	00:43	01:52	03:02
CUTTING STATION	FRONT	00:12	02:33	03:24	06:48
	SIDE	01:33	03:24	05:21	>8hr
	BACK	02:12	>8hr	>8hr	>24hr
DIFFERENCE	FRONT	-00:03	-00:16	00:50	01:48
	SIDE	01:20	02:16	04:20	>8hr
	BACK	02:03	>8hr	>8hr	>8hr

Table 1 Increase in time taken to reach the LEAV calculated from measurements taken at 1 metre from the test bench.

		Channel - TCT Saw	Channel - Band Saw	Stud - TCT Saw	Stud - Band Saw
OPEN BENCH	FRONT	00:28	04:09	04:51	>8hr
	SIDE	00:37	02:15	04:03	04:38
	BACK	00:47	01:47	04:57	06:27
CUTTING STATION	FRONT	00:29	03:49	07:08	>8hr
	SIDE	02:08	>8hr	>8hr	07:25
	BACK	02:42	>8hr	>24hr	>24hr
DIFFERENCE	FRONT	00:01	-00:10	02:17	04:21
	SIDE	01:31	>7hr	>8hr	>8hr
	BACK	01:55	>8hr	>8hr	>8hr

Table 2 Increase in time taken to reach the LEAV calculated from measurements taken at 3 metres from the test bench.

## NOISE LEVEL RESULTS

Noise in db (A)		Channel - TCT Saw	Channel - Band Saw	Stud - TCT Saw	Stud - Band Saw
OPEN BENCH	FRONT	95.2	84.8	84.9	82.0
	SIDE	95.5	88.5	88.9	88.1
	BACK	97.1	90.4	86.3	84.2
CUTTING STATION	FRONT	96.0	85.3	83.7	80.7
	SIDE	87.1	83.7	81.8	79.5
	BACK	85.6	77.9	75.9	74.5
DIFFERENCE	FRONT	-0.8	-0.5	1.2	1.3
	SIDE	8.4	4.8	7.1	8.6
	BACK	11.5	12.5	10.4	9.7

Table 3 Noise levels measured at 1 metre from the test bench.

Noise in db (A)		Channel - TCT Saw	Channel - Band Saw	Stud - TCT Saw	Stud - Band Saw
OPEN BENCH	FRONT	92.4	82.8	82.2	79.2
	SIDE	91.1	85.5	83.0	82.4
	BACK	90.0	86.5	82.1	80.9
CUTTING STATION	FRONT	92.2	83.2	80.5	77.6
	SIDE	85.7	79.2	76.6	80.3
	BACK	84.7	77.9	74.3	73.6
DIFFERENCE	FRONT	0.2	-0.4	1.7	1.6
	SIDE	5.4	6.3	6.4	2.1
	BACK	5.3	8.6	7.8	7.3

Table 4 Noise levels measured at 3 metres from the test bench.

## CONCLUSIONS FROM TESTING

The overall average noise levels when using the Armorgard cutting station was significantly quieter than cutting on an open bench.

The greatest improvements were for locations at the back (closed) side of the Cutting Stations.

The noise levels at the operator generally did not decrease, but they did not generally increase either suggesting that the cutting station was successfully absorbing some of the noise rather than simply redirecting it away from the closed sides and towards the operator.

There was no significant reduction in cutting speed when using the Armorgard cabinet compared to the open bench.

The operator preferred the ergonomics of the Cutting Station over the previous design.

Using the Cutting Station, using an improved cutting blade and using an alternative cutting tool were all found to significantly reduce the noise levels in the vicinity of the cutting operation.

For example, using the Cutting Station with a bandsaw rather than a TCT saw on an open bench when cutting channel gave a 19 dB(A) noise reduction at 1 metre from the tool.

The Cutting Station substantially increased the times before exposed personnel stood to the side or back of the cutting station would be expected to reach the Lower Exposure Action Value given in the Control of Noise at Work Regulations.



Figure 1: Comparative view of cutting Scenarios.