

Bristol Hackspace Risk Assessment

Startrite Pillar Drill 2015-12-10

Place of assessment: BV Studios Room G10

Date and time of assessment: 2015-12-01 Observations on several occasions while commissioning the drill.

Date Approve: XXXXX

Assessors: John Willis

Based on template version 0.1

Disclaimer:

The assessment was done on a best endeavours basis on behalf of the BotLab/Hackspace community. All members have a shared responsibility for safety and should actively assess and update this document. Liability for errors and omissions is a share responsibility of all members. Nothing in this assessment should be taken as permission or instruction to work in an unsafe manner. The assessment does not replace or reduce an individual's common law duty of care to work in a way that does not endanger themselves or others.

Subject background and assessment limitations:

Equipment /process description: *Intermittent drilling small numbers of holes in items of wood (softwood and non toxic hardwood), wood based board material, steel, aluminium and alloys, brass, and plastics.*

Location: *G10 next to the Grinder*

Item general description: *Floor standing pillar drill, ~~chuck~~ capacity 13mm, power 1/4hp single phase motor.*

Usage covered by this assessment: *low volume use by Hackspace members in non hazardous materials.*

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Risk	Description	Recommendation
Work Area	The Startrite Drill is near to the Bandsaw, small pillar drill table, Grinder, Wood Lathe, CNC mill/router, Wood store, woodwork bench. The operator will stand in the access to these and in the operating space of several of these. Large pieces of work could touch any of these items of equipment. The drill operator could be pushed into the drill or distracted by others workingworkig nearby. The drill operator could distract or push others into operatingopearting tools.	Make people aware of the need for clear space in an induction session
	The wood store is generally messy an spillsdspills over into the work area for adjacent tools	Limit storage of material to what can be kept in the rack. Throw out any material not kept in the rack.
	It could be difficult to reach the emergency stop button while drilling large items	Consider fitting a movable enableemable floor switch which switches off the drill if the pedal is released.
Mechanical	The drill is top heavy and could fall over	Bolt it to the floor
	Clothing could get caught in the rotating drill and orif swarf and pull the operator into the machine	Cover the need for sensible clothing in the workshop in an induction session.
	Operators could be injured by rotating swarf	Provide clamps for use with the drill consider fitting a drill guard
	Operators could be injured by rotating work if the drill jams	Cover work holding in an induction session. Keep the drills sharp.
	If the drill is started with the key in the chuck the chuck key could fly off and injure someone	Enforce a don't leave the key in the chuck rule. tie the chuck key to the drill and fit a clip / magnet to keep it out of

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Risk	Description	Recommendation
		the way.
	chips can fly off and damage eyes.	Keep light safety glasses and or visor by the drill.
	It is possible for someone to poke their fingers in the moving belt	Make it clear that Hackspace risk assessments don't cover idiots.
	Eye protection is available in G10 but frequently not put back in its correct place	Purchase suitable goggles and / or visor and keep next to the drill.
	First aid equipment in G10 includes eye wash but there but maintenance of safety equipment is not defined.	Set up a rota for routine maintenance . mainttenance .
	Access to emergency equipment is given a lower priority than storage of old equipment.	Change the working culture in Hackspace.
Electrical	The drill is powered through daisy chained extension leads causing potential trip hazard, earth problems an circuit circuit overload.	Fit enough sockets in G10 to remove the need for extension leads.
	The drill was purchased from a private individual and electrical connections were not to a standard suitable for communitycommunity use: There was no on off switch it was controlled by the switch on the wall, The earth connection was loose. Thee is no cover plate over the motor electrical connections. It has been fitted with a used electricalelectrical switch. it was wired by a member who is not a qualified electrician	Perform an electrical check and check the wiring before accepting the drill for use.

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Risk	Description	Recommendation
Fire	There is a very low risk of fire from machining alloys of magnesium or lithium.	See the fire risk assessment. remind members about inflammable alloys alloys in the induction.
	There is a low risk of fire from drilling wood with blunt drills	Don't allow members to modify the drill to allow drilling without an operator.
Temperature	Drills swarf and work-pieces workpieces can become hot enough to burn skin. flying chips can burn eyes.	Cover the risk in the induction. Make eye protection available by the drill. Maintain adequate quantities of eye and burn first aid in G10.
Dust/Fume	Some materials can emit harmful fumes when drilled e.g. MDF. This is unlikely to be a problem unless someone drills a very large number of holes in a problem material material or known hazardous material.	Make it clear that Hackspace risk assessments are not valid for long runs of processing. Don't allow drilling known toxic material such as Berylia or Asbestos
	Cutting fluids can produce irritating fumes. This is unlikely to be a problem for reasonable drilling runs and if operators keep their head in a normal position and don't bend down to look at the work.	
Noise	Noise should not be a problem unless the drill is malfunctioning.	Cover tool operating awareness in the G10 induction.
Chemical/ Biological Biological	Cutting fluids can cause skin problems	Obtain the COSHH safety sheet for any cutting cutting fluid used and make it available available near the drill and on the wiki.

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Risk	Description	Recommendation
Radiation Hazards	N/A	

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Hazard [Check-list](#)~~Checklist~~

Heading	Hazard	Applicable Y/N
Work Area	Enough room	Y
	Neighbouring processes effect on this	Y
	This effect on neighbouring processes	Y
	Access	Y
	Material storage	Y
	Emergency cut-out cutout	Y
	Availability of safety equipment	Y
	Availability of safety information	Y
Other		
Mechanical	Rotating parts	Y
	Moving parts	
	Sharp	Y
	Trapping	
	Ejected material	Y
	Lifting	

Heading	Hazard	Applicable Y/N
Electrical	Supply	Y
	Excessive volts	
	Excessive frequency	
	Water	
	Other - Drill may not have been electrically electrically safe when purchased.	Y
Fire	Ignition source	N
	Flammable material	Y
	Other	N
Temperature	Hot / cold surfaces	Y
	Hot / cold environment	N
	Hot / cold work	N
	Other	N

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	Other-Top heavy Machine	Y
Heading	Hazard	Applicable Y/N
Dust / Fume	Quantity	Y
	Hazardous	N
	Other	N
Noise	Volume	N
	Low frequency	N
	Ultrasonic	N
	Other	N
Chemical/Biological	Other	N
Radiation	Radio	N
	Microwave	N
	Light	N
	UV	N
	Ionising	N
	Other	N

	Continued...	

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