

QUALITATIVE RISK ASSESSMENT (QRA) FORM

Document Number: **NDSME-RA-003**

Use of Lathe, Mill, Drill Press or Grinder

QRA Title (e.g. Work, Activity, MOC, etc.)

NDSME Site

Location(s)

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18/06/2025


Date

Qualitative Risk Assessment Team (Minimum 2 people)

TASK, PROCESS STEP, or PROPOSED CHANGE	THREATS / HAZARDS / ASPECTS <i>How can the TASK, STEP, or CHANGE go wrong? What are the potential Consequences? What are the Gaps?</i>	CURRENT CONTROLS / BARRIERS <i>including OPERATIONAL PROCEDURES</i> <i>What are the existing CONTROLS / BARRIERS, if any, to Control, Mitigate, Eliminate, or Prevent the Identified THREAT / HAZARD / ASPECT? NOTE: Barriers can be Equipment, Process, or People</i> NOTE: For a RISK SCORE of 9 or greater (RISK LEVEL > 2), additional CONTROLS / BARRIERS must be proposed.	RISK SCORE		Risk Level	
			C	F		
Entanglement with moving parts	<ul style="list-style-type: none"> Laceration Abrasion Bruising Breaking of bones 	<ul style="list-style-type: none"> Correct PPE (safety glasses, overalls etc.) must be worn at all times. The chuck must be adequately guarded to prevent contact whilst in motion. Operators must be made aware that the lead screw or feed shaft rotate in use and may be unguarded with a danger of clothing being drawn in when in use. Materials should not project beyond the headstock gearing cover through the hollow spindle. 	3	2	6	2
Injury when loading material on/off machine or manual handling of Chucks	<ul style="list-style-type: none"> Back strain. Body injuries such as crushing, bone breakage. Injury to assisting personnel. 	<ul style="list-style-type: none"> The work-piece should be firmly held by a substantial amount of material in the chuck. Work mounted on a faceplate should be securely bolted to it and counter-balanced to prevent excessive vibration. Chuck keys should never be left in the chuck and should be spring-loaded where possible to prevent this. Cutting tools must be securely held in the tool post and excessive overhang of the tool should be avoided to reduce the possibility of breakage. 	3	1	3	1
Damaged machine safety equipment such as guards, limit/micro safety switches	<ul style="list-style-type: none"> Body injury to operator. Injury to persons in near vicinity. 	<ul style="list-style-type: none"> All guards are in place and in good working order. All micro switches, limit switches operational and without faults. 	3	1	3	1
Excessive Noise	<ul style="list-style-type: none"> Damage to hearing 	<ul style="list-style-type: none"> Ear defenders to be worn when excessive noise generated. 	3	2	6	2
Airborne Dust Particles	<ul style="list-style-type: none"> Respiratory damage to operator. Respiratory damage to persons in the near vicinity. Skin/eye irritation 	<ul style="list-style-type: none"> If dust is produced while using material such as modelling foam, GRP, carbon fibre, a dust mask and extractor must be used 	3	2	6	2
Skin contamination from coolant/oil	<ul style="list-style-type: none"> Skin irritation/damage. 	<ul style="list-style-type: none"> Disposable gloves should be worn if suffering from skin allergies or using irritant material. 	2	1	2	1
<i>if using Mill</i>						
Ejection of tool from holder/spindle	<ul style="list-style-type: none"> Eye injury Head injury (concussion) Puncture wound 	<ul style="list-style-type: none"> Correct PPE must be worn at all times. Tooling must be secured before use with correct speeds/feeds selected. Use coolant to prolong tool life, lubricate and prevent overheating of job. Worn tooling should be discarded or sharpened. All safety guards must be in place when machine is in operation. 	4	2	8	2

Ejection of job from table/Mount	<ul style="list-style-type: none"> • Body injuries such as crushing, bone breakage 	<ul style="list-style-type: none"> • Jobs/fixtures securely fastened with correct clamping systems. • Correct feeds and speeds selected. • All safety guards must be in place when machine is in operation. 	4	2	8	2
<p>If using Lathe</p> <p>Ejection of work piece, tool, chuck key and swarf</p>	<ul style="list-style-type: none"> • Laceration • Abrasion • Bruising • Eye injury 	<ul style="list-style-type: none"> • The work-piece should be firmly held by a substantial amount of material in the chuck. • Work mounted on a faceplate should be securely bolted to it and counter balanced to prevent excessive vibration. • Chuck keys should never be left in the chuck. • The use of files and abrasives such as emery cloth, to finish work in the lathe is potentially hazardous and should not be encouraged. Be alert at all times with no distractions if having to use this method. 	3	2	6	2
Finishing in the Lathe	<ul style="list-style-type: none"> • Laceration • Abrasion • Bruising • Breaking of bones 	<ul style="list-style-type: none"> • Correct PPE must be worn at all times. • Drill Vice should be used for smaller items or where the hole being drilled is large compared to the work piece. 	3	2	6	2
<p>If using Drill Press</p> <p>Swarf, Ejection of work piece</p>	<ul style="list-style-type: none"> • Laceration • Abrasion • Bruising • Eye injury 	<ul style="list-style-type: none"> • Machine guards are in place. • Only abrasive wheel certified personnel allowed to dress, balance or remove wheel. • Correct clamping procedures used. • Safety glasses • Use correct stone for material 	2	1	2	1
<p>if using Grinder</p> <p>Wheel Explosion</p> <p>Sparks</p>	<ul style="list-style-type: none"> • Shattered stone wheel causing body injury • Eye injury 	<p>It is the responsibility of every member to Stop Work when unsafe conditions are recognized.</p> <p>NOTE: Risk Levels 4 and 5 REQUIRE STOP WORKS until controls are in place to reduce risk or impact. For risk levels 3 and below, if identified controls can not be implemented the members must stop and reevaluate task and determine new controls that can be implemented.</p>	2	1	2	1

Qualitative Risk Assessment Team Completed by:	 (Signed)	R. Hendrik (Printed)	18/06/2025	Date
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Qualitative Risk Assessment Approved by:	 (Signed)	A. Mann (Printed)	18/06/2025	Date
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NOTE: C denotes the CONSEQUENCE SEVERITY if the identified IMPACT, THREAT, or HAZARD occurs or is encountered.
 F denotes the FREQUENCY or LIKELIHOOD of the identified IMPACT, THREAT, or HAZARD occurring or being encountered.
 Cx F denotes Risk Priority Number (RPN) also known as the Hazard & Qualitative Risk Assessment score.