# Makita RP0900 Hand Plunge Router Risk Assessment

## Hazards Identified:

### Contact with rotating cutter:

The hand router operates with an exposed cutter rotating at high speed to effect the shaping of the workpiece. The exposed rotating cutter is fundamental to the router's operation and presents a range of potential risks.

- The router can be started unexpectedly when cutter is not safely positioned. This may happen when the cutter is being inserted, adjusted or removed from the machine.
- Loose clothing or long hair could draw the operator towards the cutter.
- The operator may become unbalanced and unable to control the router safely.
- The cutter may become loose and could be ejected from the router
- The operator may lose control or drop the router when it is being operated

### Ejection of the workpiece or tools:

The router exerts considerable forces on the workpiece being shaped.

- These forces could cause the workpiece to be projected at high speed across the workspace. This is made more likely in the case of "climb cutting" ie feeding the router in the direction of rotation of the cutter, not against it. The router will also pull awayy from the operator reducing their control.
- The tools used to secure the cutter in place could be similarly ejected if not removed after adjustments.
- Parts of the tools may be ejected.

### Production of dust and chippings:

The routing process converts the material being cut into dust and chippings, presenting hazards:

- Chippings can be forcibly thrown from the router cutter

- The dust and particles produced may be hazardous to health

### Exposure to noise:

The routers cutting process is noisy

### Handling the cutter:

When the cutter is stationery it presents hazards:

- The cutter has sharp edges needed to cut which present the risk of cutting the operator manipulating it.
- After use, the cutter can be very hot and cause burns

### Electrocution:

In common with other electrical power tools, the router present s risks associated with electricity

- The power cord for the router can be cut  when routing
- Electrical insulation of the operator can be compromised

## Who might be harmed?

**The router operator** is in close proximity to the cutter, workpiece. They are directly exposed to the noise and dust produced as part of the routing process. They need to set up, adjust and remove the cutter in the router. They hold and control the router when operating it.

**Others working in the workspace** are exposed to the risk of a cutter or workpiece being ejected by the router. They are also exposed to the dust and noise created when the router is operating.

**Visitors to the workshop** are also exposed to risks of a cutter or workpiece being ejected, dust and noise. Visitors to the workshop are restricted by a pass access system.

## Risk Evaluation

| Hazard Identified | Severity (1-5) | Probability (1-5) | Risk Rating | Mitigation Measures |
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| **Contact with rotating cutter** | | | | |
| Unexpected starting | 4 | 3 | 12 | Operators are trained to only plug in the router when ready to make a cut. It should be unplugged at all times when not cutting |
| Loose clothing or long hair | 4 | 2 | 8 | Operators are trained to remove loose clothing and to tie back long hair |
| Operator unbalanced | 2 | 4 | 8 | Operators are trained to practice a cut without the power before executing it. |
| Cutter or part of cutter becomes loose | 4 | 2 | 8 | 1. Operators are trained to clean the collet before inserting a tool<br>2. Operators are trained in the correct procedure to insert a cutter and tighten the collet<br>3. Only tools of with ¼ inch shank diameter are permitted to be used<br>4. Operators are trained to check the bit and work piece before use<br>5. Operators are recommended to only use high quality bits<br>6. Operators must wear eye protection |
| Operator loses control | 2 | 3 | 6 | 1. The router requires an operator to be depressing the power switch for it to cut<br>2. Operators are trained how to hold the router correctly<br>3. Operators are trained not to “climb cut”. |

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| **Ejection of the workpiece or tools** | | | | |
| Workpiece projected | 4 | 3 | 12 | 1. Operators are trained to secure their workpiece correctly. Clamps, vices and a sacrificial bench top are provided to allow various fixings to be made<br>2. Operators must eye protection<br>3. All those permitted to use the workshop are trained to use PPE as needed to prevent risks from other workshop users and to pay attention to other's actions.<br>4. Operators must wear eye protection<br>5. Operators are trained not to "climb cut". |
| Spanner projected | 4 | 1 | 4 | 1. One spanner of pair used to secure the cutter is attached to the power flex and thus cannot be in when the tool is plugged in. This serves as a reminder to remove the other spanner.<br>2. Operators must wear eye protection<br>3. All those permitted to use the workshop are trained to use PPE as needed to prevent risks from other workshop users and to pay attention to other's actions. |
| **Production of dust and chippings** | | | | |
| Chippings projected from router | 3 | 4 | 12 | 1. Operators must wear eye protection<br>2. All those permitted to use the workshop are trained to use PPE as needed to prevent risks from other workshop users and to pay attention to other's actions. |
| Dust hazardous to health | 2<br>Long term exposure limited | 3 | 6 | 1. Operators are trained to limit their exposure to hazardous dust e.g. MDF. Dust masks are provided to limit exposure.<br>2. All those permitted to use the workshop are trained to use PPE as needed to prevent risks from other workshop users and to pay attention to other's actions. |

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| **Exposure to noise** | | | | |
| Cutting process is noisy | 2<br>Long term exposure limited | 3 | 6 | 1. Operators must wear hearing protection<br>2. All those permitted to use the workshop are trained to use PPE as needed to prevent risks from other workshop users and to pay attention to other's actions. |
| **Handling the cutter** | | | | |
| Cuts from cutter | 2 | 3 | 6 | Operators are trained how to handle cutter correctly |
| Cutter hot after operation | 2 | 3 | 6 | Operators are trained to let cutter cool after cutting |
| **Electrocution** | | | | |
| Power cord cut in operation | 4 | 1 | 4 | Operators are trained to ensure the power cord is behind them when cutting |
| Electrical insulation compromised | 4 | 1 | 4 | The router is PAT tested annually |

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| **Prepared by:** | | |
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## Review date: 01/01/2022