

**Specification of Competency Standards
for the Manufacturing Technology Industry
Unit of Competency**

Functional Area - Product Manufacturing

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| Title | Intermediate electrical discharge machining |
| Code | 106511L4 |
| Range | This unit of competency is applicable to the production department of the corporation of tooling manufacturing industry. Practitioners should be capable to understand the knowledge of intermediate electrical discharge machining and carry out intermediate electrical discharge machining of Mirror surface, EDM Drilling and Micro EDM |
| Level | 4 |
| Credit | 6 (For Reference Only) |
| Competency | <p>Performance Requirements</p> <ol style="list-style-type: none"> 1. Understand the techniques and technologies of intermediate electrical discharge machining <ul style="list-style-type: none"> • Understand the surface texture generated by using different parameters for EDM • Understand the principles, characteristics and applications and relevant precision EDM surface requirement standard of all kinds of intermediate electrical discharge machining such as Mirror Surface and EDM Drilling • Understand the principles, application and relevant EDM surface requirement standard of mirror surface EDM • Recognise the principles, characteristics, application and relevant precision and micro EDM surface requirement standard • Understand the impact of processing fluid on workpiece and processing quality • Understand the parameter setting and optimization techniques of all kinds of precision and micro EDM • Understand the impact of different workpiece materials and engineering design on the processing parameters setting for precision EDM • Understand types, specifications, structure, applications, processing principles of CNC EDM machine, and its difference with the traditional electric discharge machine • Understand the usage of all precision and micro CNC EDM processing instructions, program structure and methods of EDM milling with CNC EDM milling modules 2. Carry out intermediate electrical discharge machining <ul style="list-style-type: none"> • Set up suitable processing parameters in accordance with workpiece materials and engineering design, and compile all kinds of precision and micro EDM programs • Set appropriate precision and micro processing parameters and compensation in accordance with the requirements of the tolerances, surface texture and roughness of high precision and micro product and components stated on engineering design drawings • Accurately set and turn position of the workpiece and electrode • Evaluate the processing performance of electrode employed in EDM machines • Operate CNC EDM machines to carry out precision EDM, such as carrying out ultra precision machining, ultra precision edge machining, optimal surface roughness machining, EDM milling and EDM drilling • Preventatively maintain machines for precision EDM machines, and form troubleshooting to ensure the processing accuracy and quality, so as to meet the requirement of precision and ultra-precision machining • Select the appropriate electrode and processing conditions as a basis for estimating processing time • Estimate the processing time in precision and micro EDM in accordance with the drawings, discharge electrode movement and processing conditions 3. Professional handling of intermediate electrical discharge machining |

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| | <ul style="list-style-type: none">Follow safety guidelines and related codes of practice of all kinds of precision and microdischarge machining, in accordance with the requirements of design drawings, specifications and production efficiency, carry out electrical discharge machining |
| Assessment Criteria | <p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none">Capable to operate EDM machines to carry out all kinds of intermediate EDM, such as carrying out ultra precision machining, ultra precision edge machining, optimal surface roughness machining, EDM milling and EDM drillingCapable to operate micro EDM machines and carry out micro EDMCapable to handle the unusual circumstances of the CNC EDM milling machine, and carry out preventive maintenance, so as to assure the required processing accuracy and fineness |
| Remark | Person who has the above knowledge and ability should also obtain the knowledge and ability of Electrical discharge machining (EDM) (106405L3) at the same time. |