

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

Functional Area - Product Manufacturing

Title	Drilling and tapping
Code	106404L3
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 drilling and tapping, and operate all kinds of drilling machines, apply portable drilling and tapping tools for various drilling and tapping operation
Level	3
Credit	3 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Understand drilling and tapping</p> <ul style="list-style-type: none"> • Understand the principles and applications of drilling and tapping (Drilling) (Tapping) • Understand different international standard of • Understand the structure, applications, and safety guidelines on usage of different fixtures • Understand the bench, vertical and deep hole drilling machine structure • Understand various types, materials, specifications, edge angle and selection conditions of drilling and tapping heads • Understand the operation methods and safety guidelines of portable drilling and tapping tools • Understand the structure and transmission method of radial drilling machine • Understand the structure, accuracy, applications and operation of CNC drilling machine • Understand the programming structure and methods for CNC drilling and tapping (Drilling) (Tapping) • Understand the functions and applications of all kinds of cutting fluid and the handling methods of metal scraps • Understand the troubleshooting and preventive maintenance methods of CNC and manual drilling and tapping machines and tools <p>2. Carry out drilling and tapping</p> <ul style="list-style-type: none"> • Apply different fixtures to hold the workpiece with different shapes • Select the appropriate drilling machine, drilling heads, feed rate, drilling method according to engineering design drawing requirement to perform drilling and tapping, so as to reduce the drilling and tapping head wear and improve the machining accuracy (Feed Rate) • Select the appropriate drilling and tapping heads according to engineering design drawings and processing materials • Carry out manual machinery drilling and tapping • Operate bench and vertical drilling machines and carry out drilling • Operate radial drilling machine, carry out drilling and tapping operations • Compile CNC drilling and tapping program and operate CNC machines for drilling and tapping • Determine and manage the performance and life of the drilling bit, and maintain the drilling and tapping heads, such as using the drilling grinder to correct the shape and edge angle • Maintain the drilling machines, portable drilling and tapping tools and carry out troubleshooting <p>3. Professional handling of drilling and tapping</p>

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	<ul style="list-style-type: none">Follow safety guidelines of drilling and tapping(e.g.handle metal scraps produced in the drilling and tapping process) and related code of practices, and in accordance with design drawings, specifications and production efficiency requirements to carry out drilling and tapping
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none">Capable to apply suitable drilling machines and portable drilling and tapping tools to carry out drilling and tappingCapable to compile CNC drilling and tapping programs for performing corresponding machining operationsCapable to handle the unusual circumstances of all kinds of drilling machines, portable drilling and tapping tools and carry out preventive maintenance.
Remark	