

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

Functional Area - Product Manufacturing

Title	Manual mechanical milling
Code	106408L3
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 manual operational machine milling and grinding, and operate general milling machine and carry out manual operational machine milling and grinding.
Level	3
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <ol style="list-style-type: none"> 1. Understand manual operational machine milling and grinding <ul style="list-style-type: none"> • Understand the foundation operation principles of milling machines, including start and stop milling machine, modify spindle revolutions, select feed direction and speed of the work bench, adjust the height, length and width of work bed, adjust the verticality of the milling machine spindle , and load/ unload and operate the dividing head, tailstock and chuck • Understand the safety precautions and usages of commonly used fixtures of milling machines and all kinds of plates, such as EDW and attachment clips • Understand the types and applications issues of commonly used tools • Understand the functions and applications of all kinds of cutting fluid of milling and the handling methods of metal scraps • Understand the operation methods and usages of relevant supporting tools, such as Rotating Plate, Indexing Head and (Rotating Plate) (Indexing Head) • Understand the relationships between the workpiece and the milling conditions, including the mutual relationships between product design, material types, spindle revolution, cutting depth and bench feed rate • Understand the troubleshooting and maintenance methods of milling machines 2. Carry out manual operational machine milling and grinding <ul style="list-style-type: none"> • Properly fix, loading/unloading and calibrate workpiece • With the engineering drawing and materials, select suitable tools and milling conditions • Analyse the wear conditions of the tools and carry out adjustment and calibration • Carry out face milling, side milling, angular Milling) step milling, groove milling, angular groove milling, multi-side milling and milling off workpieces etc. • Apply all kinds of measurement tools to measure the workpiece initially and carry out correction, including the size of the workpiece, precision, grooves, slope of the surface roughness, arc, and gaps etc. • Maintain general milling machines and carry out troubleshooting 3. Professional handling of manual operational machine milling and grinding <ul style="list-style-type: none"> • Follow safety guidelines of manual operational machine milling and grinding (such as handle metal scrap produced in the milling process) and related Code, and in accordance with design drawings, specifications and production efficiency requirements, carry out milling and grinding
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> • Capable to operate the general milling machine correctly, and achieve an excellent production efficiency and product quality and precision requirements. • Capable to select, configure and load/unload the appropriate tools with workpiece materials and engineering design.

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	<ul style="list-style-type: none">• Capable to solve general operation problems of the milling machines and carry out preventive maintenance.
Remark	