

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

Functional Area - Product Manufacturing

Title	Surface grinding
Code	106406L3
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 surface grinding, and operate surface grinding machine and carry out surface grinding.
Level	3
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Understand surface grinding</p> <ul style="list-style-type: none"> • Understand the relevant types, structures, size and applications of commonly used surface grinding fixtures, including magnetic chuck, precision/grinding vice, stopper and sine bar etc • Understand the structure, transmission mode, basic principles of operation and safety rules of surface grinding machines • Understand the principles of grinding • Understand the functions of various parts of surface grinding machine • Understand the principles and applications of handwheel graduating • Understand the relationship between indeed depth and processing efficiency • Understand the characteristics of grinding wheel, and the presentation methods of specifications and meaning , including abrasive, graininess, degree of combination, hardness, structure, shape, and grinding wheel balance etc. • Understand the types and applications of grinding cooling fluid • Understand the types and applications of and other grinding wheel correctors • Understand the functions and principles of gasket • Understand the cause of unusual circumstance and the preventive maintenance methods • Understand the magnetic induction and demagnetization principle • Understand formation principles and prevention methods of grinding internal force • Understand the principle of thermal expansion and contraction, and its impacts on the precision of grinding and solutions <p>2. Carry out surface grinding</p> <ul style="list-style-type: none"> • Correctly use the fixtures and grip iron and non-iron metal workpieces • According to processing requirements, select the grinding wheel with appropriate shape, material and size • According to processing requirements, set suitable feed rate and grinding depth etc. • Assemble and disassemble grinding wheel, gasket and flange • Use balancer to balance grinding wheel • Start and stop the surface grinding machine, including horizontal and vertical operation of surface grinding machine, adjust horizontal and vertical feed rate, and horizontal and vertical , and operate handwheel control grinding depth etc • Carry out surface grinding, including grinding plane, parallel, side, slope and groove etc • According to surface grinding machines performance, grinding wheel wear and scratch conditions, handle properly • Correct, adjust and maintain the surface grinding machines, so as to maintain the precision of surface grinding <p>3. Professional handling of surface grinding</p>

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	<ul style="list-style-type: none">Follow the safety guidelines of surface grinding (e.g. grinding wheel operation, inspection and preventive maintenance) and relevant Code, in accordance with design drawings, specifications and production efficiency requirements, carry out surface grinding
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none">Capable to carry out surface grindingCapable to set appropriate parameters in accordance with the processing requirements of selecting suitable grinding wheels, machine and parts, in order to reduce losses and improve precisionCapable to solve general unusual circumstances of surface grinding machines, and carry out correction, adjustment and maintenance
Remark	