

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

Functional Area - Product Manufacturing

Title	Jig grind and jig bore
Code	106514L4
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 processing knowledge of jig grinding and jig boring, and also carry out all kinds of machining of jig grinding and jig boring
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Understand the techniques and technologies of jig grinding and jig boring</p> <ul style="list-style-type: none"> • Understand the relevant types, structures, size and applications of commonly used fixtures of jig grinding and jig boring • Understand the structure, size, transmission mode, foundation principles of operation and safety regulations of jig grinding and jig boring • Understand the precision control and machine maintenance methods of jig grinding and jig boring • Understand the functions of all kinds of cutting fluid of grinding and applications of the treatment methods of metal scrap • Understand the characteristics of grinding wheel, and the presentation methods of specifications and meaning, including abrasive, graininess, degree of combination, hardness, structure and shape etc (Grinding Wheel) • Understand the formation principles and prevention methods of grinding internal stress • Understand the magnetic induction and demagnetization principle • Understand the types, application, selection and maintenance of all kinds of tools of jig bore , • Understand the relationship between the different processing parameters and Jig Bore tool life • Understand all processing parameters of jig grinding and jig boring, such as the processing impact on quality and efficiency of grinding and boring speed, feed rate, grinding and boring depth // • Understand the programming methods of toolpath and grinding wheel tracks of numerical control jig grinding and jig boring <p>2. Carry out jig grinding and jig boring processing</p> <ul style="list-style-type: none"> • Correctly use the fixtures and grip all kinds of workpieces • According to the processing requirements, set up suitable grinding speed, peripheral speed and diameter of the grinding • Operate the normal start and stop operations of jig grind and jig bore, including start and stop the machine, change rotating speed of axis, adjust the circular speed and feed rate, adjust the angle of the grinding wheel with taper hole and control the grinding depth • Carry out cylindrical bore grinding, outer and inner circular surface grinding, taper hole grinding, and slotting form of grinding • Carry out toolpath and grinding wheel tracks of numerical control jig grinding and jig boring • According to the performance of jig grinding and jig boring machines, wear conditions and wear scar of grinding wheel, make judgement on abnormal situation and handle properly • Correct, adjust and maintain the jig grinding and jig boring machine, so as to maintain the precision and life of jig grinding and jig boring machine

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

Functional Area - Product Manufacturing

	<p>3. Professional handling of jig grinding and jig boring</p> <ul style="list-style-type: none">• Follow safety guidelines and related codes of practice of jig grinding and jig boring (such as operation, inspection and preventive maintenance of grinding wheel and metal scrap treatment), in accordance with the requirements of design drawings, specifications and production efficiency, carry out jig grinding and jig boring
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none">• Capable to carry out tool path programming of jig grinding and jig boring• Capable to operate all kinds of commonly used jig grinding and jig boring machines and carry out jig grinding and jig boring, so as to achieve excellent precision and efficiency• Capable to handle all kinds of unusual circumstances of jig grinding and jig boring
Remark	