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

Functional Area - Product Design and Development

Title	Sheet metal stamping single die and compound die functional design
Code	106468L4
Range	This unit of competency is applicable to the design and development departments of Manufacturing Technology Industry. Practitioners should be capable to carry out sheet metal stamping single die and compound die functional design in accordance with the combination of sheet metal mould design and structural design
Level	4
Credit	6 （For Reference Only）
Competency	Performance Requirements 1. Understand relevant knowledge of sheet metal stamping single die and compound die functional design • Understand the customer's requirements on appearance and functions, such as flashing burr, surface appearance and connection point • Understand relevant international standard of sheet metal stamping single die and compound die functional design • Understand the types, structures and designs of single die, including punching, bending, rolling, forming, forging, embossing • Understand the principles and relationships of punching and blanking • Understand the calculation of punching pressure • Understand the definition and application of punching gap • Understand the characteristics of the radius of bending and the moulding material • Understand the computation of the expanded length of the bending materials • Understand the Spring-back phenomenon • Understand the relationship between the gap of rolling dies, punches, lower mould and shoulder radius • Understand the computation of the finished products of the rolling blank • Understand various structures and design of different combinations of the compound die of stamping procedure • Recognise the product application limitations of the design and production of compound die • Understand the commonly used types and specifications of surface treatment of sheet metal stamping die • Recognise the commonly used types, structures, specifications and working principles of the commonly used equipment of sheet metal stamping 2. Carry out sheet metal stamping single die and compound die functional design • According to the integrated design of metal stamping, design integrated punching die of punches, guide plate, stripper, and dies of bending, blanking, rolling, forming, forging and embossing • Formulate and adjust the appropriate die gap, center position of die pressure, bending angles, elongation, extended height and other parameters • Design compound die of sheet metal stamping • In accordance with all kinds of requirements of the structure of metal stamping dies and the production of sheet metal stamping products, set the appropriate tolerance and processing for single die and compound die, so as to achieve requirements of cumulative tolerance limits of the dies, workpiece sliding /fixed and coordination, and provide appropriate description of workpiece drawing • Select and apply all kinds of standard parts of sheet metal stamping die base and die, such as round punch, and guide plunger

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	• According to the requirements of different products, select the appropriate die and steel • According to different functional design requirements, select the appropriate die surface treatment • Communicate with internal and external customers and stakeholders and achieve consistent standards 3. Professional handling of sheet metal stamping single die and compound die functional design • Detailedly consider elements such as safety, risk, productivity, quality, environmental protection and cost, carry out sheet metal stamping single die and compound die functional design and meet all aspects of requirements
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Capable to base on the integrated sheet metal stamping single die and compound die and structural design, set the appropriate tolerance and processing and complete sheet metal stamping single die and compound die functional design • Capable to draw all workpiece drawing, provide appropriate instructions and ensure the content is accurate
Remark	