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

Functional Area - Product Design and Development

Title	Sheet metal stamping die assembly and structural design
Code	106572L5
Range	This unit of competency is applicable to design and development departments of the corporations of Tooling Manufacturing Industry. Practitioners should be familiar with the principles of sheet metal stamping die, capable to integrate customers requirements and relevant international standards, and carry out sheet metal stamping die assembly and structural design
Level	5
Credit	6 （For Reference Only）
Competency	Performance Requirements 1. Understand relevant knowledge of sheet metal stamping die assembly and structural design • Understand the customer's requirements on appearance and functions, such as • Understand relevant international standards of design of sheet metal stamping die • Understand the manufacturing process and its features of sheet metal stamping die, material selection, milling, heat treatment, EDM, wire cutting, grinding, polishing, surface treatment • Understand all kinds of sheet metal stamping manufacturing process, such as punching, bending, forming, rolling, forging and stamping • Understand the types, characteristics, application methods and heat treatment methods of all kinds of sheet metal stamping die, including all kinds of steels, tungsten carbide, and other non-steel materials like ceramic • Understand structure and application methods of single sheet metals stamping dies, such as punching dies, bending dies and rolling • Understand the structure and application methods of all kinds of sheet metal dies, including single, complex, continuous and transfer die • Understand the application methods of all kinds of functional system, as well as its relationship with the overall design • Understand the function and application of all kinds of sheet metal components • Understand the sheet metal die structure, installation and coordination of components • Understand coordination methods of all progressive and transfer dies • Understand the types and specifications of surface treatment of the commonly used sheet metal dies • Understand the manufacturing principles and applications of all kinds of complex sheet metal stamping die, such as 3D moulding • 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 die design • According to the product requirements, plan the sheet metal stamping processing of sheet metal stamping die assembly, such as product material, thickness of sheet metal and the product shape • Examine precision, quantity, shape and production requirements of product, select appropriate materials and types of dies, such as single, complex, continuous, transfer die • Formulate appropriate size, design, and strength for sheet metal stamping structure • Integrate and formulate the concept design of sheet metal stamping die • According to the appearance and functionality required of different products, select the appropriate mould for surface treatment

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	• Assign all functional design requirements to each members of the design team and carry out management • Lead sheet metal stamping die design team to complete all functional designs, and integrate all designs into a completed sheet metal stamping die structural design • Communicate with internal and external customers and stakeholders and achieve consistent standards 3. Professional handling of sheet metal stamping die assembly and structural design • Carefully consider elements of safety, risk, capacity, quality, environmental protection and cost etc, carry out sheet metal stamping die assembly and structural design and also meet all aspects of requirements
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Capable to collect and integrate customers requirements and relevant international standards, formulate sheet metal stamping die assembly design • Capable to consider the appearance and functions requirements of products, complete the overall structural design of sheet metal stamping die
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