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OCCUPATIONAL STRUCTURE Metal Based Industry























Occupational Structure for Metal Based Industry



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Concept and Structure of Malaysia Skill Certification System



1. METAL BASED INDUSTRY

The metals industry assumes the important role in Malaysia's industrialisation and economic development. The industry provides materials required for the development of manufacturing and construction industries. The focus of the development of the industries are in iron and steel and fabricated metals sub-sectors. Basic metals sub-sector comprises the manufacture of primary iron and steel consisting of all the process from smelting in blast furnaces to semi-finished stage in rolling mill (bars, billets and ingots). The fabricated metal product includes the manufacture of structural metal products, tanks, reservoirs and steem generators. Meanwhile the main processes involved in this sub-sectors are:

- Mould and Die
- Machining
- Metal Casting
- Metal Stamping
- Heat Treatment
- Surface Treatment/Finishing
- Metal Fabrication

1.1 Mould and Die Industry

Malaysia's mould and die industry is recognised as the leading engineering supporting industry in the country. Over the last three decades, the mould & die industry has experienced rapid growth in tandem with the overall growth of the manufacturing sector. The increasing incorporation of locally manufactured parts and components has significantly fuelled the demand for moulds and dies. Malaysian companies have the capability to manufacture most types of moulds, dies and toolings to complement the manufacturing sectors. The value of imports of moulds and dies amounted to RM1.31 billion in 2004. Imports were mainly from Japan, Taiwan, Germany, Singapore. These imports were mainly very high precision and complex toolings, for which opportunities exist for new manufacturing ventures. Malaysia also exports moulds and dies, which has shown an increasing trend over the last five years. The Government has initiated the setting up of the Mould & Die Design Centre to provide additional boost to the development of the local mould & die industry. The Centre will provide R&D, design, technical consultancy, training and facilities rental services to the local mould & die industry and manufacturing sector in general. The mould and die industry comprises about 400 companies involved in the manufacture of most types of moulds, dies and tooling to complement the needs of the E&E, plastics, telecommunication, automotive, machinery, rubber and other industries.

1.2 Machining Industry

Malaysia's machining industry is a total solutions provider to all the machining needs of the country, with most companies attaining high levels of technological capabilities and using state-of-the-art CNC machine tools in their operations. The machining industry in Malaysia can be classified into two categories:

- Companies which provide machining services to other industries on a jobbing basis.
- Companies which produce precision machined parts such as jigs & fixtures, turned parts, shafts, pins, bushes and other machined components. There are about 170 companies in operation, providing machined parts and components and machining services.

1.3 Metal Casting Industry

The industry is divided into four main areas:

- Foundries
- Die casting
- Magnesium Injection Moulding (Thixomoulding©)
- Investment casting

1.3.1 Foundry

The foundry industry in Malaysia over the last 50 years has attained a significant level of technological expertise in servicing the traditional industries of rubber, tin and palm oil. Working with the local engineering companies, the foundries have developed their capabilities to re-engineer and adapt components and sub-assemblies for imported machinery to suit local conditions. Some of the more advanced foundries today have automated casting facilities and are producing castings to international standards for export. These include prominent Malaysian companies like MMC Metal Industries, Yoonsteel, Hicom Engineering, Lestari Casting and a foreign-owned company, Metalock Castings (S'pore).

1.3.2 Die Casting

The die-casting industry in Malaysia is fast developing as a major component supply source, supporting the manufacture of computer, electrical appliances, automotive components and hardware products. The local companies have developed and acquired

adequate know-how and production capabilities in producing die-cast components of very high quality such as computer disc drive components, die-cast parts for the domestic electrical appliances industry and the electronics industry. These companies are mainly foreign or joint-ventures such as Hiroshige (Japan), Wincast Precision Engineering (S'pore), Dynacast SPM (United Kingdom), MMI Precision Manufacturing (S'pore), MELCOM, Asahi Kosei (Japan), Kawamura (Japan), Keseisha (Japan), Nakazawa Die Casting (Japan), PDCI (S'pore), Jomon Technology (S'pore), Sansho Giken (Japan) and Swanmet (S'pore).

1.3.3 Magnesium Injection Moulding (Thixomoulding©)

Malaysia is one of the few countries in the world which has this facility. Magnesium injection moulding, which is a revolutionary semi-solid process for high speed injection moulding of net-shape magnesium alloy parts, is regarded as the most advanced way of fabricating high quality, high strength, high complexity and light weight magnesium alloy parts and components to precision tolerances. Parts and components presently manufactured in Malaysia are for aesthetic, structural and functional uses for the electronics, telecommunication and automotive industries.

1.3.4 Investment Casting

Investment casting is a relatively new industry in Malaysia, mainly supplying components of accurate dimensional tolerances and complex shapes, normally used in the aerospace, automotive and machinery industries. There are four companies presently producing precision investment casting mainly for the export market. They are Rigel Metalcraft (Taiwan), Swanmet (S'pore) and Malaysian-owned companies Nostalgia Investment Casting and MMI Precision. With the further development of the local automotive industry and increased demand for automobile parts and motorcycle die-cast parts, there will be greater demand for die-cast components especially in magnesium alloy die-casting. Trends also indicate an increase in demand for die-castings for the computer and computer peripheral industry. This is expected to stimulate growth in the industry. Investment casting is fast becoming a basic engineering supporting industry. It is expected that more established foundries would be seeking technology and joint-venture partners to diversify into this field.

1.4 Metal Stamping

The metal stamping industry is a well-established industry in Malaysia, supplying stamped/pressed parts to a wide range of industries, including the electrical & electronics, automotive, industrial machinery and equipment, precision measuring

and testing equipment. The industry has developed significantly, in capacity and technical capabilities, to serve the various market needs of multinational corporations such as Matsushita, Sony, Hitachi, Toshiba, Dell, Yamaha, Thomson, Philips and Hewlett Packard. The industry is now heading towards advanced technologies and the provision of total solutions including prototypes, moulds and dies and sub-assembled components. The steady increase in the demand for electrical and electronic products and automotive components will continue to spearhead the growth in the metal stamping industry in Malaysia. There are over 300 companies engaged in metal stamping activities as technological advances and a steady increase in demand continue to drive the need for expansion within the industry. Prominent Malaysian companies include Cybron TL Manufacturing, Kris Components, Kein Hing Industry, Wong Engineering and NH Metal Stamping.

1.5 Heat Treatment

The heat treatment industry is expected to grow in tandem with the development of the major industry clusters of machinery and equipment, moulds and dies, iron and steel secondary products and automotive components. This industry offers services such as continuous mesh-belt heat treatment; vacuum hardening; carburizing; carbonitriding; nitro-carburizing; annealing; normalizing; and tempering for a diverse range of metal products. Heat treatment services for high carbon steel and alloy steel products such as moulds and dies, critical parts for bearings and automotive components are the latest additions to the list of products already serviced which include bolts, nuts, shafts, gears, pins and springs. Most of the companies in operation providing heat treatment services are joint ventures with foreign companies who supply both capital and technical knowhow support. Prominent companies in this industry include Malaysian owned companies such as Upsilon Heat Treatment Services, Belton Oriental Heat Treatment, ProHeat Treatment.

1.6 Surface Treatment/Polishing

The industry has the capability and capacity to cater for most of the requirements of the manufacturing industry. These include a variety of plating operations such as batch and continuous electroplating; precision electroplating; electroless plating; phosphating; passivation; anodizing; chromating; electroplating for the semiconductor industry including integrated circuits and lead frames; sinter plating and physical vapour deposition. Malaysia is now focusing its efforts in establishing more modern plating plants with cuttingedge equipment and technology, while upgrading current facilities to complement the country's heightened industrial efforts and environmental concerns. There is an increasing demand for surface treatment services from the electrical and electronics, automotive, aerospace and machinery components industries, thus opening up vast opportunities for new ventures in this area. There are about 40 companies in operation in this industry which include Malaysian owned companies such as AKN Technology, Ampmas and Metal Polishing Industries. Most of these companies are presently servicing the needs of notable MNCs.

1.7 Metal Fabrication

Metal fabrication activities in which Malaysian companies have developed world-class capabilities can be classified into four categories; namely fabrication for the offshore/ onshore oil and gas industry; building and civil construction fabrication; fabrication of processing and manufacturing plants and industrial machinery and equipment structures and component fabrication. Local companies undertake fabrication for the offshore/onshore oil & gas industry which includes fabrication works for the offshore oil drilling platform requirements such as jackets, production modules, platform decks, accommodation modules, line-pipe & spool and related industrial onshore activities such as petroleum refineries, petrochemical plants and storage facilities. In the building and civil construction fabrication category local companies fabricate steel superstructures for high-rise buildings, bridges, flyovers, transmission towers and other infrastructural facilities such as ports and airports. In the processing and manufacturing plant fabrication, companies undertake turnkey projects to build, install and commission processing plants in the country. The metal fabrication industry in Malaysia is considered a fairly established industry. In the building and construction industry many local fabrication companies have begun to source for jobs outside Malavsia. As a result, several local fabricators have gained international recognition in this industry.

2. EXECUTIVE SUMMARY FOR SUB-SECTORS IN METAL BASED INDUSTRY

			Level				Total			
NO.	30B-3ECTOR/		NL	L1	L2	L3	L4	L5	TOTAL	
1.	STEEL MAKING &	Non-Critical		2	2	6	2	2	40	
	FOUNDRY	Critical				2			16	
2.	FORGING	Non-Critical		1	2	1	1	1	7	
		Critical			1				7	
3.	FABRICATION	Non-Critical		6	10	7	2	2	33	
		Critical			1	5				
4.	MACHINING	Non-Critical		1	7	3	1	1	17	
		Critical				4			17	
5.	SURFACE FINISH	Non-Critical		2	2	1	1	1	7	
		Critical								
6.	LABORATORY	Non-Critical		0	3	1	1	2	7	
		Critical								
7.	QUALITY ASSURANCE	Non-Critical		1	3	1	1	1	7	
		Critical								
8.	MAINTENANCE	Non-Critical		1	4	2	1	1	٥	
		Critical							5	
9.	LOGISTIC	Non-Critical		1	2	2	1	1	7	
		Critical							ľ	
10.	HEAT TREATMENT	Non-Critical		1	1	1	1	1	5	
		Critical							5	
					Non-C	ritical			102	
					Criti	ical			13	
	Total			16	38	36	12	13	115	

2.1 EXECUTIVE SUMMARY OF TOTAL JOB TITLES

- 1. Based on panel discussions, members agreed that the metal based industry is sectorised into 10 sub-sectors.
- 2. The 10 sub-sectors are Steel Making & Foundry, Forging, Fabrication, Machining, Surface Finish, Laboratory, Quality Assurance, Maintenance, Logistics, and Heat Treatment.
- 3. A total of 115 job titles were registered, of which 102 job titles were noncritical and 13 job titles were critical.
- 4. Sub-sector Fabrication registered the most job titles with 33 job titles.
- 5. Sub-sectors Machining, Fabrication, and Steel Making & Foundry were identified to have a very good future prospect and competitive to be developed due to development in automotive and aerospace industries. These sub-sectors may promise more jobs in the future.

2.2 EXECUTIVE SUMMARY FOR CRITICAL AND NON-CRITICAL JOB TITLES

- 1. Machining, Fabrication, Steel Making & Foundry and Stamping were among the most important sub-sectors and seems to be critical in metal based industry. In order for metalbased industry to be competitive enough globally, it has to develop more skills in the area stated below:
 - □ Skills in Die design and die setter.
 - □ Productivity and effiency can be improved through better efficiency and skills in production technology.
 - □ Knowledge in various market requirements in term of product quality and standards.

Therefore, it is recommended that the development of NOSS for this sector will be done concurrently. The list of the new critical job title are as below:

- □ Level 2 : Forging Die Setter
- Level 2 : Stamping Die Setter
- □ Level 3 : Machinist (EDM Operation)

The existing NOSS which are critical:

- 1. Steel Making & Foundry Foundry Technician (Pattern Making) (G-090-3) and Foundary Technician (Mould & Core Making)(G-080-3) Level 3 need revision and updating according to latest technology.
- Fabrication Senior Welding Inspection (H-060-3), Gas Welding Technician (H-022-3), Gas Tungsten Arc Welding Technician (Carbon Steel & Aluminium & Stainless Steel) (H-025-3), Gas tungsten Arc & Shielded Metal Arc Welding Technician (Carbon Steel & Stainless Steel)(H-026-3), Gas Metal Arc Welding Technician (Carbon Steel, Stainless Steel)(H-026-3), Gas Metal Arc Welding Technician (Carbon Steel, Stainless Steel & Aluminium)(H-027-3) – Level 3 need revision and updating according to latest technology.
- Machining Machinist (Lathe Turning Operation) (H-014-3), Machinist (Milling Operation) (H-015-3), Machinist (Grinding Operation) (H-016-3) – Level 3 need revision and updating according to latest technology.

3. Methodology

There are several methods that can be used in determining the job title for this industry. However the method employed in this study are:

- Interview (Factory visit, phone conversation and etc.)
- Idea brainstorming
- Discussion/Meeting
- Articles and Journals

Several key players in the Metal Based Industry were invited during the brainstorming session. A personnel from JPK was also invited. The brainstorming session were held at the meeting of Madita Sdn. Bhd. Office.

	Method	Date	Place	Nota
1.	Literature Review	3 rd July 2007 - 30 th July 2007	Madita Sdn. Bhd.	With reference to IMP3, RK9, DOC, Government Policy, MASCO, Industrial Association.
2.	Brainstorming Session	3 August 2007	Madita Sdn. Bhd.	OA Job Titles
3.	Brainstorming Session	17 August 2007	Madita Sdn. Bhd.	Job Definitions Analysis
4.	Discussion/ Meeting	26 August 2007	Madita Sdn. Bhd.	Grammar Validation and proof reading.
5.	Discussion/ Meeting	15 Sept 2007	Madita Sdn. Bhd.	Grammar Validation and proof reading.

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SUB-SECTORS, JOB AREAS AND JOB TITLE OF METAL BASED INDUSTRY

1a. STEEL MAKING & FOUNDRY

L	Steel Making					
5	Steel Making Manager					
		(G-1	10-5)			
4		Steel Makin	g Executive			
4		(G-11	10-4)			
	Material Handling	Melting	Casting	Rolling		
3	Technician	Technician	Technician	Technician		
	(G-110-3)	(G-111-3)	(G-112-3)	(G-113-3)		
2	Senior Production Operator (Steel Making)					
2	(G-100-2)					
Production Operator (Steel Making)						
		(G-10	00-1)			

1b. STEEL MAKING & FOUNDRY

L	Pattern Making	Moulding/Core Making	Melting	Die Casting	
5		Foundry Ma	anager		
		(G-070-	-5)		
1		Foundry Exe	ecutive		
4		(G-070-	-4)		
	**Foundry Technician	**Foundry	Foundry	Foundry	
	(Pattern Making)	Technician	Technician	Technician	
3	(G-090-3)**	(Mould & Core	(Melting)	(Die Casting)	
		Making)	(G-070-3)	(G-100-3)	
		(G-080-3)**			
2		Senior Foun	dryman		
2	(G-060-2)				
1	Foundryman				
		(G-060-	-1)		

2. FORGING

L		Forging Shop		
5	Forging Manager			
4	Forging Executive			
3	Forging Supervisor			
2	**Forging Die Setter**	Forging Line Leader	Finishing Line Leader	
1		Forging Operator		

3a. FABRICATION

L	Stampi	ng	
5	Stamping M	anager	
4	Stamping Executive		
3	Stamping Su	pervisor	
2	**Stamping Die Setter**	Stamping Line Leader	
1	Stamping O	perator	

3b. FABRICATION

L	Gas Welding	Sheet Metal/Roll Forming	Fabrication	Inspection
5		Welding Engin (H-0	eer (Fabrication) 023-5)	
4		Assistant Welding E (H-0	Engineer (Fabrication) 023-4)	
3	**Gas Welding Technician (H-022-3)**	Sheet Metal Technician (H-070-3)	Steel Structure & Fabrication Technician (H-200-3)	**Senior Welding Inspector (H-060-3)**
2	Senior Gas Welder (H-022-2)	Senior Sheet Metal Fabricator (H-070-2)	Senior Steel Structure Erector & Fabricator (H-200-2)	Welding Inspector (H-060-2)
1	Gas Welder (H-022-1)	Sheet Metal Fabricator (H-070-1)	Steel Structure Erector & Fabricator (H-200-1)	Welding Inspector (H-060-1)

3c. FABRICATION

L	Arc Welding				
5	Welding Engineer (Fabrication) (H-023-5)				
4	Assistant Welding Engineer (Fabrication) (H-023-4)				
3	Shielded Metal Arc Welding Technician (Carbon Steel & Stainless Steel) (H-024-3)	**Gas tung & Shielded Welding To (Carbon Stee Ste (H-020	gsten Arc Metal Arc echnician I & Stainless el) 5-3)**	**Gas Tungsten Arc Welding Technician (Carbon Steel & Aluminium & Stainless Steel) (H-025-3)**	
2	Shielded Metal Arc Welder (Carbon Steel & Stainless Steel) (H-024-2)Gas Tungsten Arc Welder (Carbon Steel & Stainless Steel) (H-025-2)			Fungsten Arc Welder Steel & Stainless Steel) (H-025-2)	
1	Shi	elded Metal Arc	Welder (H-024	I-1)	

3d. FABRICATION

L	Arc Welding					
5	Welding Engineer (Fabrication) (H-023-5)					
4	Assistant Welding Engineer (Fabrication) (H-023-4)					
3	Non Ferrous Metal Welding Technician (H-021-3)	Non Ferrous Metal Welding Technician (H-021-3)**Gas Metal Arc Welding Technician (Carbon Steel, Stainless Steel & Aluminium) (H-027-3)**Flux Cored Welding Tech (Carbon Steel, (Carbon Steel, (H-028-3))		l Arc Inician teel) 3)	Submerged Arc Welding Technician (Carbon Steel) (H-029-3)	
2	Non Ferrous Metal Welder (H-021-3) (Gas Metal Arc Welder S (Carbon Steel, Stainless & C Aluminium) (H-027-2)		Subr Ope	merged Arc Welding rator (Carbon Steel) (H-029-2)
1			Shielded Meta (H-02	al Arc Welder 24-1)		

4a. MACHINING

L	Metal Machining					
5	Manufacturing Engineer – CAD/CAM (H-050-5)					
4	Assistant Manufacturing Engineer – CAD/CAM (H-050-4)					
3	**Machinist (Lathe Turning Operation) (H-014-3)**	**Machinist (Milling Operation) (H-015-3)**	**Machinist (Grinding Operation) (H-016-3)**	**Machinist (EDM Operation)**		
2	General Machinist (Lathe TurningGeneral Machinist (Milling Operation) (H-015-2)General Machinist (Grinding Operation) (H-016-2)General Machinist (EDM Operation)					
1	General Machinist (H-017-1)					

4b. MACHINING

L	Metal Machining				
5	Manufacturing Engineer - CAD/CAM (H-050-5)				
4	Assistant Manufacturing Engineer - CAD/CAM (H-050-4)				
3	Computer Numerical Control (CNC) Technician (H-013-3)	Senior Toolmaker - Plastic Injection (H-097-3)	Senior Toolmaker - Press Tool (H-096-3)		
2	CNC Machinist (H-013-2)	Toolmaker - Plastic Injection Mould (H-097-2)	Toolmaker Press - Tool (H-096-2)		
1	General Machinist (H-017-1)				

4c. MACHINING

L	Metal Machining			
5	Tooling Engineer (H-095-5)			
4	Press Work Die Designer (H-093-4)	k Die Designer Assistant Tool -093-4) (H-09		Plastic Mould Designer (H-094-4)
3	Senior Toolmaker – Press Tool (H-096-3)		Senior Toolmaker – Plastic Injection Mould (H-097-3)	
2	Toolmaker – Press Tool (H-096-2)		Toolmak	er – Plastic Injection Mould (H-097-2)
1	General Machinist (H-017-1)			

5. SURFACE FINISH

L	Pre-Treatment	Painting/Coating	
5	Surface Finish Manager		
4	Assistant Surface Finish Manager		
3	Surface Finish Supervisor		
2	Pre-Treatment Line Leader Painting Line Leader		
1	Pre-Treatment Operator	Painting Operator	

6. LABORATORY

L	Metrology	Mechanical Test	Me	tallorgraphy
5	Laboratory Manager		Metallurgist	Not Available
4	Assistant Laboratory Manager		Not Available	Not Available
3	Laboratory Supervisor		Not Available	Not Available
2	Laboratory Technician	Calibration Technician	Not Available	Metallurgical Laboratory Technician
1	Not Available		N	lot Available

7. QUALITY ASSURANCE

L	Production	Quality System
5	Quality Assurance Engineer (Manufacturing) (H-301-5)	
4	Assistant Quality Assurance Engineer (Manufacturing) (H-301-4)	
3	Senior Quality Assurance Technician (H-301-3)	
2	Quality Assurance Technician (H-301-2)	Document Controller
1	Junior Quality Assurance Technician (H-301-1)	Not Available

8. MAINTENANCE

L	Maintenance Storekeeper	Mechanical	Electrical
5	Not Available	Maintenance Engineer (H-100-5)	Not Available
4	Not Available	Assistant Maintenance Engineer (H-100-4)	Not Available
3	Senior Technical Storekeeper	Industrial Technician (H-100-3)	Chargeman A4 – Low Voltage (C-030-3)
2	Technical Storekeeper	Senior Industrial Mechanic(H-100-2)	Chargeman A1 – Low Voltage (C-030-2)
1	Industrial Mechanic (H-100-1)		Chargeman A0 – Low Voltage (C-030-1)

9. LOGISTIC

L	Warehouse Fleet		
5	Logistic Manager		
4	Assistant Logistic Manager		
3	Storekeeper Supervisor	Fleet Supervisor	
2	Senior Storekeeper	Transporter Driver	
1	Storekeeper	Not Available	

10. HEAT TREATMENT

L	Heat Treatment Shop
5	Heat Treatment Manager
4	Assistant Heat Treatment Manager
3	Heat Treatment Supervisor
2	Heat Treatment Technician
1	Heat Treatment Operator

Note:

Forging Die Setter - CRITICAL

Occupational Definition

LEVEL 1 PRODUCTION OPERATOR (STEEL MAKING)(G-100-1) FOUNDRYMAN (G-060-1)

LEVEL 2 SENIOR PRODUCTION OPERATOR (STEEL MAKING)(G-100-2) SENIOR FOUNDRYMAN (G-060-2)

LEVEL 3 MATERIAL HANDLING TECHNICIAN (G-110-3) MELTING TECHNICIAN (G-111-3) CASTING TECHNICIAN (G-112-3) ROLLING TECHNICIAN (G-113-3) FOUNDRY TECHNICIAN (PATTERN MAKING) (G-090-3) FOUNDRY TECHNICIAN (MOULD & CORE MAKING) (G-080-3) FOUNDRY TECHNICIAN (MELTING) (G-070-3) FOUNDRY TECHNICIAN (DIE CASTING) (G-100-3)

> LEVEL 4 STEEL MAKING EXECUTIVE (G-110-4) FOUNDRY EXECUTIVE (G-070-4)

LEVEL 5 STEEL MAKING MANAGER (G-110-5) FOUNDRY MANAGER (G-070-5)

STEEL MAKING & FOUNDRY (STEEL MAKING)

Level 1

Occupational definition for PRODUCTION OPERATOR (STEEL MAKING)

A Production Operator (Steel Making) is designated to perform a range of work activities, most of which are routine in steel making related to material handling, melting, casting and rolling; he/she works under the supervision of a Senior Production Operator/ Supervisor/Technician.

- 1) Adheres to work safety precaution while working and keep working area safe and tidy.
- 2) Selects and prepares raw material for melting.
- 3) Prepares and maintains tools and equipment.
- 4) Carries out melting, casting and rolling operations.
- 5) Checks tools and equipment before, during and after operation.
- 6) Carries out sampling of product during melting, casting and rolling.
- 7) Responds to abnormal operating condition, emergency situation and accident.

Level 1

$\mathcal{O}_{ccupational definition for FOUNDRYMAN}$

A Foundryman is designated to perform a range of work activities, most of which are routines in a foundry related to melting, moulding, core making, pattern making and die casting; he/she works under the supervision of a Senior Foundryman.

- 1) Adheres to work safety precaution while working and keep working are safe, clean and tidy.
- 2) Prepares and maintains tools and equipment for foundry work.
- 3) Prepares and fabricates tooling for casting.
- 4) Interprets basic technical drawing.
- 5) Selects, prepares sand and makes sand mould and sand core.
- 6) Selects and prepares materials for making pattern and core.
- Selects scrap material, metal ingots and chemical additives required for melting.
- 8) Checks, start, shut down furnace, repairs and replaces furnace lining.
- 9) Charges and recharges the furnace with prepared material. Removes slag and measures molten metal temperature.
- 10) Responds to cooling system failure, explosion and power failure during melting.

Level 2

Occupational definition for SENIOR PRODUCTION OPERATOR (STEEL MAKING)

A Senior Production Operator (Steel Making) is designated to perform a significant range of varied work activities, some of the activities are non-routine and required individual responsibility and autonomy in steel making related to raw material, melting, casting and rolling; he/she works under a Supervisor/Technician.

- 1) Adheres to work safety precaution while working and keep working area safe and tidy.
- 2) Prepares and maintains tools and equipment.
- 3) Carries out melting, casting and rolling operations.
- 4) Checks tools and equipment before, during and after operations.
- 5) Carries out sampling of product during melting, casting and rolling.
- 6) Responds to abnormal operating condition, emergency situation and accidents.
- 7) Controls melting, casting and rolling operations.
- 8) Interprets product quality analysis.

Level 2

$\mathcal{O}_{ccupational definition for SENIOR FOUNDRYMAN}$

A Senior Foundryman is designated to perform a significant range of varied activities, some of the activities are non-routine and required individual, responsibility and autonomy in a foundry related to melting, moulding, core making, pattern making and die casting; he works under the supervision of a Foundry Technician.

- 1) Adheres to work safety precaution while working and keep working area safe, clean and tidy.
- 2) Prepares and maintains tools and equipment for foundry work.
- 3) Prepares and fabricates tooling and casting.
- 4) Interprets basic technical drawing.
- 5) Selects, performs sand test, prepares sand and makes and mould and sand core.
- 6) Selects and prepares materials for making pattern and core.
- 7) Assembles gating system and cavity.
- 8) Selects scrap material, metal ingots and chemical additives required for melting.
- 9) Checks, starts, operates and shut down furnace.
- 10) Charges and recharges the furnace with prepared material, monitors melting process, measure molten metal temperature and discharge molten metal.
- 11) Performs molten metal treatment.
- 12) Responds to cooling system failure, explosion and power failure during melting.

Level 3

Occupational definition for MATERIAL HANDLING TECHNICIAN (STEEL MAKING)

A Material Handling Technician (Steel Making) is designated to perform varied work activities most of which are complex and non-routine in melting operation; he/she supervises a group of workers.

- 1) Ensures work area is safe, tidy and free from obstruction; all safety measures are monitored and complied with.
- 2) Records daily material movement.
- 3) Maintains material movement records and inventory.
- 4) Ensures material is always available for production work.
- 5) Distributes work, conducts training and maintains records.
- 6) Grades raw materials.
- 7) Participate in quality improvement activities such as QCC and Kaizen.

Level 3

$\mathcal{O}_{\text{ccupational definition for CASTING TECHNICIAN (STEEL MAKING)}$

A Casting Technician (Steel Making) is designated to perform varied work activities most of which are complex and non-routine in casting operation; he/she supervises a group of workers.

- 1) Ensures work area is clean and tidy; sealing & chilling, casting tools and other consumable are stored.
- 2) Performs test run, start, shut down casting machine and determine condition of casting machine after operation.
- 3) Shuts down casting machine and carries out routine maintenance and prepares for next casting operation.
- 4) Coordinates to cooling system failure, tundish and ladle break out during casting.
- 5) Ensures safety fire fighting is available and in operating condition.
- 6) Distributes work, controls inventory & production, conduct training and maintains records.
- 7) Ensures casting operation is carried out to Standard Operating Procedures.

Level 3

$\mathcal{O}_{\text{ccupational definition for ROLLING TECHNICIAN (STEEL MAKING)}$

A Rolling Technician (Steel Making) is designated to perform varied work activities most of which are complex and non-routine in rolling operation; he/she supervise a group of workers.

- 1) Ensures work area is safe, tidy and free from obstruction; all safety measures are monitored and complied with.
- 2) Maintains operational data log and record involved in the rolling operation.
- 3) Ensures all rolling equipment are stable, safe and always ready for operation.
- 4) Monitors rolling operation.
- 5) Coordinates cooling system failure, power failure and accidents during rolling operation.
- 6) Distributes work, controls inventory & production, conduct training and maintains records.
- 7) Ensures rolling operation is carried out to Standard Operating Procedures (SOP).

Level 3

Occupational definition for FOUNDRY TECHNICIAN (PATTERN MAKING)

A Foundry Technician (Pattern making) is designated to perform a varied work activity most of which are complex and non-routine in pattern making; he/she supervises a group of workers.

- 1) Ensures working area is safe, clean and tidy.
- 2) Constructs pattern and core box drawings.
- 3) Reviews and interprets product drawings.
- 4) Selects, prepares and cut materials for making pattern, pattern plate, core box and gating system.
- 5) Selects and use fasteners to join and assemble components to form pattern, pattern plate, core box and gating system.
- 6) Checks pattern, pattern plate, core box and gating system against specifications.
- 7) Ensure tools and equipment is maintained.
- 8) Ensure safety fire fighting equipment is available and in operating condition.
- 9) Distributes work, controls inventory & production, conducts training and maintains records.

Level 3

Occupational definition for FOUNDRY TECHNICIAN (MOULD AND CORE MAKING)

A Foundry Technician (Mould and Core Making) is designated to perform a varied work activity most of which are complex and non-routine in mould and core making; he/she supervises a group of workers.

- 1) Ensures working area is safe, clean and tidy; scrap materials and chemical additive is properly stored.
- 2) Conduct sand distribution test for new mould sand and interprets.
- 3) Test result.
- 4) Mixes sand for mould making and core making.
- 5) Set up pattern for mould making.
- 6) Checks pattern before moulding process.
- 7) Make green sand mould and self setting mould.
- 8) Conduct sand distribution test for new and sand core.
- 9) Maintains mould and core making equipment.
- 10) Assembles and prepares core box.
- 11) Identifies causes of casting defects.
- 12) Ensure safety fire fighting equipment is available and in operating condition.
- 13) Distributes work, controls inventory & production, conducts training and maintains records.

Level 3

$\mathcal{O}_{\text{ccupational definition for FOUNDRY TECHNICIAN (MELTING)}$

A Foundry Technician (Melting) is designated to perform a varied work activity most of which are complex and non-routine in melting operation; he/she supervises a group of workers.

- 1) Ensures working area is safe, clean and tidy; scrap materials and chemical additive is properly stored.
- 2) Selects scrap material, metal ingots, flux material, degassing material and grain refiner required for melting and equivalent material standard.
- 3) Checks, starts, shut down furnace and determine condition of furnace lining/crucible.
- 4) Charges and recharges the furnace with prepared material and treatment chemical, monitors melting process, removes slag, measures molten metal temperature and monitors whole melting process.
- 5) Performs molten metal treatment, checks chemical composition of molten metal, adjust chemical composition and pours molten metal into ladle.
- 6) Shuts down furnace, repairs, replace new furnace lining and carry out routine maintenance.
- 7) Responds to cooling system failure, explosion, power, failure and furnace breakthrough during melting.
- 8) Ensure safety fire fighting equipment is available and in operating condition.
- 9) Distributes work, controls inventory & production, conduct training and maintains records.
Level 3

Occupational definition for FOUNDRY TECHNICIAN (DIE CASTING)

A Foundry Technician (Die Casting) is designated to perform a varied work activity most of which are complex and non-routine in die casting operation; he/she supervises a group of workers.

- 1) Ensures working area is safe, clean and tidy.
- 2) Responds to emergency situation.
- 3) Ensures mould is cleaned before and after use.
- 4) Prepares and pre heat die casting ladle.
- 5) Checks and insert core into mould.
- 6) Pours molten metal into mould.
- 7) Removes casting from mould.
- 8) Checks and maintains mould.
- 9) Ensures safety fire fighting equipment is available and in operating condition.
- 10) Distributes work, controls inventory and production, conduct training and maintains records.

Level 4

$\mathcal{O}_{ccupational definition for STEEL MAKING EXECUTIVE}$

A Steel making Executive is designated to assist Steel making Manager to plan, manage and control on steel making department to achieve the required performance standard.

- 1) Ensures the capacity planning of each steel making lines are within the requirement.
- 2) Ensures the manpower of steel making section is properly planned.
- 3) Coordinates, monitors & confirms the pilot run and mass production.
- 4) Monitors the continuous improvement activity and 5S.
- 5) Monitors the production planning process to ensure that customers' needs are fulfilled.
- 6) Coordinates activity of safety and implementation within manufacturing premises.
- 7) Performs any other job functions as instructed by the management from time to time.

Level 4

$\mathcal{O}_{ccupational definition for FOUNDRY EXECUTIVE}$

A Foundry Executive is designated to assist Foundry Manager to plan, manage and control on foundry department to achieve the required performance standard.

- 1) Ensures the capacity planning of each foundry lines are within the requirement.
- 2) Ensures the manpower of foundry section is properly planned.
- 3) Coordinates, monitors and confirms the pilot run and mass production.
- 4) Monitors the continuous improvement activity and 5S.
- 5) Monitors the production planning process to ensure that customers' needs are fulfilled.
- 6) Coordinates activity of safety and implementation within manufacturing premises.
- 7) Performs any other job functions as instructed by the management from time to time.

Level 5

$\mathcal{O}_{ccupational definition for STEEL MAKING MANAGER}$

A Steel making Manager is designated to manage and oversee the overall functions of steel making facilities.

- 1) Manages and oversees the overall functions of steel making department.
- 2) Monitors overall department operational budget.
- 3) Monitors, plans and improves of steelmaking equipment and facilities, utilization and efficiency.
- 4) Ensures training programme for steel making department staff are conducted effectively.
- 5) Monitors and upkeeps the steel making equipment and facilities as per annual preventive maintenance (TPM) schedule.
- 6) Manages the maintaining, monitoring and improving steel making department housekeeping and continuous improvement.
- 7) Reports the performance of steel making department to the management.
- 8) Ensures smooth running of department and inter department liaison.
- 9) Ensures the implementation of safety at working place.
- 10) Performs any other job functions as instructed by the management from time to time.

Level 5

$\mathcal{O}_{ccupational definition for FOUNDRY MANAGER}$

A Foundry Manager is designated to manage and oversee the overall functions of Foundry & Casting facilities.

- 1) Manages and oversees the overall functions of foundry department.
- 2) Monitors overall department operational budget.
- 3) Monitors, plans and improves of foundry equipment and facilities, utilization and efficiency.
- 4) Ensures training programme for foundry department staff are conducted effectively.
- 5) Monitors and upkeeps the foundry equipment and facilities as per annual preventive maintenance (TPM) schedule.
- 6) Manages the maintaining, monitoring and improving foundry department housekeeping and continuous improvement.
- 7) Reports the performance of foundry department to the management.
- 8) Ensures smooth running of department and inter department liaison.
- 9) Performs any other job functions as instructed by the management from time to time.

LEVEL 1

FORGING OPERATOR

LEVEL 2

FORGING DIE SETTER FORGING LINE LEADER FINISHING LINE LEADER

LEVEL 3

FORGING SUPERVISOR

LEVEL 4

FORGING EXECUTIVE

LEVEL 5

FORGING MANAGER

Level 1

$\mathcal{O}_{ccupational definition for FORGING OPERATOR}$

A Forging Operator is designated to perform the operation of stamping activities within Forging Department.

- 1) Performs forging job to assist Forging Line Leader in producing forging products.
- 2) Ensures all equipment are in good order prior to run.
- 3) Follows related standard operating procedures.
- 4) Performs inspection on parts being forged.
- 5) Adheres with safety instruction.
- 6) Records related inspection data for parts being forged.
- 7) Performs countermeasures action for defective parts and abnormal forging process.
- 8) Participates in quality improvement activities such as QCC and Kaizen.
- 9) Performs other duties as specified by Forging Line Leader.

Level 2

$\mathcal{O}_{ ext{ccupational definition for FORGING DIE SETTER}$

A Forging Die Setter is designated to assist Forging Supervisor in die setting activities.

- 1) Ensures that forging processes are fully understood before commencing an operation.
- 2) Understands inspection instructions and verifies the job performed accordingly.
- 3) Ensure that dies are set-up in compliance with machine requirements, specifications and other requirements.
- 4) Reports any abnormalities to forging supervisor.
- 5) Completes full production and inspection records for each job, as required.
- 6) Ensures forging material and fully identified against the job number at all time during production process.
- 7) Verifies all activities related to 5S at workplace are performed accordingly.
- 8) Verifies autonomous maintenance activities are carried out.
- 9) Performs any other tasks as assigned by Forging Supervisor.

Level 2

$\mathcal{O}_{\rm ccupational}$ definition for FORGING LINE LEADER

A Forging Line Leader is designated to lead Forging Line and to assist Forging Supervisor in forging process.

- 1) Ensures that forging processes are fully understood before commencing an operation.
- 2) Understands inspection instructions and verify the job performed accordingly.
- 3) Ensures that items are produced in compliance with specifications and order requirements.
- 4) Reports any abnormalities to Forging Supervisor.
- 5) Completes full production and inspection records for each job, as required.
- 6) Identifies segregate non-conforming material and products and report these to Forging Supervisor.
- 7) Ensures forging material and fully identified against the job number at all time during production process.
- 8) Verifies all activities related to 5S at workplace are performed accordingly.
- 9) Verifies autonomous maintenance activities are carried out.
- 10) Performs any other tasks as assigned by Forging Supervisor.

Level 2

$\mathcal{O}_{ccupational}$ definition for FINISHING LINE LEADER

A Finishing Line Leader is designated to lead Finishing Line and to assist Forging Supervisor in forging process.

- 1) Ensures that finishing processes are fully understood before commencing an operation.
- 2) Understands inspection instructions and verify the job performed accordingly.
- 3) Ensures that items are produced in compliance with specifications and order requirements.
- 4) Reports any abnormalities to Forging Supervisor.
- 5) Completes full production and inspection records for each job, as required.
- 6) Identifies segregate non-conforming material and products and report these to Forging Supervisor.
- 7) Ensures finishing material and fully identified against the job number at all time during production process.
- 8) Verifies all activities related to 5S at workplace are performed accordingly.
- 9) Verifies autonomous maintenance activities are carried.
- 10) Performs any other tasks as assigned by Forging Supervisor.

Level 3

$\mathcal{O}_{ccupational definition for FORGING SUPERVISOR}$

A Forging Supervisor is designated to supervise and coordinate activities relating to forging department.

- 1) Supervises and coordinates activity of workers engaged in forging products.
- 2) Applying knowledge of forging machine setup and operating techniques and production methods.
- 3) Reads operating logs to identify inoperative forging machines.
- 4) Determines reason for machine malfunction, and arranges for machine repair.
- 5) Reviews production schedule and work orders, and assigns duties to workers according to order priorities.
- 6) Studies quality control reports to identify product defects and directs machine operators to adjust machines to eliminate flaws.
- 7) Examines forging products form each machine to verify conformance to specifications.
- 8) Conducts and directs training of new employees in forging machine operation and processes.
- 9) Confers with management and other supervisors to resolve production problems.
- 10) Performs any other duties as instructed by the Management.

Level 4

$\mathcal{O}_{ccupational definition for FORGING EXECUTIVE}$

A Forging Executive is designated to assist Forging Manager to plan, manage and control on forging department to achieve the required performance standard.

- 1) Ensures the capacity planning of each forging lines.
- 2) Ensures the manpower of forging section is properly planned.
- 3) Coordinates, monitors & confirms the pilot run and mass production.
- 4) Monitors the continuous improvement activity and 5S.
- 5) Monitors the production planning process to ensure that customers' needs are fulfilled.
- 6) Coordinates activity of safety and implementation within manufacturing premises.
- 7) Performs any other job functions as instructed by the management from time to time.

Level 5

$\mathcal{O}_{ccupational definition for FORGING MANAGER}$

A Forging Manager is designated to manage and oversee the overall functions of forging department.

- 1) Manages and oversees the overall functions of forging department.
- 2) Monitors overall department operational budget.
- 3) Monitors, plans and improves forging department equipment and facilities utilization and efficiency.
- 4) Ensures training programme for forging department staff are conducted effectively.
- 5) Monitors and upkeeps the forging department equipment and facilities as per annual preventive and maintenance schedule.
- 6) Manages the maintaining, monitoring and improving forging department housekeeping and continuous improvement.
- 7) Reports the performance of forging department to the Management.
- 8) Ensures smooth running of department and inter department liaison.
- 9) Performs any other job functions as instructed by the Management from time to time.

LEVEL 1

STAMPING OPERATOR GAS WELDER (H-022-1) SHEET METAL FABRICATOR (H-070-1) STEEL STRUCTURE ERECTOR & FABRICATOR (H-200-1) WELDING INSPECTOR (H-060-1) SHIELDED METAL ARC WELDER (H-024-1)

LEVEL 2

STAMPING DIE SETTER STAMPING LINE LEADER SENIOR GAS WELDER (H-022-2) SENIOR SHEET METAL FABRICATOR (H-070-2) SENIOR STEEL STRUCTURE ERECTOR & FABRICATOR (H-200-2) WELDING INSPECTOR (H-060-2) SHIELDED METAL ARC WELDER (CARBON STEEL & STAINLESS STEEL) (H-024-2) GAS TUNGSTEN ARC WELDER (CARBON STEEL & STAINLESS STEEL) (H-025-2) NON-FERROUS METAL WELDER (H-021-3) GAS METAL ARC WELDER (CARBON STEEL, STAINLESS & ALUMINIUM) (H-027-2) SUBMERGED ARC WELDING OPERATOR (CARBON STEEL) (H-029-2)

LEVEL 3

STAMPING SUPERVISOR GAS WELDING TECHNICIAN (H-022-3) SHEET METAL TECHNICIAN (H-070-3) **STEEL STRUCTURE & FABRICATION TECHNICIAN (H-200-3)** SENIOR WELDING INSPECTOR (H-060-3) SHIELDED METAL ARC WELDING TECHNICIAN (CARBON STEEL & STAINLESS STEEL)(H-024-3) GAS TUNGSTEN ARC & SHIELDED METAL ARC WELDING TECHNICIAN (CARBON STEEL & STAINLESS STEEL) (H-026-3) GAS TUNGSTEN ARC WELDING TECHNICIAN (CARBON STEEL & ALUMINIUM & STAINLESS STEEL) (H-025-3) NON-FERROUS METAL WELDING TECHNICIAN (H-021-3) GAS METAL ARC WELDING TECHNICIAN (CARBON STEEL, STAINLESS STEEL & ALUMINIUM) (H-027-3) FLUX CORED ARC WELDING TECHNICIAN (CARBON STEEL) (H-028-3) SUBMERGED ARC WELDING TECHNICIAN (CARBON STEEL) (H-029-3)

LEVEL 4

STAMPING EXECUTIVE ASSISTANT WELDING ENGINEER (FABRICATION) (H- 023-4)

LEVEL 5

STAMPING MANAGER WELDING ENGINEER (FABRICATION) (H- 023-5)

Level 1

$\mathcal{O}_{ccupational}$ definition for STAMPING OPERATOR

A Stamping Operator is designated to perform the operation of stamping activities within Stamping Department.

- 1) Performs stamping job to assist Stamping Line Leader in producing stamping parts.
- 2) Ensures all equipment are in good order prior to run.
- 3) Follows related standard operating procedures.
- 4) Performs inspection on parts being stamped.
- 5) Adheres with safety instruction.
- 6) Records related inspection data for parts being stamped.
- 7) Perform countermeasures action for defective parts and abnormal stamping process.
- 8) Performs other duties as specified by Stamping Line Leader.

Level 1

Occupational definition for GAS WELDER

A Gas Welder is designated to prepare, cuts and performs fusion weld on mild steel plate and tube, brass plate and tube, aluminium plate and cast iron plate and non-fusion weld on mild steel plate 7 copper plate, brass plate, cast iron plate, stainless steel plate and tube in 1G position according a given specification and procedures using gas welding equipment and accessories.

- 1) Complies with safe working procedure.
- 2) Selects and prepares materials, flux and filler metal for gas welding.
- 3) Sets up gas welding equipment and accessories.
- 4) Performs fusion and non-fusion welding on similar and dissimilar materials.
- 5) Performs heat treatment on workpiece.
- 6) Performs gas cutting maintain tools and equipment.
- 7) Performs quality control.

Level 1

$\mathcal{O}_{\text{ccupational definition for SHEET METAL FABRICATOR}$

A Sheet Metal Fabricator is designated to prepare, cuts, bend and forms ferrous and non-ferrous material of thickness less than 3.00mm by using hand and power tools and join the material by riveting, seaming, soldering, brazing and welding processes to specified requirement.

- 1) Adheres to safety rules and regulations.
- 2) Identifies and prepares sheet metals including ferrous and non-metal to job requirement.
- 3) Draws, read and interprets engineering drawing/blue print.
- 4) Cuts, bends and forms sheet metal by using hand and power tools to specifications designs and develops patters by conventional method and CAD to specifications.
- 5) Uses and maintains machine and equipment, performs bench fitting jobs.
- 6) Uses and maintains marking, measuring tools and gauges.
- 7) Performs any other task as per instructed by senior sheet metal fabrication.

Level 1

Occupational definition for SHEET STRUCTURE ERECTOR & FABRICATOR

A Steel Structure Erector & Fabricator is designated to prepare, fabricates, assembles and joins (permanent and non-permanent joint) steel metal plates and pipes to make metal frames and structures.

- 1) Identifies, select, estimates and material required.
- 2) Reads and interprets engineering drawings.
- 3) Reads and interprets work instructions, specifications and procedures.
- 4) Measures, marks and prepares materials for fabrication work.
- 5) Cuts work materials using cutting tools and equipment.
- 6) Performs related metal fitting jobs.
- 7) Forms and bend metal plates and pipes.
- 8) Erects and assembles metal frame and structures.
- 9) Joins metal plates and pipes using various welding.
- 10) Performs any other task as per instructed by Senior Steel Structure Erecter & Fabricator.

Level 1

$\mathcal{O}_{ccupational definition for WELDING INSPECTOR}$

A Welding Inspector is designated to check and monitor; before, during and after completion of welding.

- 1) Adheres to safety rules and regulations.
- 2) Identifies, verifies and ensure materials, consumables, equipment and accessories are prepared and used as required and specified.
- 3) Inspects work as carried out and performed by fabricators, welder and welding operators to produce sound weld in accordance with codes, standards and specifications and monitor heat treatment.
- 4) Witnesses and verifies welding procedure and performance and welder/ operator qualification tests.
- 5) Monitors NDT inspection, mechanical, hydrostatic and pneumatic tests.
- 6) Records inspection results on work personally inspected, prepares record and maintains inspection documentation.
- 7) Performs any other task as per instructed by Senior Welding Inspector.

Level 1

Occupational definition for SHIELDED METAL ARC WELDER (CARBON STEEL)

A Shielded Metal Arc Welder is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tools and equipments; tacks and joins the prepared material using Shielded Metal Arc Welding (SMAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities.
- 2) Interprets welding drawings and instructions.
- 3) Layouts work material and cut materials using gas cutting equipment, disc cutter and power saw.
- 4) Prepares joints, fits and tacks workpieces before welding.
- 5) Sets up Shielded Metal Arc Welding (SMAW) equipment and accessories and performs welding on plates of thickness range from 6mm to 9mm and pipes of nominal pipe size range from 6 inches to 8 inches, in 1G positions.
- 6) Inspect welded joints visually using inspection kit.

Level 2

$\mathcal{O}_{ccupational}$ definition for STAMPING DIE SETTER

A Stamping Die Setter is designated to assist Stamping Supervisor in die setting activities.

- 1) Ensures that stamping processes are fully understood before commencing an operation.
- 2) Understands inspection instructions and verifies the job performed accordingly.
- 3) Ensures that dies are set-up in compliance with machine requirements, specifications and other requirements.
- 4) Reports any abnormalities to Stamping Supervisor.
- 5) Completes full production and inspection records for each job, as required.
- 6) Verifies all activities related to 5S at workplace are performed accordingly.
- 7) Verifies autonomous maintenance activities are carried out.
- 8) Performs any other tasks as assigned by Stamping Supervisor.

Level 2

$\mathcal{O}_{ccupational}$ definition for STAMPING LINE LEADER

A Stamping Line Leader is designated to lead Stamping Line and to assist Stamping Supervisor in stamping process.

- 1) Ensures that stamping processes are fully understood before commencing an operation.
- 2) Understands inspection instructions and verify the job performed accordingly.
- 3) Ensures that items are produced in compliance with specifications and order requirements.
- 4) Completes full production and inspection records for each job, as required.
- 5) Identifies segregate non-conforming material and products and report these to Stamping Supervisor.
- 6) Ensures stamping material and fully identified against the job number at all time during production process.
- 7) Verifies all activities related to 5S at workplace are performed accordingly.
- 8) Verifies autonomous maintenance activities are carried out.
- 9) Performs any other tasks as assigned by Stamping Supervisor.

Level 2

Occupational definition for SENIOR GAS WELDER

A Senior Gas Welder is designated to prepare, cuts and performs fusion weld on mild steel plate and tube, brass plate and tube, aluminium plate and cast iron plate and non-fusion weld on mild steel plate 7 copper plate, brass plate, cast iron plate, stainless steel plate and tube in 1G position according a given specification and procedures using gas welding equipment and accessories.

- 1) Complies with safe working procedure.
- 2) Selects and prepares materials, flux and filler metal for gas welding.
- 3) Sets up gas welding equipment and accessories.
- 4) Performs fusion and non-fusion welding on similar and dissimilar materials.
- 5) Performs heat treatment on workpiece.
- 6) Performs gas cutting maintain tools and equipment.
- 7) Performs quality control.

Level 2

$\mathcal{O}_{\text{ccupational definition for SENIOR SHEET METAL FABRICATOR}$

A Senior Sheet Metal Fabricator is designated to prepare, cuts, bend and forms ferrous and non-ferrous material of thickness less than 3.00mm by using hand and power tools and join the material by riveting, seaming, soldering, brazing and welding processes to specified requirement.

- 1) Adheres to safety rules and regulations.
- 2) Identifies and prepares sheet metals including ferrous and non-metal to job requirement.
- 3) Draws, read and interprets engineering drawing/blue print.
- 4) Cuts, bend and forms sheet metal by using hand and power tools to specifications designs and develops patters by conventional method and CAD to specifications.
- 5) Uses and maintains machine and equipment, performs bench fitting jobs.
- 6) Uses and maintains marking, measuring tools and gauges.

Level 2

Occupational definition for SENIOR SHEET STRUCTURE ERECTOR & FABRICATOR

A Senior Steel Structure Erector & Fabricator is designated to prepare, fabricates, assembles and joins (permanent and non-permanent joint) steel metal plates and pipes to make metal frames and structures.

- 1) Identifies, select, estimates and material required.
- 2) Reads and interprets engineering drawings.
- 3) Reads and interprets work instructions, specifications and procedures.
- 4) Measures, marks and prepares materials for fabrication work.
- 5) Cut work materials using cutting tools and equipment.
- 6) Performs related metal fitting jobs.
- 7) Forms and bend metal plates and pipes.
- 8) Erects and assembles metal frame and structures.
- 9) Joins metal plates and pipes using various welding.
- 10) Processes and metal fasteners.

Level 2

$\mathcal{O}_{ccupational definition for WELDING INSPECTOR}$

A Welding Inspector is designated to check and monitors; before, during and after completion of welding.

- 1) Adheres to safety rules and regulations.
- 2) Identifies, verifies and ensure materials, consumables, equipment and accessories are prepared and used as required and specified.
- 3) Inspects work as carried out and performed by fabricators, welder and welding operators to produce sound weld in accordance with codes, standards and specifications and monitor heat treatment.
- 4) Witnesses and verifies welding procedure and performance and welder/ operator qualification tests.
- 5) Monitors NDT inspection, mechanical, hydrostatic and pneumatic tests. Records inspection results on work personally inspected, prepares record and maintains inspection documentation.

Level 2

Occupational definition for SHIELDED METAL-ARC WELDER (CARBON STEEL & STAINLESS STEEL)

A Shielded Metal Arc Welder is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tools and equipment; tacks and joins the prepared material using Shielded Metal Arc Welding (SMAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities.
- 2) Interprets welding drawings, instructions and procedures.
- 3) Measures, marks and cuts materials using gas cutting equipment, disc cutting power saw and air plasma cutting equipment.
- 4) Prepares joints, fits and tacks workpieces before welding.
- 5) Prepares and conducts pre-heating process on workpiece.
- 6) Sets up Shielded Metal Arc Welding equipment and accessories and perform welding on plates of thickness range 6mm to 12mm and pipes of nominal pipe size range from 2 inches to inches, up to 5G positions.
- 7) Carries out mechanical test on welded specimens.
- 8) Inspects welded joints visually using inspection kit.

Level 2

Occupational definition for GAS TUNGSTEN ARC WELDER (CARBON STEEL AND STAINLESS STEEL)

A gas tungsten arc welder is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tools and equipment, tacks and joins the prepared material using Gas Tungsten Arc Welding (GTAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities.
- 2) Interprets welding drawings, instructions and procedures.
- 3) Measures, marks and cut materials using gas cutting equipment, disc cutter, power saw and air plasma cutting equipment.
- 4) Prepares joints, fits and tacks work-pieces before welding.
- 5) Prepares and conducts pre-heating process on work-piece.
- 6) Sets up Gas Tungsten Arc Welding (GTAW) equipment and accessories and performs welding on plates of thickness range from 1.6mm to 3.0 mm and pipes of nominal pipe size range from 2 inches to 8 inches, up to 5G positions.
- 7) Carries out mechanical tests on welded specimens.
- 8) Inspects welded joints visually using inspection kit.

Level 2

$\mathcal{O}_{\text{ccupational definition for NON-FERROUS METAL WELDER}$

Non-Ferrous Metal Welder is designated to prepare, cuts and welds and performs braze weld on aluminium plate and its alloys and copper plate and tube according to a given specification and procedures and in particular.

- 1) Complies with safe working procedure.
- 2) Selects and prepares non-ferrous materials and consumables for welding.
- 3) Sets up welding equipment and perform gas, shielded metal arc welding and condenser spot welding processes.
- 4) Maintains welding equipment and accessories.
- 5) Performs quality control.

Level 2

Occupational definition for GAS METAL ARC WELDER (CARBON STEEL, STAINLESS STEEL & ALUMINIUM)

A Gas Metal Arc Welder is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tool and equipment; tacks and joins the prepared material using Gas Metal Arc Welding (GMAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities, conducts safety briefings, monitors and audits welding safety practices.
- 2) Interprets welding drawings, procedures and prepares welding instructions.
- 3) Measures, marks and cut materials using gas cutting equipment, disc cutter, power saw and air plasma cutting equipment. Prepares joints, fits and tacks work-pieces before welding.
- 4) Prepares joints, fits and tacks work-piece before welding.
- 5) Prepares and conducts pre-heating process on work-piece.
- 6) Sets up Gas Metal Arc Welding (GMAW) equipment and accessories and performs welding on plates of thickness range from 1.6mm to 3.0 mm and pipes of nominal pipe size range from 2 inches to 8 inches, up to 6G positions.
- 7) Carries out mechanical tests on welded specimens.
- 8) Inspects welded joints visually using inspection kit.

Level 2

Occupational definition for SUBMERGED ARC WELDING OPERATOR (CARBON STEEL)

A Submerged Arc Welding (SAW) Operator is designated to prepare, cuts and fits plates and pipes of various measuring, marking and cutting tools and equipment; tacks and joins the prepared material using shielded metal (SMAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities.
- 2) Interprets welding drawings, instructions and procedures.
- 3) Measures, marks and cut materials using gas cutting equipment, disc cutter, power saw.
- 4) Prepares joints, fits and tacks workpieces before welding.
- 5) Prepares and conducts pre-heating process on workpiece.
- 6) Sets up Submerged Arc Welding (SAW) equipment and accessories, welding flux, set up workpiece and performs trial run to verify a given welding parameters.
- 7) Performs welding using Submerged Arc Welding (SAW) on carbon steel plate of minimum thickness 12.00mm.
- 8) Carries out mechanical tests on welded specimens.
- 9) Inspects welded joints visually using inspection kit.

Level 3

$\mathcal{O}_{ccupational}$ definition for STAMPING SUPERVISOR

A Stamping Supervisor is designated to supervise and coordinate activities relating to stamping department.

- 1) Supervises and coordinates activity of workers engaged in stamping products.
- 2) Applies knowledge of stamping machine setup and operating techniques and production methods.
- 3) Reads operating logs to identify inoperative stamping machines.
- 4) Determines reason for machine malfunction, and arranges for machine repair.
- 5) Reviews production schedule and work orders, and assigns duties to workers according to order priorities.
- 6) Studies quality control reports to identify product defects and directs machine operators to adjust machines to eliminate flaws.
- 7) Examines stamping products form each machine to verify conformance to specifications.
- 8) Conducts and directs training of new employees in stamping machine operation and processes.
- 9) Confers with management and other supervisors to resolve production problems.
- 10) Performs any other duties as instructed by the management.

Level 3

$\mathcal{O}_{ccupational definition for GAS WELDING TECHNICIAN}$

A Gas Welding Technician is designated to prepare, cuts and performs fusion weld on mild steel plate and tube, brass plate and tube, aluminum plate and cast iron plate and non-fusion weld on mild steel plate, copper plate and pip, brass plate, cast iron plate, aluminium plate and stainless steel plate and tube in 1G, 2G and 5G position according a given specification and procedures using gas welding equipment and accessories.

- 1) Complies with safe working procedure.
- 2) Selects and prepares materials, flux and filler metal for gas welding.
- 3) Sets up gas welding equipment and accessories.
- 4) Performs fusion and non-fusion welding on similar and dissimilar materials.
- 5) Performs hard facing on carbon steel plate and hard surfacing on mild steel plate.
- 6) Performs heat treatment on workpiece.
- 7) Performs gas cutting.
- 8) Maintains tools and equipment.
- 9) Performs quality control.

Level 3

$\mathcal{O}_{ ext{ccupational}}$ definition for SHEET METAL TECHNICIAN

A Sheet Metal Technician is designated to prepare, cuts, bends and forms ferrous and non-ferrous material of thickness less than 3.0mm by using hand and power tools and join the material by riveting, seaming, soldering, brazing, welding and chemical bonding processes to specified requirement.

- 1) Adheres to safety rules and regulations.
- 2) Identifies and prepares sheet metals including ferrous and non-metal to job requirement.
- 3) Reads and interprets engineering drawing/blue print.
- 4) Cuts, bend and forms sheet metal by using hand and power tools to specifications designs and develops patterns by conventional method and CAD to requirement.
- 5) Uses and maintains machine and equipment including CNC machines.
- 6) Performs bench fitting jobs.
- 7) Uses and maintains marking.
- 8) Measures tools and gauges.
- 9) Trouble shooting and problem solving.
- 10) Budgets and costing.

Level 3

Occupational definition for STEEL STRUCTURE ERECTION & FABRICATION TECHNICIAN

A Steel Structure Erection & Fabrication Technician is designated to prepare, fabricates, assembles and joins (permanent and non-permanent joint) steel metal plates and pipes to make metal frames and structures.

- 1) Identifies, selects, estimates and materials required.
- 2) Reads and interprets engineering drawings.
- 3) Reads and interprets work instructions, specifications and procedures.
- 4) Measures, marks and prepares materials for fabrications work.
- 5) Cuts work materials using cutting tools and equipment.
- 6) Performs related metal fitting jobs.
- 7) Forms and bends metal plates and pipes.
- 8) Erects and assembles metal frames and structures.
- 9) Joints metal plates and pipes using various welding processes and metal fasteners.
- 10) Inspects completed fabrication work.
- 11) Calculates cost of production.
- 12) Performs supervision work.
Level 3

$\mathcal{O}_{\text{ccupational definition for SENIOR WELDING INSPECTOR}$

Senior Welding Inspector is designated to check and monitors; before, during and after completion of welding.

- 1) Adheres to safety rules and regulations.
- 2) Identifies, verifies and ensures materials, consumables, equipment and accessories are prepared and use as required and specified.
- Inspect and assesses work as carried out and performed by fabricators, welders and welding operators to produce sound weld in accordance with codes, standards and specifications and monitor heat treatment.
- 4) Witnesses, verifies and reviews welding procedure and performance and welder/operator qualification tests.
- 5) Monitors and reviews NDT inspection, mechanical, hydrostatic and pneumatic tests.
- 6) Records inspection results on work personally inspected, prepares record and maintains inspection documentation.

Occupational definition for SHIELDED METAL ARC WELDING TECHNICIAN (CARBON STEEL & STAINLESS STEEL)

A Shielded Metal Arc Welding Technician is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tools and equipment; tacks and joins the prepared material using shielded metal arc welding (smaw) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities, conducts safety briefings, monitors and audits welding safety practices.
- 2) Interprets welding drawings, procedures and prepares welding instructions.
- 3) Measures, marks and cuts materials using gas cutting equipment, disc cutter, power saw and air plasma cutting equipment.
- 4) Prepares joints, fits and tacks workpieces before welding.
- 5) Prepares and conducts pre-heating process on workpiece.
- 6) Sets up Shielded Metal Arc Welding (SMAW) equipment and accessories and perform welding on plates of thickness range 6mm to 12mm and pipes of nominal pipe size range from 2 inches to 8 inches, up to 6G and 6GR positions.
- 7) Carries out mechanical test on welded specimens.
- 8) Inspects welded joints visually using inspection kit.
- 9) Plan work schedule, assigns work monitors welding activities.

Occupational definition for GAS TUNGSTEN ARC AND SHIELDED METAL ARC WELDING TECHNICIAN (CARBON STEEL & STAINLESS STEEL)

A Gas Tungsten Arc and Shielded Metal Arc Welding Technician is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tools and equipment; tacks and joins the prepared material using gas tungsten arc and shielded metal arc welding processes according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities, conduct safety briefing, monitors and audits welding safety practices.
- 2) Interprets welding drawings, procedures and prepares welding instructions.
- 3) Measures, marks and cut materials using gas cutting equipment, disc cutter, power saw and air plasma cutting equipment.
- 4) Prepare joint, fits and tacks workpieces before welding.
- 5) Prepares and conducts pre-heating process on workpiece.
- 6) Set up Gas Tungsten Arc and Shielded Metal Arc equipment and accessories and performs welding on plates of thickness range from 1.6mm to 3.0mm and pipes of nominal pipe size range from 2 inches to 8 inches, up to 6G positions.
- 7) Carry out mechanical tests on welded specimens.
- 8) Inspect welded joints visually using inspection kit.
- 9) Plans work schedule, assigns work and monitors welding activities.

Occupational definition for GAS TUNGSTEN ARC WELDING TECHNICIAN (CARBON STEEL & STAINLESS STEEL & ALUMINIUM)

A Gas Tungsten Arc Welding Technician is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tool and equipment; tacks and joins the prepared material using Gas Tungsten Arc Welding (GTAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities, conducts safety briefings, monitors and audits welding safety practices.
- 2) Interprets welding drawings, procedures and prepares welding instructions.
- 3) Measures, marks and cut materials using gas cutting equipment, disc cutter, power saw and air plasma cutting equipment. Prepares joints, fits and tacks workpieces before welding.
- 4) Prepares and conducts pre-heating process on workpiece.
- 5) Set up Gas Tungsten Arc Welding (GTAW) equipment and accessories and performs welding on plates of thickness range from 1.6mm to 3.0 mm and pipes of nominal pipe size range from 2 inches to 8 inches, up to 6G positions.
- 6) Carry out mechanical tests on welded specimens.
- 7) Inspects welded joints visually using inspection kit.
- 8) Plans work schedule, assigns work and monitors welding activities.

Level 3

Occupational definition for NON-FERROUS METAL WELDING TECHNICIAN

A Non-Ferrous Metal Welding Technician is designated to prepare, cuts and welds and performs braze weld on aluminium plate and its alloys, copper plate tube and tube; weld titanium plate, magnesium plate and nickle plate according to a given specification and procedure.

- 1) Complies with safe working procedure.
- 2) Selects and prepares non-ferrous materials and consumables for welding.
- 3) Set up welding equipment and performs gas, shielded metal arc welding, condenser spot welding, Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW) and plasma welding processes.
- 4) Maintains welding equipment and accessories.
- 5) Performs quality control.
- 6) Repairs weld defects.

Level 3

Occupational definition for GAS METAL ARC WELDING TECHNICIAN (CARBON STEEL & STAINLESS STEEL & ALUMINIUM)

A Gas Metal Arc Welding Technician is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tool and equipment; tacks and joins the prepared material using Gas Metal Arc Welding (GMAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities, conducts safety briefings, monitors and audits welding safety practices.
- 2) Interprets welding drawings, procedures and prepares welding instructions.
- 3) Measures, marks and cut materials using gas cutting equipment, disc cutter, power saw and air plasma cutting equipment. Prepares joints, fits and tacks workpieces before welding.
- 4) Prepares and conducts pre-heating process on workpiece.
- 5) Sets up Gas Metal Arc Welding (GMAW) equipment and accessories and performs welding on plates of thickness range from 1.6mm to 3.0mm and pipes of nominal pipe size range from 2 inches to 8 inches, up to 6G positions.
- 6) Carry out mechanical tests on welded specimens.
- 7) Inspects welded joints visually using inspection kit.
- 8) Plans work schedule, assigns work and monitors welding activities.

Level 3

Occupational definition for FLUX CORED ARC WELDING TECHNICIAN (CARBON STEEL)

A Flux Cored Arc Welding Technician is designated to prepare, cuts and fits plates and pipes of various size using various measuring, marking and cutting tools and equipment; tacks and joins the prepared material using Flux Cored Arc Welding (FCAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities, conducts safety briefings, monitors and audits welding safety practices.
- 2) Interprets welding drawings, procedures and prepares welding instructions.
- 3) Measures, marks and cut materials using gas cutting equipment, disc cutter, power saw and air plasma cutting equipment.
- 4) Prepares joints, fits and tacks workpieces before welding.
- 5) Prepares and conducts pre-heating process on workpiece.
- 6) Sets up Flux Cored Arc Welding (FCAW) equipment and accessories and performs welding on carbon steel and stainless steel plates of thickness range from 6.00mm to 12.00mm up to 4G welding position, weld carbon steel and stainless steel pipe up to 6G welding position.
- 7) Carries out mechanical tests on welded specimens.
- 8) Inspects welded joints visually using inspection kit.
- 9) Plans work schedule. Assigns work and monitors welding activities.

Occupational definition for SUBMERGED ARC WELDING TECHNICIAN (CARBON STEEL)

A Submerged Arc Welding Technician is designated to prepare, cuts and fits plates and pipes of various sizes using various measuring, marking and cutting tools and equipment; tacks and joint the prepared material using Shielded Metal Arc Welding (SMAW) and Submerged Arc Welding (SAW) process according a given procedure and meets a specified welding standard.

- 1) Complies with safe working practices when carrying out welding and related activities, conducts safety briefings, monitors and audits welding safety practices.
- 2) Interprets welding drawings, procedures and prepares welding instructions.
- 3) Measures, marks and cut materials using gas cutting equipment, disc cutter, power saw and air plasma cutting equipment.
- 4) Prepares joints, fits and tacks workpieces before welding.
- 5) Prepares and conduct pre-heating process on workpiece.
- 6) Sets up Submerged Arc Welding (SAW) equipment and accessories, prepares material, welding flux, set up workpiece and performs trial run to verify a given welding parameters.

Level 4

$\mathcal{O}_{ccupational definition for STAMPING EXECUTIVE}$

A Stamping Executive is designated to assist Stamping Manager to plan, manage, and control on stamping department to achieve the required performance standard.

- 1) Assists Stamping Manager in planning, managing and controlling of stamping department to achieve the required performance standard.
- 2) Assists Stamping Manager to plan departmental budget.
- Evaluates training needs, develops schedule and assists in implementation of training to ensure effective training requirement are achieved for operating personnel to enhance skills and knowledge for optimum operation and maintenance of stamping department performance.
- 4) Monitors and controls implementation of stamping department activities to ensure overall effectiveness of stamping department performance.
- 5) Implements safety requirement to minimize hazard at stamping department.
- 6) Ensures the production of stamping meets the production schedule on time.
- 7) Monitors the production & quality performance as per customer specification.
- 8) Ensures the capacity planning of each stamping lines.
- 9) Ensures the manpower of stamping section is properly planned.
- 10) Coordinates, monitors & confirms the pilot run and mass production.

- 11) Monitors the continuous improvement activity and 5S.
- 12) Monitors the production planning process to ensure that customers' needs are fulfilled.
- 13) Performs any other job functions as instructed by the Management from time to time.

Level 4

Ccupational definition for ASSISTANT WELDING ENGINEER (FABRICATION)

An Assistant Welding Engineer (Fabrication) is designated to supervise, controls, develops and manages processes, procedures and methods related to fabrication work and fabrication work activities to ensure work safety standard is adhered to, work quality and productivity is continuously maintained and improved.

- 1) Inculcates and demonstrates good work ethics and engineering practices.
- 2) Inculcates, promotes and complies with work safety, environmental and health.
- Develops Welding Procedure Specification (WPS), conducts Welding Procedure Qualification Test (WPQT), develops Welding Procedure Qualification Record (PQR) and conducts Welder Qualification Test (WQT).
- 4) Checks and verifies materials, consumables and equipment against specifications and or codes & standards.
- 5) Interprets codes & standards, complies information and records into Quality Assurance Manual (QAM).
- 6) Designs jigs & fixtures, conducts stress relief operation on materials and weldment.
- 7) Selects inspection technique, performs visual inspection before, during and after fabrication work and observe NDT inspection.
- 8) Has familiarity with computer office application and software related to welding.

Level 5

$\mathcal{O}_{ccupational definition for STAMPING MANAGER}$

A Stamping Manager is designated to manage and oversee the overall functions of Stamping Department.

- 1) Manages and oversees the overall functions of stamping department.
- 2) Monitors overall department operational budget.
- 3) Monitors, plans and improves stamping department equipment and facilities utilization and efficiency.
- 4) Ensures training programme for stamping department staff are conducted effectively.
- 5) Monitors and upkeeps the stamping department equipment and facilities as per annual preventive and maintenance schedule.
- 6) Manages the maintaining, monitoring and improving stamping department housekeeping and continuous improvement.
- 7) Reports the performance of stamping department to the Management.
- 8) Ensures smooth running of department and inter department liaison.
- 9) Performs any other job functions as instructed by the Management from time to time.

Level 5

$\mathcal{O}_{ccupational definition for WELDING ENGINEER (FABRICATION)}$

A Welding Engineer (Fabrication) is designated to supervise, controls, develops, designs and manages processes, procedures and methods related to fabrication work and fabrication work activities to ensure work safety standard is adhered to, work quality and productivity is continuously maintained and improved.

- 1) Inculcates and demonstrates good work ethics and engineering practices.
- 2) Inculcates, promotes and complies with work safety, environmental and health practices.
- Develops Welding Procedure Specification (WPS), conducts Welding Procedure Qualification Test (WPQT), develops Welding Procedure Qualification Record (PQR) and Welder Qualification Test (WQT).
- 4) Checks and verifies materials, consumables and equipment against specifications and or codes & standards; verifies welding design.
- 5) Interprets codes & standards, compiles information and record into Quality Assurance Manual (QAM); implements & maintains QAM.
- 6) Designs jigs & fixtures, conducts stress relief operation on materials and weldment.

LEVEL 1

GENERAL MACHINIST (H-017-1)

LEVEL 2

GENERAL MACHINIST (LATHE TURNING OPERATION) (H-014-2) GENERAL MACHINIST (MILLING OPERATION) (H-015-2) GENERAL MACHINIST (GRINDING OPERATION) (H-016-2) GENERAL MACHINIST (EDM OPERATION) COMPUTER NUMERICAL CONTROL (CNC) MACHINIST (H-013-2) TOOL MAKER – PLASTIC INJECTION MOULD (H-097-2) TOOL MAKER PRESS – TOOL (H-096-2)

LEVEL 3

MACHINIST (LATHE TURNING OPERATION) (H-014-3) MACHINIST (MILLING OPERATION) (H-015-3) MACHINIST (GRINDING OPERATION) (H-016-3) MACHINIST (EDM OPERATION) COMPUTER NUMERICAL CONTROL (CNC) TECHNICIAN (H-013-3) SENIOR TOOL MAKER – PLASTIC INJECTION (MOULD) (H-097-3) SENIOR TOOL MAKER – PRESS TOOL (H-096-3)

LEVEL 4

ASSISTANT MANUFACTURING ENGINEER – CAD/CAM (H-050-4) PRESS WORK DIE DESIGNER (H-093-4) ASSISTANT TOOLING ENGINEER (H-095-4) PLASTIC MOULD DESIGNER (H-094-4)

LEVEL 5

MANUFACTURING ENGINEER – CAD/CAM (H-050-5) TOOLING ENGINEER (H-095-5)

Level 1

$\mathcal{O}_{ccupational definition for GENERAL MACHINIST}$

A General Machinist is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Performs metal bench fitting works.
- 4) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 5) Select and set up work materials on machine.
- 6) Operates various types of conventional metal cutting machines and equipment to cut and shape work materials to specification.

Level 2

Occupational definition for GENERAL MACHINIST (LATHE TURNING OPERATION)

A General Machinist is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines, Electrical Discharge Machining (EDM) Equipment to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Performs metal bench fitting works.
- 4) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 5) Selects and sets up work materials on machine.
- 6) Operates various types of conventional metal cutting machines and equipment to cut and shape work materials to specification.
- 7) Prepares and operates EDM equipment for die sinking process.
- 8) Fabricates electrode for EDM die sinking process.

Level 2

Occupational definition for GENERAL MACHINIST (MILLING OPERATION)

A General machinist (Milling Operation) is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines, Electrical Discharge Machining (EDM) Equipment to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Performs metal bench fitting works.
- 4) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 5) Cutting tools required.
- 6) Selects and set up work materials on machine.
- 7) Operates various types of conventional metal cutting machines and equipment.
- 8) To cut and shape work materials to specification.
- 9) Prepares and operates EDM equipment for die sinking process.
- 10) Fabricates electrode for EDM die sinking process.

Level 2

Occupational definition for GENERAL MACHINIST (GRINDING OPERATION)

A General Machinist (Grinding Operation) is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines, to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Performs metal bench fitting works.
- 4) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 5) Selects and set up work materials on machine.
- 6) Operates various type of conventional metal cutting machines and equipment to cut and shape work materials to specification.

Level 2

Occupational definition for GENERAL MACHINIST (EDM OPERATION)

A General Machinist (EDM Operation) is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines, Electrical Discharge Machining (EDM) Equipment to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Performs metal bench fitting works.
- 4) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 5) Selects and set up work materials on machine.
- 6) Operates various type of conventional metal cutting machines and equipment to cut and shape work materials to specification.
- 7) Prepares and operates EDM equipment for die sinking process.
- 8) Fabricates electrode for EDM die sinking process.

Level 2

Occupational definition for COMPUTER NUMERICAL CONTROL (CNC) MACHINIST

A CNC Machinist is designated to fabricate metal using CNC Lathe and Milling machine, CNC-EDM Wire Cut and Die Sinking machine to a dimensional accuracy, tolerances and surface texture as per specification.

- 1) Conducts him/herself in a safe manner while performing his/her job.
- 2) Conducts daily inspection on machine and equipment.
- 3) Prepares program for CNC machines.
- 4) Selects and set up cutting tools.
- 5) Sets up workpiece and perform machining using CNC and EDM machines.

Level 2

Occupational definition for TOOLMAKER – PLASTIC INJECTION MOULD

A Toolmaker-Plastic Injection Mould is designated to prepare two plate mould design under supervision; assemble, test and troubleshoot two plate mould and compound dies.

- 1) Generate engineering drawings.
- 2) Assists Tool Designer/Engineer in design two plate mould.
- 3) Use conventional, advance machining processes such as die sinking and CNC wire cut processes, CNC lathe turning and CNC 2D milling processes to fabricate two plate.
- 4) Uses various type of measuring tools and instrument to check and inspects dimension and profile of workpieces.
- 5) Assembles and try out two plate mould.
- 6) Determine and rectify two plate mould related problem.

Level 2

$\mathcal{O}_{\text{ccupational definition for TOOLMAKER PRESS – TOOL}$

A Toolmaker Press - Tool is designated to prepare single and compound dies design under supervision; fabricates single and compound dies using conventional and advance machining processes; assembles, tests and troubleshoot single and compound dies.

- 1) Generate engineering drawings.
- 2) Assists Tool Designer/Engineering in design single and compound dies.
- 3) Uses conventional advance machining processes, such as die sinking and CNC wire cut processes, CNC lathe turning and CNC 2D milling processes to fabricate single and compound dies.
- 4) Uses various type of measuring tools and instrument to check and inspect dimension and profile of workpieces.
- 5) Assembles and try out single and compound dies.
- 6) Determine and rectify single and compound die related problem.

Level 3

Occupational definition for MACHINIST (LATHE TURNING OPERATION)

A Machinist (Lathe Turning Operation) is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines, CNC Lathe, CNC Milling Machine and drilling machining (EDM) equipment to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Produce drawing using draughting software.
- 4) Perform metal bench fitting works.
- 5) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 6) Select and set up work materials on machine.
- 7) Operates various types of conventional metal cutting machines and equipment to cut and shape work materials to specification.
- 8) Prepare and operates CNC Lathe and milling Machine.
- 9) Prepare and operates EDM and CNC-EDM equipment for die sinking and wire cutting processes.
- 10) Fabricates electrode for EDM and CNC-EDM processes.
- 11) Performs Quality Control Work.
- 12) Carry out supervisory work.

Level 3

$\mathcal{O}_{ccupational definition for MACHINIST (MILLING OPERATION)}$

A Machinist (Milling Operation) is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines, CNC lathe, CNC Milling Machine and CNC Electrical Discharge Machining (EDM) Equipment to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Produces drawing using draughting software.
- 4) Performs metal bench fitting works.
- 5) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 6) Selects and set up work materials on machine.
- 7) Operates various types of conventional metal cutting machines and equipment.
- 8) To cuts and shapes work materials to specification.
- 9) Prepares and operates CNC Lathe and Milling Machine.
- 10) Prepares and operates EDM and CNC-EDM equipment for die sinking and wire cutting process.
- 11) Fabricates electrode for EDM and CNC-EDM processes.
- 12) Performs Quality Control work.
- 13) Carries out supervisory work.

Level 3

$\mathcal{O}_{ccupational definition for MACHINIST (GRINDING OPERATION)}$

A Machinist (Grinding Operation) is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines, CNC Grinding Machine to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Produce drawing using draughting software.
- 4) Performs metal bench fitting works.
- 5) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 6) Selects and set up work materials on machine.
- 7) Operates various types of conventional metal cutting machines and equipment to cut and shape work materials to specification.

Level 3

$\mathcal{O}_{ccupational definition for MACHINIST (EDM OPERATION)}$

A Machinist (EDM Operation) is designated to prepare and operates various types of conventional metal cutting machines such as lathe, milling, grinding and drilling machines CNC Electrical Discharge Machining (EDM) Equipment to cut and shape materials.

- 1) Complies with workshop safety rules and regulations.
- 2) Interprets engineering drawing and blue print, performs free hand sketching and draw basic engineering drawing.
- 3) Produces drawing using draughting software.
- 4) Performs metal bench fitting works.
- 5) Selects and prepares conventional metal cutting machines, equipment and cutting tools required.
- 6) Selects and set up work materials on machine.
- 7) Operates various types of conventional metal cutting machines and equipment to cut and shape work materials to specification.

Level 3

Occupational definition for COMPUTER NUMERICAL CONTROL (CNC) TECHNICIAN

A CNC Machining Technician is designated to fabricate metal using CNC Lathe, Milling and Grinding machine, CNC-EDM Wire Cut and Die Sinking machine to a dimensional accuracy, tolerances and surface texture as per specification.

- 1) Conducts him/herself in a safe manner while performing his/her job.
- 2) Conducts daily inspection on machines and equipment.
- 3) Prepares program for CNC machines.
- 4) Prepares program for machining on CAD/CAM software.
- 5) Selects and sets up cutting tools.
- 6) Set up workpiece and perform machining using CNC and EDM machines.
- 7) Prepares machining process plan.

Level 3

Occupational definition for SENIOR TOOLMAKER – PLASTIC INJECTION MOULD

A Senior Toolmaker - Plastic Injection Mould is designated to prepare two plate mould and three plate mould design under supervision; fabricates two plate mould and three plate mould using conventional and advance machining processes; assemble, test and troubleshoot mould and perform mould maintenance work.

- 1) Generate engineering drawings.
- 2) Assists Tool Designer/Engineering in design two plate mould and three plate mould.
- 3) Uses conventional, advance machining processes such as die sinking, CNC-EDM, CNC lathe turning and CNC 2D milling processes to fabricate two plate mould and three plate mould.
- 4) Uses various type of measuring tools and instrument to check and inspects dimensions and profile of workpieces.
- 5) Assembles and try out two plate mould and three mould.
- 6) Determine and rectify mould die related problem.
- 7) Performs mould maintenance work.
- 8) Performs supervision work.

Level 3

$\mathcal{O}_{ccupational definition for SENIOR TOOLMAKER – PRESS TOOL}$

A Senior Toolmaker - Press Tool is designated to prepare single, compound and progressive dies under supervision; fabricates single, compound and progressive dies using conventional and advance machining processes; assemble, test and troubleshoot dies and perform die maintenance work.

- 1) Generate engineering drawings.
- 2) Assists Tool Designer/Engineer in design single, compound and progressive dies.
- Uses conventional, advance machining processes such as dies sinking, CNC wire out processes and CNC-EDM, CNC lathe turning and CNC 2D milling processes to fabricate single, compound and progressive dies.
- 4) Uses various type of measuring tools and instrument to check and inspects dimensions and profile of workpieces.
- 5) Assembles and try out single, compound and progressive dies.
- 6) Determine and rectify die related problem.
- 7) Performs die maintenance work.
- 8) Performs supervision work.

Occupational definition for ASSISTANT MANUFACTURING ENGINEER (CAD/CAM)

An Assistant Manufacturing Engineer (CAD/CAM) is designated to assist in the design, planning, organizing and manufacturing of parts and components. They perform duties related to the programming, set up, operation and maintenance of machine tools, and material handling systems. The work is carried out independently or in a team at various places such as design offices, manufacturing plants and workshops. They use complex software tools for the analysis and design of parts, for the integration of computer aided design, programming and simulation of machining processes, for the programming and simulation of material handling systems and for the collection and training for staff.

- 1) Assists in the investigation of the feasibility to design and manufacture parts.
- 2) Assists in the preparation of equipment, material cost and timing estimates, reports and design specifications.
- 3) Designs or modifies parts and components with CAD systems.
- 4) Performs engineering analysis of part designs.
- 5) Integrates CAD/CAM for turning, milling, EDM and other machining or manufacturing processes.
- 6) Prepares work schedules.
- 7) Organises and allocates manufacturing resources and monitor the production.

- 8) Investigates equipment failures or unexpected quality problems.
- 9) Prepares technical documents and quotations.
- 10) Administers and supervises personnel.
- 11) Provides coaching and training to staff.
- 12) Pursues personal and technical development to maintain professional competency.

Level 4

$\mathcal{O}_{\text{ccupational definition for PRESS WORK DIE DESIGNER}$

A Press Work Die Designer is designated to study product design, sample product and applies related statistical data to build die design concept and improve die design, produces design drawing, provides technical advise on die fabrication process.

- 1) Performs study on product design and or product sample and recommends to client on feasibility of manufacturing product.
- 2) Assesses client fabrication facilities to determine production capabilities.
- 3) Determines type of dies and tools construction based on easy maintenance and incorporate safety features in design.
- 4) Uses software application to generate die designs/drawings.
- 5) Performs die testing and troubleshooting.
- Provides technical services in new product development, vendor development program and keeping pace with new technology in die design.
- 7) Monitors die fabrication process and assist in house manpower development.

Level 4

$\mathcal{O}_{ ext{ccupational}}$ definition for ASSISTANT TOOLING ENGINEER

An Assistant Tooling Engineer is designated to assist in the research, design, planning, development, modification or improvement of tools, dies, jigs fixture and moulds for processing and manufacturing of parts. They performs duties related to the installation, operation and maintenance of tools, dies, moulds and fixtures and systems. The work is carried out independently or in a team at various places such as tool rooms, design offices, manufacturing plants and workshops using computers and complex software tools for the design, simulation, testing and data collection. They provide supervision and guidance to employees and coordinate their activities with engineers, tool designers, assistant engineers and tool technicians and provide coaching and training for internal and external customers.

- Assists in the investigation of the feasibility, cost value, design, ergonomics, operation and performance of tools, dies, moulds, jigs, fixtures and systems.
- 2) Assists in the preparation of equipment, component, material cost and timing estimates, reports and design specifications.
- 3) Designs or modify tools, dies, moulds and fixtures and systems.
- 4) Builds and modify, test and intergrate automation equipment and systems.
- 5) Sets up test and diagnostic equipment to diagnose, test and analyze the performance of tools, dies, moulds and fixtures.

- 6) Conducts or supervise the installation, commissioning and operation of tools, dies, moulds and fixtures and tooling systems.
- 7) Develops maintenance standards, schedules and programs.
- 8) Provides coaching/training to staff and maintenance personnel.
- 9) Investigates equipment failures or unexpected maintenance problems.
- 10) Prepares technical documents and quotations.
- 11) Supervises drafts persons tool technicians and tool designers.
- 12) Pursues personal and technical development to maintain professional competency.

Level 4

$\mathcal{O}_{ m ccupational}$ definition for PLASTIC MOULD DESIGNER

A Plastic Mould Designer is designated to study product design, sample product and applies related statistical data to build mould design concept and improve mould design drawing, provides technical advise on mould fabrication process.

- 1) Performs study on product sample and recommends to client on feasibility of manufacturing product.
- 2) Assesses client moulding facilities to determine production capabilities.
- 3) Determine types of moulds and mould construction based on easy maintenance.
- 4) Uses software application to generate mould designs/drawings.
- 5) Performs mould testing and troubleshooting.
- 6) Provides technical services in new product development, vendor development program and keeping pace with new technology in mould design.
- 7) Monitors mould fabrication process and assist in house manpower development.

Level 5

Occupational definition for MANUFACTURING ENGINEER (CAD/CAM)

A Manufacturing Engineer (CAD/CAM) is designated to design, plan and organize the manufacturing of parts and components. They liaise with customers and perform duties related to the management and administration of a modern manufacturing environment, such as machine tools and material handling systems. The work is carried out independently or in a team at various places such as design offices, manufacturing plants and workshops. They use complex software tools for the analysis and design of parts, for the integration of computer aided design, programming and simulation of machining processes, for the programming and simulation of material handling systems and for the collection and analysis of manufacturing data. They provide supervision and guidance to employees and coordinate their activities with other engineers, assistant engineers and technicians and provide coaching and training to staff.

- 1) Investigates the feasibility, cost value, design, ergonomics, operation and performance of parts and components.
- 2) Prepares equipment, component, material cost and timing estimates, reports and design specifications.
- 3) Designs or modifies parts or components using CAD systems.
- 4) Liaises and discusses designs and product specifications with customers.
- 5) Analyses the manufacturing process of parts and component.
- 6) Supervises the planning and operation of manufacturing activities and approve work orders.
- 7) Prepares budgets and resource plans.
- 8) Investigates equipment failures or unexpected quality problems.
- 9) Oversees the production of technical documents and quotations.
- 10) Evaluates tenders for the procurement of material, equipment, services, components and software.
- 11) Supervises technicians, assistant engineers and other staff.
- 12) Reviews and approve designs, calculations and cost estimations for accuracy and conformance and software.
- 13) Enforces company policies, quality, safety and environmental protection regulations and standards.
- 14) Provides coaching and training staff.
- 15) Pursues personal and technical development to maintain professional competency.

Level 5

$\mathcal{O}_{ccupational definition for TOOLING ENGINEER}$

Tooling Engineer is designated to do research, design, plan, develop, modify or improve tools, dies, jigs fixture and moulds for processing and manufacturing of parts. They performs duties related to the evaluation, installation, operation and maintenance of tools, dies, moulds and fixtures and systems. The work is carried out independently or in a team at various places such as tool rooms, design offices, manufacturing plants, workshops using computers and complex software tools for the design, simulation, testing and data collection. They provide supervision and guidance to employees and coordinate their activities with other engineers, assistant engineers and technician and provide coaching and training for internal and external customers.

- 1) Investigates the feasibility, cost value, design, ergonomics, operation and performance of tools, dies, moulds, jigs, fixtures and systems.
- 2) Prepares equipment, component, material cost and timing estimates, reports design specifications.
- 3) Designs or modify tools, dies, moulds and fixtures and systems.
- 4) Builds or modify, test and intergrate automation equipment and systems.
- 5) Set-up test and diagnostic equipment to diagnose, test and analyze the performance of tools, dies, moulds and fixtures.
- 6) Conducts or supervise the installation, commissioning and operation of tools, dies, moulds and fixtures and tooling systems.
- 7) Develops maintenance standards, schedules and programs.
- 8) Provides coaching/training to staff and maintenance personnel.

- 9) Investigates equipment failures or unexpected maintenance problems.
- 10) Prepares or oversee the production of technical documents and quotations.
- 11) Evaluates tenders for the procurement of equipment, sub-assemblies, components and software.
- 12) Supervises drafts persons, tool technicians, tool designers and assistant engineers.
- 13) Reviews and approves designs, calculations and cost estimations for accuracy and conformance to design criteria.
- 14) Reviews and approves designs for safety and environmental protection regulations.
- 15) Pursues personal and technical development to maintain professional competency.

LEVEL1 PRE-TREATMENT OPERATOR PAINTING OPERATOR

LEVEL 2 PRE-TREATMENT LINE LEADER PAINTING LINE LEADER

LEVEL 3 SURFACE FINISH SUPERVISOR

LEVEL 4

SURFACE FINISH ASSISTANT MANAGER

LEVEL 5

SURFACE FINISH MANAGER

Level 1

$\mathcal{O}_{ ext{ccupational definition for PRE-TREATMENT OPERATOR}$

A Pre-Treatment Operator is designated to perform the operation of pre-treatment activities within Surface Finish Department.

- 1) Performs pre-treatment job to assist Pre-treatment Line Leader in producing coated or painted parts.
- 2) Ensures all pre-treated equipments are in good order.
- 3) Follows related standard operating procedures.
- 4) Performs inspection on parts being treated.
- 5) Adheres with safety instruction.
- 6) Records related inspection data for parts being treated.
- 7) Performs countermeasures action for defective parts and abnormal pre-treatment process.
- 8) Performs other duties as specified by Pre-Treatment Line Leader.

Level 1

$\mathcal{O}_{ccupational definition for PAINTING OPERATOR}$

A Painting Operator is designated to perform the operation of painting activities within Surface Finish Department.

- 1) Performs painting job to assist Painting Line Leader in producing painted parts.
- 2) Ensures all equipments are in good order prior to run.
- 3) Follows related standard operating procedures.
- 4) Performs inspection on parts being painted.
- 5) Adheres with safety instruction.
- 6) Records related inspection data for painted parts.
- 7) Performs countermeasures action for defective parts and abnormal stamping process.
- 8) Performs other duties as specified by Painting Line Leader.

Level 2

$\mathcal{O}_{ ext{ccupational}}$ definition for PRE-TREATMENT LINE LEADER

A Pre-Treatment Line Leader is designated to lead Pre-Treatment Line and to assist Surface Finish Supervisor in pre-treatment process.

- 1) Ensures that pre-treatment processes are fully understood before commencing painting operation.
- 2) Understands inspection instructions of pre-treatment processes and verifies job accordingly.
- 3) Ensures that items are produced in compliance with specifications and order requirements.
- 4) Reports any abnormalities to Surface Finish Supervisor.
- 5) Completes full production and inspection records for each job, as required.
- 6) Identifies segregate non-conforming products and report these to Surface Finish Supervisor.
- 7) Ensures that pre-treatment material and fully identified against the job number at all time during production process.
- 8) Verifies all activities related to 5S at workplace are performed accordingly.
- 9) Verifies autonomous maintenance of painting equipment are carried out.
- 10) Performs any other tasks as assigned by Surface Finish Supervisor.

Level 2

$\mathcal{O}_{ m ccupational}$ definition for PAINTING LINE LEADER

A Painting Line Leader is designated to lead Painting Line and to assist Surface Finish Supervisor in painting process.

- 1) Ensures that painting processes are fully understood before commencing painting operation.
- 2) Understands painting inspection instructions and verifies job accordingly.
- 3) Ensures that painted parts are produced in compliance with specifications and order requirements.
- 4) Reports any abnormalities to Surface Finish Supervisor.
- 5) Completes full production and inspection records for each job, as required.
- 6) Identifies segregate non-conforming products and report these to Surface Finish Supervisor.
- 7) Ensures painting material and fully identified against the job number at all time during production process.
- 8) Verifies all activities related to 5S at workplace are performed accordingly.
- 9) Verifies autonomous maintenance of painting equipment are carried out.
- 10) Performs any other tasks as assigned by Surface Finish Supervisor.

Level 3

$\mathcal{O}_{\text{ccupational definition for SURFACE FINISH SUPERVISOR}$

A Surface Finish Supervisor is designated to supervise and coordinate activities relating to surface finish department.

- 1) Supervises and coordinates activity of workers engaged in surface finished products.
- 2) Applying knowledge of surface finish machine setup and operating techniques and production methods.
- 3) Reads operating logs to identify inoperative surface finish machines.
- 4) Determines reason for machine malfunction and arranges for machine repair.
- 5) Reviews production schedule and work orders and assigns duties to workers according to order priorities.
- 6) Studies quality control reports to identify product defects and directs machine operators to adjust machines to eliminate flaws.
- 7) Examines stamping products form each machine to verify conformance to specifications.
- 8) Conducts and directs training of new employees in surface finish machine operation and processes.
- 9) Confers with management and other supervisors to resolve production problems.
- 10) Performs any other duties as instructed by the Management.

Level 4

Occupational definition for SURFACE FINISH ASSISTANT MANAGER

A Surface Finish Assistant Manager is designated to assist Surface Finish Manager to plan, manage and control on stamping department to achieve the required performance standard.

- 1) Assists Surface Finish Manager in planning, managing and controlling of surface finish department to achieve the required performance standard.
- 2) Assists Surface Finish Manager to plan departmental budget.
- 3) Evaluates training needs, develops schedule and assists in implementation of training to ensure effective training requirement are achieved for operating personnel to enhance skills and knowledge for optimum operation and maintenance of surface finish department performance.
- 4) Monitors and controls implementation of surface finish department activities to ensure overall effectiveness of surface finish department performance.
- 5) Implements safety requirement to minimize hazard at surface finish department.
- 6) Ensures the production of surface finish meets the production schedule on time.
- 7) Monitors the production & quality performance as per customer specification.

- 8) Ensures the capacity planning of each surface finish line.
- 9) Ensures the manpower of surface finish section is properly planned.
- 10) Coordinates, monitors & confirms the pilot run and mass production.
- 11) Monitors the continuous improvement activity and 5S.
- 12) Monitors the production planning process to ensure that customers' needs are fulfilled.
- 13) Performs any other job functions as instructed by the Management from time to time.

Level 5

$\mathcal{O}_{ ext{ccupational definition for SURFACE FINISH MANAGER}$

A Surface Finish Manager is designated to manage and oversee the overall functions of Surface Finish Department.

- 1) Manages and oversees the overall functions of surface finish department.
- 2) Monitors overall department operational budget.
- 3) Monitors, plans and improves surface finish department equipment and facilities utilization and efficiency.
- 4) Ensures training programme for surface finish department staff are conducted effectively.
- 5) Monitors and upkeeps the surface finish department equipment and facilities as per annual preventive and maintenance schedule.
- 6) Manages the maintaining, monitoring and improving surface finish department housekeeping and continuous improvement.
- 7) Reports the performance of surface finish department to the Management.
- 8) Ensures smooth running of department and inter department liaison.
- 9) Performs any other job functions as instructed by the Management from time to time.

LEVEL 1

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LEVEL 2

LABORATORY TECHNICIAN CALIBRATION TECHNICIAN METALLURGICAL LABORATORY TECHNICIAN

LEVEL 3

LABORATORY SUPERVISOR

LEVEL 4

LABORATORY ASSISTANT MANAGER

LEVEL 5

LABORATORY MANAGER METALLURGIST

Level 2

$\mathcal{O}_{ ext{ccupational}}$ definition for LABORATORY TECHNICIAN

A Laboratory Technician is designated to perform laboratory activities and to assist Laboratory Supervisor in laboratory process.

- 1) Ensures that measuring and inspection processes are fully understood prior to commence an operation.
- 2) Understands measuring and inspection instructions and verifies job accordingly.
- 3) Ensures that laboratory reports are produced in compliance with specifications and order requirements.
- 4) Reports any abnormalities to Laboratory Supervisor.
- 5) Verifies all activities related to 5S at workplace are performed accordingly.
- 6) Verifies equipment maintenance activities are carried out.
- 7) Performs any other tasks as assigned by Laboratory Supervisor.

Level 2

$\mathcal{O}_{\text{ccupational definition for CALIBRATION TECHNICIAN}$

A Calibration Technician is designated to perform calibration activities and to assist Laboratory Supervisor in laboratory department.

- 1) Ensures that calibration processes are fully understood before commencing the measurement and calibration.
- 2) Understands calibration instructions and verifies job accordingly.
- 3) Ensure that calibration reports are produced in compliance with specifications and order requirements.
- 4) Reports any abnormalities to Laboratory Supervisor.
- 5) Verifies all activities related to 5S at workplace are performed accordingly.
- 6) Verifies autonomous maintenance activities are carried out.
- 7) Performs any other tasks as assigned by Laboratory Supervisor.

Level 2

Occupational definition for METALLURGICAL LABORATORY TECHNICIAN

A Metallurgical Laboratory Technician is designated to perform metallurgical inspection and to assist metallurgist within metallography department.

- 1) Ensures that metallurgical inspection processes are fully understood prior to commence an operation.
- 2) Understands metallurgical instructions and verifies job accordingly.
- 3) Ensures that metallurgical inspection reports are produced in compliance with specifications and order requirements.
- 4) Reports any abnormalities to Metallurgist.
- 5) Completes full metallurgical inspection records for each job, as required.
- 6) Verifies all activities related to 5S at laboratory are performed accordingly.
- 7) Verifies equipment maintenance for metallurgical equipment are carried out.
- 8) Performs any other tasks as assigned by Metallurgist.

Level 3

$\mathcal{O}_{ ext{ccupational}}$ definition for LABORATORY SUPERVISOR

A Laboratory Supervisor is designated to supervise and coordinate activities relating to laboratory department.

- 1) Supervises and coordinates activity of workers engaged in laboratories.
- 2) Applying knowledge of laboratory equipment set-up and operating techniques.
- 3) Determines reason for laboratory equipment's malfunction and arranges for equipment repair.
- 4) Reviews calibration schedules and assigns duties to workers according to order priorities.
- 5) Studies measuring and calibration reports to identify measuring accuracy and directs operators to adjust equipments to avoid inaccuracy.
- 6) Conducts and directs training of new employees in laboratory equipment and measurement processes.
- 7) Confers with management and other supervisors to resolve measuring and calibration problems.
- 8) Performs any other duties as instructed by the Management.

Level 4

$\mathcal{O}_{\text{ccupational definition for LABORATORY ASSISTANT MANAGER}$

A Laboratory Assistant Manager is designated to assist Laboratory Manager to plan, manage and control on laboratory department to achieve the required performance standard.

- 1) Assists Laboratory Manager in planning, managing and controlling of laboratory department to achieve the required performance standard.
- 2) Assists Laboratory Manager to plan departmental budget.
- 3) Evaluates training needs, develops schedule and assists in implementation of training to ensure effective training requirement are achieved for operating personnel to enhance skills and knowledge for optimum operation and maintenance of laboratory department performance.
- 4) Monitors and controls implementation of laboratory department activities to ensure overall effectiveness of laboratory department performance.
- 5) Implements safety requirement to minimize hazard at laboratory department.
- 6) Monitors the calibration activities as per customer specification.
- 7) Ensures the manpower of laboratory section is properly planned.
- 8) Monitors the continuous improvement activity and 5S.
- 9) Monitors the measuring and calibration planning process to ensure that customers' needs are fulfilled.
- 10) Performs any other job functions as instructed by the Management from time to time.

Level 5

$\mathcal{O}_{ccupational definition for LABORATORY MANAGER}$

A Laboratory Manager is designated to manage and oversee the overall functions of Laboratory Department.

- 1) Manages and oversees the overall functions of laboratory department.
- 2) Monitors overall department operational budget.
- 3) Monitors, plans and improves laboratory department equipment and facilities utilization and efficiency.
- 4) Ensures training programme for laboratory department staff are conducted effectively.
- 5) Monitors and upkeeps the laboratory department equipment and facilities as per annual preventive and maintenance schedule.
- 6) Manages the maintaining, monitoring and improving laboratory department housekeeping and continuous improvement.
- 7) Reports the performance of laboratory department to the Management.
- 8) Ensures smooth running of department and inter department liaison.
- 9) Performs any other job functions as instructed by the Management from time to time.

Level 5

$\mathcal{O}_{ ext{ccupational definition for METALLURGIST}}$

Metallurgist is designated to manage and oversee the overall functions of Metallography Department.

- 1) Manages and oversees the overall functions of metallography department.
- 2) Monitors overall department operational budget.
- 3) Monitors, plans and improves metallography department equipment and facilities utilization and efficiency.
- 4) Ensures training programme for metallography department staff are conducted effectively.
- 5) Monitors and upkeeps the metallography department equipment and facilities as per annual preventive and maintenance schedule.
- 6) Manages the maintaining, monitoring and improving metallography department housekeeping and continuous improvement.
- 7) Reports the performance of metallography department to the Management.
- 8) Ensures smooth running of department and inter department liaison.
- 9) Performs any other job functions as instructed by the Management from time to time.

LEVEL 1

JUNIOR QUALITY ASSURANCE TECHNICIAN (H-301-1)

LEVEL 2

QUALITY ASSURANCE TECHNICIAN (H-301-2) DOCUMENT CONTROLLER

LEVEL 3

SENIOR QUALITY ASSURANCE TECHNICIAN (H-301-3)

LEVEL 4

ASSISTANT QUALITY ASSURANCE ENGINEER (MANUFACTURING) (H-301-4)

LEVEL 5

QUALITY ASSURANCE ENGINEER (MANUFACTURING) (H-301-5)

Level 1

Occupational definition for JUNIOR QUALITY ASSURANCE TECHNICIAN

A Junior Quality Assurance Technician is designated to perform routine inspection, measurement and testing.

- 1) Conducts incoming, in process and final inspection.
- 2) Performs visual inspection.
- 3) Carries out dimensional measurement.
- 4) Calibrates common measuring tools.
- 5) Interprets engineering drawing.
- 6) Perform basic manufacturing processes.

Level 2

$\mathcal{O}_{\text{ccupational definition for QUALITY ASSURANCE TECHNICIAN}$

A Quality Assurance Technician is designated to perform routine inspection. Measurement and testing as per level 1 with additional quality control activities.

- 1) Calibrates varieties of measuring tools.
- 2) Conducts process and product audit.
- 3) Performs destructive and non-destructive testing.
- 4) Recommends product disposition.
- 5) Recommends containment action.

Level 2

$\mathcal{O}_{\text{ccupational definition for DOCUMENT CONTROLLER}}$

A Document Controller is designated to perform jobs related document control within Quality Assurance Department.

- 1) Controls the issuance and obsolete controlled document within company.
- 2) Assists Quality Assurance Department in area of certification of QMS.
- 3) Involves in company quality audit activities.
- 4) Participates in company's quality improvement activities such as QCC and Kaizen.
- 5) Verifies activities related to 5S at workplace, document storage and document filing.
- 6) Performs any other task as assigned by Quality Assurance Supervisor.

Level 3

Occupational definition for SENIOR QUALITY ASSURANCE TECHNICIAN

A Senior Quality Assurance Technician is designated to perform Level 1 and 2 activities with additional functions, which are non-routine and complex in nature.

- 1) Develops procedures for calibration, test and inspection.
- 2) Monitors quality improvement activities.
- 3) Troubleshoots and analyzes causes of production defect.
- 4) Recommends corrective and preventive action.
- 5) Writes reports.

Level 4

Occupational definition for ASSISTANT QUALITY ASSURANCE ENGINEER (MANUFACTURING)

An Assistant Quality Assurance Engineer is designated to assist Quality Assurance Engineer in recommending quality policy and objectives, establishing the quality management system, managing and promoting quality assurance activities and reviewing the quality performance against quality policy and objectives. In addition the Assistant Quality Assurance Engineer determines and implements safety, health and environment activities.

- 1) Obtain information through internet/intranet.
- 2) Determines and implements safety, health and environment regulations and recommends improvement on the job safety.
- 3) Implements quality policy and objectives, Field Failure Analysis (FFA), Training Needs Analysis (TNA), Measurement System Analysis (MSA) and Internal Quality Audit Analysis (IQAA) and in-house training.
- 4) Manages Quality Management System (QMS) document 5. Establishes data base for quality system.
- 5) Coordinates evaluation on new product quality, inspection and testing activities.
- 6) Evaluates process capability.
- 7) Decides disposition of non-conforming product.
- 8) Handles and measures customer complaints and satisfaction.
- 9) Promotes and monitors 5M elements and small group activities.
- 10) Supervises Quality Assurance Technician on job function.

Level 5

Occupational definition for QUALITY ASSURANCE ENGINEER (MANUFACTURING)

A Quality Assurance Engineer is designated to recommend quality policy and objectives, establishes quality management system, manages and promotes quality assurance activities and reviews the quality performance against quality policy and objectives.

- 1) Recommends quality policy and objectives.
- Develops and establishes inspections and test plans, Laboratories Quality Management System (QMS), supplier performance rating, customer service procedures, control plans, training plans and program, Measurement System Analysis (MSA) and Quality Assurance System (QAS).
- 3) Manages, promotes and coordinates 5M elements, Total Quality Management (TOM), quality assurance activities and Training Needs Analysis (TNA).
- 4) Determines application software, calibration regulation and Cost of Quality (COQ).
- 5) Conducts Failure Mode and Effect Analysis (FMEA), Value Analysis/ Value Engineering (VA/NE), regular supplier audit and Total Quality Management (TQM).
- 6) Applies budgetary cost control, project risk management, advance statistical techniques and advance product quality planning concept.
- 7) Liaises with public and professional bodies.
- 8) Reviews product and process specification.
- 9) Supervises and manages Assistant Quality Assurance Engineer job function.

LEVEL 1

INDUSTRIAL MECHANIC (H-100-1) CHARGEMAN A0 – LOW VOLTAGE (C-030-1)

LEVEL 2

TECHNICAL STOREKEEPER SENIOR INDUSTRIAL MECHANIC (H-100-2) CHARGEMAN A1- LOW VOLTAGE (C-030-2)

LEVEL 3

SENIOR TECHNICAL STOREKEEPER INDUSTRIAL TECHNICIAN (H-100-3) CHARGEMAN A4 – LOW VOLTAGE (C-030-3)

LEVEL 4

ASSISTANT MAINTENANCE ENGINEER (H-100-4)

LEVEL 5

MAINTENANCE ENGINEER (H-100-5)

Level 1

$\mathcal{O}_{\text{ccupational definition for INDUSTRIAL MECHANICS}}$

An Industrial Mechanic is designated to perform bench-fitting work, fabricates materials, maintains and installs equipment and machinery, cut materials by machining, maintains pneumatic/electropneumatic, maintains hydraulic/electrohydraulic, maintains PLC and electrical components.

- 1) Complies with safe working procedure.
- 2) Selects, measures, marks and prepares materials.
- 3) Performs filing, grinding, scraping and make internal and external threads.
- 4) Bends and cut materials by using various processes.
- 5) Joins belts, chains/links, conveyer and cables.
- 6) Joins materials by welding, brazing, bonding and bolting.
- 7) Checks leakage, vibration, temperature and pressure and lubricates equipment and machinery and checks for corrosion on machine parts.
- 8) Checks electrical motor, isolator, switch state, cable and connections.
- 9) Interprets circuit diagram and checks relay, sensor, fuse solenoid, leakage and replace parts/components of pneumatic/electropneumatic system.
- 10) Interprets circuit diagram and checks relay, sensor, fuse, solenoid, leakage and replace parts/components and performs bleeding on hydraulic/electrohydraulic system.
- 11) Interprets program and download program.

Level 1

$\mathcal{O}_{ccupational definition for CHARGEMAN A0 - LOW VOLTAGE}$

A Chargeman A0 – Low Voltage is designated to perform technical tasks connected with electrical engineering services, as well as planning new installation, acquiring of equipment, operation, maintenance and repair of electrical equipment, facilities and distribution system.

- 1) Provides technical assistance connected with installation and development of electrical equipment, facilities and distribution system.
- 2) Designs and prepares blue prints/circuit diagrams of electrical installation and circuitry according to the specification given.
- 3) Prepares detailed estimates of quantity and costs of materials and labour required for manufacture and installation according to the specification given.
- 4) Provides technical supervision of the manufacture, installation, utilisation, maintenance and repair of electrical system and equipment to ensure satisfactory performance and compliance with specification and regulations.
- 5) Applies technical knowledge of electrical engineering principles and practice in order to identify and solve problems arising in the course of their work.
- 6) Performs related tasks.
- 7) Supervises other workers.

Level 2

$\mathcal{O}_{ccupational definition for TECHNICAL STOREKEEPER}$

A Technical Storekeeper is designated to maintain optimum stock level using to ensure that production is not hampered.

- 1) Initiates purchase request, receives, checks and issues both M&R materials and capital investment items to ensure the correct availability of material when required.
- 2) Ensures hazardous materials are handled with care and liaises with the Safety Coordinator on safety aspects of stocks in the Technical Store to avoid any accidents in the factory and to educate the employees.
- 3) To establish and maintains a coin system for tools on loan to Maintenance staff.
- 4) Ensures all stocks are labeled corresponding to Inventory system for quick and easy locating these materials without delay.
- 5) Liaises closely with Maintenance Department on improvements and feedback of the service provided by the Technical Store.
- 6) Obtains information on new machines and ensures ready stocks are made available when needed, at the same time ensure this new material is properly catalogue and labeled.
- 7) Identifies the minimum/maximum stock level to be carried by the Technical Store at any one time to meet the requirement of the users. He consults the Electrical, Instrument and Mechanical Engineers or Engineering Manager on this issue especially on new spare parts on materials not listed before.
- 8) Any other job functions as instructed by the Management from time to time.

Level 2

$\mathcal{O}_{ ext{ccupational}}$ definition for SENIOR INDUSTRIAL MECHANIC

A Senior Industrial Mechanic is designated to perform bench-fitting work, fabricates materials, maintains and installs equipment and machinery, cut materials by machining, maintains pneumatic/electropneumatic, maintains hydraulic/electrohydraulic, maintains PLC and electrical components.

- 1) Complies with safe working procedure.
- 2) Selects, measures, marks and prepares materials.
- 3) Performs filing, grinding, scraping and make internal and external threads.
- 4) Bends and cut materials by using various processes.
- 5) Joins belts, chains/links, conveyer and cables.
- 6) Joins materials by welding, brazing, bonding and bolting.
- 7) Checks leakage, vibration, temperature and pressure and lubricates equipment and machinery and checks for corrosion on machine parts.
- 8) Checks electrical motor, isolator, switch state, cable and connections.
- 9) Interprets circuit diagram and checks relay, sensor, fuse solenoid, leakage and replace parts/components of pneumatic/electropneumatic system.
- 10) Interprets circuit diagram and checks relay, sensor, fuse, solenoid, leakage and replace parts/components and performs bleeding on hydraulic/electrohydraulic system.
- 11) Interprets program and download program.

Level 2

$\mathcal{O}_{ccupational definition for CHARGEMAN A1 - LOW VOLTAGE}$

A Chargeman A1 – Low Voltage is designated to perform technical tasks connected with electrical engineering services, as well as planning new installation, acquiring of equipment, operation, maintenance and repair of electrical equipment, facilities and distribution system.

- 1) Provides technical assistance connected with installation and development of electrical equipment, facilities and distribution system.
- 2) Design and prepare blue prints/circuit diagrams of electrical installation and circuitry according to the specification given.
- 3) Prepares detailed estimates of quantity and costs of materials and labour required for manufacture and installation according to the specification given.
- 4) Provides technical supervision of the manufacture, installation, utilisation, maintenance and repair of electrical system and equipment to ensure satisfactory performance and compliance with specification and regulations.
- 5) Applies technical knowledge of electrical engineering principles and practice in order to identify and solve problems arising in the course of their work.
- 6) Performs related tasks.
- 7) Supervise other workers.

Level 3

$\mathcal{O}_{ccupational definition SENIOR TECHNICAL STOREKEEPER}$

A Senior Technical Storekeeper is designated to maintain optimum stock level of the maintenance pare parts using to ensure that production is not hampered.

- Initiates purchase request, receives, checks and issues both M&R materials and capital investment items to ensure the correct availability of material when required.
- 2) Ensures hazardous materials are handled with care and liaises with the Safety Coordinator on safety aspects of stocks in the Technical Store to avoid any accidents in the factory and to educate the employees.
- 3) To establish and maintains a coin system for tools on loan to Maintenance staff.
- 4) Ensures all stocks are labeled corresponding to Inventory system for quick and easy locating these materials without delay.
- 5) Liaises closely with Maintenance Department on improvements and feedback of the service provided by the Technical Store.
- 6) Obtains information on new machines and ensures ready stocks are made available when needed, at the same time ensure this new material is properly catalogue and labeled.
- 7) Identifies the minimum/maximum stock level to be carried by the Technical Store at any one time to meet the requirement of the users. He consults the Electrical, Instrument and Mechanical Engineers or Engineering Manager on this issue especially on new spare parts on materials not listed before.
- 8) Any other job functions as instructed by the Management from time to time.

Level 3

$\mathcal{O}_{ccupational}$ definition for INDUSTRIAL TECHNICIAN

An Industrial Technician is designated to perform bench-fitting work, fabricates materials, maintains and installs equipment and machinery, cut materials by machining, maintains pneumatic/electropneumatic, maintains hydraulic/electrohydraulic, maintains PLC and electrical components.

- 1) Complies with safe working procedure.
- 2) Inspects, selects, measures, marks, prepares, calculate materials required and estimate costs of materials.
- 3) Performs filing, grinding, scraping and make internal and external threads.
- 4) Bends and cuts materials by using various processes.
- 5) Joins belts, chains/links, conveyor, cables and industrial elevator.
- 6) Joins materials by welding, brazing, bonding and bolting checks leakage, cibration, temperature and pressure, lubricates equipment and machinery, checks for corrosion on machine parts and proposes maintenance schedule.
- 7) Interprets electrical circuit diagram, checks electrical motor, isolator, switch starter, cable circuit breaker and connections.
- 8) Interprets circuit diagram and checks relay, sensor, fuse, solenoid, leakage, replace parts/components, proposes modifications and rectify pneumatic/electropneumatic system.

- 9) Interprets circuit diagram and checks relay, sensor, fuse, solenoid, leakage, replace parts/components, perform bleeding, proposes modification, rectify hydraulic/electrohydraulic system.
- 10) Interprets program, download PLC program, diagnose and rectify faults and test program.
MAINTENANCE

Level 3

$\mathcal{O}_{ccupational definition for CHARGEMAN A4 – LOW VOLTAGE}$

A Chargeman A4 – Low Voltage is designated to perform technical tasks connected with electrical engineering services, as well as planning new installation, acquiring of equipment, operation, maintenance and repair of electrical equipment, facilities and distribution system.

- 1) Provides technical assistance connected with installation and development of electrical equipment, facilities and distribution system.
- 2) Designs and prepares blue prints/circuit diagrams of electrical installation and circuitry according to the specification given.
- 3) Prepares detailed estimates of quantity and costs of materials and labour required for manufacture and installation according to the specification given.
- 4) Provides technical supervision of the manufacture, installation, utilisation, maintenance and repair of electrical system and equipment to ensure satisfactory performance and compliance with specification and regulations.
- 5) Applies technical knowledge of electrical engineering principles and practice in order to identify and solve problems arising in the course of their work.
- 6) Performs related tasks.
- 7) Supervise other workers.

MAINTENANCE

Level 4

Occupational definition for ASSISTANT MAINTENANCE ENGINEER

An Assistant Maintenance Engineer is designated to assist in designing, developing and production of machines; assembles, tests and commission new machines; modify existing machine; plan and manage maintenance of machine.

- 1) Prepares machine conceptual design and detail machine drawing.
- 2) Identify need for change for machine modification and prepare cost and benefit analysis.
- 3) Prepares resources and process schedule for machine manufacturing.
- 4) Fabricates, assembles and test machine before commissioning machine.
- 5) Prepares machine commissioning.
- 6) Rectifies machine problem and develop Trouble-shooting Guide for machine.
- 7) Prepares maintenance schedule and carry out machine maintenance.

MAINTENANCE

Level 5

$\mathcal{O}_{ccupational definition MAINTENANCE ENGINEER}$

A Maintenance Engineer is designated to carry out feasibility study; analyses and evaluates machine designs; monitors production process and machine assembly, tests and commissions new machines; modifies existing machine; plans and manages maintenance of machine.

- 1) Evaluates machine conceptual design and detail machine drawing.
- 2) Prepares actual cost and benefit analysis.
- 3) Reviews resources and process schedule for machine manufacturing.
- 4) Performs on site testing and commissioning run.
- 5) Prepares Standard Operating Procedure.
- 6) Analyses machine condition and make recommendation.
- 7) Conducts failure, mode and effect analysis and investigate defective machine.
- 8) Manages workshop, personnel and financial allocation.

LEVEL 1

STOREKEEPER

LEVEL 2

SENIOR STOREKEEPER TRANSPORTER DRIVER

LEVEL 3

STOREKEEPER SUPERVISOR FLEET SUPERVISOR

LEVEL 4

ASSISTANT LOGISTIC MANAGER

LEVEL 5

LOGISTIC MANAGER

Level 1

$\mathcal{O}_{ccupational definition for STOREKEEPER}$

A Storekeeper is designated to maintain optimum stock level within store department.

- 1) Initiates purchase request, receives, checks and issues materials and capital investment items to ensure the correct availability of material when required.
- 2) Ensures hazardous materials are handled with care and liaises with the Safety Coordinator on safety aspects of stocks in the Technical Store to avoid any accidents in the factory.
- 3) Ensures all stocks are labeled corresponding to inventory system for quick and easy locating these materials without delay.
- 4) Obtains information on new machines and ensures ready stocks of production material are made available when needed, at the same time ensure this new material is properly catalogue and labeled.
- 5) Identifies the minimum/maximum stock level to meet the requirement of the users.
- 6) Any other job functions as instructed by the Senior Storekeeper from time to time.
- 7) Implements good housekeeping and 5S activities within store premises.

Level 2

$\mathcal{O}_{ccupational definition for SENIOR STOREKEEPER}$

A Senior Storekeeper is designated to maintain optimum stock level using to ensure that production is not hampered.

- 1) Recommends purchase request, receives, checks and issues materials and capital investment items to ensure the correct availability of material when required.
- 2) Ensures raw materials received are handled with care and liaises with the Safety Coordinator on safety aspects of stocks or material to avoid any accidents in the store premises.
- 3) Monitors stocks or finished goods are labeled corresponding to Inventory system for quick and easy locating these materials without delay.
- 4) Informations on new machines and ensures ready stocks are made available when needed, at the same time ensure this new material is properly catalogue and labeled.
- 5) Monitors the minimum/maximum stock level of work in progress (wip) or finished goods.
- 6) Participates in improvement activities such as kaizen QCC and 5S.
- 7) Any other job functions as instructed by the Storekeeper supervisor from time to time.

Level 2

$\mathcal{O}_{ccupational definition for TRANSPORTER DRIVER}$

A Transporter Driver is designated to drive a transporter along an assigned route and ensures completion of the daily run.

- 1) Ensures finished good or raw materials are being transported according to process requirement.
- 2) Conducts daily checking for all products being transported to another place.
- 3) Performs routine services on assigned vehicle including filling with fuel, water and oil, checking brake system, hydraulic systems and other safety devises.
- 4) Maintains routine traveling records such as mileage record and destination.
- 5) Performs preventive maintenance activities according to annual TPM schedule.
- 6) Participates in quality improvement activities such as QCC, Kaizen and 5S.
- 7) Performs other related duties as assigned by Fleet Supervisor.

Level 3

$\mathcal{O}_{\text{ccupational definition for STOREKEEPER SUPERVISOR}$

A Storekeeper Supervisor is designated to maintain optimum stock level using to ensure that production is not hampered.

- 1) Initiates purchase request, receives, checks and issues of raw materials items to ensure the correct availability of material when required.
- 2) Ensures all stocks such as raw material stocks finished goods stocks are labeled corresponding to inventory system for quick and easy locating these materials.
- 3) Supervises the minimum/maximum stock level carried out by the storekeeper meet the requirement of the users internally and externally.
- 4) Prepares and implement warehouse maintenance and cleansing.
- 5) Coordinates on all administrative matters related to warehouse.
- 6) Prepares and coordinate work schedule for all storekeeper.
- 7) Prepares a monthly report.
- 8) Any other job functions as instructed by the Management from time to time.

Level 3

$\mathcal{O}_{ccupational definition for FLEET SUPERVISOR}$

A Fleet Supervisor is designated to provide an efficient and effective transport services for waste collection.

- 1) Prepares and implements transportation schedule for delivered products.
- 2) Monitors and coordinates transportation of metal product according to the plan schedule using the appropriate communication provided.
- 3) Maintains information data base for each consignment of transportation to include; Departure location and time, Details of consignment, Routes taken, Vehicle number, Driver's name, Arrival location and time.
- 4) Prepares and implements vehicles maintenance and cleansing.
- 5) Coordinates on all administrative matters related to vehicles.
- 6) Prepares and coordinates work schedule for all vehicle's driver.
- 7) Ensure effective vehicles maintenance.
- 8) Prepares a monthly report.

Level 4

$\mathcal{O}_{\text{ccupational definition for ASSISTANT LOGISTIC MANAGER}$

An Assistant Logistic Manager is designated to assist Logistic Manager in implementing the plan of the overall functions of Logistic & Planning Department.

- 1) Oversees the overall functions of Logistic & Planning Department.
- 2) Monitors department operation budget.
- 3) Ensures Logistic operation compliance to license, organization policy and any applicable legal requirement.
- 4) Monitors the transport contractor adhere to rules and regulations imposed by local authority.
- 5) Reports on the progress or development of operation work daily.
- 6) Ensures smooth running of department and inter department liaison by planning and coordinate the logistic issue.
- 7) Maintains equipment, tools & machine within logistic department custody.
- 8) Monitors subordinate activities that related to their normal routine works of logistic operation.
- 9) Conducts training to staff and transporter.
- 10) Prepares report to management.

Level 5

$\mathcal{O}_{ccupational definition for LOGISTIC MANAGER}$

A Logistic Manager is designated to manage, plans and coordinate the overall functions of Logistic & Planning Department.

- 1) Ensures compliance to license, organization policy and any applicable legal requirements.
- 2) Monitors overall department operational budget.
- 3) Liaisons with DOE on legal requirement and enquiry.
- 4) Liaisons with Marketing and Transporters in collection and customer enquiry.
- 5) Monitors, planning and improving plant/facilities utilization and efficiency.
- 6) Strives to reduce production cost and maximize production output.
- 7) Monitors and upkeep of structure and infrastructure of the facilities.
- 8) Prepares report to management.
- 9) Performs any other task assigned by the management.

LEVEL 1

HEAT TREATMENT OPERATOR

LEVEL 2

HEAT TREATMENT TECHNICIAN

LEVEL 3

HEAT TREATMENT SUPERVISOR

LEVEL 4

ASSISTANT HEAT TREATMENT MANAGER

LEVEL 5

HEAT TREATMENT MANAGER

Level 1

$\mathcal{O}_{\text{ccupational definition for HEAT TREATMENT OPERATOR}$

A Heat Treatment Operator is designated to perform the operation of heat treating activities within Heat Treatment Department.

- 1) Performs heat treatment job to assist Heat Treatment Line Leader in producing heat treated parts.
- 2) Ensures all equipments are in good order prior to run.
- 3) Follows related standard operating procedures.
- 4) Performs inspection on parts being treated.
- 5) Adheres with safety instruction.
- 6) Records related inspection data for parts being treated.
- 7) Performs countermeasures action for defective parts and abnormal heat treatment process.
- 8) Performs other duties as specified by Heat Treatment Line Leader.

Level 2

$\mathcal{O}_{ ext{ccupational definition for HEAT TREATMENT TECHNICIAN}$

A Heat Treatment Technician is designated to perform Heat Treatment activities and to assist Heat Treatment Supervisor in Heat Treatment process.

- 1) Ensures that heat treatment processes are fully understood before commencing an operation.
- 2) Understands inspection instructions and verifies job accordingly.
- 3) Ensures that heats treated are produced in compliance with specifications and order requirements.
- 4) Reports any abnormalities to Heat Treatment Supervisor.
- 5) Completes full production and inspection records for each job, as required.
- 6) Identifies segregate non-conforming material and products and report these to Heat Treatment Supervisor.
- 7) Ensures heat treated material and fully identified against the job number at all time during production process.
- 8) Verifies all activities related to 5S at workplace are performed accordingly.
- 9) Verifies autonomous maintenance activities are carried out.
- 10) Performs any other tasks as assigned by Heat Treatment Supervisor.

Level 3

$\mathcal{O}_{ccupational definition for HEAT TREATMENT SUPERVISOR}$

A Heat Treatment Supervisor is designated to supervise and coordinate activities relating to heat treatment department.

- 1) Supervises and coordinates activity of workers engaged in heat treated products.
- 2) Applying knowledge of heat treatment machine setup and operating techniques and production methods.
- 3) Reads operating logs to identify inoperative heat treatment machines.
- 4) Determines reason for machine malfunction and arranges for machine repair.
- 5) Reviews production schedule and work orders and assigns duties to workers according to order priorities.
- 6) Studies quality control reports to identify product defects and directs machine operators to adjust machines to eliminate flaws.
- 7) Examines heat treated products form each machine to verify conformance to specifications.
- 8) Conducts and directs training of new employees in heat treatment machine operation and processes.
- Confers with management and other supervisors to resolve production problems.
- 10) Performs any other duties as instructed by the Management.

Level 4

Occupational definition for ASSISTANT HEAT TREATMENT MANAGER

An Assistant Heat Treatment Manager is designated to assist Heat Treatment Manager to plan, manage and control on stamping department to achieve the required performance standard.

- 1) Assists Heat Treatment Manager in planning, managing, and controlling of stamping department to achieve the required performance standard.
- 2) Assists Heat Treatment Manager to plan departmental budget.
- 3) Evaluates training needs, develops schedule and assists in implementation of training to ensure effective training requirement are achieved for operating personnel to enhance skills and knowledge for optimum operation and maintenance of heat treatment department performance.
- 4) Monitors and controls implementation of heat treatment department activities to ensure overall effectiveness of heat treatment department performance.
- 5) Implements safety requirement to minimize hazard at heat treatment department.
- 6) Ensures the production of heat treatment meets the production schedule on time.
- 7) Monitors the production & quality performance as per customer specification.

- 8) Ensures the capacity planning of each heat treatment lines.
- 9) Ensures the manpower of heat treatment section is properly planned.
- 10) Coordinates, monitors & confirms the pilot run and mass production.
- 11) Monitors the continuous improvement activity and 5S.
- 12) Monitors the production planning process to ensure that customers' needs are fulfilled.
- 13) Performs any other job functions as instructed by the Management from time to time.

Level 5

$\mathcal{O}_{ ext{ccupational definition for HEAT TREATMENT MANAGER}$

A Heat Treatment Manager is designated to manage and oversee the overall functions of Heat Treatment Department.

- 1) Manages and oversees the overall functions of heat treatment department.
- 2) Monitors overall department operational budget.
- 3) Monitors, plans and improves stamping department equipment and facilities utilization and efficiency.
- 4) Ensures training programme for stamping department staff are conducted effectively.
- 5) Monitors and upkeeps the heat treatment department equipment and facilities as per annual preventive and maintenance schedule.
- 6) Manages the maintaining, monitoring and improving heat treatment department housekeeping and continuous improvement.
- 7) Reports the performance of heat treatment department to the Management.
- 8) Ensures smooth running of department and inter department liaison.
- 9) Performs any other job functions as instructed by the Management from time to time.