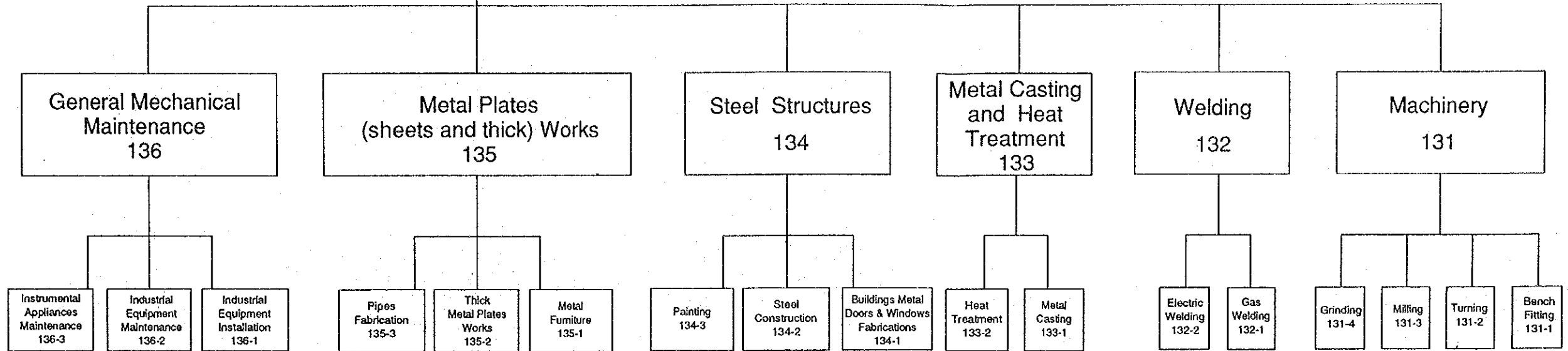


附属資料 ⑥

Job Description and classification

JOB DESCRIPTION AND CLASSIFICATION

Metal Works and General Maintenance



130-011-05 Mechanical Engineer / Production / General

| Professional 5 | Mechanical Maintenance Engineer 136-211-5 | | Industrial Equipment Installation Engineer 136-111-5 | | Mechanical Engineer / Metals 135-011-5 | | | Steel Structures Engineer 134-011-5 | | Mechanical Engineer / Metal Casting 133-011-5 | | | Mechanical Engineer / Welding 132-011-5 | | Mechanical Engineer / Production 131-011-5 | | | | | | | | | |
|-----------------------|------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------|--------------------------------------------------|------------------------------------------------------|--------------------------------------------------|------------------------------------------|--------------------------------------------|----------------------------------------------|-------------------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------------|----------------------------|--------------------------------------------------|-------------------------------------------|--------------------------------------|---------------------------------------------|----------------------------------------------|----------------------------|
| Technician 4 | General Mechanical Maintenance Supervisor 136-212-4 | | Industrial Equipment Installation Supervisor 136-112-4 | | Thick Metal Plates Works Supervisor 135-212-4 | Development Draft man 135-211-4 | Metal Furniture Production Supervisor 135-111-4 | Steel Structures Erection Supervisor 134-212-4 | Steel Structures Fabrication Supervisor 134-211-4 | LAB Technician Metal Heat Treatment 133-211-4 | Metal Casting Supervisor 133-111-4 | General Supervisor Welding 132-013-4 | Welding Inspector 132-012-4 | Mechanical Supervisor for Machine W/S 131-013-4 | Draftman Mechanical / Production 131-012-4 | | | | | | | | | |
| Craftsman 3 | Instrumental Appliances General Mechanic / 136-311-3 | Maintenance Mechanic / General 136-213-3 | Industrial Equipment Installation Mechanic / General 136-113-3 | | Pipe Fabricator / General 135-311-3 | Thick Metal Plates Fabricator / General 135-213-3 | Metal Furniture Fabricator / General 135-112-3 | Steel Structures Fabrication / General 134-213-3 | Buildings Metal Doors & Windows Fabricator 134-111-3 | LAB Technician Assistant 133-212-3 | Core Maker 133-113-3 | Molds Maker (Molder) 133-112-3 | Pipe Welder / General 132-015-3 | Electrical Arc Welder / General 132-211-3 | Welder / General 132-014-3 | Dies Maker 131-014-3 | Grinding Machinery Operator / General 131-411-3 | Turner / General 131-211-3 | Bench Fitter General 131-111-3 | | | | | |
| Skilled Worker 2 | Instrument Mechanic 136-312-2 | Pumps & Compressor Maintenance Mechanic 136-219-3 | Materials Handling Equipment Maintenance Mechanic 136-216-2 | Industrial Equipment Maintenance Mechanic 136-214-2 | Industrial Equipment Installation Mechanic 136-114-2 | Pipe Fabricator 135-312-2 | Thick Metal Plates Fabricator 135-214-2 | Metal Furniture Fabricator 135-113-2 | Painter 134-311-2 | Steel Structures Erector 134-215-2 | Steel Structure Fabricator 134-214-2 | Metal Doors & Windows Fabricator 134-112-2 | Metal Furnace Operator 133-117-2 | Sand Molds Caster 133-115-2 | Metal Molds Caster 113-114-2 | Pipe Welder 132-213-2 | Electrical Arc Welder 132-212-2 | Oxy Acet Welder 132-111-2 | Tool Grinder Operator 131-412-2 | Milling Machine Operator 131-311-2 | Turner 131-212-2 | Bench Fitter 131-112-2 | | |
| Semi-Skilled Worker 1 | Belts Joiner 136-218-1 | Pumps & Compressor Mechanic Assistant 136-226-1 | Materials Handling Equipment Maintenance Mechanic Assistant 136-217-1 | Industrial Equipment Maintenance Assistant 136-215-1 | Industrial Equipment Installation Mechanic Assistant 136-115-1 | Spinning Machine Operator 133-119-1 | Tin Smith 135-118-1 | Sheet Metal Forming Press Operation 135-117-1 | Sheet Folder Operator 135-116-1 | Metal Plates Shearing Machine Operator 135-115-1 | Metal Rolling Machine Operator 135-114-1 | Painter Assistant 134-312-1 | Steel Structures Erector Assistant 134-216-1 | Aluminum Profiles Fabricator 134-114-1 | Steel Profiles Fabricator 134-113-1 | Metal Furnace Operator Assistant 133-118-1 | Black Smith 133-213-1 | Caster Assistant 133-116-1 | Auto Electric Welding Machine Operator 132-215-1 | Electrical Arc Welder Assistant 132-214-1 | Oxy Acet Welding Assistant 132-112-1 | Surface Grinding Machine Operator 131-413-1 | Milling Machine Operator Assistant 131-312-1 | Turner Assistant 131-213-1 |

出典：VTC。

注：次頁169ページ以降に本表の130-011-05から136-218-1までのJob Descriptionを添付した。(但し、136-219-3はVTCから入手できなかった。)

なお、本件資料の原文はアラビア語であることから、本表と、169ページ以降の英訳資料の間に訳者による訳語の相違がある場合がある。

Introduction:

The professional description and classification is a system to specify the jobs and identify their names unifying them into professional families. This depends on the similarity in job nature. In addition, there is the definition of each job in a specific and accurate manner among the tasks and duties included along with the identification of the place of each job on the technical scale of skills. This scale specifies the levels of professional work.

The professional description and classification in Jordan is based on the economic activity field which includes the following sectors:

- a. Industry, mining and constructions.
- b. Agriculture
- c. Services

Priority has been given in classification in the first state to the sector of industry, mining and constructions. This sector was analyzed into the following vocational families:

1. Electricity (power)
2. Electronics
3. Operation and Maintenance of Vehicles and Machinery
4. Metal Formulation and general Mechanical Maintenance.
5. Air conditioning and sanitary networks.
6. Carpentry and Decoration
7. Construction
8. Chemical Processes
9. Textiles.

In the first stage, emphasis has been laid on classifying the jobs within professional families which directly relate to the safety and existence of people. Technical (functional) committees were established to classify the works and prepare the performance tests within the following professional families:

- a. Electricity
- b. Operation and Maintenance of Vehicles and Machinery
- c. Constructions
- d. Metal Formulation and general Mechanical Engineering
- e. Air conditioning and sanitary networks.

This manual covers the classification and description of jobs within professional family of metal formulation and general mechanical maintenance. It is the third manual in this series. Two other manuals had been issued. They cover the classification of Operation and Maintenance of Machinery and Vehicles and the Family "Electricity/Power"

General Framework:

The following division (analysis) is used in the professional classification and description of the professional family:

1. Analyzing the professional family to main professional groups. Six groups were specified in the one professional family.
2. Analyzing each professional group into six units (professions). This family included 17 professions.
3. Analyzing each of the professions into jobs of relevant nature. The profession usually includes a group of connecting works performed on several levels. This profession included 85 jobs.
4. Specifying the job position on the technical skill scale.

Components of the Professional Description and Classification:

These include four main components:

1. The title; it includes the profession name- one or more words.
2. Job Description: it includes the contents of the job (duties and tasks) with a reference to the supervision offered by the job occupant or offered for him.
3. Level: it specifies the position of the work on the technical skill scale.
4. Code - symbol number: This is to be read from left to right. Following are the meanings of the numbers in such a code:
 - 1- The sector - it holds the first number to the left.
 2. Professional family - it holds the second number to the left
 3. The main professional family: it holds the third number
 4. Profession: it holds the fourth number
 5. Job: it holds the fifth and sixth numbers
 6. Level: it holds the seventh number

Technical Scale of Skills (Levels of Professional Work):

The following structure of the professional job levels as adopted by the Vocational Training Corporation is aimed to be adopted at the national level in Jordan. It emerges from five main groups:

First Group: Semi-skilled worker (limited skills):

He is the one who performs tasks that require a limited amount of skills that the individual can acquire from a relatively short training. Some cases in the point in the industrial field are: the machinery operators, workers who repair punctures, those who fix electricity pipes, workers who fix telephones ... etc.

It is worth mentioning here that the term : "limited skilled" replaces other terms such as non-skilled or semi-skilled.*

Second Group: Skilled Worker:

He is the one who performs tasks that require skills related with an integral part of the profession and of a high performance level. These skills required special orientation involving the practical (performance) and technical data parts.

For example, the turnery worker, electric welding worker, household electric fixture workers, workers who fit telephone cables and other works.

Third Group: Professional Worker:

He is the one who performs tasks that require skills cover the overall framework of the profession. They require the practical (performance) part and the technical data of relation with the practical bases on which the technical information are built. In addition, there is the ability to distribute the works and increase the performance level of workers.

For example, in the industrial sector, we find the car mechanics, electricians of the electric generation stations. Workers of fixtures (electric and others).

Fourth Group: Technician :

He is the one who performs works that require practical, scientific and managerial specialized skills. These help him understand the nature of performance and its analysis to define the steps of work. He is a connection between the specialized and the workers.

* Throughout this translation the term semi skilled will be used instead of limited skilled (translator)

For example, foremen, lab technicians, asst. engineers.... etc.

Fifth Group: Specialized:

He's the one who performs works that require a high level of scientific, technical and leadership skills. This helps him analyze and plan for performance and following up with it as well as with the other individual workers. When problems occur, he can solve them.

For example, engineers, doctors (physicians) lawyers and others.

Uses of the Job Description and Classification:

It is used to contribute to many sectors and purposes:

1. Research, studies and worker statistics for the socio-economic development.
2. Preparation and improvement of training programs.
3. Preparation of tests of the performance level.
4. Issuing licences profession practice on the specified level.
5. Drawing the policy of wages.

Dr. Munther Masri

Director General/Vocational Training Corp.

Names of persons who prepared the professional description and classification of this family (Metal Formulation and General Mechanical Maintenance)

1. Ahmad Mustafa, Eng. - Technical Director - Vocational Training Corp.
2. Ismail Hindawi, Eng. - Training Coordinator - Vocational Training Corp.
3. Talab Jundi, Eng. - Workshop Engineer, Petroleum Refinery Co.
4. Wahid Halabi, Eng. - Workshop Engineer, Jordan Electric Authority

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | |
| Profession | |
| Job | Mechanical Engineer - Production/General |
| Reference No. | 130-011-5 |

Job Description:

Works independently or under the factory manager. He organizes and develops lines and methods of metal works production. He designs or adopts the designs of metal works. He adopts the operation, maintenance and follow up programs. He monitors the readiness of machinery in the several workshops related to the production and formulation of metals. He directs and coordinates the activities and works of subject workers. He observes and applies the basics of professional safety and healths through:

Coping with the technical development in the field of operation, welding, casting and thermal treatment. He conducts economic feasibility studies to benefit from the technical development in the field of metal works. He conducts working studies for the lines and methods of production to be developed. He designs metal works to be produced using the operation machinery, welding and casting. He prepares the specifications and techniques of production. Or, he selects and adopts such specifications, He studies the operation and maintenance programs and adopt the same prior to issuing the execution orders. He follows up the procedures of execution and assess them. He follow up the readiness of the production workshops. He conducts technical studies aiming at reducing the production cost and increasing the productivity degree. He directs the subject worker and coordinates their activities and solves problems of work and workers.

He works on providing the equipment and means and clothes of professional safety. He observes the provision of sanitary conditions on the job site. He shares in preparing and improving the instructions and procedures of safety and professional health and he follows up the perpetuity of the same.

Level: Specialized.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | |
| Job | Mechanical Engineer - Production |
| Reference No. | 131-011-5 |

Job Description:

Planning and designing the operation workshop. Following up the development of machinery and methods of metal works production. He develops the supplies of the production workshop. He conducts feasibility studies or prepares the designs and specifications of the production. He prepares the targets and programs of production. He prepares the programs of preventing maintenance. He follows up the provision of raw materials necessary for the production. He directs the subject workers and coordinates their activities and solves problems of work and workers. He observes and applies the basics of professional safety and health through:

Establishing the specifications and attributes of the operation machinery. Establishing the spatial requirements and services for each machine. Preparing the layout of distribution of machines in the workshop. Following up with the layout of machinery distribution. Following up with the magazines and technical publications issued by the manufacturing companies in order to get acquainted with the new elements in the production machinery. Developing the assets at the workshop observing the economic dimension. Studying the designs and specifications of products to assure the possibility of execution. Suggesting some amendments when needed and in cooperation with the design engineer. Establishing the priorities of production. Preparing the objectives and regular programs of production. Issuing the execution orders. Studying the directories issued by manufacturers for the available operation machines. Preparing preventive maintenance programs according to the recommendations of manufacturers. Following up the execution programs and the preventive maintenance for the assets in the workshop. Studying and ratifying the orders of raw materials and following up their provision with the concerned parties. Controlling the wastes in time and effort and material. Coordinating the activities of subject workers and directing them towards achieving the production aims. Assurance of type and quantity of product. Specifying the bottle neck points and diagnosing their reasons. Providing solutions for the same or adopting necessary steps. Diagnosing the reasons of workers problems reasons. Providing the solutions or adopting the necessary steps therefor. Recommending the administrative

procedures related with the subject workers according to the by-laws of the company. Studying by-laws of the Company and establishing the communication channels in it. Respecting and supporting the working party by-laws.

He works on providing the equipment and means and clothes of professional safety. He observes the provision of sanitary conditions on the job site. He shares in preparing and improving the instructions and procedures of safety and professional health and he follows up the perpetuity of the same.

Level: Specialized.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | |
| Job | Mechanical Draftsman - Production |
| Reference No. | 131-012-4 |

Job Description:

Works under the production mechanical engineer. He reads the preliminary layouts (Croke drawing). Then, he sketches them again according to the rules and basics used in engineering drafting. He explores the tools and table and paper of drawing. He learns the codes and significance of engineering concepts in drawing, production, storage and documentation of drawings. He observes the basics of professional safety and health through:

Reading the Corky drawings. Redrawing them according to the rules and basics used in the field. These include the drawing of engineering sections (horizontal and ground plans), sections and assisting sections and the detailed drawing and accumulative one. Using codes and engineering lexicon in the drawing such as the gear symbols the surface smoothness and the difference and the codes of joints and welding lines and the interrupted line and the continuous line etc. Using the drawing tools and storing them and using the drawing table. Exploring the specifications and attributes of the drawing paper. Knowing the concepts used in the drawing paper scales. Implementing the inking process of the drawing. Observing the rules used in the thickness of the line while inking. Establishing the tables and specifications and quantities and knowing the lengths measures; their fractions and multiplications. Producing drawings using the printing machines required for maps (layouts). Storing and documenting drawings. Observing the rules and basics of professional safety and health.

Level: Technician

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | |
| Job | Mechanical Foreman -Operation Machines |
| Reference No. | 131-013-4 |

Job Description:

Working under the mechanical engineer/production. He supervises the subject workers and coordinate their activities. He studies the work order and execution layouts. He establishes the steps and sequence of production operations. He establishes the quality and quantity of raw materials necessary for production. He prepares the purchase order. He examines the production and assures its compliance with the specifications. He executes the maintenance programs of the supplies of the production workshop. He trains and increases the level of performance of the subject workers. He observes the rules of professional safety through:

Studying the production objectives (quality and quantity), studying the production capacity of the operation machines. Studying the capabilities and potentials of subject workers. Drafting the time tables of execution. Distributing works on subject workers to secure the achievement of the production target. Studying the work order and the execution layouts to establish the specifications and material of product. Establishing the machinery of operation to be used to achieve the required specifications. Establishing the sequence of production operations to controls wastes of time. Establishing the specifications of materials input in the production and order them. Controlling wastes in raw materials. Following up the production procedures. Solving technical problems facing subject workers. Controlling the quality of production. Assuring the specification compliance. Avoiding execution bottlenecks. Studying the preventive maintenance programs of the production machines and following up the same. Assuring the readiness and wound use of work tools and parts. Establishing the training requirements for the subject workers. Increasing their performance level. Supplying the accessories and equipment of personal prevention. Observing and following up the execution of rules and basics of professional health. Solving work problems or recommending the administrative procedures to the direct boss. Preparing and submitting the work reports.

Level : technician.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Manual Flattening (leveling) |
| Job | General Filer |
| Reference No. | 131-111-3 |

Job Description:

Working under the mechanical foreman - Production. He reads the execution drawings. He prepares and operates the scrapers. He executes the leveling mechanical and manual processes using the scrapers and channel opening tools. He implements the mechanical and manual drilling processes. He prepares the cutters and internal and external surface turnery in a parallel manner. He observes and applies the rules and basics of professional safety through:

Establishing the attributes and of metals and their liability for operation and formulation. Reading the executive drawings. Establishing the execution steps. Preparing and operating and servicing the scrapers and drills and channel openers (manual) mobile and fixed according to the recommendations of the manufacturer. Selecting and preparing the equipment and tools and the relevant cutters. Preparing the controllers of the machine. Implementing the horizontal and vertical and corner leveling process using the butt scraper. Implementing the processes of corner and arch formulation. Opening the channels and straight and formulation strips using the cracker. Using manual and mechanical drills in hole opening. Implementing the manual internal and external serration processes. Using the manual sharpening machines in the leveling process. Cutting metals an leveling the surfaces using the manual files. Selecting the adequate file. Using manual and mechanical saws and manual chisels in the cutting and formulation processes. Using the manual scrapers in the processes of the arch and straight leveling. Implementing the process of finishing using the reamer. Sharpening and preparing the cutters. Turnery of the internal and external parallel surfaces. Implementing the serration processes internal and external in one door. Using the accurate scales (0.01 mm). Maintaining and keeping these equipment and observing the instructions and rules of professional safety and health.

Level : Technician.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Turnery and Friezing |
| Job | General Turner |
| Reference No. | 131-211-3 |

Job Description:

Working individually or under the production mechanical foreman. He reads the executive drawings. Establishes the execution steps using the turnery machine and the frieze. He prepares and operates the turnery and friezing machines. He turns all the internal and external surfaces. He implements the mechanical serration processes using the turnery. Turns the decentral surfaces. Sharpens and prepares the knives and cutters. Implements the leveling processes using the friezing machines. Opens the channels and cutting the serrate of gears. Observes and implements the rules and basics of professional safety and health through:

Identifying the attributes of metals and their liability for operation. Reading the executive drawings and specifying the execution steps on the turnery and frieze. Preparing and operating and servicing the turnery machines and friezing according to the manufacturer's recommendation. Turnery of surfaces from the outside in connection between two centers. Turnery of the smooth surfaces from the outside using the plotter or another adequate set. Turnery of the decentral surfaces in connection with the tray or the four head or in connection between the two centers. Implementing the internal and external mechanical serration of the one door and multi doors. Implementing the horizontal and vertical leveling processes using the friezes. Opening internal and external straight channels using the differential serration. Opening spiral channels. Understanding the terms and parts of the straight, spiral and cylindrical serration as well as their calculation methods. Calculating the corners of cutting. Calculating the diameter step or the module. Selecting and fixing the adequate knife. Cutting the straight, spiral and cylindrical serrate. Using the accurate scales (0.01mm). Cleaning and oiling the machines. Arranging and storing the tools of parts and the scales. Observing the safety rules.

Level: Technician.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Sharpening |
| Job | Operator of Sharpening Machines (general) |
| Reference No. | 131-411-3 |

Job Description:

Working under the mechanical foreman (machines). Reads the execution layouts. Prepares and operates the sharpening machines. Implementing the process of flat and cylindrical sharpening from the inside and the outside. Implementing processes of sharpening several parts. Complying with the safety rules through:

Identifying the attributes of metals and their liability for operation and formulation. Reading the executing drawing. Specifying the execution steps. Preparing and operating and servicing the sharpening machines and the polishing machines according to the recommendations of the manufacturer. Selecting and fixing and preparing and balancing the sharpening stones. Identifying the specifications and codes of such stones. Preparing the machine controllers. Leveling the straight and corner surfaces using the sharpening machines of the flat surfaces. Sharpening cylinder surfaces (straight and smooth) from inside and outside using the cylindrical sharpening machine (0.01 mm accuracy). Operating the polishing and smoothing surfaces to achieve a smoothness degree of 0.001 - 0.005 mm. Sharpening the tools. Calibrating the degrees of parts. Identifying the length scales servicing them and keeping them. Complying the rules of safety.

Level: Professional.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | |
| Job | module producer |
| Reference No. | 131-014-3 |

Job Description:

Working under the mechanical foreman - operation machines. He reads the execution layouts. He prepares and operates the operation machinery in their several types. He conducts the manual and automatic flattening processes. The chiseling processes. Manual scraping, He applies the rules and basics of professional health through:

Identifying the attributes of metals and their liability for operation and formulation. Reading the execution layouts. Identifying the steps of execution. Preparing and operating all the production machinery such as turneries, scrapers, separators, and saws. Furnishing and operating the sharpening and drilling machines mobile and fixed. Implementing horizontal and vertical flattening processes and corners using scrapers. Turnery of balanced and even surfaces both from the inside and the outside. Opening the channels and straight and formulation strips using the friezes and crackers. Using the mobile sharpening machines and drilling in flattening and drilling processes. Cutting metals and flattening the surfaces using manual files and chisels. Using the electric drills in opening holes and channels. Completing the process using the rimer (reamer). Sharpening and preparing the cutters. Completing the manual and mechanical serration process. Understanding the concepts of differentiation and ignorance in scales. Using the length scale measures such as the micrometer, caliber of accuracy up to 0.01 mm.

Observing and following up the instructions and procedures of professional safety and health.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Manual Leveling |
| Job | Filer |
| Reference No. | 131-112-2 |

Job Description:

Working under the general filer. He reads the execution drawings. He prepares and operates the scrapers. He implements the manual and mechanical leveling processes using scrapers and channel openers. He implements the processes of opening holes and serration and preparing the cutters. He observes the rules and instructions of professional safety through:

Establishing the attributes of metals and their liability for formulation and operation. Reading the execution drawings. Establishing the execution steps. Preparing and operating and servicing the scrapers and channel openers and mobile and fixed drills according to manufacturer's recommendation. Selecting and preparing the tools, equipment and knives adequate for cutting. Preparing the controllers of the machine. Implementing the horizontal, vertical and corner leveling processes using the butting scraper. Opening the straight and formulation strips and channels using the cracker. Establishing the centers of holes and implementing the process of punching in locating such centers. Using the manual and mechanical chisels in the cutting and formulation processes. Using the accurate 0.01 mm scales. Storing these equipment and maintaining them, preparing the cutter equipment. Executing the instructions and rules of professional safety.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Turnery |
| Job | Turner |
| Reference No. | 131-212-2 |

Job Description:

Working under the general turner. He reads the execution drawings and specifications. He prepares and operates the turnery according to the recommendations of the manufacturer and according to the production requirements. Turns the external and internal cylindrical surfaces. Turnery of internal and external smooth spots. Using the mechanical serration process using the turnery. Turnery of decentral surfaces. Sharpening and preparing the cutting knives and tools. Servicing the turnery according to the recommendations of the manufacturer. Observing and applying the rules and basics of professional safety and health through:

Reading the execution drawings and -specifications to identify the metal required for use. Calculating the dimensions of the service, and final scales and the required differentiation (accuracy degree). Selecting the means of adequate connection (joining). Fixing and connecting the part of work. Selecting and fixing the adequate cutting knife. Establishing the accelerating revolve of the machine in light of the metal used and size of the part under work and the cutting tool. Preparing the controllers of the machine. Operating the turnery according to the recommendations of the manufacturer. Turnery of external cylindrical surfaces. Parallel and formulation turnery Turnery of internal surfaces using the plotter or the mobile grab or using the turnery machine of smooth surfaces. Calculating and identifying the serration steps and types. Controlling the turnery for the serration process. Preparing the cutting knife to cut the serration. Turnery of decentral surfaces using the four head. Identifying the decentral deviation. Controlling the four head in light of this deviation. Implementing the turnery process. Using the scale such as the ruler and the micrometer of 0.01mm accuracy. Using the measuring watch to examine the cylindrical surfaces. Cleaning and oiling the turnery and the directory paths Storing the parts and tools of scales. Implementing safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Friezing |
| Job | Friezer |
| Reference No. | 131-311-2 |

Job Description:

Working under the general turner. Reads the execution drawings and prepares and services the friezing machines. He implements the processes of leveling using friezing machines and opens channels. Cuts the teeth of straight, spiral and cylindrical serration. Complies with safety rules through:

Reading the execution drawings. Identifying the adequate metal. Identifying the dimensions of the parts prepared for the friezing process. Calculating the final dimensions. Identifying the limits of differentiation (accuracy degree). Using the accurate measures (0.01mm). Selecting and fixing the adequate cutting knife. Identifying the revolving speed in light of the metal and the shape and dimensions of the knife. Preparing the friezing controllers and operating them according to the recommendations of the manufacturer. Opening the internal and external straight channels using the frieze. Identifying the methods of division. Implementing the division using the division head and the different serrations. Opening the spiral channels. Understanding the terms and parts of the straight, spiral and cylindrical teeth and their calculation methods. Calculating the degree (corner) of inclination for the channels, spiral teeth and controlling the table according to the required degree. Connecting the direction bar with division head through the teeth set. Calculating the diameter step or the module and fixing the required knife. Cutting the straight, cylindrical and spiral serrations. Cleaning and oiling the frieze and the direction paths. Arranging and storing the equipment of cutting and scales. Complying with the safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Sharpening |
| Job | Operator of sharpeners and tools |
| Reference No. | 131-412-2 |

Job Description:

Working under the operator of sharpeners (general). Prepares and operates and services the sharpening machines of tools and other flat sharpeners. Implementing the required sharpening processes of the tools. Controlling the degrees of parts. Complying with the rules of safety through:

Identifying the attributes of the metals and their liability for formulation and operation. Reading the executive drawings especially those which reveal the cutting corners of the tools. Preparing and operating and servicing the sharpening machines - straight and the tool sharpeners and the polishing machines according to the recommendations of the manufacturers. Selecting and fixing and preparing and calibrating the flat levels and the corner ones using the sharpeners of flat levels of 0.01mm accuracy. Controlling the cutting edges and the levels and corners of cutting tools using the sharpening machines of tools such as the knives of turneries, friezes, scrapers, drill chisels, ropes and discs of sawing. Identifying the tools of micro length measurement; servicing and maintaining them.

Operating the polishing machines. Smoothing the surfaces to achieve a smoothness degree of 0.005mm. Complying the safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Turnery |
| Job | Turner Assistant |
| Reference No. | 131-213-1 |

Job Description:

Working under the turner or the filer. He cuts and prepares the adequate lengths of the raw materials. He executes the drilling processes and services the tools and accurate scales. He turns the internal and external parallel surfaces. He implements the manual and mechanical serration processes. Services the operation machines. Observe the rules of safety through:

Cutting and preparing the jobs for the turnery process or the filing process using the manual saw or the mechanical one or the fraction disc. Fixing and connecting the part of work on the turnery or the scraper. Examining the straightness. Preparing the controls of the machine. Turning the external and internal surfaces accurately - 0.01 mm. Implementing processes of holing using the turnery or the mobile or fixed drills. Implementing the manual serration processes. Implementing the mechanical serration processes on the turnery with one door. Servicing the micro tools and scales. Sharpening and preparing the parts used in the leveling process; maintaining them. Complying with the safety rules.

Level: semi-skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Freizing |
| Job | Asst. Friezer |
| Reference No. | 131-312-1 |

Job Description:

Working under the friezer. He cuts and prepares the required lengths of raw materials. Services and operates the friezing machines according to the manufacturers' recommendations. Implementing the horizontal and vertical leveling processes. Opening the straight and circular channels. Complying with the safety rules through:

Preparing the parts and cutting them in the adequate lengths using the manual or mechanical saw. Connecting the part on the friezing machine. Selecting and fixing the cutting knife according to the supervisor instructions. Cleaning and oiling the friezing machine according to the manufacturer. Stopping and operating the friezing machines according to the recommendations of the manufacturers. Leveling the horizontal and vertical surfaces using the friezing machines. Opening the straight and circular channels using the friezing machines up to 0.01mm accuracy degree. Cleaning and keeping and reading the microscales. Complying with the safety rules.

Level: semi-skilled

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Operation Machines |
| Profession | Sharpening |
| Job | Operator of sharpening machines - flat/straight |
| Reference No. | 131-413-1 |

Job Description:

Working under the general sharpening machine operator. Prepares and operates and services the sharpening machines and polishers. Implements the straight sharpening operations. Complies with the safety rules:

Identifying the attributes of metals and their liability for formulation and operation. Reading the execution drawings. Specifying the execution steps. Preparing and operating the sharpening machines and polishers of flat levels according to the instructions of the manufacturers. Selecting and fixing the sharpening stones. Calibrating the machine and smoothing the flat levels and corners using the sharpeners of 0.01 mm accuracy. Smoothing the flat levels to achieve a smoothness degree of 0.005mm. Identifying the length scales servicing them and maintaining them. Complying with safety rules.

Level: semi-skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | |
| Job | Mechanical Engineer, Welding |
| Reference No. | 132-011-5 |

Job Description:

Designs welding joints for pure metals and their ingots. Conducts field and practical studies to improve methods and techniques of metal welding. Follows up development of equipment and welding techniques. Assessing the possibility of their use and application. Studying the technical reports of the test results. Making the technical decision. Guiding and directing workers observing the instructions of vocational safety and health.

Studying the work requirements. Studying the nature of welding joints and physical and mechanical and chemical factors. Test metals of joints while observing mechanical and physical attributes of metals. Establishing the method and technique of welding. Establishing the specifications of Welding bars (wires). Examine executive detailed layouts and technical specification lists. Giving order to start execution. Conducting field and lab studies to develop methods used in welding. Following up with the scientific magazines and technical leaflets issued by the manufacturing companies in order to up date his information.

Preparation and issuance of instructions to test welders. Assuring safety and test procedures. Studying the technical reports of welding tests. Taking technical decisions. Studying directories and bulletins of manufacturers to establish regular maintenance. Preparing programs of preventive maintenance for equipment. Examine performance of workers and issue their certificates. Increasing their performance level through regular training.

Solving work and workers technical and management problems in cooperation with parties in charge. Preparing and submitting work reports to such parties. Working on providing means and equipment and clothes of vocational safety. Providing sound healthy conditions on the work site. Participation in preparing and improving instructions and procedures of vocational safety and health.

Level: Specialized

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | |
| Job | Welding Examiner |
| Reference No. | 132-012-4 |

Job Description:

Working under the Mechanical Engineer/Welding. He implements ray tests of bars and joints used in welding. Testing samples of welding joints to assure their mechanical attributes. Preparing technical reports. Observing and applying instructions of professional safety and health.

Operating the x-ray machine of testing welding joints. Operating the testing machine using Gamma ray. Operating the ultra sound machine. Operating the machine to test welding using magnetic field. Doing welding tests using former machines.

Keeping and documenting pictures and records of test. Doing the folding test of welding joints. Testing the endurance of welding joints using the relevant machine. Doing and submitting technical reports to the Welding Engineer to inform of the test results. Exploring the procedures and conditions to operate test machines. Respecting and applying the same. Observing and following up with the execution instructions and safety procedures.

Level: Technician

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | |
| Job | Foreman Welder |
| Reference No. | 132-013-4 |

Job Description:

Working under the mechanical engineer (production or welding). Studying execution plans and specifications. Establishing methods and procedures and techniques of required welding. Follow up with the execution methods of the required production. Assuring the compliance of the production with the adopted specifications. Evaluating the pace of progress in the production in lights of production programs and schedules. Storing bars and welding accessories in a sound manner according to the conditions of the manufacturer. Preparing orders of inputs. Control wastes in time and material. Participating in solving labor and laborers problems. Executing preventive maintenance programs of the workshop equipment. Training subject workers for better performance. Preparing work reports and submitting them. Participating in assessing and analyzing the costs of real production. Observing and applying the basics of professional safety and health through:

Receiving execution lay outs or the job order from the engineer in charge. Studying the execution drawings and specifications and the job order. Establishing the methods and procedures of welding. Establishing the kind and diameters of welding bars as required. Establishing the specifications of welding. Reporting to the engineer in charge and taking his approval to any amendment in the drawings and specifications. Studying the tables and production programs. Distribution of work on the subject workers. Following up with the execution procedures. Observing the effectiveness and operation of raw materials used in the production. Avoiding or controlling waste. Controlling practical conduct of subject workers and maintain sound use of work hours. Solving problems of work and workers in cooperation with the engineer in charge. Studying the preventive maintenance programs. Distributing roles of subject worker. Following up with the execution in light of the set schedule. Establishing the individual training needs for the subject workers and increasing their competence in coordination with the responsible engineer. Preparing and submitting report to the engineer according to the practice followed in this respect. Estimating the production cost and studying the possibility of reducing the costs of production inputs. Observing and following up with the instructions and procedures of professional safety. Level: technician

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | |
| Job | Welder, Combination |
| Reference No. | 132-014-3 |

Job Description:

Working under the Foreman welder or alone. He prepares and operates the welding equipment. Cuts using the flame of Acetylene Oxide. Preparing and operating the arc electrical manual welding machines. Welding steel (iron metal) according to the execution layouts or the job order or the instructions of the foreman welder. Welding cast iron, cutting iron metals using the Acetylene Oxide flame or the usual electrical arc. Observing the instructions of professional safety and health through the following:

Reading the executive drawings to establish the type of required welding and the specifications of the required welding bars and line. Preparing the Acetylene Oxide welding machines. Fixing the gas pressure valves (controllers) on cylinders. Controlling and balancing the welding gases. Examining and fitting the gas hoses. Starting the gas fire and balancing the flame. Welding the iron elements using the Acetylene Oxide in the several positions (land, horizontal, vertical and overhead). Cutting the metal elements using the flame manually. Preparing and operating the arc welding machines according to the manufacturers' conditions. Selecting the type and diameter of required bars. Welding the iron (steel) metal element except for the pipes in several positions. Cutting iron metals using the manual electrical arc. Assuring the compliance with the specifications. Welding cast iron using the acetylene arc with a copper wire. Welding the cast iron with the electrical bar after preheat. Preparing the cast iron welding joints through rolling out. Heating the cast iron using the flame of Acetylene Oxide or in the heating furnaces before welding. Training and increasing the performance of subject workers. Observing and following up with the execution of instructions and procedures of professional safety and health.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | Electric Welding |
| Job | Arc Welder, General |
| Reference No. | 132-211-3 |

Job Description:

Working under the Foreman welder or alone. Preparing and operating the arc electric and manual welders. Preparing and operating the electric arc welder concealed with CO2 gas (mig). Preparing and operating electric arc welding using the Argon (tig). Welding the several iron and non-iron metals, steel ignots in the different positions. Applying the basics and rules of Professional Safety and Health through:

Reading the execution layouts to get an idea about the required welding details. This includes the kind of metal to be welded, specifications of the welding line, specifications of the welding bar. Preparing and operating the electric manual arc welders according to the recommendations of the manufacturing company. Preparing and operating the welding (mig) machines according to recommendations by the manufacturer. Controlling and balancing the specifications of the electric current according to the recommendations of the manufacturer in light of the specifications of the job metal. Setting and operating the tig welders according to manufacturer recommendations. Selecting and fixing the welding wire pulley. Fitting the CO2 hoses ; controlling and balancing the specifications of the electric current , fitting the hoses of Argon Gas. Welding the iron metal in the ground, vertical and horizontal and overhead positions. Welding the cast iron in the several positions. Ignot Steel Welding in the several positions. Welding the aluminum ignots in the several positions. Training and increasing the performance of subject workers. Observing and following up with the rules and instructions of professional safety and health.

Level: Professional.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | |
| Job | Pipe Fitter, Combination |
| Reference No. | 132-015-3 |

Job Description:

Working under the Foreman Welder. He welds the carbonated steel pipes and the ignot steel pipes using the welding machines of the electric arc both in the stable and moving positions. Also, welding the pipes using the flame of Acetylene Oxide. Observing the rules and instructions of professional safety and health through the following:

Preparing and operating the electric arc welders of the changing and flow current and the idle gas welding machine (Tige). Selecting the type and diameter of the adequate welding bar. Reading the execution layouts to establish the specifications of welding. Assuring the erection and absence of projections in the pipes to be welded. Dotting the pipes. Welding the carbonate steel pipes in the stable position according to the specifications. Welding the stainless steel pipes in the fixed and moving positions. Welding the ignot steel pipes in the fixed and moving positions. Preparing and operating the welding equipment using the Acetylene Oxide. Balancing the flame thereof. Selecting the type and diameter of the adequate welding wire. Welding the pipes using the flame of Acetylene Oxide. Observing and following up with the instructions of professional safety and health.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | Gas (Oxygen) Welding |
| Job | Oxygen Welder |
| Reference No. | 132-111-2 |

Job Description:

Working under the Combination welder. Preparing and operating the welding and cutting machines using the Acetylene Oxide. Welding the elements and iron metal parts according to the execution layouts. Cutting and formulating the metal elements using the manual and mechanical starter and in accordance with the execution layout. Observing and applying the rules and instructions of Professional Safety and Health through:

Reading the execution layouts in order to establish the steps and specifications of the required welding. Setting and fixing the operation tools on the working table or on the ground of the workshop. Fixing the controllers of gas and the pressure valves and the welding starter. Balancing the pressure of work for each controller of the oxygen and Acetylene. Starting a mixture of the gas and balancing the flame. Directing the welding bar to the melting area. Controlling the width and thickness of the welding line through controlling the flame movement and the forward of the welding bar. Welding the metal elements according to the specifications. Repairing and fitting the broken or cracked metal elements using the oxygen welding with iron or copper wires. Welding the elements made of cast iron using the copper wire. Filling in the holes and rebuilding (coating) the corrosive metal surfaces. Executing the welding processes in the several positions- ground, horizontal and vertical from lower to top points and vice versa and overhead position. Fixing and selecting the cutting valves, balancing the cutting flame. Implementing the cutting operation in arch and straight lines manually. Setting and operating the cutter machine using the oxygen flame. Sharpening and cleaning the welding lines and cutting using the sharpening electrical mobile stones or using the chisels. Cleaning and servicing the oxygen welding equipment. Executing the instructions and rules of professional safety and health.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | Electric Welding |
| Job | Arc Welder |
| Reference No. | 132-212-2 |

Job Description:

Working under the general welder. Preparing and operating the arc welders (electric/manual). Welding the iron metals (except for pipes) according to the executive layouts or the job order or the instructions of the supervisor. Repairing the broken iron elements by welding. Welding pieces of cast iron. Cutting metal elements using the electric arc and observing and applying the rules and instructions of the professional safety and health:

Examining cables of the welding machine to assure that they are in good condition and free of tear and wear. Operating the welding machine according to the recommendations of the manufacturing company. Selecting and balancing the value of the welding current. Joining the earth connection with the operation piece. Reading the execution layouts or the welding instructions to specify the welding specifications and the kind of the welding bar. Selecting the kind and diameter of the welding bar and fixing it in the holder. Generating the electric arc in the adequate length for the welding job in the ground position observing the specifications of the welding line. Executing the vertical welding process from lower to upper and vice versa. Executing the welding process in the horizontal and overhead status. Examining the broken parts to specify the method and kind of the necessary supply for the welding line in sharpening. Executing the welding process. Welding the cast iron after setting the joint without preheat observing necessary cautions. Heating the cast iron pieces toward welding using the gas heating valves or heating furnaces. Implementing the process of cast welding after heating. Cutting the metal excessive using the usual electric arc. Implementing the rules and instructions of the professional safety and health.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | Electric Welding |
| Job | Pipe fitter (welder) |
| Reference No. | 132-213-2 |

Job Description:

Working under the supervision of the general welder. Welds the carbonated steel pipes and in the fixed and movable positions using the welding machines with the electric arc. Observing the rules and instructions and bases of professional safety and health through:

Setting and operating the electric arc welders of the continuous and changing electric current. Selecting the kind and diameter of the adequate welding arc. Reading the execution drawings to establish the welding specifications. Welding the steel pipes in the fixed position according to the specifications. Sharpening and cleaning the welding line. Fixing the pipes on the revolving connection machine. Implementing welding process according to specifications. Implementing the rules and instructions of professional safety and health.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | Gas welding |
| Job | Assistant Welder |
| Reference No. | 132-112-1 |

Job Description:

Working under the oxygen welder. Setting and operating the Acetylene oxide welding equipment. Welding iron metals up-to 5 mm thickness in the ground and horizontal position. Sharpening and cleaning the welding lines using the mobile electric sharpening stones. Observing and applying instructions and rules of professional safety and health:

Fixing the work parts on the working table or the ground. Dotting the work parts. Selecting the welding wire. Fixing the gas controllers on the cylinders. Transporting and handling cylinders in a safe and sound method. Examining gas hoses. Fixing them and providing them with controllers and from one end and with the welding starter on the other end. Starting and balancing the welding flame. Executing the welding process in the ground position and horizontally for the iron sheets less than 5mm thickness. Cleaning and sharpening the welding line using the sharpening stones, wire brushes, and chisels. Executing and following up with the instructions and procedures of professional safety and health. Rearranging the work site.

Level: semi skilled (of limited skills).

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | Electric Welding |
| Job | Asst. Electric Welder |
| Reference No. | 132-214-1 |

Job Description:

Working under the electric welder. Setting and operating the arc electric welders. Iron welding in the ground position up to 10mm thickness. Sharpening and cleaning the line and area of welding. Cleaning and arranging the work site. Observing and applying the bases and instructions of professional safety and health through:

Implementing the instruction of the direct boss. Setting and operating the electric arc welders (manual) according to the instructions of the supervisor. Setting the electric arc welder. Reporting to the Supervisor in case of any defects in operation. Selecting the diameter of the welding bar. Fixing the welding ignot (bar) in the holder. Connecting the earth holder with the work piece or the metal welding table. Fixing the welding fixture. Chiseling and cleaning the metal surface which has been welded. Arranging the welding cables and accessories. Cleaning the work site. Dotting the work piece with welding according to the instructions of the supervisor. Implementing the rules and instructions of safety.

Level: semi skilled (limited skills)

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Welding |
| Profession | Electric Welding |
| Job | Operator of an automatic electric welding machine |
| Reference No. | 132-215-1 |

Job Description:

Working under the supervision of the general welder or the electric combination welder. Setting the welding machine according to the instructions of the foreman. Fixing the work pieces on the welding machine. Operating the welding machine according to the instructions of the supervisor. Monitoring the machine performance and reporting to the supervisor in case of any defect in the operation. Observing and applying the rules of professional safety:

Examining the powder containers of welding and refilling them as necessary. Fixing the welding wire-roll according to specifications. Balancing the controllers of the machine according to the instructions of the supervisor. Fixing the pieces to be welded on the machine platform. Directing the powder sprayer to the specified place. Operating the machine and welding. Stopping the machine. Dismantling and cleaning the welded pieces. Cleaning and servicing the machine according to the instructions given by the supervisor. Implementing rules of safety.

Level: semi-skilled (limited skills).

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | |
| Job | Mechanical Engineer - Production |
| Reference No. | 133-011-5 |

Job Description:

Planning and organizing the casting workshop. Follows up with the development in machines and tools and methods of casting and melting iron and non-iron metals. Studying or preparing the designs and layouts of the required production. Specifying the specifications and quantities and portions of the inputs of production. Identifying the attributes and specifications of the modules and melting pots. Prepares and schedules the production programs. Quality control of the product. Preparing the maintenance programs for the assets of the workshop. Following up with the necessary raw material provision. Directing the subject workers. Establishes the problems of work and workers. Complying with the bases and instructions of safety:

Identifying the attributes and specifications of melting furnaces. Identifying the attributes and specifications of the transportation means and circulation of melting metals. Identifying the attributes and specifications of the grinders of casting sand. Identifying the attributes and specifications of the pressing machines and the sand molders. Identifying the die casting machines. Specifying the spatial and basic services of each element in the equipment of the casting workshop. Preparing the layouts of machine distribution. Following up with the technical bulletins issued by the manufacturers for the supplies of metal melting and casting machines. Developing the equipment of the workshop observing the economic feasibility. Studying the designs and execution drawings of the production parts to specify the attributes and specifications of the product and the best execution methods. Modifying the engineering designs to cope with the production requirements, specifying the attributes, specifications and material of patterns and molds. Quality assurance using testing tools. Studying and ratifying the orders of raw materials and following up with their provision. Controlling wastes in time, effort and material. Studying the directories of manufacturers. Preparing the preventive maintenance programs according to the recommendations of manufacturers. Following up the maintenance programs. Locating bottlenecks and diagnosing their reasons and solutions. Taking necessary steps when needed. Locating and diagnosing work and worker problems. Solving them. Respecting the by-

laws of the working party. Taking administrative measures with the subject workers according to by-laws.

Providing safety means and clothes. Providing sanitary conditions of work on work site. Participating in the preparation and development of instructions and methods of professional safety and health.

Level: Specialized.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Casting |
| Job | Foreman Metal Casting |
| Reference No. | 133-111-4 |

Job Description:

Working under the mechanical engineer/cast . Studies the execution layouts and specifications. Examines raw materials and assures their compliance with the production conditions. Examines products to assure compliance with specifications. Participates in preparing schedule and execution program. Participating in preventive maintenance programs. Controls wastes. Follows up with the readiness of equipment and machinery. Supervises and coordinates activities of subject workers and trains them. Complies with safety instructions through:

Studying execution drawing and specifications to identify the nature and scales of product. Specify the production scales of product. Specify the production and operation steps. Specify raw material as production inputs. Studying the execution program and schedules. Examining raw materials and mixture ingredients of melting charge. Examining models and molds. Following up procedures of metal cast. Specifying steps and methods of product operation after casting such as cleaning, emery with sand, turnery and formulation. Coordinating with the foremen of formulation workshop. Testing the scales and specification compliance. Sharing with the responsible engineer in preparing the production programs and execution tables. Sharing with the Engineer in charge in preparing preventive maintenance programs. Executing equipment and tolls used in production processes. Quality assurance. Controlling wastes in materials, energy, equipment and time. Distributing works on subject workers and assessing their productivity. Establishing individual training needs of subject workers.

Complying with safety rules and instructions.

Level: Technician.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Thermal Treatment |
| Job | Lab Technician - Metal Thermal Treatment |
| Reference No. | 133-211-4 |

Job Description:

Working under the Metal/Cast Engineer. Prepares and operates the tools and equipment of testing the mechanical and physical attributes of the metals. Testing these attributes. Follows up with the preparation of test samples. Executes preventive maintenance programs according to the recommendations of the manufacturer. Prepares and submits technical reports on the test results. Complies with safety rules through:

Operating the photo machines. Developing and prints the microscope pictures of the metals. Operating the photo machines of the metal sectors using x-rays and Gamma rays. Operating the testing machines in the magnetic field to discover cracks and cells in the metal sectors. Implementing such tests. Testing the crystal structure of metals. Testing the homogeneity of internal structure. Operating the set of testing pressure and flexibility and solidity. Implementing such tests. Assuring the preparation of test samples according to the general rules and conditions. Studying the requirements of preventive maintenance and servicing of the testing and photo sets in light of the manufacturer's recommendations. Preparing and implementing programs of maintenance and service of tests. Preparing a technical report on the results of test. Documenting the reports and results. Complying with safety rules.

Level: Technician.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Casting |
| Job | Molder |
| Reference No. | 133-112-3 |

Job Description:

Working under the casting foreman. Prepares and produces sand molds of metal casts. Fixing and supporting the core. Preparing the casting and ventilation outlets. Wiping the molds either manually or drying furnaces. Maintaining permanent molds after removing the casts. Observing and applying safety rules:

Specifying number of casts needed in light of pattern size and supervisor instructions. Preparing casting sand according to the instructions of the supervisor.

Preparing and producing the casting (foundry) molds of one piece. Fixing and supporting the core. Preparing and producing the Multi part foundry mold. Sifting, spraying and pressing the casting sand around the pattern using the sieve, trowel, pressing tools. Leveling internal surfaces of the mold using manual brushes. Locating the size and size of casting and ventilation outlets in light of the foreman instructions.

Cutting and opening the casting and ventilation outlets. Examining the mold and repairing cracks. Complying with the safety rules.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Casting |
| Job | Coremaker |
| Reference No. | 133-113-3 |

Job Description:

Working under the casting foreman. Reads the execution drawings to identify the scales and specifications of the core. Prepares the core box. Prepares the core sand. Prepares the supporting cables. Pouring and pressing sand. Removes the core from the boss. Repairs the cracks and destruction. Dries the core using the dryer furnace. Complies with safety rules:

Receiving execution drawings and technical specifications from the foreman in charge. Locating the nominal dimensions. Specifying the required core. Specifying work method. Selecting and cleaning the core box. Preparing the core sand. Spreading the separation sand. Spreading sand and fixing supporting wires according to specifications. Pressing sand wither with hand or manual hammers or vacuums. Removing excessive sand. Turning the core on a metal rack. Removing the core from the boss. Repairing cracks and destruction. Drying and roasting the core in the dryer furnace. Roasting for more solidity. Painting the core using the blackening paint (separation). Storing the core. Complying with safety rules.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Thermal treatment of metals |
| Job | Assistant Lab technician/Thermal treatment |
| Reference No. | 133-212-3 |

Job Description:

Working under the lab technician. Prepares the test sample. Operates and services the heating furnaces. Implements thermal treatments of metals according to the instructions of the lab technician. Complies with safety rules through:

Cutting the test sample. Sharpening the test sample using the tools and machines of manual sharpening. Preparing , Operating and servicing the polishing machine. Polishing the test sample. Numbering the test sample. Operating the heating furnaces. Controlling the equipment of temperature and time of operation. Implementing the hardening process according to the instructions of the Lab Technician. Implementing the process of heat revision according to technician instructions. Cleaning and servicing the heating furnace. Cleaning and servicing the cooling liquid. Complying with safety rules.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Casting |
| Job | Mold caster |
| Reference No. | 133-114-2 |

Job Description:

Working under the cast foreman. Prepares, operates and services the casting machine in metal molds to produce iron and non iron casts. Transports melting metal into the metal molds in the machine. Operates and calibers the cooling system. Removes casts from molds. Recleanes and connects metal molds. Observes and complies with the safety rules:

Preparing the pouring machine in metal molds. Operating the machine according to the manufacturer's instructions. Cleaning and oiling the pouring machine. Dismantling and connecting and cleaning the metal molds. Transporting the melting metal using the crucible safely. Scraping excessive and impurities from the melting metal surface. Pouring the melting metal in metal molds in adequate quantities. Operating the water and air cooling system Balancing the flow of cooling liquid and controlling cooling time. Stopping the machine. Driving screws from molds. Removing casts and testing cracks or distortions. Cooling the casts. Studying the methods to solve problems. in cooperation with the foreman. Cleaning the molds after finishing work. Complying with safety rules.

Level: Skilled

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Casting |
| Job | Metal Pourer |
| Reference No. | 133-115-2 |

Job Description:

Works under the casting foreman. Transports the melting metal load using manual crucibles or overhead lifts to the casting site. Scraping the excessive and impurities from the surface. Pouring the melting metal in sand molds according to adequate quantities.

Removes the casts from sand molds. Complies with safety rules:

Specifying the quantity of melting metal adequate for required casts. Selecting cleaning and heating the crucible. Filling and transporting the crucible from the melting furnace manually or using the overhead lift in a safe and sound manner. Scraping the executives and projections manually. Inclining the crucible in preparation for pouring. Pouring the melting metal in the sand mold while assuring non-freezing of this metal before completion of filling into the sand mold. Assuring the total freezing and reaching adequate temperature to be removed. Removing the cast from the sand mold observing not destroying it. Testing the casts in search for defects. Solving them. Complying with safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Casting |
| Job | Assistant Caster |
| Reference No. | 133-117-2 |

Job Description:

Working under the caster. Cleans and sharpens the iron and non-iron casts. Cleans the crucibles of melting metal. Cleans and arranges the tools and the work site. Complies with safety rules through:

Cleaning the casts from sand and metal crests using the manual and mechanical wire brushes. Sharpening the excessive of casts using the manual sharpening stones or the cutting chisels. Cleaning and smoothening the casts using the pressed sand current. Cleaning the crucibles from the residuals of the melting metal and impurities. Storing the crucibles. Cleaning and storing the working tools. Cleaning and arranging the work site. Complying with safety rules.

Level: semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Casting |
| Job | Operator of Metal Melting Surfaces |
| Reference No. | 133-116-1 |

Job Description:

Working under the cast foreman. Prepares and operates and services the furnace of metal melting (electrical or working on liquid fuel). Prepares the charge of the furnace according to the instructions of the foreman. Adds the melting aids in stipulated portions. Monitors the performance of the furnace and metal melting process. Removes the layer of impurities and excessive. Unloading the melted metal into the crucibles. Complies with safety rules through:

Studying the instructions and portions of the charge mixture ingredients. Examining these ingredients to assure their compliance with specifications. Examining the control elements of furnace operation. Preheating the furnace before charging. Charging the furnace as stipulated. Monitoring the performance and the temperature of the furnace. Adding the elements that aid the melting process in specified amounts. Monitoring the color of the melting metal. Removing the layer of impurities. Unloading the melting metal into crucibles. Cleaning the furnace. Servicing its utilities and accessories. Servicing the system of the liquid fuel. Complying with safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Thermal Treatment |
| Job | Black Smith |
| Reference No. | 133-213-1 |

Job Description:

Working individually or under supervision. Prepares and operates the blacksmithing smelting furnace. Heats the pieces of works. Formulates the works using manual hammers. Operates mechanical hammers. Formulates hot pieces of work with mechanical hammers. Complies with safety rules through:

Preparing the smelting furnace and coal. Operating the furnace. Heating the pieces of work. Differentiating the temperatures using the symbols of color. Selecting the handling tongs. Formulating the pieces of work using the hammers and manual cutters. Selecting adequate cutters for formulation such as stripping, welding and shortening. Operating the mechanical formulation hammers. Implementing the formulation process of heated pieces using the mechanical hammers. Servicing and cleaning and storing the tools and equipment of work. Complying with safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Casting and Thermal treatment |
| Profession | Casting |
| Job | Assistant Furnace Operator |
| Reference No. | 133-118-1 |

Job Description:

Working under the Furnace Operator. Prepares the elements of the furnace charge according to the instructions by the Operator. Loading the furnace as stipulated. Removing and collecting impurities. Cleaning the outlets of pouring and impurities flow out. Complying with safety rules through: Crushing cast scraps. Operating the handling trolley. Loading the furnace according to the instructions by the Operator. Removing and collecting impurities and excessive to the collecting place. Examining the store of fuel. Handling fuel when necessary. Cleaning the furnace and the flow channels of melting metal and impurities. Sharing in transporting the crucible of melting metal to the site of casting. Complying with safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | |
| Job | Engineer/Metal Constructions |
| Reference No. | 134-011-5 |

Job Description:

Working individually or under supervision. Designs and follow up the implementation and assembly of metal constructions. Studies the specification of metal sheets and sectors and their operational attributes. Studies the machines and equipment of formulation and operation and their production capacities. Studies the equipment of assembly and their production capacities. Prepares the programs of production execution in the workshops. Follows up with the compliance with specifications. Prepares the execution program of assembly on site. Complies with safety rules through:

Studying the specifications of sheet iron and aluminum sectors and steel using the standard tables. Examining their availability on the local market. Identifying the operational and physical and chemical attributes of steel sectors and sheets. Designing the metal construction according to the engineering rules while observing the functional dimension of the enterprise. Checking the execution engineering drawings. Preparing the lists of quantities and specifications. Preparing the time table of execution. Following up with the procedures of production execution. Assuring compliance with specifications. Assuring the production progress according to the scheduled time table. Adopting necessary procedures. Preparing the transportation priority list to the site of assembly and construction. Following up the assembly procedures according to the specification and time table. Organizing and developing the production workshops. Preparing the maintenance programs according to the specifications and the time table. Organizing and developing the production workshops. Preparing the programs of machinery maintenance and following up with the same. Providing safety clothes and means. Providing sanitary conditions on work site. Participating in preparing and developing the safety rules and complying therewith.

Level: Specialized.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | |
| Job | Foreman/Metal Structures Formulation |
| Reference No. | 134-211-4 |

Job Description:

Working alone or under the metal structures engineer. Supervises the subject workers. Coordinates and directs their activities. Studies the execution layouts. Specifies the quantity and quality of raw materials required for the production. Prepares the purchase order. Tests the production to assure its compliance with the layouts and specifications. Executes the maintenance programs of equipment. Trains and increases the level of performance of the subject workers. Complies with the safety rules through:

Studying the production targets. Studying the production capacity of the workshop and subject workers through identifying the available potentials and capacities. Participates in the execution programs. Draws detailed plans for production. Specifies the machinery and labor force and raw materials required for the job order. Controls wastes in raw materials. Directs the workers in a manner to service the production process. Solves the technical problems facing the subject workers. Evaluating the progress in implementing the production programs. Quality control of the production and assuring the specifications and dimensions. Avoiding bottlenecks. Studying the preventive maintenance programs for the equipment of the metal structures workshop such as the welders, cutters, benders and perforators and others. Assuring the readiness and sound use of such machines. Increasing the performance level of subject workers perpetually. Complying with safety rules. Preparing and submitting the progress reports.

Level: Technician.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Metal Construction |
| Job | Foreman of Metal Construction Assembly |
| Reference No. | 134-212-4 |

Job Description:

Working under the metal construction engineer. Studies the execution drawings and participates in the execution plan preparation. Follows up with the implementation and supervision. Recommending to the responsible engineer any amendments he deems as adequate. Solving the administrative and technical problems of the subject workers. Participating in the delivery of the project. Specifying the training needs for the subject workers and providing them with the same. Complies with safety rules through:

Studying the execution drawings. Participating in the execution plan. Receiving parts and the manufactured elements of the project. Supervising their fixing. Investigating their flatness and sound erection using the required sets. Recommending to the responsible engineer any amendments to the execution drawings or the execution plan. Specifying the types and specifications of tools and equipment necessary for fixing and providing them on the work sites. Distributing jobs on the several sections. Explaining the duties of each section or subject worker. Following up the same. Solving administrative and technical problems of subject workers. Participating in the project delivery. Specifying training needs. Writing follow up reports about them. Complying with safety rules.

Level: Technician

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Construction black smithing |
| Job | General Construction Black Smith |
| Reference No. | 134-111-3 |

Job Description:

Working alone. Specifies the measures of windows and metal doors. Specifies the specifications and estimates the quantities of metal sectors necessary. Identifies the execution method and production. Follows up with the production and compliance with specifications. Supervises the assembly and construction of metal windows and doors on the work site. Complies with safety rules through:

Identifying the measures of doors and windows depending on the architectural drawings. Takes the measures of doors and windows for the cement and stone walls as executed in practical. Identifying the specifications of metal sectors from the architectural details or according to the job order. Estimating the quantities of the several sectors involved in the process of manufacturing such as the fascine, pressurized and aluminum. Establishing the method of production and equipment required therefor. Preparing the material according to the required quantities. Distributing work on subject workers. Following up with the production stages from planning, cutting, formulating, to assembling using welding or screws or riveting in light of the architectural details. Supervising the fixing process of metal windows and doors in their positions and their operation. Estimating the costs of production. Operating the electric arc welders. Operating manual arc welding of iron in the ground position. Preparing and operating the friezing machine. Opening the channels and holes of the aluminum sectors. Preparing and operating the fiber machine and the saw cutter of the aluminum sectors. Observing and complying with the safety rules.

Level: Professional

| | |
|-------------------|--------------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Metal Construction |
| Job | general blacksmith- formulation of metal constructions |
| Reference No. | 134-213-3 |

Job Description:

Working under the foreman - metal construction formulation. Reads the execution drawings. Identifies the shapes, specifications, symbols and terms of screws, rivets...etc. Identifies the shapes and codes of the steel sectors - plans and tailors sheets and steel sectors and prepares the same for formulation. Uses the manual and electric arc welders in the ground and vertical positions. Uses the cutters and several formulating sets. Uses the Oxi- Acetylene set in cutting processes. Complies with safety rules through:

Reading the execution drawings and explaining them. Identifying the shapes, scales and symbols of the steel sectors used in the metal constructions. Identifying the shapes and specifications and codes of screws and rivets and the method of use. Planning and tailoring the sheets and steel sectors and preparing the same for formulation. Using the cutters such as the metal sheet cutters and mechanical saws. Using the oxi-acetylene set (manual and electric) in cutting the metal sheets and sectors. Mastering welding in the ground and vertical positions using the manual electric arc welders. Preparing and operating and using the machines of bending, perforating and holing. Bending and formulating the steel sectors using the heat and hammering. Complying with the safety rules.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Construction blacksmithing |
| Job | Construction Black smith |
| Reference No. | 134-112-2 |

Job Description:

Working under the construction general blacksmith. Tailors , formulates , assembles and fixes metal doors and windows. Prepares and operates the electric arc welders. Prepares and operates the cutters friezers, drillers and perforators. Complies with the safety rules through:

Selecting and preparing the fascine steel sectors and pressurized and aluminum. Testing the flatness of metal sectors and amending the same. Cutting the steel fascine sectors using the fiber saw. Cutting the aluminum sectors using the disc saw. Separating the metal sectors using the required splitter. Bending the metal sectors according to the scales and specifications. Preparing and assembling the fascine windows of fixed, mobile and reversing parts . Preparing and assembling the fascine doors of the one part and multi parts (panels)/ Preparing and assembling the metal pressed and railing and lateral and upper doors using the electric arc welder, screws and riveting. Operating the fixed and mobile electric drills. Operating the overhead friezing machine. Friezing the steel sectors. Implementing the riveting process using the riveting bender. Using the perforating pressures. Preparing and assembling the protection window. Fixing the metal doors and windows in positions according to the specifications. Complying with safety rules.

Level: Skilled

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Metal Construction |
| Job | Metal Construction Black smith |
| Reference No. | 134-214-2 |

Job Description:

Working under the general metal construction blacksmith. Reads the execution drawings. Identifies the shapes and measures of the steel sectors. Identifies the shapes and specifications of screws and rivets and uses them in joining the metal constructions. Uses the cutters and oxi-acetylene set. Masters welding with the electric arc welder. Complies with the safety rules:

Reading the execution drawings. Measuring the dimensions of the prepared parts and formulated to assure their convenience to the enterprise. Identifies the shapes and measures of the steel sectors. Identifies the shapes and types of the metal sheets. Using the mechanical cutters such as the metal sheets cutters and the mechanical saw and the fiber saw. Using the oxi-acetylene set (manual and electric) Mastering the welding process. Identifying the specifications of screws and their uses in fixing processes. Identifying the shapes and specifications of rivets to be used in fixing the metal sheets. Formulating the bases of poles and formulating the poles and girders according to specifications. Using the benders, perforators and key hollers.. Complying with the safety rules.

Level : Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Metal Construction |
| Job | Metal Structures Constructor |
| Reference No. | 134-215-2 |

Job Description:

Working under the foreman - metal constructions. Prepares the bases of poles. Fixes the poles and girders. Connects the same and fixes them. Assures their balance and erectness. Participates in the processes of lifting the metal constructions. Fixing the ceilings and heat insulation of them. Welding in the ground position with the arc welder. Complies with the safety rules:

Reading and explaining the execution drawings to specify the details of assembly and connection. Fixing screws in concrete bases.. Fixing the poles on the bases and assuring their caliber. Fixing the girders and assuring their erectness. Connecting and fixing the girders and poles using the screws or rivets or welding drops with the arc welder (electric). Fixing fitters. Fixing the metal ceiling and fixing them with screws and tighteners. Manual arc welding. Using the oxi-acetylene sets for cutting the sectors and sheets. Using manual tools of chisels, sawing, sharpening and holing. Also the tools and equipment of mantling and dismantling. Complying with the safety rules.

Level: Skilled

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Painting |
| Job | Metal Construction |
| Reference No. | 134-311-2 |

Job Description:

Works alone or under the metal construction engineer. Specifies the steps of execution and required timing. Identifies the specifications and attributes of required paint. Establishes the amount of required paint. Prepares the surface for painting. Prepares the painting mixture and implements the painting process. Complies with safety rules:

Specifying the execution steps and timing for each. Identifying the specifications and attributes of paint such as the base paint, heat resistant paint and chemical proof paint....etc. Establishing the quantities of paint required for the process. Preparing the paint using the adequate solvents and the portions of mixtures. Mixing the colours and establishing the portions of mixtures and preparing the metal surfaces using the manual wire brushes. Using the sharpening stone to remove the metal residuals. Chemical cleaning through soaking the pieces to be painted in basins with adequate chemicals. Using adhesives and painting using the manual and electric tools or vacuum tools. Implementing the heat resistant painting such as porcelain painting. Drying in the furnaces. Complying with the safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Construction blacksmithing |
| Job | Fascine blacksmith |
| Reference No. | 134-113-1 |

Job Description:

Working under the construction blacksmith. Cuts and formulates and assembles and fixes the doors and windows made of fascine and pressurized iron. Operates the electric arc welds. Welds the fascine sectors in the ground position. Prepares and operates the fiber cutter. Fixes knobs, lockers and hinges. Complies with the safety rules through:

Cutting the fascine sectors using the fiber cutter according to the stipulated lengths. Splitting and bending the fascine sectors according to the required shape. Cutting and fixing the sheet iron layers on the fascine sectors through welding, screws and rivets. Assembling the fascine windows of the one panel and multi and reverse panels./ Preparing and assembling the pressurized fascine doors of the one panel, multi and reverse. Preparing the directory rails of lateral railing doors and upper doors according to the specifications. Fixing and constructing the railers. Constructing and fixing the door and window frames using the chisels, screws or nail caster. Fixing doors and windows in their positions and in a sound and safe manner. Preparing, assembling and fixing the protection networks. Fixing the hinges, knobs and lockers. Complying with the safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Construction blacksmithing |
| Job | Aluminum Black smith |
| Reference No. | 134-114-1 |

Job Description:

Working under the construction blacksmith. Cuts and formulates and assembles doors and windows made of the aluminum sectors. Prepares and operates the splitter and perforators. Prepares and operates the disc saw or other saws to cut the aluminum sectors. Complies with the safety rules through:

Preparing and operating the disc saw to cut aluminum sectors. Preparing and operating the metal disc saw. Cutting the aluminum sectors according to specified lengths. Assembling the frame of the window or the door using the riveting bender according to the shapes and angles. Friezing the aluminum sectors using the overhead friezing machine. Perforating and holing the aluminum sectors using the perforator pressures, manual and electric drills. Assembling panels of windows and doors using riveting. Fixing glass sheets and ribbons. Fixing the frames in positions. Fixing the panels. Fixing the hinges, knobs and lockers. Operating and examining the performance of doors and windows. Filling in the gaps between the frame and walls using the adequate filling material. Complying with safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Metal Construction |
| Job | Assistant Metal Structures Constructor |
| Reference No. | 134-216-1 |

Job Description:

Working under the Metal structures constructor. Shares in the preparing the bases of poles. Fixes the poles and girders and joins them according to the direct boss instructions. Shares in fixing the ceilings and their insulation. Uses the manual tools . Complies with safety rules:

Fixing the poles on their bases and connecting them. Fixing the metal girders connecting them with screws and rivets. Sharing in fixing the metal ceilings and their heat insulation. Handling tools and fixture aids in a sound manner. Selecting and using the manual cutters such as the manual saw and chisels. Selecting the sharpening sets and holing. Complying with safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Metal Structures |
| Profession | Painting |
| Job | Assistant Metal Painter |
| Reference No. | 134-312-1 |

Job Description:

Working under the metal painter. Implements the basis painting before the final process of painting. Complies with safety rules:

Implementing the basing painting process under the supervision of the metal painter. Cleaning the surfaces from rust, dirt, oils and lubricants. Uses the adequate emery (sand paper) and the disc and manual wire brushes. Implementing the adhesive process and smoothening the adhesived surfaces using the sand papers. Implementing the base painting layer. Implementing the painting process using the brush. Solving paints in adequate solutions under the supervision of metal painter. Complying with safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | |
| Job | Mechanical Engineer, Metals |
| Reference No. | 135-011-5 |

Job Description:

Working alone or under supervision. Designs and follows up with the implementation and fixing of the iron sheet works industrial and metal furniture. Studies the specifications of the iron sheets and their operational attributes. Studies the machines and sets of iron sheet formulation and their production capacities. Studies the methods of assembling and fixing the elements of the iron sheet works. Prepares the execution and production and maintenance programs. Follows up their execution. Complies with the safety rules:

Studying the specifications of the iron sheet and steel sheets from the standard tables. Investigates their availability on the local markets. Identifies the operation attributes of the iron sheets. Prepares the preliminary designs of the iron sheet works (industrial and furniture). Observes the engineering practices and the functional and economic dimensions. Checking the engineering execution drawings. Preparing the lists of quantities and specifications. Preparing the execution programs and issuing the job orders. Following up the execution methods. Assuring their compliance with the specifications and taking amendments when necessary. Organizing and improving the equipment of production workshops and coping with the technical developments in machinery and production methods. Preparing the maintenance programs according to the manufacturers instructions. Complying with the safety rules.

Level: Specialized

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | House metal furniture |
| Job | Foreman, Metal Furniture Production |
| Reference No. | 135-111-4 |

Job Description:

Working alone or under the production engineer. Studies the execution layouts or the job order to specify the specifications of the required metal works. Specifies the method and steps of work. Prepares the production programs. Controls the wastes. Quality assurance. Shares in the calculation of costs and the preparation of the regular maintenance plan. Increases the performance level of the subject workers. Complies with the safety rules through:

Receiving the job order or the execution drawings. Studying the same to establish specifications of final product. Specify production inputs. Specify the work method and the production steps and the necessary machines. Prepares the execution programs. Distributing jobs on the subject workers. Follows up the procedures of execution and waste control. Examining the quality of production. Sharing in calculating the direct costs. Planning the regular maintenance of the workshop equipment and following up with the same.

Complying with safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | Industrial Tin Works |
| Job | Draftsman |
| Reference No. | 135-211-4 |

Job Description:

Working under the Mechanical Engineer/Metals. Prepares and copies the engineering execution drawings of the industrial tin works. Participates in taking real measure on the fixing spot. Complies with the safety rules:

Reading the preliminary drawings of the production. Preparing the execution layouts according to the basics of engineering drawing using the drawing tools. Drawing the engineering specifications of the complete and sectional cylinders and the cones and pyramids and the bases and boxes of chimneys. Drawing the real shape of the meeting points of the engineering objects. Drawing the several dimensions that help in the process. Drawing the details of joints and connections. Inking the drawings copying them. Storing and maintaining the execution drawing panels. Participating with the engineers in taking real measures. Complying with the safety rules.

Level: Technician.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Tin Works |
| Profession | Industrial Tin Works |
| Job | Foreman of Tin Works |
| Reference No. | 135-212-4 |

Job Description:

Working alone or under the mechanical engineer - metals. Studies the execution drawings and specifications. Identifies the methods and techniques of execution. Follows up with the execution procedures and assessing them. Controls the wastes. Provides training for subject workers. Participates in the cost estimates and implementing the maintenance programs according to the manufacturer's instructions. Complies with the safety rules:

Studying the execution layouts. Job orders and establishes the specifications and quantities of material inputs in the production. Identifying the method of execution and the machines and tools to be used. Distributing jobs on the subject workers. Assuring quality control. Participating in preparing the preventive maintenance programs. Following up their implementation. Specifying training needs. Complying with the safety rules.

Level: Technician.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | House Metal Furniture |
| Job | Metal Furniture Blacksmith |
| Reference No. | 135-112-3 |

Job Description:

Working under the foreman - metal furniture production. Reads the execution drawings of office furniture and closets made of iron sheet. Prepares the production inputs. Prepares the machines and cutters of iron sheets. Joining and connecting the iron sheets using mechanical methods or welding. Selecting and fixing the accessories of metal furniture. Complies with the safety rules:

Establishing the measures of the furniture pieces and their formulation method. Specifies the raw materials according to the execution drawing. Selecting the type and measures of raw materials as required. Planning the iron sheets according to the required measures. Preparing and operating the iron sheet cutter (mechanical and electric). Preparing and operating the mechanical or electrical bender. Preparing and operating the manual and electric iron sheet roller. Joining pieces with screws and rivets. Preparing the drop welders. Preparing and operating the oxi-acetylene sets. Welding thin layers up to 1.5 mm in all positions. Operating the Tungsten welders. Welding the layers of stainless iron sheets. Selecting and fixing knobs and lockers, pulleys, and railers..... Complying the rules of safety.

Level: Professional.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Tin works |
| Profession | Industrial Tin Works |
| Job | General Tinsmith |
| Reference No. | 135-213-3 |

Job Description:

Working under the Tin works foreman. Reads the execution layouts. Prepares the formulation tin. Prepares and operates the formulation machines. Cuts the thick tin sheets using the oxi-acetylene flame, Welds thick tin using the electric arc. Complies with the safety rules:

Preparing the pattern. Planning the details on the tin sheets according to the required details. Specifying the attributes and specifications of the required production. Selecting the required tin. Planning the tin according to the required shape. Reducing the wastes. Preparing and operating the cutters (electric). Rolling the tin for formulating the cylinders and cones. Preparing and operating the tools of cutting using the oxi-acetylene. Preparing and operating the oxi acetylene cutter. Doing the cutting processes. Formulating the tin using the oxi acetylene and heating and manual hammer or press. Complying with the safety rules.

Level: Professional.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Tin works |
| Profession | Pipe Tailoring |
| Job | General Pipe Fabricator |
| Reference No. | 135-311-3 |

Job Description:

Working alone or under the foreman. Reads the execution drawings. Prepares the pattern of planning the pipes for formulation. Cutting the pipes using the arc welder of carbon poles of oxi acetylene flame. Joining the branches and drop welding them. Complies with the safety rules:

Reading the execution drawings to specify the type and shape of the required branches. Drawing the real shape of the joining surfaces among the branches. Preparing the pattern of pipes. Planning the pipes using the pattern. Preparing and operating the cutter using the electric arc of carbon poles. Preparing and using the cutters of oxi acetylene. Cleaning the cutting lines. Joining the branches of the pipes according to specifications. Fixing the joints with the drop welding by the electric arc welder. Using scales for measuring the dimensions. Complying with the safety rules.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | House Metal Furniture |
| Job | Metal Furniture Blacksmith |
| Reference No. | 135-113-2 |

Job Description:

Working under the general metal furniture blacksmith. Selects and prepares the iron sheets according to the specifications and instructions of the foreman. Prepares and operates the iron sheet cutters. Joins the iron sheets using the mechanical methods. Fixing accessories. Complies with the safety rules:

Specifying the measures and specifications of the raw materials of the execution layouts according to the instructions of the responsible person. Choosing the type and measures of iron sheets. Planning the iron sheets according to the measures or the form prepared by the general blacksmith. Preparing and operating and servicing the manual, mechanical and electric cutters. Preparing and operating and servicing the mechanical or electrical benders. Implementing several bending processes. Operating and preparing the iron sheet rollers (mechanical and electrical). Implementing the several rolling processes. Selecting the screws and rivets as required. Preparing and operating the drop welder - mobile and fixed. Welding thin iron sheets using the oxi-acetylene welders. Fixing the accessories. Complying with the safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Tin works |
| Profession | Industrial Tin Works |
| Job | Tinsmith |
| Reference No. | 135-214-2 |

Job Description:

Working under the Tinsmith (general). Prepares the tin sheets for formulation. Prepares and operates the formulation tools. Formulates tin according to the requirements. Connecting the industrial works using the mechanical methods and the electric arc welder. Complies with the safety rules:

Selecting the tin sheets according to the specifications. Cleaning the tin sheets from oils and lubricants and rust. Planning the tin sheets according to required measures. Reducing the wastes. Preparing and operating the mechanical tin cutters. Doing the straight and incline cutting process. Preparing and operating the electric tin bender. Doing the bending processes. Operating the rollers (mechanical). Doing the rolling processes and formulation of cylinders and cones. Preparing and operating the formulation pressures. Formulating the water storage tanks from the carbon tin and the cylindrical and cone shapes. Using galvanized tin in the process. Assembling the works of tin using the screws or rivets. Welding the carbonated and galvanized tin on the ground position using the electric arc welder. Cleaning the welding lines. Complying with the safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Tin works |
| Profession | Pipe Tailoring |
| Job | Pipe Fabricator |
| Reference No. | 135-312-2 |

Job Description:

Working under the general pipe fabricator. Plans pipes for formulation using the planning pattern. Cuts the pipes using the carbon pole electric arc or the oxi acetylene. Cleaning the lines of cutting. Drop welding using the arc./ Complies with the safety rules:

Selecting the pattern of planning according to the shape and diameter of the joints and pipes. Planning the pipes copying the pattern. Locating the cutting line using the chisel. Preparing and operating the electric arc welder of carbon poles. Cutting the pipes according to the plan using the carbon poles cutters. Preparing and operating the oxi-acetylene tools. Cutting and cleaning the pipes according to the plan. Cleaning the cutting lines using the sharpening stones. Participating in connecting the branch pipes. Drop welding. Complying with the safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | Metal Furniture Blacksmithing |
| Job | Operator of Iron sheet rollers |
| Reference No. | 135-114 -1 |

Job Description:

Working under the metal furniture blacksmith - general or iron sheets. Prepares, operates and services the manual and electric iron sheet roller. Implements the processes of bending according to specifications. Complying with the safety rules:

Controlling the distance between the roller cylinders. Cleaning and lubricating the serrations of motion transporters. Operating the manual iron sheet roller. Operating the electrical roller. Formulation of the forward part of the iron sheet to be rolled. Quality assurance. Complying with the safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | Metal Furniture Blacksmith |
| Job | Operator of Iron sheet cutter |
| Reference No. | 135-115-1 |

Job Description:

Working under the Metal general blacksmith. Prepares, operates and services the mechanical and electric iron sheet cutters. Cutting the pieces according to requirements. Complies with the safety rules:

Controlling the front and back scale limits according to required measures. Assuring the adequacy of iron sheet thickness with the capacity of the cutter. Examining the cutting blade. Assuring the compliance of cutting line with the limit. Operating the mechanical cutter. Operating the electric cutter. Cleaning and oiling the cutter parts. Dismantling and fixing the cutter blades. Calibrating the angle of blade under supervision. Implementing horizontal cutting and inclining cutting. Collecting wastes where specified. Complying with the safety rules.

Level: Semi skilled

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | Metal Furniture Blacksmith |
| Job | Operator of Iron sheet Bender |
| Reference No. | 135-116-1 |

Job Description:

Working under the Metal general blacksmith. Prepares, operates and services the mechanical and electric iron sheet benders. Prepares comprehensive bender. Implements processes of angular, arc bending. Complies with the safety rules:

Examining the limits of bending to assure erectness and absence of defects. Cleaning and lubricating the teeth and capacity controllers. Operating the manual and mechanical bender according to manufacturer's instructions. Assuring thickness of iron sheet. Specifying the number of fingers in the bender in light of required scales. Implementing the bending processes, vertical and angular bending. Implementing the arc bending process using the bending molds. Bending the edges of trays and boxes using the bending molds or using the bending comprehensive tools. Implementing safety rules.

Level: Semi-skilled

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | Metal Furniture Blacksmith |
| Job | Operator of Iron sheet Press |
| Reference No. | 135-117-1 |

Job Description:

Working under the Metal furniture general blacksmith or general iron sheet blacksmith. Prepares, operates and services the mechanical and electric and hydraulic iron sheet presses according to requirements. Complies with the safety rules:

Selecting and fixing the formulation molds (press). Examining the elements of the press and hydraulic oil. Reporting to the supervisor about any defects. Cleaning and lubricating the mobile parts. Operating the press according to the instructions of the manufacturer. Implementing the formulation pressing several processes including the perforation. Executing the safety rules.

Level: Semi-skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | Metal Furniture Blacksmith |
| Job | Tinsmith |
| Reference No. | 135-118-1 |

Job Description:

Working alone or under the general iron sheet blacksmith. Prepares and formulates the metal tin according to specifications. Connects the tins with the mechanical joints or the tin welding. Complies with the safety rules:

Selecting the tin according to requirements. Planning the tin according to scales using the patterns to produce cylindrical and cone shapes. Cutting the tin using the manual cutters and the straight and disc cutters of the mechanical tables. Operating the bender and roller of the tin. Operating the formulation tool. Joining pieces of work together through rivets and tin welding. Storing formulation tools in a sound manner. Complying with the safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | Iron Sheet Works |
| Profession | Metal Furniture Blacksmith |
| Job | Spinning machine Operator |
| Reference No. | 135-119-1 |

Job Description:

Working under the Iron Sheet general blacksmith. Prepares, operates and services the machine of formulating houseware utensils. Finishing the products. Complies with the safety rules:

Selecting and fixing the formulation molds. Connecting and fixing the tin pieces. Selecting the formulation tools. Operating the formulation machine. Cutting the excessives and formulating the edges and pressing the excessives of cuts in certain spots. Examining the product to assure specification compliance. Storing and maintaining the formulation molds. Complying with safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Fixing Industrial Equipment |
| Job | Mechanical Engineer - Fixing Industrial Equipment |
| Reference No. | 136-111-5 |

Job Description:

Working alone or under the main engineer. Studies the fixing plans. Suggests amendments on the elements spots and their accessories. Plans and organizes the works of fixing equipment and machinery in coordination with the concerned parties. Implements the adopted plans. Follows up the execution procedures. Assures specification compliance. Provides the equipment and machinery and assists in installing them. Complies the safety rules:

Studying the designs and the distribution of equipment and machinery. Implements designs and suggests amendments. Specifies the working steps. Specifies the parties who assists and share in the installation process. Doing the preliminary estimation of the costs. Prepares the draft plan of execution. Follows up the execution works and progress. Implements the required tests. Organizing the steps of work delivery. Prepares the specifications of machines and equipment and assists in their installation. Prepares lists of spare parts.

Organizing the leaves and timetables of subject workers. Recommending their promotions and raises in light of their productivity. Providing clothes of safety. Providing sanitary conditions. Participating and complying with the safety rules.

Level: Specialized

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Maintenance of Equipment |
| Job | Mechanical Engineer - General Maintenance |
| Reference No. | 136-211-5 |

Job Description:

Working alone or under the responsible director. Plans and organizes and improves the mechanic maintenance workshop. Follows up with the implementation of the maintenance plan and procedures. Complies with the safety rules:

Studying the maintenance rules and tools. Preparing lists of spare parts. Preparing specifications of the tools and sets for maintenance. Following up with the developments in the field of maintenance to develop the used methods. Improving the assets of the workshop. Drawing a timetable of maintenance. Controlling the wastes. Reducing them. Calculating the several costs. Organizing and timing the leaves of subject workers. Participating and complying with the safety rules.

Level: Specialized

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Fixing Industrial Equipment |
| Job | Foreman of Industrial Equipment Installation |
| Reference No. | 136-112-4 |

Job Description:

Working under the mechanical engineer - installation. Studies the work program. Recommendations and instructions of the manufacturers. Prepares the tools and equipment of installation. Prepares the site. Follows up with the installation procedures. Solves problems of workers. Complies with the safety rules:

Receiving the installation job order from the responsible engineer. Studying the directory of the manufacturer. Complying with instructions. Specifying the machines and equipment. Distributing jobs on subject workers. Following up. Supervision of installation progress. Preparing for the required tests while working. Sharing or implementing the experimental operation. Solving administrative and technical problems. Specifying the training needs.

Participates in the maintenance plan. Follows up the same. Complying with the safety rules.

Level: Technician

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Equipment Maintenance |
| Job | General Mechanical Maintenance Foreman |
| Reference No. | 136-212-4 |

Job Description:

Working under the responsible engineer. Receives the works and the preliminary diagnosis of defects and tools. Specifies the specialized party for repair. Follows up the procedures of repair. Implements the final test. Complies with the safety rules:

Receiving the equipment and machines which have been broken down. Diagnosing the defect. Specifying the concerned section for maintenance. Giving the technical instructions regarding the maintenance method. Filling in the required forms of maintenance and spare parts. Following up and supervising the maintenance job underway. Participating in estimating the required period for maintenance. Submitting technical reports about recurrent defects. Documenting the maintenance works in special cards. Filling in the forms and reports of workers working hours. Participating in assessing the performance of workers.

Level: Technician

| | |
|-------------------|-----------------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Fixing Industrial Equipment |
| Job | General Mechanical Engineer - Fixing Industrial Equipment |
| Reference No. | 136-113-3 |

Job Description:

Working under the Foreman of Industrial Equipment Installation. Reads the execution plans. Reviews the execution plan. Executes this plan. Solves problems in cooperation with the responsible foreman. Complies with the safety rules:

Reading the execution layouts for the industrial equipment installation. Reviewing the execution plan. Preparing the work site. Specifying the screws required for installation . Participating in the transportation and mobility of equipment to their bases. Using the manual and electrical and mechanical lifts and other levers and aids. Assembling and fixing the equipment according to the manufacturer's rules. Assembling and fixing the other accessories such as pullers and outlets, cooling systems. oiling systems hydraulic systems. Engines and transportation tools. Using the calibrating tools. Implementing the tests. Supervising the works executed by the subject workers. Participating in problem solution. Complying with safety rules.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Equipment Maintenance |
| Job | General Mechanic - Maintenance |
| Reference No. | 136-213-3 |

Job Description:

Working under the general mechanical maintenance foreman. Reads the execution layouts. Applies the recommendations and instructions. Participates in locating the defects. Dismantles and fixes the equipment. Participates in experimental operation. Delivers equipment after repair. Arc welding in ground position. Heating metals for maintenance purposes. Complies with the safety rules:

Receiving the works from the maintenance foreman. Participating in locating and specifying the defects. Maintaining and servicing the mechanical tools according to instruction. Using the scales repairing and calibrating the mechanical elements such as fraction and non fraction points. Axes and poles and connections between them. Levers and arms and pulses and belts and tubes and chains and serrated discs. Differentiating between kinds of oils and lubricants and their uses. Arc welding and ground welding of 5mm thickness. Recommending the spare parts to be used. Maintaining and keeping the tools and equipment used in maintenance. Complying with the safety rules.

Level: Profession.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Fine tools Maintenance |
| Job | General Mechanic- micro tools |
| Reference No. | 136-311-3 |

Job Description:

Working under the maintenance mechanical engineer. Maintains and repairs the mechanical fine tools such as scales and controllers. Fixing the same and calibrating them. Reading the drawings and directories. Specifying the parts to be replaced. Increasing the performance of subject workers. Complying with the safety rules:

Maintaining and repairing mechanical fine tools such as pressure gauge and thermometers and speed and flow and weight and controllers and protection such as air and hydraulic systems. Dismantling such systems and balancing them. Manual emery processes. Using mobile fine sharpeners. Selecting and cutting leakage stoppers in their several types. Dismantling and fixing the filters and pulses and hose joints. Filling with adequate gases. Increasing the level of workers performance.

Level: Professional

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Fixing Industrial Equipment |
| Job | Mechanic - Fixing Industrial Equipment |
| Reference No. | 136-114-2 |

Job Description:

Working under the general Mechanic. Reads the execution layouts. Executes the sub works according to the directions and instructions of the supervisor. Uses tools and equipment of installation . Maintains the same. Complies with the safety rules:

Executing the works as by the instructions of the responsible person. Preparing the work site. Using the manual levers and electrical and mechanical one in transporting and fixing the equipment on bases according to instructions. Assembling and fixing the mechanical accessories. Implementing the flat testing processes of elements. Using the length scales such as the micro caliber of 0,01 accuracy. Complying with the safety rules.

Level: Skilled

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Equipment Maintenance |
| Job | Maintenance Mechanic of Handling Means |
| Reference No. | 136-216-2 |

Job Description:

Working under the mechanical maintenance foreman. Dismantles and repairs and mantles the means of handling. Reading the drawings and directories of manufacturers. Operates the arc welder. Welds in the ground position. Operates the oxi-acetylene set for heating and manual cutting. Observing and applying the safety rules:

Reading the drawings and directories of manufactures. Repairing and maintaining the means of handling such as the belts and spiral means and pots and buckets and transporters. Cylinders of transportation. Dismantling the transporting belts. Dismantling and calibrating the gear boxes. Recommending the spare parts to be used. Dismantling and fixing the buckets and calibrating the accelerating speed in chains. Dismantling and fixes the covers of protection and maintenance of tools. Operates the arc welder. Welding in the ground position. Oxi-acetylene uses for heating and manual cutting. Observing the rules of safety and applying them.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Equipment Maintenance |
| Job | Maintenance Mechanic of Pumps and Presses |
| Reference No. | 136-219-2 |

Job Description:

Working under the general maintenance mechanical engineer. Dismantles and repairs and fixes and balances the pumps and presses. Identifies the worn out pieces and recommends their replacement or repair. Reads the plans and directories of manufacturers. Operates and stops pumps and compressors. Complies with the safety rules:

Dismantling the centrifugal pumps and gas compressors and its parts. Cleaning and examining the internal parts. Recommending spare parts. Examining the fillers and cascades (dynamic and mechanical). Examining the fraction points. Examining the tear and wear spots. Complying with the safety rules.

Level: Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Maintenance of Fine tools |
| Job | Mechanic of electronics (fine tools) |
| Reference No. | 136-312-2 |

Job Description:

Working under the general maintenance mechanical engineer- fine tools. Maintains and repairs the mechanical fine tool such as the controllers and gauges and balancing them. Reads the drawings and directories of manufacturers Recommending adequate spare parts. Complies with the safety rules:

Maintaining and repairing the fine mechanical tools and servicing them. such as the pressure gauges, thermometers, level meters, speedometers, flow scales and weight tools. Control systems such as valves in their several types. Dismantling the same. Balancing them and refixing them after reviewing the manufacturer's directory. Using mobile fine sharpeners. Complying with the safety rules.

Level: Skilled.

| | |
|-------------------|---------------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Fixing Industrial Equipment |
| Job | Asst. Mechanical Engineer - Fixing Industrial Equipment |
| Reference No. | 136-115-1 |

Job Description:

Working under the mechanic. Participates in the preparation works of the site. Transports and moves the equipment. Transports and handles the required tools. Complies with the safety rules:

Executing the works under the mechanic. Participates in preparing the work sites such as handling and arranging tools. Participates in moving and transporting the tools. Handles the several tools such as mechanical, hydraulic, electrical and levers. Others such as cutters and saws and benders and screwdrivers and chisels and hammers and other keys.

Complying with the safety rules.

Level: Semi Skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Equipment Maintenance |
| Job | Asst. Mechanic Maintenance of Industrial Equipment |
| Reference No. | 136-215-1 |

Job Description:

Working under the maintenance mechanic. Prepares the tools required for a certain job. Handles them. Uses and services the same. Participates in dismantling works and repair and assembly. Examines wastes of oils and lubricants and cooling liquids. Complies with the safety rules:

Preparing the tools and equipment used in maintenance such as screw drivers and several keys and hammers and pulleys. Presses and scales. Using the same and assuring their safety and cleanliness. Handling them while working. Participating in the dismantling and repair and assembly works of the industrial equipment such as the teeth stands belts and tables. and poles and axes, chains and serrated discs and levers and arm. Cleaning the mechanical parts from dirt. Cutting the cascades. Implementing sawing and chiseling and manual scraping processes and manual filing. Manual internal and external and completion works. Cleaning the working spot and arranging its. Oiling and Lubricating equipment. Complying with the safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Equipment Maintenance |
| Job | Asst. Mechanic Maintenance of Handling Equipment |
| Reference No. | 136-217-1 |

Job Description:

Working under the general maintenance mechanical engineer. Prepares the tools and equipment necessary for equipment handling. Handles and uses and services tools. Participates in dismantling and repairing and assembling. Oils and lubricates fraction points. Complies with the safety rules:

Preparing the tools and equipment used in maintaining the tools of handling such as the screw drivers, and several keys, hammers and pullers and presses and scales. Participating in the dismantling and repair and assembly processes. Fixing the cascades and stands and belts and discs and axes and pivots, chains, serrated teeth, buckets, cylinders, spirals, transporting belts, and gear boxes. Cleaning the mechanical parts from dirt and sand. Participating in the calibration process of the transport belts. Selecting oils and lubricants to be used in the required oiling processes. Complying with the rules of safety.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Equipment Maintenance |
| Job | Asst. Mechanic-Pumps and Compressors |
| Reference No. | 136-220-1 |

Job Description:

Working under the maintenance mechanical engineer- pumps and compressors. Prepares the tools and equipment necessary for maintenance. Handling the same uses them and services them. Sharing in the dismantling and repair and assembly processes. Tests the oils and lubricants. Complies with the safety rules.

Preparing the tools and equipment used in maintenance such as screw drivers and keys and hammers and pullers. Assuring their cleanliness and safety and handling the same while working. Cutting the cascades. Emery process. Cleaning the mechanical parts from oils and lubricants and dirt. Doing the processes of chiseling, cutting, scraping and filing and serration. Testing the oil level. Complying with the safety rules.

Level: Semi skilled.

| | |
|-------------------|----------------------------------------------------|
| Vocational Family | Metal Formulation and General Mechanic Maintenance |
| Main Group | General Mechanical Maintenance |
| Profession | Equipment Maintenance |
| Job | Belt Welder |
| Reference No. | 136-218-1 |

Job Description:

Working alone or under the general maintenance mechanical engineer. Prepares the belts or connecting their ends in the several methods. Maintains and services the tools of parts and connection. Complies with the safety rules:

Differentiating the types of belts. Identifying the specifications of them. Identifying the method of connecting flat belts observing the types of belts and their uses. Preparing the ends of connections. Connecting the ends using hot and cool adhesives. Identifying types of adhesives. Connecting the ends using the screws and nails and clips and sewing with leather threads. Repairing the defect spots. Complying with the safety rules.

Level: Semi skilled.

VOCATIONAL TRAINING CORPORATION

Evidence of the need for special training programs on high technology in the METAL Work Industry.

Case 1 :

Company A

Products : Hot water boilers , steam boilers.

Problems : 1. Testing of welds.

2. Introduction of thermal (powder painting).
3. Introduction of advanced welding technique.
4. Lack of technicians who can understand and set work procedures.

Company Reaction :

1. The company contracted a German expert for one year.

The cost was very high ,and the services of the expert stopped when he left the country.

Case 2 :

Company B

Products : Fan Cool Units

Problem : 1. Sheet cutting using new technology , CNC machines.

2. Introduction of MIG and TIG welding techniques.
3. Lack of technicians who can produce templates and developments.
4. Lack of technicians who can set proper work procedures for the new welding machines.

Company Reactions :

1. The company contracted an expert from Germany for one month.
2. Arrange a training course on MIG welding with the VTC.

VOCATIONAL TRAINING CORPORATION

Case 3 :

Company C :

Products : Dies

- Problem :
1. Installation and operation of CNC machines.
 2. Producing dies using CNC machines.
 3. Introduction of MIG and TIG welding.

Company Reaction :

1. The company contracted an expert from Germany.
2. Arrange a training course on MIG welding with VTC.

Case 4 :

Company D :

Products : Kitchen utensils and other articles made by spinning

- Problems :
1. Die making.
 2. Thermal (powder painting)
 3. Lack of technicians.
 4. Material identification and testing.
 5. Introduction of new spinning machines.
 6. Introduction of aluminum welding using TIG welding machines.

Company Reactions :

1. The company contracted an expert from Italy.
2. The company owner visited some similar factories in Italy and Turkey.
3. Arrange with VTC a training course on machining.
4. Contract a consultation company for identifying the suitable materials for a certain products.

JICA