

**INTERNSHIP REPORT**  
**AT PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA**



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## APPROVAL

The internship report which is written based on the Internship at PT. Stainless Steel Primavalve Majubersama, in Cikupa, Tangerang, during the period of January 3<sup>rd</sup>, 2018 to February 14<sup>th</sup>, 2018, by:

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On-site Supervisor



**PT. STAINLESS STEEL PRIMAVALVE  
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## ACKNOWLEDGEMENT

The internship report was written based on the practical work that had been held at PT. Stainless Steel Primavalve Majubersama. The report is required for fulfilling the academic administration for internship course. There are five chapters which are introduction, background of the company, system inside the company, internship assignment, and conclusion and recommendation.

The student, as the author, would like to thank to Almighty God for His blessing and guidance all the time. Besides, the student also would like to thank to all related persons and/or parties, such as:

1. Mr. V. Ariyono, S.T., M.T., as the faculty supervisor, who helped and gave suggestion to student during the internship period, including the internship report.
2. Mr. Aang Chris Harjanto, M.T., as the on-site supervisor at PT. Stainless Steel Primavalve Majubersama, who helped the student and giving some project and supporting knowledge in the real world of an industry.
3. All staffs at PT. Stainless Steel Primavalve Majubersama, especially the PPIC staff, who had supported the student to adapt and did the internship well.
4. Family and friends of the student, who gave the full support during the term of internship.

The student hope that this internship report could be beneficial for all the readers, especially for students who want to know and understand more about the internship experience.

Yogyakarta, March 16<sup>th</sup>, 2018

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Rico Shandy Handoyo

## TABLE OF CONTENTS

Title Page .....	i
Approval .....	ii
Acknowledgement .....	iii
Table of Content .....	iv
List of Tables .....	vi
List of Figures .....	vii
Appendix .....	x
<b>Chapter 1. Introduction</b>	
1.1. Background of Internship .....	1
1.2. Objective of Internship .....	2
1.3. Location and Schedule of Internship .....	3
<b>Chapter 2. Company Background</b>	
2.1. Company Profile .....	4
2.2. Organizational Structure and Job Description .....	9
2.3. Company's Management .....	17
<b>Chapter 3. Company System</b>	
3.1. Business Process .....	20
3.2. Product .....	22
3.3. Production Process .....	27
3.4. Production Facility .....	31
<b>Chapter 4. Internship Assignment</b>	
4.1. Assignment Scope .....	38
4.2. Responsibilities and Rights .....	39
4.3. Methodology .....	41
4.4. Results .....	44
<b>Chapter 5. Conclusion and Recommendation</b>	
5.1. Conclusion .....	53
5.2. Recommendation .....	53

References .....xi



## LIST OF TABLES

Table 2.1. Job Description of Operational Manager .....	15
Table 4.1. Result of Stockopname .....	48



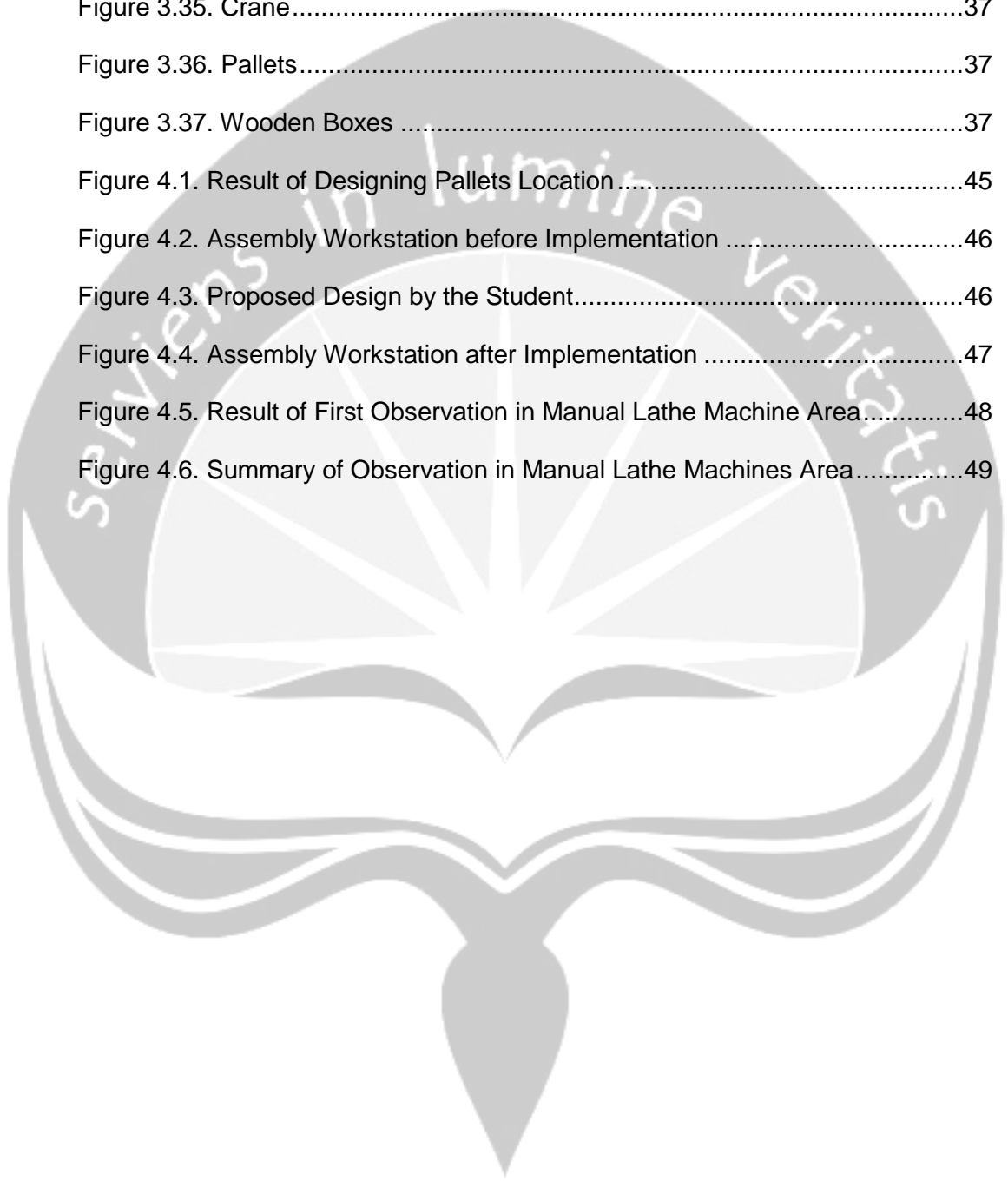
## LIST OF FIGURES

Figure 2.1. Front View of PT. Stainless Steel Primavalve Majubersama .....	4
Figure 2.2. Current Location of Headquarter of PT. Stainless Steel Primavalve Majubersama .....	5
Figure 2.3. Location of Headquarter and Branch Offices of PT. Stainless Steel Primavalve Majubersama .....	6
Figure 2.4. Certificate: ISO 9001:2008.....	6
Figure 2.5. Certificate: SKT MIGAS 2015.....	7
Figure 2.6. Certificate: SKUP 2017 .....	7
Figure 2.7. Certificate: TKDN .....	8
Figure 2.8. Certificate: API .....	8
Figure 2.9. Full Organizational Structure of PT. Stainless Steel Primavalve Majubersama.....	9
Figure 2.10. Organizational Structure of SBU Distribution Hygienic of PT. Stainless Steel Primavalve Majubersama .....	10
Figure 2.11. Organizational Structure of SBU Distribution Non-Hygienic of PT. Stainless Steel Primavalve Majubersama .....	11
Figure 2.12. Organizational Structure of SBU Original Equipment Manufacturer of PT. Stainless Steel Primavalve Majubersama.....	12
Figure 2.13. Organizational Structure of SBU Energy of PT. Stainless Steel Primavalve Majubersama .....	13
Figure 2.14. Organizational Structure of Support Division of PT. Stainless Steel Primavalve Majubersama .....	14
Figure 2.15. 5S in the Company .....	18
Figure 3.1. Business Process of PT. Stainless Steel Primavalve Majubersama.....	20
Figure 3.2. Business Process: Customer Order .....	20
Figure 3.3. Business Process: Check Stock.....	21
Figure 3.4. Business Process: Production/Subcontract.....	22

Figure 3.5. Business Process: Delivery.....	22
Figure 3.6. Product OEM: Ball Valve Type 1.....	23
Figure 3.7. Sanitary Product: Short Tee-SMS.....	23
Figure 3.8. Size Chart of Short Tee-SMS.....	24
Figure 3.9. Cross Tee-SMS and the Size Chart.....	24
Figure 3.10. Elbow and the Size Chart.....	24
Figure 3.11. Union Ferrule and the Size Chart.....	25
Figure 3.12. Butterfly Manual and ABS Handle.....	25
Figure 3.13. API 600 Gate Valve.....	25
Figure 3.14. Swing Check Valve.....	26
Figure 3.15. Concentric Truction Butterfly Valve.....	26
Figure 3.16. Injection Process.....	27
Figure 3.17. Product Mold for Impeller.....	27
Figure 3.18. Result of Wax Injection Sub-Process.....	28
Figure 3.19. Casting Process.....	29
Figure 3.20. Auto Wax Injection Machine.....	31
Figure 3.21. Dipping Machine.....	32
Figure 3.22. Hanging Conveyor-Drying Room.....	32
Figure 3.23. Heating Machine.....	33
Figure 3.24. Melting Machine.....	33
Figure 3.25. Manual Lathe Machine.....	34
Figure 3.26. CNC Machine.....	34
Figure 3.27. Milling Machine.....	34
Figure 3.28. Pressing Machine.....	35
Figure 3.29. Welding Machine.....	35
Figure 3.30. Grinding Machine.....	35
Figure 3.31. Manual Lathe Machine for Valve.....	36



Figure 3.32. Hand Pallet Truck .....	36
Figure 3.33. Electric Pallet Truck .....	36
Figure 3.34. Forklift.....	37
Figure 3.35. Crane.....	37
Figure 3.36. Pallets.....	37
Figure 3.37. Wooden Boxes .....	37
Figure 4.1. Result of Designing Pallets Location.....	45
Figure 4.2. Assembly Workstation before Implementation .....	46
Figure 4.3. Proposed Design by the Student.....	46
Figure 4.4. Assembly Workstation after Implementation .....	47
Figure 4.5. Result of First Observation in Manual Lathe Machine Area.....	48
Figure 4.6. Summary of Observation in Manual Lathe Machines Area.....	49



## LIST OF APPENDIX

Appendix 1. Job Description at PT. Stainless Steel Primavalve Majubersama

Appendix 2. Attendance Card during the Internship

Appendix 3. Student ID Card during the Internship

Appendix 4. Certificate of Internship Completion

Appendix 5. Daily Log during the Internship



## **CHAPTER 1**

### **INTRODUCTION**

This chapter aims to describe the background, purpose, location and the period of internship. The descriptions are followed below.

#### **1.1. Background of Internship**

Department of Industrial Engineering, Universitas Atma Jaya Yogyakarta (PSTI UAJY) defines the internship as a simulator that enables the students not only to apply the Industrial Engineering knowledge into real-world industry but also to train the student how to be a professional of Industrial Engineer. For this purpose, during the internship the students are requested to work in the host company within a period of month.

The paradigm of internship is that the students are expected to experience the application of Industrial Engineering knowledge in practice in which it can be obtained if during their internship the students do some activities to enhance their understanding in terms of planning, designing, improving, implementing and problem solving. Therefore during the internship period the students are requested to:

- a. Doing all the tasks that have been assigned by the host company
- b. Following all of relevant working procedures of the host company
- c. Capturing the big picture of the enterprise system in the host company and observing its characteristics

Since Industrial Engineer is dealing with the integrated system of some elements which are Man, Machine, Material, Methods, Money, Energy, Environment and Information, therefore during the internship the students should relate all of their activities in terms of system perspective. Based on the explanation above, it is clearly seen that internship is not only gathering the data.

According to Document Curriculum of PSTI UAJY, internship is an academic course in which the students should register for the course for 2 credits. Then, in order to fulfill the academic requirement of internship, the students are required to submit an internship report. The performance of the student itself is evaluated both by on-site supervisor and by faculty supervisor.

Based on Curriculum of PSTI UAJY the students of Industrial Engineering Program Universitas Atma Jaya are equipped with several theoretical background so that they are able to fill the positions in the areas of but are not limited to:

1. Quality Control
2. Logistics and *Supply Chain Management*
3. Production Planning and Inventory Control
4. Marketing
5. Human Resources Management
6. Works study and Ergonomic
7. Product Design,
8. CAD/CAM
9. Product Development
10. Occupational Health Safety and Analysis (OHSA)
11. Purchasing
12. Business Development
13. Enterprise Resource Planning
14. Facility Planning

The actual schedule and nature of work are agreed upon by the student, the host company and faculty instructor before the internship starts. Any change to the schedule and work nature must receive prior agreement from all three parties.

Period of the internship is one month start from January 29<sup>th</sup>, 2018 until March 2<sup>nd</sup>, 2018 in PT. Stainless Steel Primavalve Majubersama. The internship will continue by making report, valuation and examination about the internship.

Refer of this internship proposal, we hope the company to give an opportunity to make this internship possible.

### **1.2. Objective of Internship**

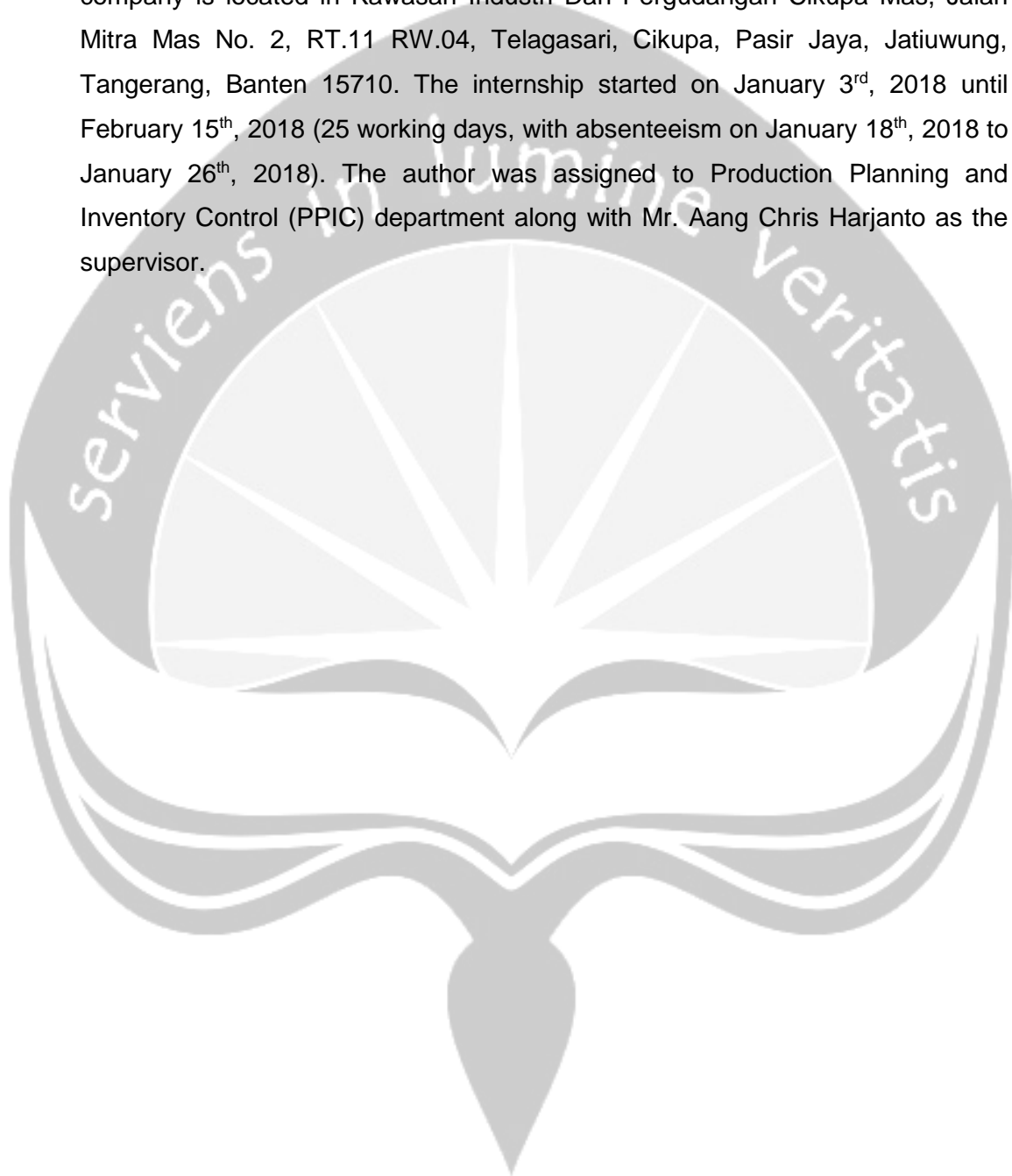
The aims of the internship are:

- a. Practice discipline
- b. Improve the interaction between student and his/her ordinate or workmate
- c. Practice adaptability in the working atmosphere
- d. Observe the daily work in the host company
- e. Enhance the Industrial Engineering knowledge in practice by seeing the practical work in the host company

- f. Enhance the knowledge of enterprise system

### **1.3. Location and Schedule of Internship**

The internship was held at PT. Stainless Steel Primavalve Majubersama. The company is located in Kawasan Industri Dan Pergudangan Cikupa Mas, Jalan Mitra Mas No. 2, RT.11 RW.04, Telagasari, Cikupa, Pasir Jaya, Jatiuwung, Tangerang, Banten 15710. The internship started on January 3<sup>rd</sup>, 2018 until February 15<sup>th</sup>, 2018 (25 working days, with absenteeism on January 18<sup>th</sup>, 2018 to January 26<sup>th</sup>, 2018). The author was assigned to Production Planning and Inventory Control (PPIC) department along with Mr. Aang Chris Harjanto as the supervisor.



## CHAPTER 2

### COMPANY BACKGROUND

The objective of this purpose is to expound company's profile such as the history, location, certification and the products that are manufactured by the company. Besides, the organizational structure and company's management are also shown in this chapter.

#### 2.1. Company Profile

PT. Stainless Steel Primavalve Majubersama (SPVMB) is a manufacturer and distributor of stainless steel equipment. The company is located in Cikupa Mas, Tangerang, Banten. The front view of PT. Stainless Steel Primavalve Majubersama is shown in Figure 2.1. Currently, the company has three types of product in general, which are Original Equipment Manufacturer (OEM), Sanitary, and Pulp and Valve. For Sanitary product, there are two types based on the function, which is hygiene product (for food and beverages, and pharmacy) and non-hygiene product.



**Figure 2.1. Front View of PT. Stainless Steel Primavalve Majubersama**  
(Source: Personal Documentary)

The company prefers to use the method of Investment Casting to produce their product. By using Investment Casting methodology, it allows the company to produce a wide variety of product, with some complex parts. The company occupying an area of 10,000 m<sup>2</sup> for their main office and manufacturing facility. Production capacity of the company is around 400 to 600 tons per year. The company also supported by some advanced equipment, such as automatic

injection machines, robotic dipping, and shelling, induction furnace, lost wax collecting machine, heat treatment facility, and CNC machines.

Some clients of the company are: 1) Pentair, Hitachi, Southern Cross (for OEM products); 2) Indofood, Coca-Cola, Nestle, Unilever, Indofarma (for Sanitary products); 3) Pertamina, Petro China, Petronas, Chevron, Total (for Pulp and Valve products). The top management highly commits to maintaining and improving the quality and performances in order to satisfy their customers. Besides, the company creates some innovation to increase their competitive advantages and become the leader in the market.

### 2.1.1. History of the Company

The company was established in 1994, on Jalan Gajah Tunggal 9, Jatake, Jatiuwung, Tangerang, Banten. Currently, the company is one of major stainless steel equipment manufacturers in Indonesia. The first product of the company was Original Equipment Manufacturer (OEM). Then, the company did an expansion in 1996. Stainless Steel Investment Casting Division was built in 1996 in order to arrange the production of Sanitary product. In 2006, the company expanded their network by establishing the first branch office and warehouse in Surabaya.



**Figure 2.2. Current Location of Headquarter of PT. Stainless Steel Primavale Majubersama**

In 2010, the company's headquarter moved from Jatake, Tangerang to Cikupa Mas, Tangerang, Banten. The current location of PT. Stainless Steel Primavale

Majubersama is shown in Figure 2.2. In the past few years, the company expanded their business as the distributor of Pulp and Valve product.



**Figure 2.3. Location of Headquarter and Branch Offices of PT. Stainless Steel Primavalue Majubersama**

(Source: spvmb.com)

Nowadays, the company has several branch office in Indonesia, which are in Bandung, Bekasi, Medan, and Bogor. Those headquarter and branches of PT. Stainless Steel Primavalue Majubersama are shown in Figure 2.3.

### 2.1.2. Certificates

#### a. ISO 9001:2008

ISO 9001 sets some criteria related to the quality management system. All of standards and policy are arranged and applied consistently in order to maintain the quality of the company with the purpose of satisfying their customers. The certificate of ISO 9001:2008 is displayed in Figure 2.4.



**Figure 2.4. Certificate: ISO 9001:2008**

(Source: spvmb.com)



b. SKT MIGAS 2015 (*Surat Keterangan Terdaftar Minyak dan Gas Bumi 2015*)

SKT MIGAS is a requirement for all industries, which produced products that directly support in the field of oil and gas. Some requirements are needed in applying the certificate, such as the number of workers, availability of tools and equipment, technology, capital and assets of the company, and the performances. In short, it means that PT. Stainless Steel Primavalve Majubersama has fulfilled those requirements based on the government regulations. The certificate of SKT Migas 2015 is presented in Figure 2.5.



**Figure 2.5. Certificate: SKT MIGAS 2015**  
(Source: spvmb.com)

c. SKUP MIGAS 2017 (*Surat Keterangan Usaha Penunjang Minyak dan Gas Bumi*)

SKUP MIGAS is given to all companies which have the capability to produce products or services for oil and gas supporting company. Some criteria for applying the certificate is based on the result of research, legality, financial condition and technical aspects. The certificate is shown below in Figure 2.6.



**Figure 2.6. Certificate: SKUP 2017**  
(Source: spvmb.com)

d. TKDN (*Tingkat Komponen Dalam Negeri*)

TKDN is given to companies based on the percentage of production components in the company including the transportation cost, labor cost, and percentages of assets by foreigners. The minimum percentage of local components is about 40%. The TKDN's certificate is displayed in Figure 2.7.



Figure 2.7. Certificate: TKDN

(Source: spvmb.com)

e. API

API is a certification for Petroleum and Natural Gas Industries issued by American Petroleum Institute. The International Standard identifies requirements while giving some recommendation in the pipeline systems. The identification covers the design, manufacture, testing and documentation standard. The certificate of API is presented in Figure 2.8.



Figure 2.8. Certificate: API

(Source: spvmb.com)

## 2.2. Organizational Structure and Job Description

### 2.2.1. Organizational Structure of PT. Stainless Steel Primavalue Majubersama

#### a. Full Organizational Structure of PT. Stainless Steel Primavalue Majubersama

PT. Stainless Steel Primavalue Majubersama was led by a Director, and has five Strategic Business Units (SBU). The full organizational structure of PT. Stainless Steel Primavalue Majubersama is shown in Figure 2.9.

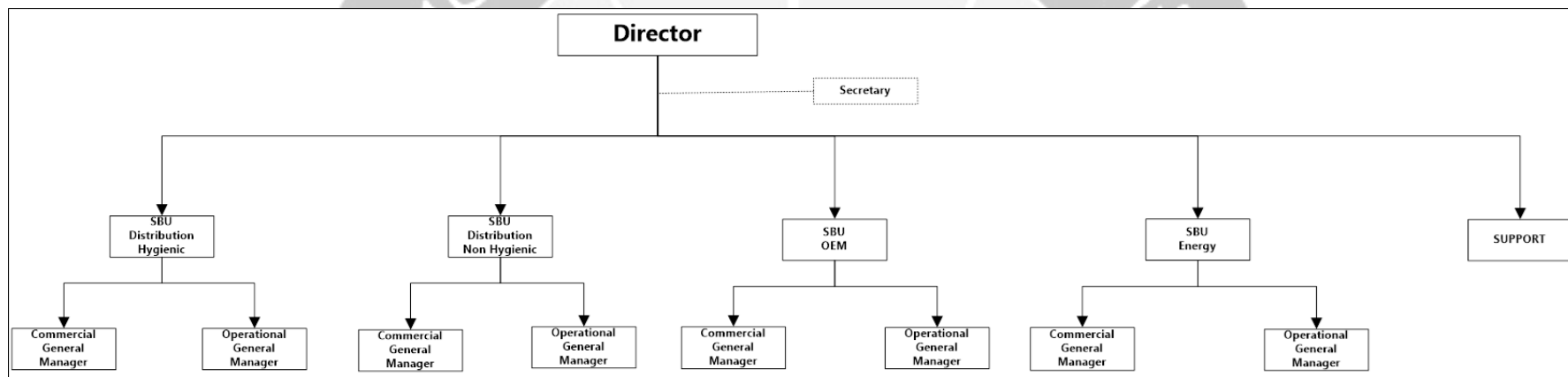


Figure 2.9. Full Organizational Structure of PT. Stainless Steel Primavalue Majubersama

b. Organizational Structure of SBU Distribution Hygienic

The organizational structure of Strategic Business Unit of Distribution Hygienic is displayed in Figure 2.10.

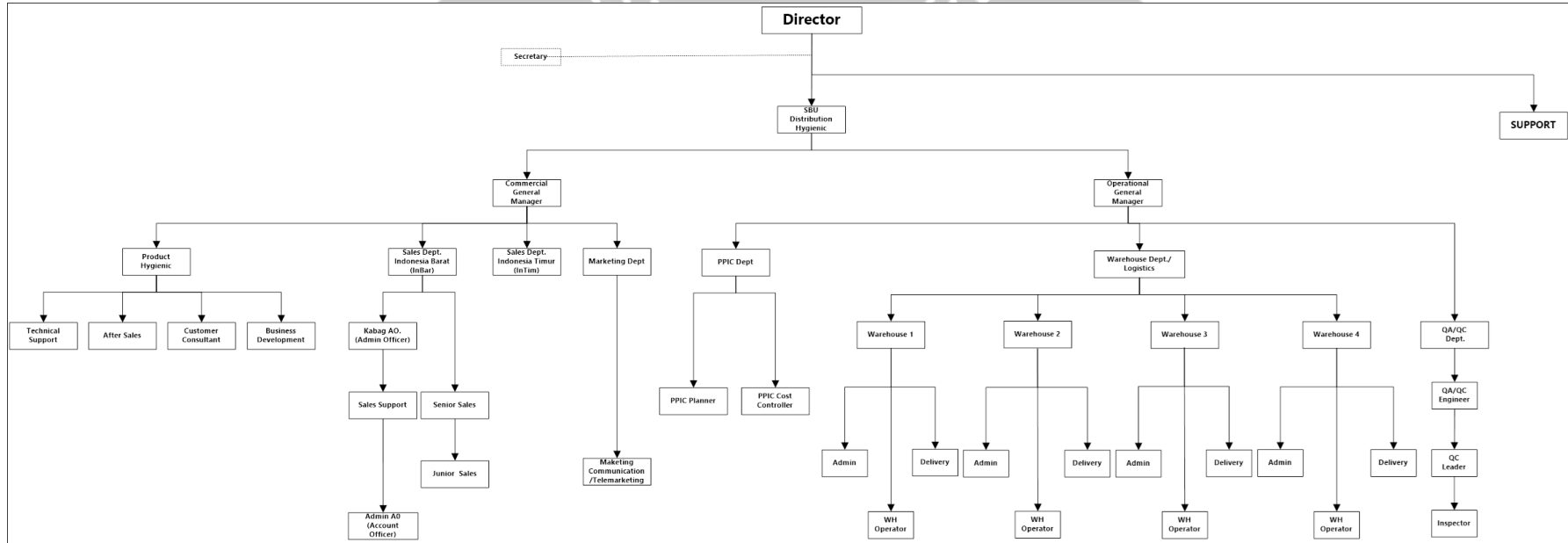


Figure 2.10. Organizational Structure of SBU Distribution Hygienic of PT. Stainless Steel Primavalve Majubersama

c. Organizational Structure of SBU Distribution Non-Hygienic

The second Strategic Business Unit is Distribution Non-Hygienic, and the organizational structure is shown in Figure 2.11.

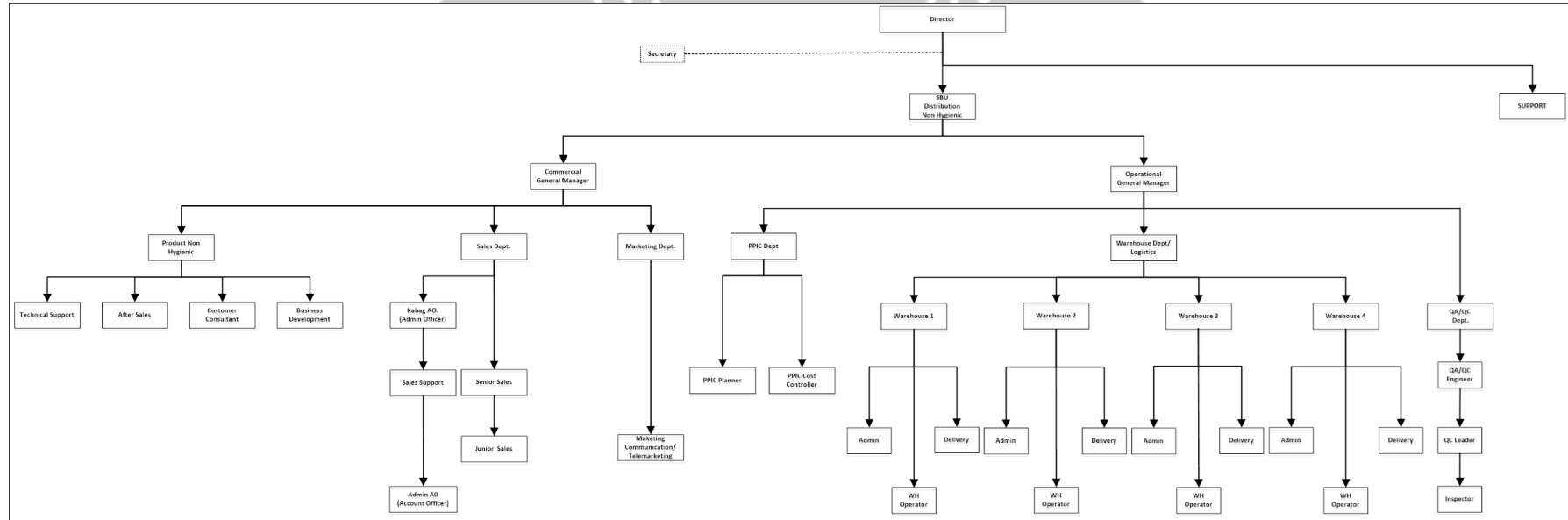


Figure 2.11. Organizational Structure of SBU Distribution Non-Hygienic of PT. Stainless Steel Primavalue Majubersama

d. Organizational Structure of SBU OEM (Original Equipment Manufacturer)

The organizational structure of Strategic Business Unit of Original Equipment Manufacturer is shown in Figure 2.12.

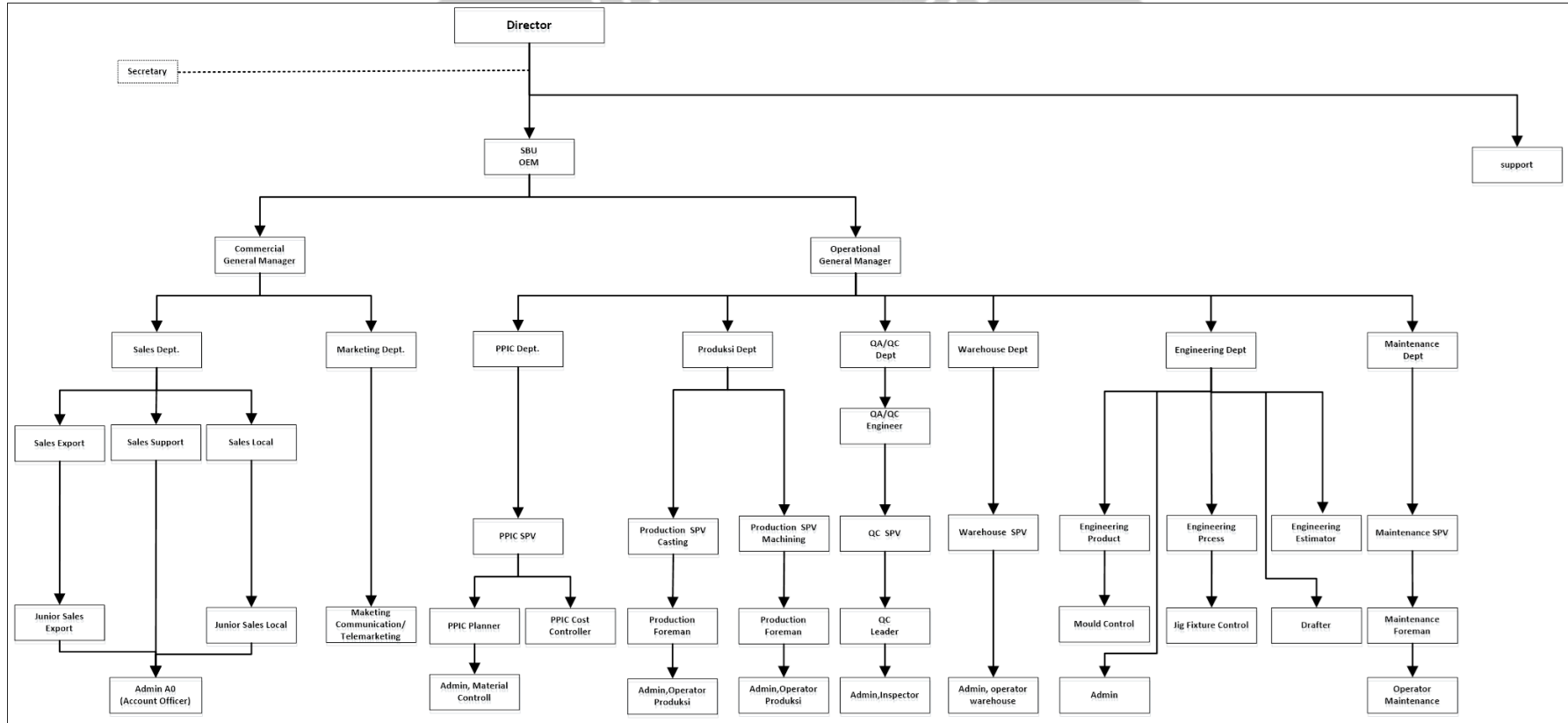


Figure 2.12. Organizational Structure of SBU Original Equipment Manufacturer of PT. Stainless Steel Primavalve Majubersama

e. Organizational Structure of SBU Energy

The organizational structure of Strategic Business Unit of Energy is displayed in Figure 2.13.

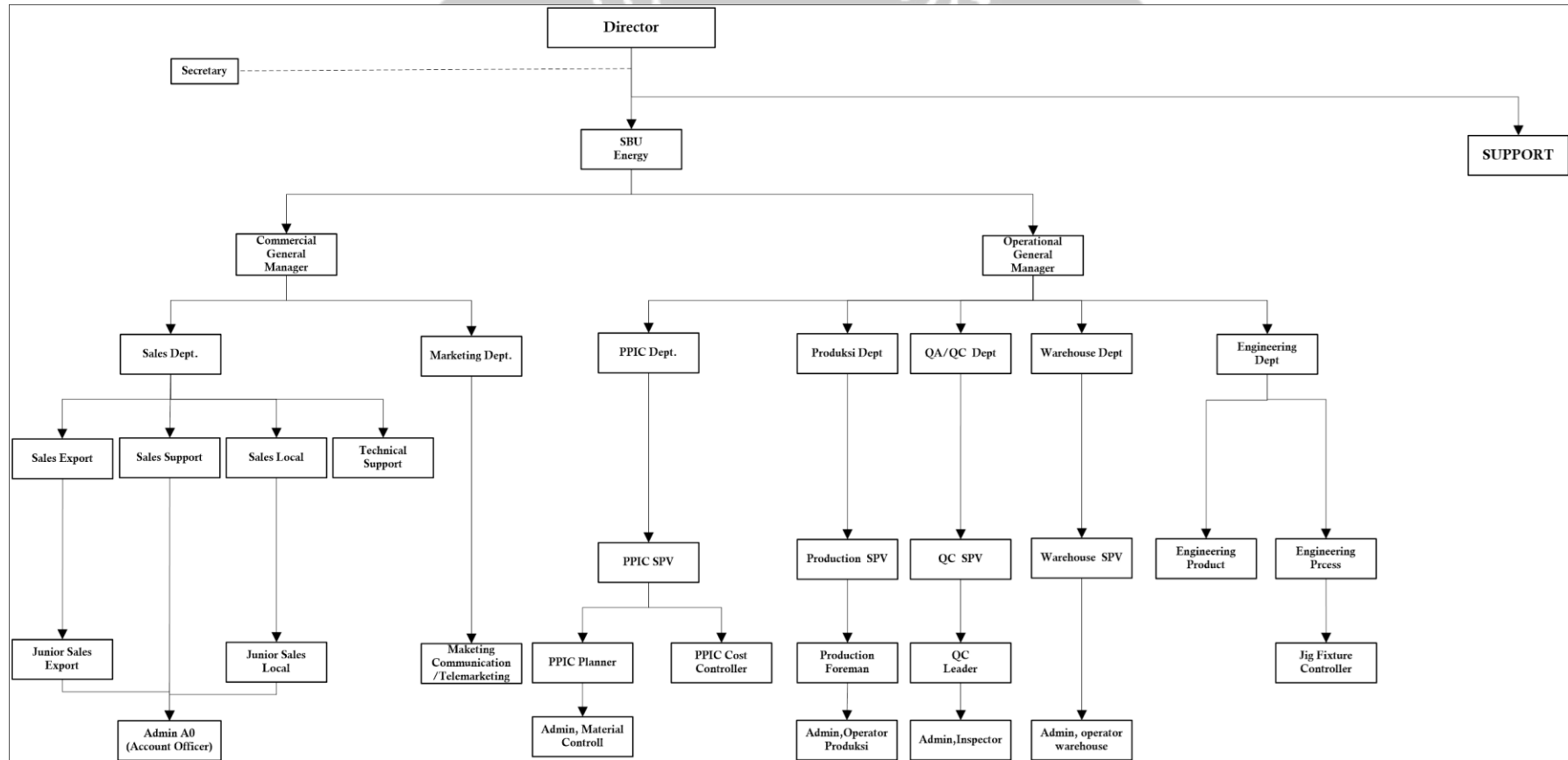


Figure 2.13. Organizational Structure of SBU Energy of PT. Stainless Steel Primavalue Majubersama

f. Organizational Structure of Support Division

The organizational structure of Strategic Business Unit of Support Division is presented in Figure 2.14.

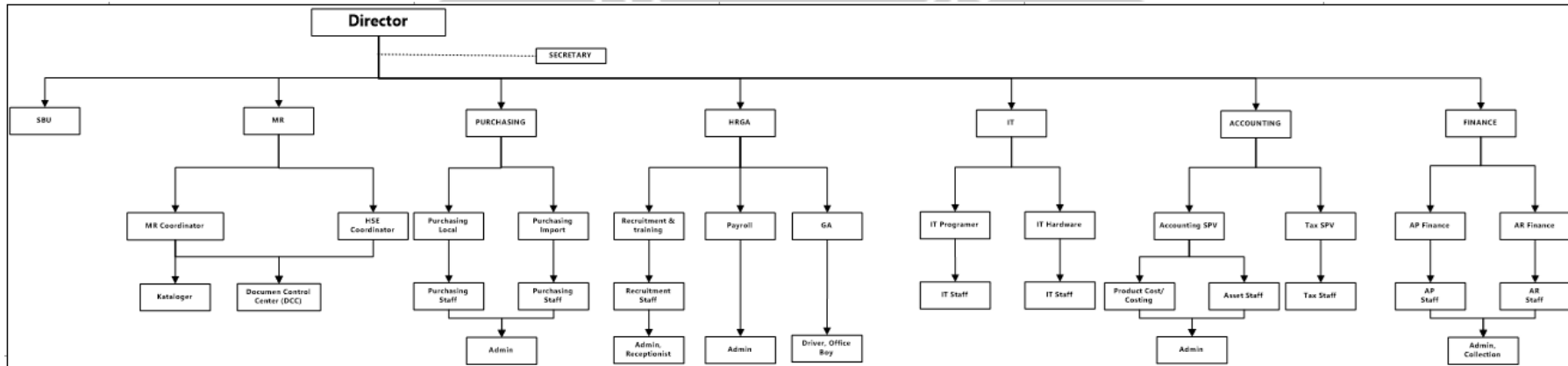



Figure 2.14. Organizational Structure of Support Division of PT. Stainless Steel Primavalue Majubersama



### 2.2.2. Job Description

Below is the example of job description form in PT. Stainless Steel Prima Valve. The example is taken from job description of the Operational Manager, as displayed in Table 2.1. The full job description of all the positions are shown in Appendix 1.

**Table 2.1. Job Description of Operational Manager**

	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Operational Manager</b>		<b>Department : Operation</b>
<b>Area / Section : Operation SBU OEM</b>		<b>Superior : Director</b>
<p><b>RESPONSIBILITY :</b></p> <ol style="list-style-type: none"> <li>1. Lead, manage, monitor all operational in area of Operation SBU OEM (original equipment manufacturer) including working area of Casting Production, Machining, Engineering PPIC, QA/QC, Maintenance and Warehouse.</li> <li>2. Implement Quality Management System ISO 9001 and API Q1</li> <li>3. Coordinate, monitor, and execute operational work in SBU OEM in accordance with applied Key Performance Indicator</li> <li>4. Monitor and analyze result of productivity, effectivity and efficiency of production system including human resources, materials, consumable, products and delivery.</li> <li>5. Doing continuous improvement program in production area including human resources, machine, working area, materials, consumable, products, and delivery.</li> <li>6. Execute HSE and 5R program.</li> </ol>		
<p><b>AUTHORITY :</b></p>		

1. Recommend Board of Director related with improvement in operational.
2. Handle strategic problem and technic related with productivity.
3. Implement product analysis and development.
4. Arrange and direct work in each working area with each responsible person, and giving KPI to Operation Team.
5. Determine the budget for operational work, including the human resources, material, consumable, and products.

**EMPLOYEMENT RELATIONSHIP :**

1. INTERNAL :
  - a. Having access in all Strategic Business Unit (SBU) and all related department.
  - b. Coordinating with all department about implementation of Quality Management System ISO 9001, API Q1, System AX, Corporate Compliance, Customer Compliance, HSE, 5R, and other related system applications.
2. EXTERNAL :
  - a. Customer, which related with Product Compliance and facility

**REQUIREMENTS:**

- Minimum title is Bachelor in Engineering
- Managerial and Leadership skill
- Understanding the working procedure of ISO 9001 and API Q1
- Computer and active English skill
- More than 5 years experiences in manufacturing

	Prepared by:	Known by:
	-	

## **2.3. Company's Management**

### **2.3.1. Vision and Mission**

#### a. Vision

The vision of PT. Stainless Steel Primavalve Majubersama as stated in their company's profile is "to become a highly competitive company in the global market which also contributing positive impact on the welfare of all stakeholders".

#### b. Mission

As written in their company's profile, the mission of PT. Stainless Steel Primavalve Majubersama is "to create values and provide solutions for our customers. Excellence in quality is our commitment, along with proactive support and services for our customers. We believe in dynamic growth and keep on innovating to become the leader in the market".

### **2.3.2. Company's Value**

#### a. Slogan

The company has slogan of "Proudly Indonesia". The company wants to be well-known as an Indonesian company, with most of their material are originally from Indonesia. The company also able to comply with all industry standards and requirement in Indonesia.

#### b. Quality Policy & Quality Objectives

In addition to their vision and mission, the company also apply quality policy and objectives in order to support their commitment. Their quality policy is to do continuous improvement in all aspects in order to maintain their customer satisfaction level in the highest level. The top management will ensure the fulfillment of customer need and government regulation that are relevant with the products and services.

While the quality objectives are:

- i. Produce good quality of products to satisfy the customer.
- ii. Maximize the resources for producing product with competitive prices.
- iii. Optimize the production time to be able to deliver the products on time.
- iv. Give the best services to all customers.
- v. Manufacture product which have additional value for their customer and all related companies.

c. 5S

The company implement 5S in all their business system. 5S is one principle of Lean Manufacturing system and act as a tool for keeping the workplace in a clean, safe and efficient to work. It stands for Seiri (Sort), Seiton (Simplify), Seiso (Clean), Seiketsu (Standardize), and Shitsuke (Self Discipline). The example of 5S implementation in the company is shown in Figure 2.15.



**Figure 2.15. 5S in the Company**

Source: Personal Documentary

### 2.3.3. Employment

The company do their employment system based on government regulation (*UU no. 13, th. 2004*) about employment and the company's regulation.

a. Working Hours

The normal working hours for employee (staff) is Monday to Friday, from 8.00 am to 5.00 pm. The employee get one hour for lunch break from 12.00 pm to 1.00 pm, except in Friday, the lunch break start at 11.30 am until 1.00 pm.

There are three shift for the workers. The first shift is start at 7.00 am to 4.00 pm, the second shift is from 4.00 pm to 11.00 pm, and the third one is from 11.00 pm to 7.00 am. But, mostly the company only use two shift, which are the first and third shift. If there is no second shift, then the third shift will start at 10.00 pm, until 7.00 am.

b. Salary and Allowances

All of the employees and workers have salary at least at the amount of UMR (Regional Minimum Wages) set by government, or minimum wages set by foundation if the workers are from certain foundation. Workers or operators have allowances for training their skills. The company will register them into several training in order to maintain and increase their skills. While the employee such as staff or higher position, have allowances of transportation, attendance, pension time, and meals.

c. Absenteeism

The employees and workers are allowed to absent with certain reason. For unhealthy reason, as long as they can show the letter from doctor, they are permitted. Besides, the company allow the employees and workers to work for a half-day once a month. The company provide an annual leave for 12 days in total for all employees and workers who have worked for at least one year.

d. Overtime Policy

There are no overtime period for all staff. If the staff should go to work on Saturday or Sunday, the company provide additional allowances, but no additional salary. While the workers could get additional salary. For the first overtime hour, the salary is one and a half times the normal wages. Then, it become twice the normal wages for every next hour until 8 hours. The ninth hour will be paid three times the normal wages. If the workers work for more than 9 hours, then they will get four times than the normal wages. But, for working days, the company only allow maximum 3 overtime hours.

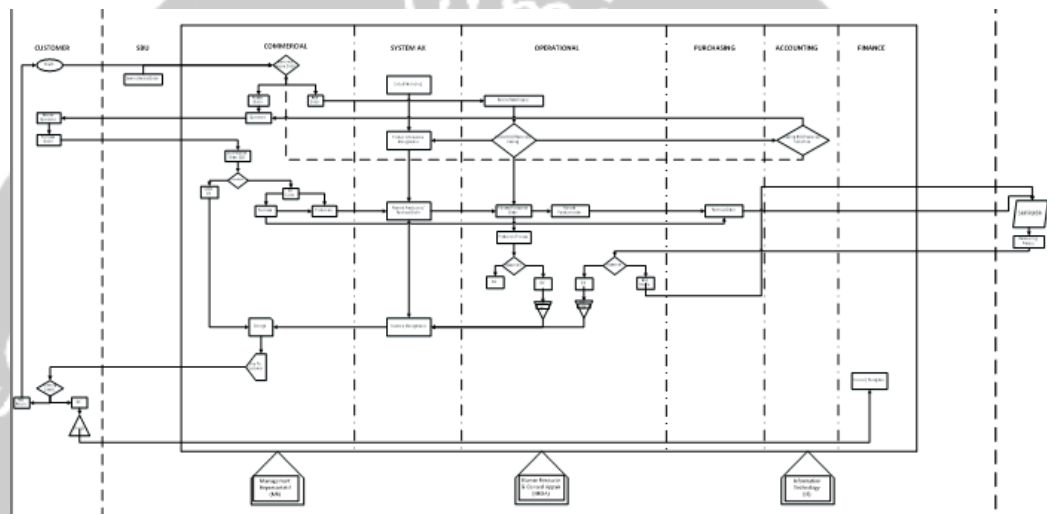
e. Insurance

All the employees and workers get government insurance for health (BPJS) and employment. Besides, the employees also get additional insurance which provided by a private company.

## CHAPTER 3 COMPANY SYSTEM

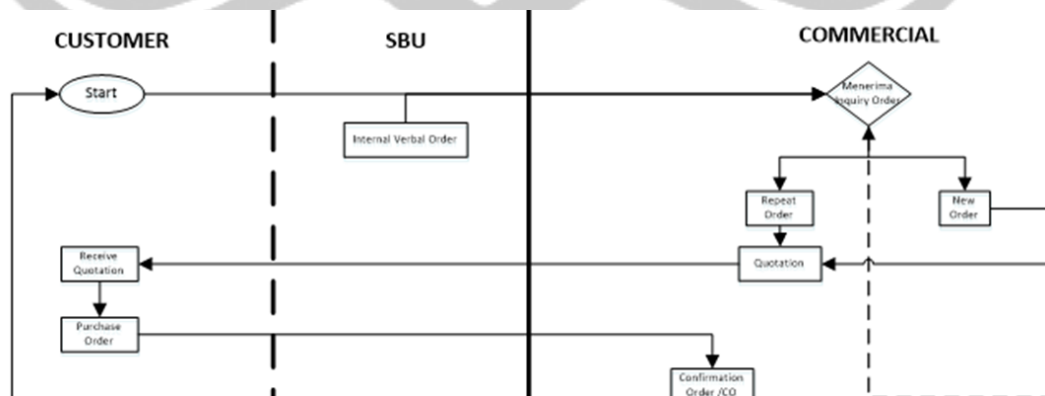
### 3.1. Business Process

PT. Stainless Steel Primavalve Majubersama operate their business process based on customer order. The full business process of PT. Stainless Steel Primavalve Majubersama is displayed in Figure 3.1.



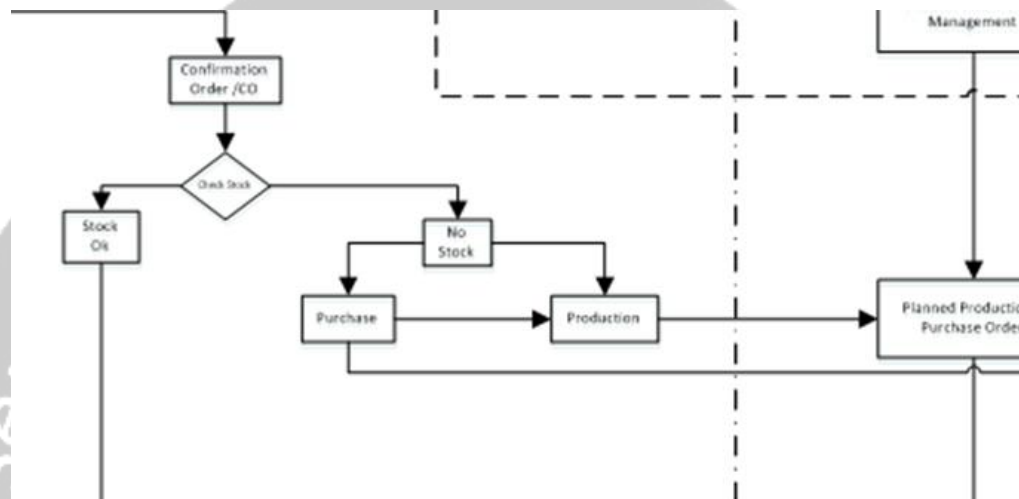
**Figure 3.1. Business Process of PT. Stainless Steel Primavalve Majubersama**

The production process will begin after dealing process between customer and the commercial team as company's representative has done. The details are shown in Figure 3.2.



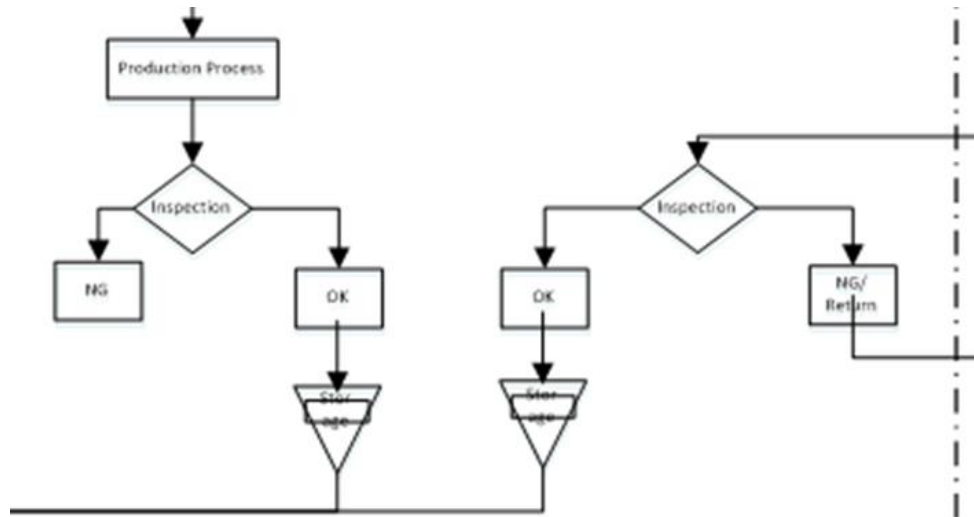
**Figure 3.2. Business Process: Customer Order**

The customer can order product either based on the available type of product or customize the product. If a customer asks for the new product, then the commercial team will give the demand to operational and accounting team for costing process. After knowing the sales price, the commercial team gives the information to the customer. Once the agreement has been made, the commercial team will confirm that the order has been confirmed.



**Figure 3.3. Business Process: Check Stock**

The commercial team will also check the availability of stocks, as shown in Figure 3.3. If the stocks are enough, then no need for the customer to waiting for production. But, if there are not enough stocks, there will be two available options whether the company will produce it or buy the product from subcontractors. The commercial team may ask for production to the operational team through the system (Microsoft Dynamics AX). Then, the operational team will ask purchasing department to procure raw material. But, if the company want to directly buy the finished good from the subcontractor, then they will ask purchasing department to handle it.



**Figure 3.4. Business Process: Production/Subcontract**

After the operational team finished their production process, the Quality Assurance (QA) team will do 100% inspection on the products. Or, if the company purchase it from the subcontractor, the QA team will also inspect it 100%. The business process for the inspection for produced or subcontracted product is presented in Figure 3.4. If there is any defect found, then the operational team will repair the produced product, or return the subcontracted product to the supplier.



**Figure 3.5. Business Process: Delivery**

The finished product will be delivered to the warehouse. This final step is displayed in the business process of delivery, as shown in Figure 3.5. Warehouse department will record those products and input the information to Microsoft Dynamics AX. They will also be in charge with the delivery process to the customers. If there is any defect product found by the customer, they are allowed to return it and ask for reparation.

### 3.2. Products

#### 3.2.1. Original Equipment Manufacturer (OEM) Products

- a. Pc Body – Ball Valve Type 1



The product of Ball Valve Type 1 is shown in Figure 3.6.



**Figure 3.6. Product OEM: Ball Valve Type 1**

Product specification:

Size range = ½" – 10"

Body material = Brass, WCB, A105, SS304, SS316

### 3.2.2. Sanitary Products

There are several types of Sanitary products. Below are some example of those products, such as Short Tee-SMS (Figure 3.7.), Cross Tee-SMS (Figure 3.9.), Elbow Short SMS 90° (Figure 3.10.), Union Ferrule 21.5 MM (Figure 3.11.), and Butterfly Manual ABS Handle (Figure 3.12.).

#### a. Short Tee-SMS

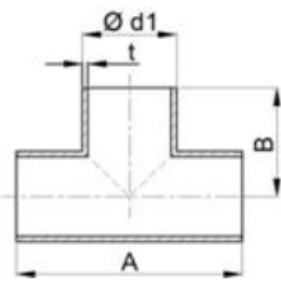


**Figure 3.7. Sanitary Product: Short Tee-SMS**

Product specification;

Material : Stainless Steel 304/316L

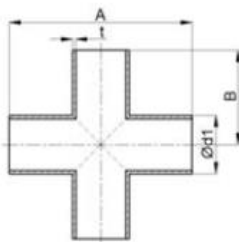
Size : The detail of size is shown in Figure 3.8.



Size	d1	A	B	t
1.0	25.4	61.0	30.5	1.2
1.5	38.1	91.4	45.7	1.2
2.0	50.8	122.0	61.0	1.2
2.5	63.5	152.4	76.2	1.6
3.0	76.2	182.9	91.5	1.6
4.0	101.6	243.8	121.9	2.0

**Figure 3.8. Size Chart of Short Tee-SMS**

b. Cross Tee-SMS

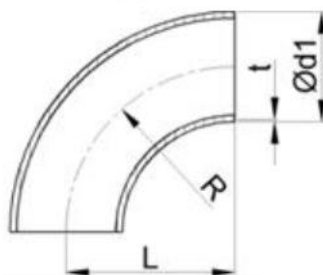


Size	d1	A	B	t
1.0	25.4	110.0	55.0	1.2
1.5	38.1	140.0	70.0	1.2
2.0	50.8	164.0	82.0	1.2
2.5	63.5	210.0	105.0	1.6
3.0	76.2	220.0	110.0	1.6
4.0	101.6	260.0	130.0	2.0

**Figure 3.9. Cross Tee-SMS and the Size Chart**

Material : Stainless Steel 304/316L

c. Elbow Short SMS 90°

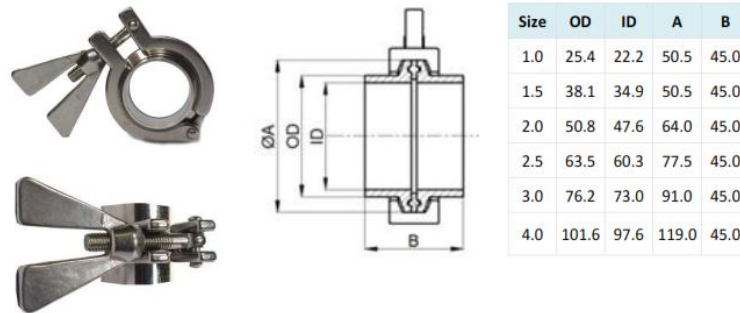


Size	d1	L	R	t
1.0	25.4	38.1	38.1	1.2
1.5	38.1	57.2	57.2	1.2
2.0	50.8	76.2	76.2	1.2
2.5	63.5	95.3	95.3	1.6
3.0	76.2	114.3	114.3	1.6
4.0	101.6	152.4	152.4	2.0

**Figure 3.10. Elbow and the Size Chart**

Material : Stainless Steel 304/316L

d. Union Ferrule 21.5 MM



**Figure 3.11. Union Ferrule and the Size Chart**

Material : Stainless Steel 304/316L and Silicone/EPDM/Viton/Teflon

e. Butterfly Manual ABS Handle



**Figure 3.12. Butterfly Manual ABS Handle**

Material : Austenitic SS grade 304/316L

Max. Pressure : 10 bar

Gasket material : EPM/Silicone/Viton

3.2.3. Valve Products

There are various types of Valve products. Some of those products are API 600 Gate Valve (Figure 3.13.), Swing Check Value (Figure 3.14.), and Concentric Truction Butterfly Valve (Figure 3.15.) as shown below.

a. API 600 Gate Valve



**Figure 3.13. API 600 Gate Valve**

Size	: 2 inches to 24 inches
Applicable Temperature	: -29° C to 425° C
Description	: Bolted Bonnet Body Flexible Wedge Hard Seal Design

b. Swing Check Valve



**Figure 3.14. Swing Check Valve**

Size	: 2 inches to 24 inches
Applicable Temperature	: -29° C to 425° C
Description	: Top cover Swing Disc Hard alloy sealing surface

c. Concentric Truction Butterfly Valve



**Figure 3.15. Concentric Truction Butterfly Valve**

Size	: 2 inches to 40 inches
Applicable Temperature	: -29° C to 120° C
Description	: Soft seal Lining Rubber Retainer shaft

### 3.3. Production Process

There are three types of products, which are Original Equipment Manufacturer (OEM), Sanitary, and Energy (Valve for oil and gas). Each type of products has its own process. For Original Equipment Manufacturer and Energy products, the process is quite similar. Below are described the details.

#### 3.3.1. Original Equipment Manufacturer (OEM)

There are a lot of production process in making Original Equipment Manufacturer product. It can be grouped into three main processes, which are Injection process, Casting process, and Machining process.

##### a. Injection Process

The main purpose of this process is to create the mold for the next process (casting). There are four sub processes in the injection process, which are Wax Injection, Wax Assembly, Dipping, and Lost Wax sub-process, as presented in Figure 3.16.



**Figure 3.16. Injection Process**

##### i. Wax Injection

Before doing this process, the company should purchase mold based on its type of product. If it is a new product, then the company should order another mold from the vendor. But if the company ever produced the same type of product, then it directly goes to the injecting process. The product mold for impeller product is displayed in Figure 3.17.



**Figure 3.17. Product Mold for Impeller**

(Source: Personal Documentary)

Besides, the operators also have to prepare molten wax. The wax is melted using a wax melting machine. Once the wax is ready, then the operator will put the wax into the mold. It is needed few minutes to wait for the temperature of wax turns low. The result of Wax Injection sub process is presented in Figure 3.18.



**Figure 3.18. Result of Wax Injection Sub-Process**

(Source: Personal Documentary)

ii. Wax Assembly

Wax assembly is a process to assembly the injected wax with its stalk. Each type of product has different location and type of stalk. The usage of the stalk is as the entrance for molten steel in the casting process.

Operators using a specific tool do the process. It is used for heating the surface of the stalk and its product. After the stalk and product heated, then the stalk will be attached to the product. It needs few moments to hold and keep the stalk in its position. The stalk will be assembled when the surface temperature of both stalk and product have been turned down.

iii. Dipping

The next process is dipping process. The prepared wax is dipped into a big tank which has been fulfilled with Chamotte sand in liquid form. The liquid itself is made from mixing process of water and Chamotte sand.

The dipping process is done with a high technology machine. Besides, the dipping process also used a hanging conveyor. The operator will put the product in the machine, and the machine dips the product into the tank. It works continuously based on its program. After it is dipped, then the operator will put it back to the hanging conveyor. The dipped product has to be dried

for about 8 until 24 hours, depends on its size. The temperature of the drying room should be not above 20 °C.

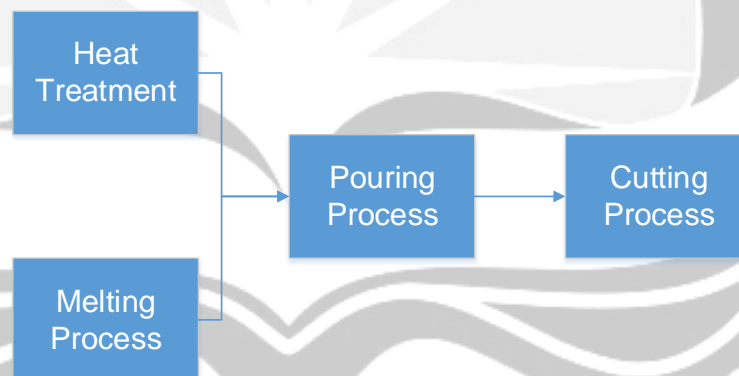
The dipping process cannot be done only once. On average, it needs about 8 to 12 times of dipping process for a single product. It also depends on the product size. The bigger product will need more dipping process.

iv. Lost Wax

In this process, the semi-finished product is heated. Once the product reaches a certain temperature, the wax will be melted. It means that the remaining part is only the layers as the result of dipping process. The melted wax will be reused for the process of wax injection, and the remaining part will be transferred to the next process.

b. Casting Process

The casting process is used to mold the stainless steel liquid into certain shapes. There are four sub processes in the casting process, which are Heat Treatment, Melting, Pouring, and Cutting, as shown in Figure 3.19. All subprocesses in this step are highly dangerous.



**Figure 3.19. Casting Process**

i. Heat Treatment

Heat treatment is a preliminary process before entering the process of pouring. Since that pouring process needs a very high temperature, about 2000 °C, the finished mold from the previous process need to be heated in order to avoid a big difference temperature before and after pouring process. Heat treatment is done using some heating machines and with the help of a special-designed stick. Duration of this process depends on the type of product, material, and its quantity.

ii. Melting Process

Melting process is similarly a preparation process before entering pouring process. The raw material, which is scrap of stainless steel will be heated to the temperature of 2000 °C. This process is done by some heating or boiling machines for stainless steel.

iii. Pouring Process

Pouring process is the most dangerous process of the whole production process. It needs about 5 operators to work together as a team. One person takes the mold from heating process, two persons will handle a stick which attached with the heated mold, one person pours the stainless steel liquid, and another will put special sand into it. When this process is ongoing, no one could walk through the area. Only the responsible operators can get into the area.

iv. Cutting Process

The next step is cutting process. Basically, this process could be divided into two subprocess.

c. Machining Process

The machining process is used to smoothen the surfaces and ensure that the products are in precise dimension. It is important to keep the precision because mostly the product will be rotated in high-speed level during the operation which means both sides should be balanced.

This process takes a long processing time because of the high percentage of defective products. It means, the product must be repaired, before entering the next process. For one product, there may be more than twice reparation. Machines and tools that are needed in this process are lathe machines, drilling machines, milling machines, and welding machines. Some Computer Numerical Control (CNC) are available on the production floor, in order to fasten its speed. There is no exact sequence of sub-processes, because the sub-processes could jump over the others.

### 3.3.2. Sanitary Product

The production process for sanitary products are not as complex as for Original Equipment Manufacturer (OEM) product. There are many types of sanitary products. In general, it could be categorized as two production types.



a. Sanitary: Type 1

The company buys some parts from the vendor in order to make the product. Workers will take those parts, and assemble them into one single product. Before the finished products are transferred to the warehouse, the product should be tested hydraulically 100%. This process is fit with products such as water butterfly.

b. Sanitary: Type 2

Another type of product needs a different production process. It starts with a long iron pipe. The operator will cut it into several pieces. It will be pressed using a pressing machine, and help from the sanitary mold. The product is used as a connector for two different product in size. The product then will be smoothen using lathe machines.

### 3.3.3. Valve (Energy) Product

The production process for valve or energy product is similar to processes that are used for Original Equipment Manufacturer (OEM) product. The differences are only about the original mold for injection process and machines which are used for the machining process, since it needs bigger lathe machine to process the product.

## 3.4. Production Facility

### 3.4.1. Injection Process

The company use machines called “Auto Wax Injection” for doing this process. The operator prepares the mold and inject it with the wax throughout the machines. The machine is shown in Figure 3.20.



**Figure 3.20. Auto Wax Injection Machine**

(Source: spvmb.com)

After injecting the wax, the semi-finished product is going to the next process, which is dipping process. In this step, the company use a high-technology machine, called as a Robotic Dipping. The machine is able to perform the process automatically. But, the operator still needs to monitor it every moment, since sometimes the machines could not handle the product well. The operator will directly fix the product position to avoid falling products. The machine is shown in Figure 3.21.



**Figure 3.21. Dipping Machine**

(Source: spvmb.com)

The machine will then attach the product back to the hanging conveyor. The conveyor delivers the product into the drying room. The hanging conveyor is shown in Figure 3.22.



**Figure 3.22. Hanging Conveyor-Drying Room**

(Source: spvmb.com)

### 3.4.2. Casting Process

Heat treatment is needed in this process in order to increase the temperature of dipped products. The company used several heating machines, as shown in Figure 3.23.



**Figure 3.23. Heating Machine**  
(Source: Personal Documentary)

Besides, it also needs machines for melting and pouring machines. The machine is shown in Figure 3.24.



**Figure 3.24. Melting Machine**  
(Source: Personal Documentary)

### 3.4.3. Machining Process

This process need lathe machine, milling machine, and grinding machine. There are two types of lathe machines, which are the manual (as shown in Figure 3.25.) and automatic or CNC machines (as shown in Figure 3.26.). CNC stands for Computer Numerical Control. There are 10 manual lathe machines, 6 CNC machines, and 6 milling machines. Besides, for the sanitary product, the company use two pressing machines and one cutting machine. The milling and pressing machines are displayed in Figure 3.27. and Figure 3.28 correspondingly.

The machines are shown below.



**Figure 3.25. Manual Lathe Machine**  
(Source: Personal Documentary)



**Figure 3.26. CNC Machine**  
(Source: Personal Documentary)

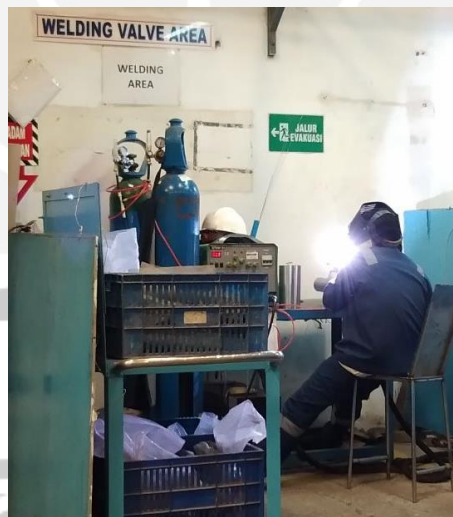


**Figure 3.27. Milling Machine**  
(Source: Personal Documentary)



**Figure 3.28. Pressing Machine**  
(Source: Personal Documentary)

The company also need welding machines for doing reparation and grinding machines for finishing and semi-finishing process. The tools are shown in Figure 3.29 and 3.30 respectively.



**Figure 3.29. Welding Machine**  
(Source: Personal Documentary)



**Figure 3.30. Grinding Machine**  
(Source: [www.ezyhero.com](http://www.ezyhero.com))

The company also provide different manual lathe machines for valve product. It is bigger than the machines which used for Original Equipment Manufacturer (OEM) product. The machines are shown in Figure 3.31.



**Figure 3.31. Manual Lathe Machine for Valve**  
(Source: Personal Documentary)

#### **3.4.4. Loading and Unloading**

There are plenty material handling tools which are used in the company, such as hand pallet trucks (Figure 3.32.), electric pallet trucks (Figure 3.33.), a forklift (Figure 3.34), and a crane (Figure 3.35.).



**Figure 3.32. Hand Pallet Truck**  
(Source: [www.hyster.com](http://www.hyster.com))



**Figure 3.33. Electric Pallet Truck**  
(Source: Personal Documentary)



**Figure 3.34. Forklift**

(Source: [www.bigrentz.com](http://www.bigrentz.com))



**Figure 3.35. Crane**

(Source: Personal Documentary)

Besides those tools, the company also use pallets (Figure 3.36.) and wooden boxes (Figure 3.37.). The wooden boxes are used for the finished product, which will be placed in the warehouse and as the container for delivery process.



**Figure 3.36. Pallets**

(Source: Personal Documentary)



**Figure 3.37. Wooden Boxes**

(Source: Personal Documentary)

## CHAPTER 4

### INTERNSHIP ASSIGNMENT

Objectives of this chapter are to explain the assignment scope, responsibility and authority, used methodology, and the result of the internship.

#### **4.1. Assignment Scope**

The student is assigned into Production Planning and Inventory Control (PPIC) department. The department is responsible to manage and control the production floor in order to produce products in right amount and time based on their customer order and closing date. The department frequently interacts with the production team for giving detail explanation of the plan. Besides, they have a strong interaction with warehouse team, with the purpose of controlling their inventory level.

The student is assigned to do some planning for improvement, observation and administrative work. There are four tasks that are given by the company. The first one is to do planning for allocating spaces of pallets in production layout of manual machine department. The student have to understand the production process and usage of each manual machines clearly. By knowing those aspects, the student is able to design the most appropriate layout for manual machines area. Each pallets will have different purposes, and it should be placed near to the related machines. The student got an idea about the design of manual machines area by doing direct observation and interview to some related workers.

The second task is designing workstation layout for assembly sanitary department. In this task, the student is asked for designing a workstation which clearly displayed where should all material and tools be placed. The student have to understand about the detail of assembly process, such as the material and tools needed, the flow of assembly process, and the dimension of each materials. All materials and tools should be placed in an exact placement and near to the workers. Containers are needed for small parts such as bolts and nuts. Those containers were remarked to give a sign for the workers about what is inside it.

The student is also given task for doing observation in manual lathe machines area with the intention of knowing the percentage of idle and non-idle. In this project, the student have to communicate the given task to the related workers, before



directly observe them. The communication was for avoiding misunderstanding that might be happened, as the workers misinterpreted the task for judging their performance. Since the non ideal condition could always happen in the real world anytime, the company want to measure how big is their utilization (in manual lathe machines area). So, the company could make any improvement or adjustment to optimize their current problems.

The last is doing stockopname with warehouse team. The stockopname in the company usually is done by a PPIC and warehouse staff. In this task, the student took a role as part of PPIC team, who worked together with the warehouse staff to check the real level of the inventory. Some products are not well-arranged in the warehouse. Besides, there was also miscalculation on the products' quantity in each containers, which make this task took a quite long time. There were some difference in quantity of plenty products. It was happened because of miscalculation and miscommunication about the products' quantity between the departments.

#### **4.2. Responsibilities and Rights**

Some responsibility and authority are given to the student during the internship period.

##### **4.2.1. Responsibilities**

The student was responsible for:

###### **a. Designing Pallets Location in Manual Machining Area**

Manual machining area has many machines. Those are 11 lathe machines, 8 milling machines, 2 press machines, and a cutting machine. Besides, it is also used for the area of quality control team, welding, and polishing. The manual machining area is able to accommodate 69 pallets, but it does not mean that the company should use the same number of pallets as well.

Pallets are used as a place for work in process product. Currently, there is no exact placement of the pallets. It affects to the unorganized location of products. In one pallet, it could contain products which will be transferred to a different process. It makes the transporter worker and PPIC team hard to notice it. The transporter worker will need more time to notice it, and PPIC team will difficult to control the work in process product.

###### **b. Designing Layout of a Workstation in Assembly Sanitary Area**

One process of sanitary production is assembly. There are three workers in this department. Two persons are responsible to do assembly process, and another is responsible for preparing the materials or parts. The on-site supervisor thought that some improvement may be needed in the department because the workstation always looks disorganized. The student was asked for designing the workstation layout to make it more organized by locating the tools and work-in-process products in its exact place

c. Observe Manual Lathe Machines Area

The on-site supervisor wants to know the comparison and percentages of time for working and idle for each machine in manual lathe area. In this task, it is unnecessary to know what type of idle it is, whether it is because of the personal reason of the workers, machines break down, or others interference.

The percentages and comparison would be used as additional consideration for PPIC team to do planning for production. Besides, if there are some high percentages of the total idle time, the company may do further investigation for it. There may be not any improvement process for this task. The main purpose is to observe and record the data of processing and idling time to get the percentage comparison.

d. Do Stockopname

Stockopname is one of the most important activities in controlling the inventory. It is used to collect the real available products in the warehouse, and compare it with had been written in the system (Microsoft Dynamics AX). The main aim of this process is to know the real inventory level, in order to do planning for the next period and analyze whether the information flow in the company good or not.

#### **4.2.2. Rights**

The given rights to the student are:

- a. Full access in production floor. But, some area might need special safety clothes which student does not have.
- b. Student is allowed to do some discussion for few minutes with related workers.
- c. Taking pictures in production floor, but the photos have to be selected by the on-site supervisor.

### **4.3. Methodology**

There are four tasks that had been done during the internship, which are designing the exact placement of pallets in manual machining area, designing workstations layout in assembly sanitary area, observing manual lathe machines area, and doing stockopname.

#### **4.3.1. Designing Pallets Location in Manual Machining Area**

The methodologies for designing pallets location in manual machining area are listed below.

##### **a. Understanding the Flow of Production Process**

There are several processes in manual machining area, such as lathing, milling, drilling, and checking. In addition, there may be some defective product which will be repaired in welding and lathe machines. By understanding the production process, the student could get more information about the flow.

##### **b. Observing the Location**

The second is observing the location. It means that the student directly observes the production floor, in order to get more detail on how the processes work. This step is used to get knowledge about the current condition of the company.

##### **c. Knowing the Usage of each machine`**

Each machine may have different type and limitations. For example, some machines cannot process the product if the dimension is too big. There are also some machines that are used for the sanitary product, which means that it has different production process. Besides, sanitary also does not need pallets.

##### **d. Create the Layout**

Once the student got enough knowledge about the problem, situation, and the possibility, then the design was created. The designing process is done with a software. The idea of the design comes from the observation. Each pallet will be located on the nearest machines for certain processes. Besides, a number of pallets needed for each process is different each other. The number of pallets for each process was given by the production supervisor and PPIC manager.

##### **e. Consult the Result**

The last step in this project is consulting the result to the on-site supervisor. Some suggestion was given by the supervisor, such as to include the polishing room and balancing room with its pallets. Then, after the supervisor agrees with

the design, it went to the production manager. The production manager agrees with the proposed design. Then, the design was proposed to the top management for doing the implementation. Because, the implementation cannot be done in working days, which means the company needs to arrange the overtime period. Besides, the implementation may affect their production speed for a while. It means that the company might be late for the next delivery because the company had been being busy with the current project.

#### **4.3.2. Designing Layout of a Workstation in Assembly Sanitary Area**

Five steps are needed in designing the layout for a workstation in assembly sanitary area. The methodologies are described below.

##### **a. Understanding the Detail Flow of Assembly Process**

In order to know how to arrange the assembly workstation, understanding the flow process is very important. It means that the student could more understand how the operators work. Working method that is used by the operators gives information about the working system itself, such as whether the operators mostly use left hand or right hand, or does some holder needed in the process, etc.

##### **b. Knowing All Parts Needed**

There are a lot of parts needed in the assembly process. Mostly, the operators work for a product which is called 'Butterfly'. It is kind of water faucet, but it is used for bigger waterways. The student may have an idea about how to place each part by knowing all parts needed. Besides, the student would also understand the quantity and dimension of each part, which may be used to sketch the layout as accurate as it can be.

##### **c. Knowing All Required Tools**

The operators need several tools in doing the operation. The student must know exactly about the need and its function so that the student could easily manage the placement for each tool. The dimension of each tool is also important to design the layout in good proportion. The desk dimension was also be measured during the project, as the reference for putting the parts, tools, and free space for an assembly process that is needed.

##### **d. Create the Layout**

After all information and data are collected, the next step is creating the layout. In this process, the most consideration in designing the layout is about the working method. All parts that are used by right hand should be placed on the right side. Parts that are frequently used by the operator must be positioned near to the operators. While the other parts could be put around the area.

e. Consult the Result

The result of the designing process was given to the on-site supervisor and the operators. If there is any suggestion by the supervisor or operators, then some adjustment may be needed.

### 4.3.3. Observing Manual Lathe Machines Area

The third task is observing manual lathe machines area. There is no design or improvement process needed for this task. The methodologies are presented below.

a. Communicate with the Related Operators

In order to avoid miscommunication and misunderstanding between the student and the operators, this step is important. A brief explanation was given to all related operators. The aim of the task is not for judging the operators whether they work well or not. But, it is for observing and knowing the percentages of idling and working time of each machine or operators each day. If the operators need to go to the lavatory or discuss some problem with others, it does not mean that the operators did not work well even though the idling time is increasing.

b. Observation

The next step is doing the observation. There are six machines that were observed during the task. The observations were done twice a day, once before the lunch break and another was after break time. The duration is one hour for each observation.

c. Input the Data to Ms. Excel

The collected data from the observation was inputted to Microsoft Excel. The observations were done from February 6<sup>th</sup>, 2018 until February 13<sup>th</sup>, 2018. Percentages of idling and working times would also be calculated in this process.

d. Give the Data to the On-site Supervisor

The data including the summary was given to the on-site supervisor. The student did not need to give some recommendation or suggestion. The

supervisor is the one who has authority to state whether the process needs to be improved or not.

#### **4.3.4. Stock Opname**

This task was used to check the real condition of inventory level, and compare it with the data in the system (Microsoft Dynamics AX). The methodologies for doing this task are shown below.

a. Coordinating with Warehouse Team

The on-site supervisor asked the student to do stockopname with warehouse team. Stockopname was done by the company once a month. Warehouse team was also in charge with this activity. Before doing the task, the supervisor and student do a small coordination with the warehouse team.

b. Check the Real Stock in the Warehouse

All items in the list were checked one by one. The task was done with the help from staff and operators in warehouse department, who have better knowledge on identifying the location of each item.

c. Input the Collected Data

All the real data was then inputted into Microsoft Excel. The gap between the real physical stock and the inventory level in the system was calculated as well.

d. Give the Data to the On-site Supervisor

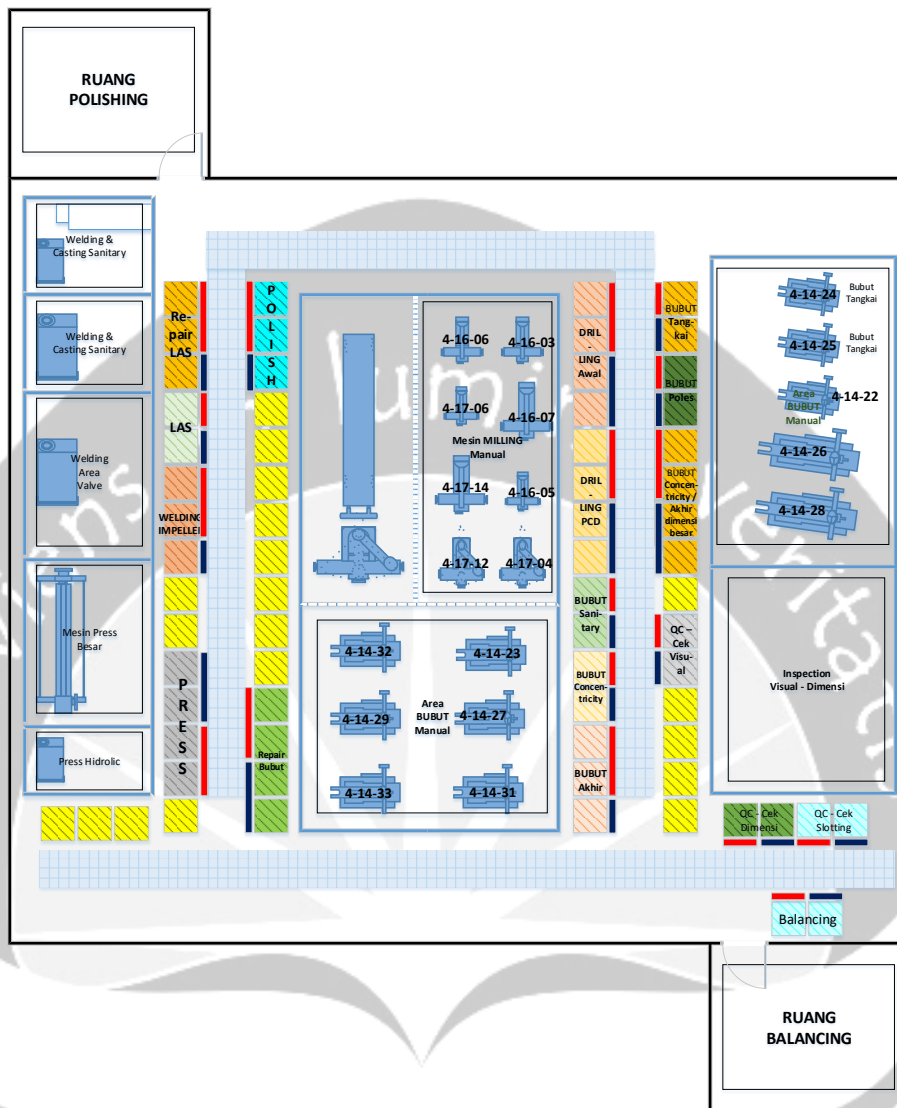
The data of the real physical stock in the warehouse were given to the on-site supervisor. The data was used to be inputted on Microsoft Dynamics AX to update their stock level.

#### **4.4. Results**

The results of each task are written in detail below.

##### **4.4.1. Designing Pallets Location in Manual Machining Area**

The result of the first task is as shown in Figure 4.1. Unfortunately, the planning has not been implemented yet by the company. The company has not decided yet about the implementation time. In order to implement it, the PPIC department needs to propose it to their superior.



**Figure 4.1. Result of Designing Pallets Location**

Colored pallets mean that it has been allocated for a specific process. The red line is a code for incoming products and the blue one as the outgoing products code. The remaining pallets, which is colored by yellow, are still empty. It could be used when the company has too much work-in-process product.

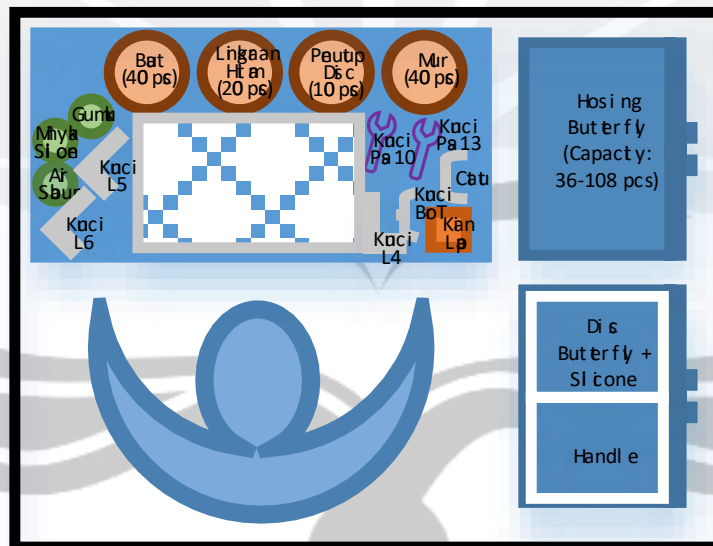
#### **4.4.2. Designing Layout of Workstations in Assembly Sanitary Area**

As shown in picture 4.2., that assembly working area for the sanitary product is untidy enough.



**Figure 4.2. Assembly Workstation before Implementation**

The worker put everything on the desk. They put a lot of incoming parts at once on the table. There is no exact placement of the tools, so the workers just put it whenever it is. Below is the proposed layout for each workstation.



**Figure 4.3. Proposed Design by the Student**

The design in Figure 4.3. is used for the two persons who work for assembly process. As it is shown, each part has its own exact place. All tools also have its own place. On the execution, it used red scotch tape as the line. Below is displayed in Figure 4.4. the condition after the implementation.





**Figure 4.4. Assembly Workstation after Implementation**

#### 4.4.3. Observing Manual Lathe Machines Area

The observation is done for seven days from February 6<sup>th</sup>, 2018 until February 13<sup>th</sup>, 2018. The observations were held twice a day. The example of the result for one observation is shown in Figure 4.5, which is the result of the first observation. For a working hour, the highest percentage of processing time is 95%. Without considering the absenteeism, the lowest percentage is 80%. The detail result of the first observation is presented in Figure 4.5.

2/6/2018	Number of Machine											
	4-14-32 Agus		4-14-23 Cahyo Adi		4-14-29 Suhendar		4-14-27 Ramdan		4-14-31 Arif		4-14-33 Wawan	
9.15	Idle 2 mins	8	Bantu Op Lain 3 mins	7	Bantu Op Lain 3 mins	7	Process	10	Tidak masuk	0	Bantu Op Lain 3 mins	7
9.25	Process	10	Process	10	Process	10	Process	10	Tidak masuk	0	Process	10
9.35	Bantu Op Lain 2 mins	8	Process	10	Process	10	Process	10	Tidak masuk	0	Process	10
9.45	Process	10	Process	10	Bantu Op Lain 4 mins	6	Process	10	Tidak masuk	0	Process	10
9.55	Process	10	Process	10	Process	10	Bantu Op Lain 7 mins	3	Tidak masuk	0	Process	10
10.05	Process	10	Process	10	Meninggalkan tempat	5	Process	10	Tidak masuk	0	Process	10
	<b>SubTotal Processing Time</b>	<b>56</b>	<b>SubTotal Processing Time</b>	<b>57</b>	<b>SubTotal Processing Time</b>	<b>48</b>	<b>SubTotal Processing Time</b>	<b>53</b>	<b>SubTotal Processing Time</b>	<b>0</b>	<b>SubTotal Processing Time</b>	<b>57</b>
	<b>93.33%</b>		<b>95.00%</b>		<b>80.00%</b>		<b>88.33%</b>		<b>0.00%</b>		<b>95.00%</b>	

**Figure 4.5. Result of First Observation in Manual Lathe Machines Area**

The idle time could happen because of some reason, such as personal need by operators, breakdown machines, absenteeism, helping other operators, talking with the superior or other operators, etc.

Machine 4-14-32 and 4-14-23 are used for sanitary products, and the others are used for Original Equipment Manufacturer (OEM) products. The summary of the full observation is shown Figure 4.6.

Date	Number of Machine					
	4-14-32	4-14-23	4-14-29	4-14-27	4-14-31	4-14-33
5-Feb	95.00%	67.50%	0.00%	96.67%	80.42%	75.83%
6-Feb	95.00%	89.17%	47.50%	94.17%	37.50%	96.67%
7-Feb	56.67%	53.33%	58.33%	0.00%	48.33%	37.50%
8-Feb	78.33%	73.33%	54.17%	0.00%	62.50%	40.00%
9-Feb	78.18%	69.09%	46.36%	45.45%	54.55%	60.91%
12-Feb	57.92%	60.42%	4.17%	67.50%	0.00%	0.00%
13-Feb	63.33%	79.17%	0.00%	74.17%	70.83%	83.33%
<b>Summary - Percentages of Working Time</b>	<b>74.92%</b>	<b>70.29%</b>	<b>30.08%</b>	<b>53.99%</b>	<b>50.59%</b>	<b>56.32%</b>

**Figure 4.6. Summary of Observations in Manual Lathe Machines Area**

The highest percentage of working time is 74.92%, which happened in machine 4-14-32. The lowest percentage of working time is 30.08% in machine 4-14-29. One reason which gives the big impact for machine 4-14-29 because of the machine was broken and under maintenance for two days.

Machines for sanitary products, which are 4-14-32 and 4-14-23, relatively have higher percentages of working time compared to the others. One of the causes is because they process very different type of products. For sanitary products, the processes are quite short and the defect rate is lower than the Original Equipment Manufacturer (OEM) products. Besides, some problem also occurred for the OEM products, such as the product was welded by another operator. Another problem is the big product that needs more than one person to set it up to the machines. It could require two or three persons. The setup time for the big product also quite time-consuming, it could take 15-30 minutes.

#### 4.4.4. Stockopname

Stockopname has been done on February 10<sup>th</sup>, 2018. The student worked together with warehouse foreman and labor in order to complete the data. Below are shown the full data of stockopname, in Table 4.1. The full document has given to the on-site supervisor as well.

**Table 4.1. Result of Stockopname**

Product name	Inventory	Actual Inventory	Actual minus Inventory
ASSY. CABLE PROTECTOR 3.5" AISI 1020	157	179	22
ASSY CABLE PROTECTOR 3 1/2" FOR FLATE CABLE # 1R (CHEVRON)	1121	74	-1047
WASTEGATE OUTLET- MACHINING 84D735488P1	263	268	5

**Table 4.1. Continuation**

BODY MACHINING 200 MM F 952 8 LUG SS 316 2000173	145	113	-32
EXHAUST MAIN SECTION 84D713117G1 6" SS 309	782	744	-38
WASTEGATE INLET- MACHINING 84D735486P1	221	204	-17
PART LOCOMOTIF 41D715510 ( MAIN SECT) SS 309	66	65	-1
PART LOCOMOTIF 41D715765 ( END SECT) SS 309	27	27	0
MANIFOLD EXHAUST MAIN SECTION 6" 84D735481G1 CH20 / SS 309	433	432	-1
EXHAUST END SECTION 84D713118G1 6" CA6NM	404	420	16
EXHAUST TEE 84E904513/84E904521 # 4" MAT CF8C	2	2	0
FLANGE EXHAUST MAIN SECTION 84D717050ABP1	15	0	-15
MANIFOLD EXHAUST END SECTION 6" 84D735482G1 CA6NM	235	203	-32
TRAVEL STOP CAM D TO F F79U SS 304 2011677	100	130	30
TRAVEL STOP CAM B TO # 20.7 F79U SS 304 2007788	40	40	0
# 050 F 951 BRIDGE SS 304 2027550	51	91	40
# 065 F 951 BRIDGE SS 304 2040385	40	40	0
# 080 F 951 BRIDGE SS 304 2032896	130	130	0
# 100 F 951 BRIDGE SS 304 2009448	242	301	59
# 125 F 951 BRIDGE SS 304 2014846	3	3	0
# 150 F 951 BRIDGE SS 304 2021808	328	111	-217
# 200 F 951 BRIDGE SS 304 2014523	74	124	50
ALEVER 3V 49204 SS 304 (NEW)	32	47	15
# 050 F 952 E CAST 4 LUG SS 316 2010840	153	204	51
# 080 F 952 E CAST 4 LUG SS 316 2030663	119	138	19
# 100 F 952 E CAST 4 LUG SS 316 2027812	207	202	-5
# 080 F 952 E CAST 8 LUG SS 316 2005808	53	54	1
# 100 F 952 E CAST 8 LUG SS 316 2025875	3	0	-3
# 125 F 952 E CAST 8 LUG SS 316 2001031	1	1	0
# 150 F 952 E CAST 8 LUG SS 316 2006527	22	29	7
IMPELLER 65 X 50 - 160 SEB063	113	113	0
IMPELLER 80 X 65 - 160 SEC063	139	140	1
IMPELLER 80 X 50 - 200 SFC063	170	169	-1
IMPELLER 100 X 65 - 200 SFD063	159	144	-15
IMPELLER 125 X 100 - 200 SFF063	70	71	1
IMPELLER 80 X 50 - 250 SGC063	249	251	2
IMPELLER 125 X 100 - 250 SGF063	193	196	3

**Table 4.1. Continuation**

IMPELLER 150 X 125 - 250 SGG063	79	76	-3
IMPELLER 80 X 50 - 315 SHC063	2	1	-1
IMPELLER 100 X 65 - 315 SHD063	43	44	1
IMPELLER 125 X 80 - 315 SHE063	49	43	-6
IMPELLER 125 X 100 - 315 SHF063	48	22	-26
IMPELLER 150 X 125 - 315 SHG063	43	10	-33
IMPELLER 250 X 200 - 315 SHJ063C	17	3	-14
IMPELLER 125 X 80 - 400 SJE063	10	4	-6
IMPELLER 150 X 125 - 400 SJG063	8	8	0
IMPELLER 200 X 150 - 400 SJH063C	13	3	-10
IMPELLER 125 X 100 - 500 SKF063C	2	2	0
# 100 F 951 BRIDGE SS 316	31	31	0
IMPELLER 100 X 80 - 160 SED063	82	51	-31
IMPELLER 125 X 80 - 200 SFE063	73	76	3
IMPELLER 65 X 40 - 250 SGB063	1	0	-1
IMPELLER 100 X 65 - 250 SGD063	47	26	-21
IMPELLER 200 X 150 - 315 SHH063C	6	1	-5
IMPELLER 150 X 125 - 500 SKG063C	5	1	-4
IMPELLER 125 X 80 - 400 SJE763	5	0	-5
IMPELLER 150 X 125 - 315 SHG763	9	10	1
# 080 F 952 E CAST 4 LUG SS 317 2030663	4	4	0
# 050 F 952 BODY E 4 LUG SAF2205 GR CD3MN	9	7	-2
# 080 F 952 BODY E 8 LUG SAF2205 GR CD3MN	5	5	0
# 150 F 952 E CAST 8 LUG SS 317 2006527	53	54	1
# 100 F 952 BODY E CAST 8 LUG SAF2205 GR CD3MN	1	1	0
KNUCLE JOINT NJUT 4 SS 304	115	114	-1
KNUCLE JOINT NJUT 10 SS 304	93	84	-9
HEAVY DUTY SINGLE PIN CLAMP 10-20/A37111100042	3155	3155	0
HEAVY DUTY SINGLE PIN CLAMP 4 1/2" DN115 1111100852	309	309	0
HEAVY DUTY SINGLE PIN CLAMP 2 1/2" 111100592	1516	1516	0
HEAVY DUTY SINGLE PIN CLAMP 3 1/2"/DN80 111100102	324	324	0
HEAVY DUTY SINGLE PIN CLAMP 3 1/2"/DN80 111100102	67	67	0
HANDLE TYPE A 150 SS 304	35	35	0
TRAVEL STOP CAM D TO # 25.4 F79U SS 304 2021640	3	3	0
KNUCLE JOINT NJUT 5 SS 304	114	114	0
KNUCLE JOINT NJUT 6 SS 304	12	0	-12

**Table 4.1. Continuation**

K10 - 40 KEY 12 X 8 X 80 SS 304	120	113	-7
K10 - 35 KEY 10 X 8 X 70 SS 304	71	74	3
TILLER ARM 342 X 85 X 70 SS 316	38	51	13
# 40 AQUALUBE SEAL BODY DIA 82 X 75 MM SS 316	31	30	-1
TILLER ARM DIA 40 MM 342 X 85 X 70 SS 316	14	34	20
K10 - 40S ROUND END KEY 12 X 8 X 60 SS 316	103	103	0
K10-50S ROUND END KEY 14 X 9 X 60 MM SS 316	52	52	0
35 MM SEAL CARRIER DIA 84 X 13.5 MM SS 316	38	76	38
Air Nozzle Furnace 324B76-1 Dia 90 x 140 HP	27	86	59
Air Nozzle U-Beam 324B94-61-3-1 Dia 50 x 92 (Hole 6 mm) HP	27	25	-2
Air Nozzle U-Beam 324B94-61-3-2 Dia 50 x 92 (Hole 4 mm) HP	25	23	-2
# 127 MM CLAMP COUPLING 127 - 400P S 45C	1	1	0
# 127 MM CLAMP COUPLING 127 - 350P S 45C	3	3	0
CASTING TEE # 3" ASTM A732-1A - 84C608658ABP1	123	123	0
CAST. MOUNTING BRACKET 125-600MM SS 304 2015237	14	14	0
CAST. KAIT SS 304	541	541	0
CAST BODY CHECK VALVE 100 MM SS 316 2036250	61	61	0
CAST BODY CHECK VALVE 050 MM SS 316 2010494	142	146	4
CAST BODY CHECK VALVE 080 MM SS 316 2044143	71	72	1
CAST BODY CHECK VALVE 150 MM SS 316 2005414	51	51	0
CAST BODY CHECK VALVE 065 MM SS 316 2020671	155	154	-1
CAST BODY CHECK VALVE 125 MM SS 316 2008848	165	167	2
CAST WT HANDLE SELECTRIX SS 316	111	111	0
CASTING DISC 302Y/125A SCS 13A E2-06933-R3	1	1	0
CASTING DISC 302Y/300A SCS 16A E3-18128-R0	1	1	0
CASTING BASE P3326-01 SS 316	1270	1270	0
CASTING D-HOOK P3326-03 SS 316	414	1260	846
CASTING BASE PI5233-01 SS 316	245	245	0
CASTING D-HOOK PI5233-03 SS 316	1	1	0
# 250 F 459 BRIDGE CAST SS 316	46	46	0
# 050 F 951 GLAND BOX SS 304 2031078 CAST	106	132	26
# 050 F 951 GLAND BOX SAF2205 GR CD3MN CAST	14	14	0

**Table 4.1. Continuation**

# 065 F 951 GLAND BOX SS 304 2010502 CAST	11	14	3
# 080 F 951 GLAND BOX SS 304 2009260 CAST	214	174	-40
# 100 F 951 GLAND BOX SS 304 2020491 CAST	74	42	-32
# 100 F 951 GLAND BOX SS 316 CAST	53	53	0
# 125 F 951 GLAND BOX SS 304 2022771 CAST	1	15	14
# 150 F 951 GLAND BOX SS 304 2031859 CAST	163	216	53
# 200 F 951 GLAND BOX SAF2205 GR CD3MN CAST	1	1	0
# 200 F 951 GLAND BOX SS 304 2042422 CAST	180	181	1
# 200 F 951 GLAND BOX SS 316 CAST	21	21	0
# 250 F 951 GLAND BOX SAF2205 GR CD3MN CAST	16	16	0
# 250 F 951 GLAND BOX SS 304 2033000 CAST	75	77	2
# 250 F 951 GLAND BOX SS 316 CAST	7	7	0
# 300 F 951 GLAND BOX SAF2205 GR CD3MN CAST	14	14	0
# 300 F 951 GLAND BOX SS 304 2042036 CAST	224	228	4
# 300 F 951 GLAND BOX SS 316 CAST	18	18	0
CAST RELL BAR SS 304	705	705	0
CASTING SLOT BARR # 11 X 11 MM SS 310	41	41	0
CASTING LOCKING NUT P3326-06 SS 316	365	365	0
# 250 F 459 BRIDGE SS 304 2014042 CAST	139	139	0
CASTING HANDLE PI5233-2 SS 316	236	236	0
CASTING DISC 302Y/100A SCS 13A E2-06932-R2	3	3	0

## **CHAPTER 5**

### **CONCLUSION AND SUGGESTION**

This chapter aims to explain the conclusion and suggestion that could be gotten based on the internship.

#### **5.1. Conclusion**

- a. The student has done the internship in PT. Stainless Steel Primavalve Majubersama, in Tangerang, with the period of January 3<sup>rd</sup>, 2018 to February 14<sup>th</sup>, 2018, or as equal to 25 working days.
- b. PT. Stainless Steel Primavalve Majubersama is a casting manufacturer, that has three kinds of product, which are Original Equipment Manufacturer (OEM), Sanitary, and Valve or Energy products.
- c. There are two improvements proposed by the student, such as the design for locating pallets in machining area and design for the layout of sanitary assembly workstation. The improvements design have discussed with the on-site supervisor, foreman, and operators.
- d. The student does some administrative work of Production Planning and Inventory Control department in the company.

#### **5.2. Suggestion**

In order to perform better, especially for PPIC department, the student suggests some recommendation to the company.

- a. Do scheduling with specific machines and material container with the purpose of making controlling activity easier.
- b. Occasionally, there is misunderstanding information between the PPIC team and Production team. In order to prevent it happen, a systematic information system may be needed, since the applied system (Microsoft Dynamics AX) does not have enough information for inside production floor (from Injection process until final checking process).

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## Appendix 1 – Job Description

- a. Commercial Team
  - i. Sales Manager

	<b>JOB DESCRIPTION</b>	Ref. Numb. : -
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date :
<b>Position : Sales Manager</b>		<b>Department : Commercial</b>
<b>Area / Section : SBU OEM / Sales</b>		<b>Superior : Director</b>
<b>RESPONSIBILITY :</b> <ul style="list-style-type: none"><li>1. Execute working system of Sales SBU OEM according to quality management system of ISO 9001</li><li>2. Create planning for sales annually</li><li>3. Do visitation to customer in order to get new opportunity / new sales order</li><li>4. Be responsible for outstanding customer</li><li>5. Be responsible with after sales customer</li><li>6. Making a new quotation.</li><li>7. Follow up Production</li><li>8. Search new opportunity by website.</li><li>9. Sales call : maintain existing customer &amp; new customer</li></ul>		
<b>AUTHORITY :</b> <ul style="list-style-type: none"><li>1. Create yearly plan for sales</li><li>2. Give the budget discount</li></ul>		
<b>EMPLOYMENT RELATIONSHIP :</b>		

<p>1. INTERNAL :</p> <p>a. Having access in all Strategic Business Unit (SBU) and all related departments.</p> <p>b. Coordinate with all department related with implementation of quality management system ISO 9001, API Q1, System AX, Corporate Compliance, Customer Compliance, HSE, 5R, and other related system application</p> <p>2. EXTERNAL :</p> <p>a. Customer, which related with product compliance and price negotiation</p>		
<p><b>REQUIREMENT :</b></p> <ul style="list-style-type: none"> <li>- Minimum education is Diploma III</li> <li>- Understand ISO 9001</li> <li>- Computer and active English skill</li> <li>- At least 5 years working experience</li> </ul>		
	Prepared by :	Known by :

ii. Sales

		<p><b>JOB DESCRIPTION</b></p>		Ref. Numb. :-
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA				Date :
<b>Position : Sales</b>			<b>Department : Commercial</b>	
<b>Area / Section : SBU OEM / Sales</b>			<b>Superior : Sales Manager</b>	

**RESPONSIBILITY :**

1. Execute working system of Sales SBU OEM according to quality management system of ISO 9001
2. Do visitation to customer in order to get new opportunity / new sales order
3. Be responsible for outstanding customer
4. Be responsible with after sales customer
5. Making a new quotation.
6. Follow up Production
7. Search new opportunity by website.
8. Sales call : maintain existing customer & new customer

**AUTHORITY :**

1. Create yearly plan for sales

**EMPLOYMENT RELATIONSHIP :**


1. INTERNAL :
  - a. Having access in all Strategic Business Unit (SBU) and all related departments.
2. EXTERNAL :
  - a. Customer, which related with product compliance and price negotiation

**REQUIREMENT :**

- Minimum education is Diploma III
- Understand ISO 9001
- Computer and active English skill
- At least 3 years working experience


	Prepared by :	Known by :

iii. Sales Admin

	<h2>JOB DESCRIPTION</h2>	Ref. Numb. : -
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date :
<b>Position : Sales Admin</b>		<b>Department : Commercial</b>
<b>Area / Section : SBU OEM / Sales</b>		<b>Superior : Sales Manager</b>
<b>RESPONSIBILITY :</b> <ol style="list-style-type: none"> <li>1. Execute working system of Sales SBU OEM according to quality management system of ISO 9001</li> <li>2. Processing purchase order from customer to System AX</li> <li>3. Save all exported and local file</li> <li>4. Process inquiry from sales</li> <li>5. Do correspondence with PPIC, production, and warehouse in order to follow the product that would be released soon</li> <li>6. Do correspondence with forwarder team in order to process CoC Export</li> <li>7. Create and process the returned goods</li> <li>8. Process the filling in sales agency</li> </ol>		
<b>AUTHORITY :</b> <ol style="list-style-type: none"> <li>1. Inquiry process to customer</li> </ol>		
<b>EMPLOYMENT RELATIONSHIP :</b> Having access in all Strategic Business Unit (SBU) and all related departments.		
<b>REQUIREMENT :</b> <ul style="list-style-type: none"> <li>- Minimum education is Diploma III</li> <li>- Understand ISO 9001</li> </ul>		


- Computer and active English skill		
	Prepared by :	Known by :

iv. Account Officer

		<h2>JOB DESCRIPTION</h2>	Ref. Numb. : -
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA			Date :
<b>Position : Account Officer</b>		<b>Department : Commercial</b>	
<b>Area / Section : SBU OEM / Sales</b>		<b>Superior : Sales Manager</b>	
<b>RESPONSIBILITY :</b> <ol style="list-style-type: none"> <li>1. Execute working system of Sales SBU OEM according to quality management system of ISO 9001</li> <li>2. Processing purchase order from customer to System AX</li> <li>3. Save all exported and local file</li> <li>4. Process inquiry from sales</li> <li>5. Do correspondence with PPIC, production, and warehouse in order to follow the product that would be released soon</li> <li>6. Do correspondence with forwarder team in order to process CoC Export</li> <li>7. Create and process the returned goods</li> <li>8. Process the filling in sales agency</li> <li>9. Proses RFQ for each customer</li> </ol>			

<b>AUTHORITY :</b> 1. Do RFQ process to Quotation		
<b>EMPLOYMENT RELATIONSHIP :</b> - Across department for running ISO 9001		
<b>REQUIREMENT :</b> - Minimum education is Diploma III - Understand ISO 9001 - Computer and active English skill		
	Prepared by :	Known by :

v. Technical Support

 PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA	<h2>JOB DESCRIPTION</h2>	Ref. Numb. : -
		Date :
<b>Position : Technical Support</b>	<b>Department : Commercial</b>	
<b>Area / Section : SBU OEM / Sales</b>	<b>Superior : Sales Manager</b>	
<b>RESPONSIBILITY :</b> 1. Execute working system for sales in SBU OEM according to quality management system ISO 9001 2. Visit customer: 3customer/week 3. Do presentation, handling complain, survey specification		

4. Analyze and trouble shooting 5. Check specification of BQ/Inquiry 6. Training TO Sales and AO 7. Create and process returned product		
<b>AUTHORITY :</b> 1. Giving advice to handling complain including technical specification		
<b>EMPLOYMENT RELATIONSHIP :</b> - Across department for running ISO 9001		
<b>REQUIREMENT :</b> - Minimum education is Diploma III - Understand ISO 9001 - Computer and active English skill		
	Prepared by :	Known by :


vi. Marketing Communication

	<b>JOB DESCRIPTION</b>	Ref. Numb. : -
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PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date :
<b>Position : Marketing Communication</b>		<b>Department : Commercial</b>
<b>Area / Section : SBU OEM/ Commercial</b>		<b>Superior : Manager</b>
<b>RESPONSIBILITY :</b> 1. Execute working system of Sales SBU OEM according to quality management system of ISO 9001 2. Update website & social media contents 3. Update Design Collateral Marketing (Brochure, Catalog, Company Profile, calendar) 4. Update presentation file for sales 5. Prepare and held exhibition 6. Email blast for promotion 7. Editing Video Promotion & Corporation		
<b>AUTHORITY :</b> 1. Update company's website		
<b>EMPLOYMENT RELATIONSHIP :</b> - Across department for running ISO 9001		
<b>REQUIREMENT :</b> - Minimum education is Diploma III - Understand ISO 9001 - Computer and active English skill		
		Prepared by :
		Known by :



- b. Operational Team
  - i. Operational Manager

	<h2 style="margin: 0;">JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Operational Manager</b>		<b>Department : Operation</b>
<b>Area / Section : Operation SBU OEM</b>		<b>Superior : Director</b>
<p><b>RESPONSIBILITY :</b></p> <ol style="list-style-type: none"> <li>1. Lead, manage, monitor all operational in area of Operation SBU OEM (original equipment manufacturer) including working area of Casting Production, Machining, Engineering PPIC, QA/QC, Maintenance and Warehouse.</li> <li>2. Implement Quality Management System ISO 9001 and API Q1</li> <li>3. Coordinate, monitor, and execute operational work in SBU OEM in accordance with applied Key Performance Indicator</li> <li>4. Monitor and analyze result of productivity, effectivity and efficiency of production system including human resources, materials, consumable, products and delivery.</li> <li>5. Doing continuous improvement program in production area including human resources, machine, working area, materials, consumable, products, and delivery.</li> <li>6. Execute HSE and 5R program.</li> </ol>		
<p><b>AUTHORITY :</b></p> <ol style="list-style-type: none"> <li>1. Recommend Board of Director related with improvement in operational.</li> <li>2. Handle strategic problem and technic related with productivity.</li> </ol>		

3. Implement product analysis and development.
4. Arrange and direct work in each working area with each responsible person, and giving KPI to Operation Team.
5. Determine the budget for operational work, including the human resources, material, consumable, and products.

**EMPLOYEMENT RELATIONSHIP :**

1. INTERNAL :

- a. Having access in all Strategic Business Unit (SBU) and all related department.
- b. Coordinating with all department about implementation of Quality Management System ISO 9001, API Q1, System AX, Corporate Compliance, Customer Compliance, HSE, 5R, and other related system applications.

2. EXTERNAL :


- a. Customer, which related with Product Compliance and facility

**REQUIREMENTS:**

- Minimum title is Bachelor in Engineering
- Managerial and Leadership skill
- Understanding the working procedure of ISO 9001 and API Q1
- Computer and active English skill
- More than 5 years experiences in manufacturing

	Prepared by:	Known by:
	-	

ii. Engineering Product

	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Engineering Product</b>	<b>Department : Operation</b>	
<b>Area / Section : SBU OEM / Casting</b>	<b>Superior : Engineering Manager</b>	
<p><b>RESPONSIBILITY :</b></p> <ol style="list-style-type: none"> <li>1. Execute the engineering working system in accordance with Quality Management System ISO 9001</li> <li>2. Calculate the processing cost and create Bill of Material (BOM) SBU OEM product</li> <li>3. Execute the trial and development process of product in order to fulfill the specification and customer requirement</li> <li>4. Create Inspection Test Plan (ITP), QCPC, Technical Agreement as the reference for testing the product before it is releasing</li> <li>5. Create gating system for new products, and analyze with software to analyze whether it is appropriate or not</li> <li>6. Create data and report from the result of trial development and trial improvement</li> </ol>		
<p><b>AUTHORITY :</b></p> <ul style="list-style-type: none"> <li>Calculate casting estimation on casting product</li> <li>Doing procurement of mold, tools, fixture and jig</li> <li>Create the standard process and the parameter for casting product</li> </ul>		
<p><b>EMPLOYMENT RELATIONSHIP :</b></p>		


Access on production and marketing area related with casting product  
 Access on production area including material trial, method, and changes in product specification  
 Access related with engineering documents in accordance with Quality Management System

**REQUIREMENTS:**

- Minimum title is Bachelor in Engineering
- Managerial and Leadership skill
- Understanding the working procedure of ISO 9001
- Computer and active English skill
- More than 5 years experiences in manufacturing

	Prepared by:	Known by:
	-	

iii. Engineering Process

	<b>JOB DESCRIPTION</b>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Engineer Proses</b>		<b>Department : Operation</b>
<b>Area / Section : SBU OEM / Casting</b>		<b>Superior : Engineering Manager</b>
<b>RESPONSIBILITY :</b>		
1. Execute the Engineering working system correspond with Quality Management System		

ISO 9001

2. Doing improvement on product and process on production SBU OEM area
3. Create trial improvement report including cycle time and rate of rejection
4. Do trial for decreasing rate of rejection of the product
5. Do material efficiency trial
6. Do trial for decreasing cycle time of processes

**AUTHORITY :**

Do trial of improvement and modification of process

**EMPLOYMENT RELATIONSHIP :**


Access on production and marketing area related with casting product  
Access on production area including trial for material, method, and changes of product specification  
Access related with engineering document in accordance with Quality Management System

**REQUIREMENT :**

- Minimum title is Diploma in Engineering
- Managerial and Leadership skill
- Understanding the working procedure of ISO 9001
- Computer and active English skill
- More than 5 years experiences in production


	Prepared by:	Known by:
	-	Arif Wibowo
	Staf Recr. & Training	Manager

iv. Engineering Estimator

	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA	Date : -	
<b>Position : Engineer Estimator</b>		<b>Department : Operation</b>
<b>Area / Section : SBU OEM/ Casting</b>		<b>Superior : Engineering Manager</b>
<p><b>RESPONSIBILITY :</b></p> <ol style="list-style-type: none"> <li>1. Execute Engineering working system according to Quality Management System on ISO 9001</li> <li>2. Estimate production cost based on inquiry from marketing</li> <li>3. Calculate production cycle time for new product and improved product</li> <li>4. Create and update production process standard ( QCPC, WRS )</li> <li>5. Create Line BOM</li> <li>6. Create Route BOM</li> </ol>		
<p><b>AUTHORITY :</b></p> <ul style="list-style-type: none"> <li>Calculate estimated casting for its products</li> <li>Create standard process and the parameter for casting product</li> </ul>		
<p><b>EMPLOYMENT RELATIONSHIP :</b></p> <ul style="list-style-type: none"> <li>Access on production and marketing area related with casting product</li> <li>Access with production area including trial for material, method, changes of any specification product</li> <li>Access related with engineering documents based on Quality Management System</li> </ul>		
<p><b>REQUIREMENT :</b></p> <ul style="list-style-type: none"> <li>- Minimum title is Bachelor in Engineering</li> </ul>		

<ul style="list-style-type: none"> <li>- Managerial and Leadership skill</li> <li>- Understanding the working procedure of ISO 9001</li> <li>- Computer and active English skill</li> </ul>		
	Prepared by:	Known by:

v. Engineering Drafter

	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Engineer Drafter</b>		<b>Department : Operation</b>
<b>Area / Section : SBU OEM / Casting</b>		<b>Superior : Engineering Manager</b>
<b>RESPONSIBILITY :</b> <ol style="list-style-type: none"> <li>1. Execute engineering system management according to Quality Management System on ISO 9001</li> <li>2. Create standard of the drawing to the whole product, tools, fixtures, jig, etc</li> <li>3. Create process of casting simulation</li> <li>4. Follow up the whole process related with casting which is done by subcontractor until it is received by the originator</li> </ol>		
<b>AUTHORITY :</b> Create standard of process and the parameter for casting product		

**EMPLOYMENT RELATIONSHIP :**


Access with production and marketing area related with casting product  
 Access with production area including trial for material, method, changes in product specification  
 Access related with engineering document according to Quality Management System

**REQUIREMENT:**

- Minimum title is Diploma in Engineering
- Able to operate drawing software (Solid Work, Autocad)
- Managerial and Leadership skill
- Understanding the working procedure of ISO 9001

	Prepared by:	Known by:


vi. Engineering Machining

	<b>JOB DESCRIPTION</b>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Engineer Machining</b>		<b>Department : Operation</b>
<b>Area / Section : Casting</b>		<b>Superior : Engineering Manager</b>
<b>RESPONSIBILITY :</b>		
1. Execute engineering working system according to quality management system on		



<p>ISO 9001</p> <ol style="list-style-type: none"> <li>2. Create design of machining process for each product</li> <li>3. Decreasing rejection rate on machining process</li> <li>4. Increasing productivity on machining process</li> <li>5. Do material efficiency trial and consumable machining process</li> </ol>		
<p><b>AUTHORITY :</b>          Execute changes in standard process          Procure mould, tools, fixture and jig          Create standard process and parameter process for casting product</p>		
<p><b>EMPLOYEMENT RELATIONSHIP :</b>          Access with production and marketing area related with casting product          Access with production area including trial for material, method, and changes in product specification          Access on engineering document according to quality management system</p>		
<p><b>REQUIREMENT :</b></p> <ul style="list-style-type: none"> <li>- Minimum title is Diploma in Engineering</li> <li>- Understand process for machining manual and CNC</li> <li>- Managerial and Leadership skill</li> <li>- Understanding the working procedure of ISO 9001</li> <li>- At least 3 years working experience</li> </ul>		
	Prepared by:	Known by:

vii. PPIC Supervisor

	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : PPIC Supervisor</b>		<b>Department : Operation</b>
<b>Area / Section : SBU OEM /Casting</b>		<b>Superior : PPIC Manager</b>
<p><b>RESPONSIBILITY :</b></p> <ol style="list-style-type: none"> <li>1. Execute PPIC working system according to quality management system on ISO 9001</li> <li>2. Create Production Planned Order</li> <li>3. Create Master Production Planning, which is consist of :             <ol style="list-style-type: none"> <li>a. Monthly Production Planning</li> <li>b. Monthly planning for material needed</li> <li>c. Monthly planning for man hour needed</li> </ol> </li> <li>4. Monitoring production process activity for fulfilling marketing demand</li> <li>5. Report finished casting and machining</li> <li>6. Control stock of raw material</li> <li>7. Monitoring progress of production in subcontractor</li> </ol>		
<p><b>AUTHORITY :</b></p> <p>Estimate finished production process from marketing          Determine need of material for production based on Bill of Material          Determine need of man hour for production based on Bill of Material          Determine process for subcontract based on available capacity</p>		


Determine overtime needed based on planned budget		
<b>EMPLOYEMENT RELATIONSHIP :</b>		
1. INTERNAL :		
a. Access with production and marketing area related with casting product		
b. Access with production area including trial for material, method, and changes in product specification		
2. EXTERNAL :		
a. Vendor, which related with sub contract process		
<b>PERSYARATAN PEKERJAAN:</b>		
- Minimum title is Bachelor in Engineering		
- Understand principle of Production Planning and Inventory Control		
- Managerial and Leadership skill		
- Understanding the working procedure of ISO 9001 and API Q1		
- Computer and active English skill		
	Prepared by:	Known by:
	-	Arif Wibowo
	Staf Recr. & Training	Manager

viii. PPIC Planner

	<b>JOB DESCRIPTION</b>	Ref. Numb. : JD-HRD01
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date. : -

<b>Position : PPIC Planner</b>	<b>Department : Operation</b>	
<b>Area / Section : SBU OEM / Casting</b>	<b>Superior : PPIC Supervisor</b>	
<b>RESPONSIBILITY :</b>		
<ol style="list-style-type: none"> <li>1. Execute PPIC working system according to quality management system on ISO 9001</li> <li>2. Create Job Card</li> <li>3. Create Transfer Order (Warehouse &amp; Subcontractor)</li> <li>4. Monitor production process activities for fulfilling marketing demand</li> </ol>		
<b>AUTHORITY :</b>		
Estimate finished production process from marketing		
<b>EMPLOYMENT RELATIONSHIP :</b>		
<ol style="list-style-type: none"> <li>a. Access with production and marketing area related with casting product</li> <li>b. Access with production area including trial for material, method, and changes in product specification</li> </ol>		
<b>REQUIREMENT :</b>		
<ul style="list-style-type: none"> <li>- Minimum education is graduated from high school</li> <li>- Understand principle of Production Planning and Inventory Control</li> <li>- Managerial and Leadership skill</li> <li>- Understanding the working procedure of ISO 9001</li> <li>- Computer and active English skill</li> </ul>		
	Prepared by:	Known by:


ix. PPIC Admin

	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : PPIC Planner</b>		<b>Department : Operation</b>
<b>Area / Section : SBU OEM / Casting</b>		<b>Superior : PPIC Supervisor</b>
<b>RESPONSIBILITY :</b> 1. Execute PPIC working system according quality management system on ISO 9001 2. Create Route Card 3. Create Transfer Order (Warehouse & Subcontractor) 4. Create Picklist 5. Create Inventory Movement 6. Create Planned Purchase Order 7. Create Stock Counting		
<b>AUTHORITY :</b> Doing stock counting on production area and PPIC Issues Purchase Request for Operational team		
<b>EMPLOYMENT RELATIONSHIP :</b> a. Access with production and marketing area related with inventory movement, transfer order, and counting		
<b>REQUIREMENT :</b> - Minimum education is graduated from high school		

<ul style="list-style-type: none"> <li>- Understand about Inventory Control</li> <li>- Understanding the working procedure of ISO 9001</li> <li>- Computer skill</li> </ul>		
	Prepared by:	Known by:
	-	Arif Wibowo
	Staf Recr. & Training	Manager

x. Production Manager

**Table 2.16. Job Description: Production Manager**

	<b>JOB DESCRIPTION</b>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Head of Department</b>		<b>Department : Operation</b>
<b>Area / Section : SBU OEM / Casting</b>		<b>Superior : Operational Manager</b>
<b>RESPONSIBILITY :</b>		
<ol style="list-style-type: none"> <li>1. Execute production system of SBU OEM according to quality management system on ISO 9001 and API Q1 application</li> <li>2. Work together with PPIC in order to do planning and scheduling for production</li> <li>3. Coordinate and monitor including giving advice to supervisor, foreman, leader in casting production area</li> <li>4. Be responsible with controlling raw material and man power efficiency, machines and tools</li> </ol>		

- 5. Running HSE and 5R program, including to ensure all employees using their protective equipment
- 6. Create daily report related with material, product and machine
- 7. Maintain the productivity and appraise working result of 5R and HSE

**AUTHORITY :**

- Evaluate performance of supervisor, foreman and leader
- Arrange operation of each machine

**EMPLOYEMENT RELATIONSHIP :**

Having access across departments related with quality of the product, delivery, material, and working procedure, including productivity

**REQUIREMENT :**

- Minimum title is Bachelor in Engineering
- Managerial and Leadership skill
- Understanding the working procedure of ISO 9001
- Computer and active English skill
- At least 5 years working experience

	Prepared by:	Known by:


xi. Production Supervisor

	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Supervisor</b>		<b>Department : Operation</b>
<b>Area / Section : SBU OEM / Casting</b>		<b>Superior : Manager Production</b>
<b>RESPONSIBILITY :</b> 1. Execute production working system of SBU OEM according to quality management system on ISO 9001 and API Q1 application 2. Coordinate and monitor including advising foreman and leader in casting production 4. Be responsible with controlling raw material and man power efficiency, machines and tools 4. Delegating daily work and responsibility to foreman and leader 5. Create production report for all working area 6. Running HSE and 5R program		
<b>AUTHORITY :</b> - Evaluate performance of foreman and leader for production target		
<b>EMPLOYMENT RELATIONSHIP :</b> Having access across departments related with product and production schedule		
<b>REQUIREMENT :</b> - Minimum title is Diploma in Engineering - Leadership skill - Understanding the working procedure of ISO 9001 and API Q1		




- Computer Microsoft Office - At least 3 years working experience in manufacture		
	Prepared by:	Known by:

xii. Production Leader

		<b>JOB DESCRIPTION</b>		Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA				Date : -
<b>Position : Leader</b>			<b>Department : Operation</b>	
<b>Area / Section : SBU OEM / Casting</b>			<b>Superior : Supervisor Production</b>	
<b>RESPONSIBILITY :</b> 1. Execute production working system of SBU OEM according to quality management system on ISO 9001 and API Q1 application 2. Coordinate and monitor including advising foreman and leader in casting production 4. Be responsible with controlling raw material and man power efficiency, machines and tools 4. Delegating daily work and responsibility to foreman and leader 5. Create production report for all working area 6. Running HSE and 5R program				
<b>AUTHORITY :</b>				

- Evaluate performance of operator for production target		
<b>EMPLOYMENT RELATIONSHIP :</b> Having access across departments related with product and production schedule		
<b>REQUIREMENT :</b> - Minimum title is Diploma in Engineering - Leadership skill - Understanding the working procedure of ISO 9001 - Computer Microsoft Office - At least 3 years working experience in manufacture		
	Prepared by:	Known by:

xiii. Production Admin

 PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA	<h2>JOB DESCRIPTION</h2>	Ref. Number :
		Date : -
<b>Position : Production Admin</b>	<b>Department : Operation</b>	
<b>Area / Section : SBU OEM / Casting</b>	<b>Superior : Production Supervisor</b>	
<b>RESPONSIBILITY :</b> 1. Execute production working system of SBU OEM according to quality management system		

- on ISO 9001
- 2. Create Route Card
- 3. Create Picklist
- 4. Create Report as finished
- 5. Process any permission letter for production team
- 6. Update daily result of production output

**AUTHORITY :**

- 1. Report production output as finished product

**EMPLOYMENT RELATIONSHIP :**

- a. Access with production and marketing area related with permission letter

**REQUIREMENT :**

- Minimum education is graduated from high school
- Understand about inventory control
- Understanding the working procedure of ISO 9001
- Computer skill

	Prepared by:	Known by:
	-	Arif Wibowo

xiv. QA-QC Manager

	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Manager</b>		<b>Department : Operation</b>
<b>Area / Section :SBU OEM/ Casting</b>		<b>Superior : Operational Manager</b>
<p><b>RESPONSIBILITY :</b></p> <ol style="list-style-type: none"> <li>1. Arrange all activities in field of Quality Assurance of SBU OEM including quality control process, incoming, in-process, final checking &amp; outgoing inspection, monitoring &amp; maintaining API Q1 and implementing ISO 9001 including system for controlling document</li> <li>2. Monitoring and reporting quality of products and activities including internal corrective action and preventive action</li> <li>3. Reviewing, creating, analyzing and giving corrective action related with customer complain</li> <li>4. Developing quality control system for improving its quality</li> <li>5. Do planning for characteristic control of new product from its standard process until the product finished</li> <li>6. Create and plan audit internal for quality each year based on API and ISO 9001, including requirement for development training for human resources</li> </ol>		
<p><b>AUTHORITY :</b></p> <ul style="list-style-type: none"> <li>- Do selection and determine quality of process starting from material until finished goods</li> <li>- Monitoring from its structure for quality of product</li> </ul>		
<p><b>EMPLOYEMENT RELATIONSHIP :</b></p> <ol style="list-style-type: none"> <li>1. INTERNAL :</li> </ol>		

- a. Having access in all Strategic Business Unit (SBU) and related departments
- b. Coordinate with all departments related with implementation of quality management system of ISO 9001, API Q1, System AX, Corporate Compliance, Customer Compliance, HSE, 5R, other related system application

2. EXTERNAL :


- a. Customer, which related with customer complain
- a. Vendor, which related with product complain

**REQUIREMENT :**

- Minimum title is Bachelor in Machine/Metallurgy Engineering
- Understanding the working procedure of ISO 9001
- Internal audit certification
- Understand about API Q1
- Computer and active English skill
- At least 5 years working experience

	Prepared by:	Known by:

xv. QA Energy


	<h2>JOB DESCRIPTION</h2>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Quality Assurance Energy</b>		<b>Departement : Quality Control</b>
<b>Area / Section : Energy</b>		<b>Superior : QA/QC Manager</b>
<p><b>TANGGUNG JAWAB :</b></p> <ol style="list-style-type: none"> <li>1. Arrange all activities in field of Quality Assurance of SBU OEM including quality control process, incoming, inproses, final checking &amp; outgoing inspection, monitoring &amp; maintaining API Q1 dan implementing ISO 9001 including system for controlling document</li> <li>2. Check implementation for production process according to QCPC</li> <li>3. Review production performance for inhouse</li> <li>4. Review product which will be released soon</li> <li>5. Review procedure related with Quality aspect including document from customer (product compliance), for both new and existing documents</li> <li>6. Follow Up CPAR (Corrective, Preventive action request) from customer complain and Internal Quality Issue, including its effectiveness</li> </ol>		
<p><b>AUTHORITY :</b></p> <ul style="list-style-type: none"> <li>- Do selection and determine quality of process starting from material until finished goods</li> <li>- Monitoring from its structure for quality of product</li> </ul>		
<p><b>EMPLOYEMENT RELATIONSHIP :</b></p> <ul style="list-style-type: none"> <li>- Across department which running ISO 9001 and API Q1 program</li> </ul>		

**REQUIREMENT :**

- Minimum title is Bachelor in Machine/Metallurgy Engineering
- Understanding the working procedure of ISO 9001
- Internal audit certification
- Understand about API Q1
- Computer and active English skill
- At least 5 years working experience

	Prepared by:	Known by:
	-	Arif Wibowo

xvi. QA Casting

	<b>JOB DESCRIPTION</b>	Ref. Number : JD-HRD01
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Quality Assurance Casting</b>		<b>Department : Quality Control</b>
<b>Area / Section : Casting</b>		<b>Superior : QA/QC Manager</b>
<b>RESPONSIBILITY :</b> <ol style="list-style-type: none"> <li>1. Arrange all activities in field of Quality Assurance of SBU OEM including quality control process, incoming, in-process, final checking &amp; outgoing inspection, monitoring &amp; maintaining API Q1 dan implementing ISO 9001 including system for controlling document</li> <li>2. Check implementation for production process according to QCPC</li> <li>3. Review production performance for in-house</li> </ol>		

4. Review product which will be released soon
5. Review procedure related with Quality aspect including document from customer (product compliance), for both new and existing documents
6. Follow Up CPAR (Corrective, Preventive action request) from customer complain and Internal Quality Issue, including its effectiveness
7. Post confirmation result of quarantine order on system (Microsoft Dynamic AX)

**AUTHORITY :**

- Do selection and determine quality of process starting from material until finished goods
- Monitoring from its structure for quality of product

**EMPLOYEMENT RELATIONSHIP :**

- Across department which running ISO 9001 and API Q1 program

**REQUIREMENT :**

- Minimum title is Bachelor in Machine/Metallurgy Engineering
- Understanding the working procedure of ISO 9001
- Internal audit certification
- Understand about API Q1
- Computer and active English skill
- At least 5 years working experience

	Prepared by:	Known by:
	-	Arif Wibowo
	Staf Recr. & Training	Manager




xvii. Warehouse Supervisor

		<b>JOB DESCRIPTION</b>		Ref. Number :
				Date : -
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA				
<b>Position : Supervisor</b>			<b>Department : Operational</b>	
<b>Area / Section : Warehouse</b>			<b>Superior : Operational Manager</b>	
<b>RESPONSIBILITY :</b>				
<ol style="list-style-type: none"> <li>1. Execute warehouse working system of SBU OEM according to quality management system of ISO 9001 and API Q1 application</li> <li>2. Coordinate and monitor including giving advise to foreman and leader in warehouse</li> <li>3. Be responsible with controlling raw material and efficiency of usage of human resources, machines and tools</li> <li>4. Delegating daily work and responsibility to foreman and leader</li> <li>5. Checking arrival of purchased product or material</li> <li>6. Running HSE and 5R program</li> <li>7. Print Receiving Note (RN)</li> <li>8. Preparing material based on production demand</li> <li>9. Creating PR (Purchase Request) based on warehouse needed</li> <li>10. Input Transfer Order to Subcontractor</li> </ol>				
<b>AUTHORITY :</b>				
<ul style="list-style-type: none"> <li>- Doing stock opname in warehouse</li> <li>- Doing Inventory Movement Adj</li> </ul>				

<b>EMPLOYMENT RELATIONSHIP :</b>		
- Across department which running ISO 9001 program		
<b>REQUIREMENT :</b>		
- Minimum title is Diploma in Engineering		
- Leadership skill		
- Understanding working procedure of ISO 9001		
- Computer Microsoft Office skill		
- At least 5 years working experience in manufacture		
	Prepared by:	Known by:

xviii. Warehouse Leader

 PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA	<h2>JOB DESCRIPTION</h2>	Ref. Number :
		Date : -
<b>Position : Warehouse Leader</b>	<b>Department : Operational</b>	
<b>Area / Section : Warehouse</b>	<b>Superior : Operational Manager</b>	
<b>RESPONSIBILITY :</b>		
1. Execute warehouse working system of SBU OEM according to quality management system of ISO 9001 and API Q1 application		

2. Coordinate and monitor including giving advice to operator in warehouse
3. Be responsible with controlling raw material and efficiency of usage of human resources, machines and tools
4. Delegating daily work and responsibility to operator and admin
5. Checking arrival of purchased product or material
6. Running HSE and 5R program
7. Print Receiving Note (RN)
8. Preparing material based on production demand
9. Creating PR (Purchase Request) based on warehouse needed
10. Input Transfer Order to Subcontractor

**AUTHORITY :**

- Doing stock opname in warehouse
- Doing Inventory Movement Adj

**EMPLOYEMENT RELATIONSHIP :**

- Across department which running ISO 9001 program


**REQUIREMENTS:**

- Minimum education is graduated from high school
- Leadership skill
- Understanding working procedure of ISO 9001
- Computer Microsoft Office skill
- At least 5 years working experience in manufacture

Prepared by:

Known by:

xix. Warehouse Admin

	<b>JOB DESCRIPTION</b>	Ref. Number :
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA		Date : -
<b>Position : Warehouse Admin</b>		<b>Department : Operational</b>
<b>Area / Section : Warehouse</b>		<b>Superior : Operational Manager</b>
<b>RESPONSIBILITY :</b> <ol style="list-style-type: none"><li>1. Execute warehouse working system of SBU OEM according to quality management system of ISO 9001 and API Q1 application</li><li>2. Coordinate and monitor including giving advice to foreman and leader in warehouse</li><li>3. Be responsible with controlling raw material and efficiency of usage of human resources, machines and tools</li><li>4. Delegating daily work and responsibility to foreman and leader</li><li>5. Checking arrival of purchased product or material</li><li>6. Running HSE and 5R program</li><li>7. Print Receiving Note (RN)</li><li>8. Preparing material based on production demand</li><li>9. Creating PR (Purchase Request) based on warehouse needed</li><li>10. Input Transfer Order to Subcontractor</li></ol>		
<b>AUTHORITY :</b>		

<ul style="list-style-type: none"> <li>- Doing stock opname in warehouse</li> <li>- Doing Inventory Movement Adj</li> </ul>		
<b>EMPLOYEMENT RELATIONSHIP :</b> <ul style="list-style-type: none"> <li>- Across department which running ISO 9001 program</li> </ul>		
<b>PERSYARATAN PEKERJAAN:</b> <ul style="list-style-type: none"> <li>- Minimum education is graduated from high school</li> <li>- Leadership skill</li> <li>- Understanding working procedure of ISO 9001</li> <li>- Computer Microsoft Office skill</li> <li>- At least 5 years working experience in manufacture</li> </ul>		
	Prepared by:	Known by:

## Appendix 2 – Attendance Card during the Internship

### 1. Period December 23<sup>rd</sup>, 2017 – January 22<sup>nd</sup>, 2018, Side 1

No. .... Nama Rico Shandy M.

BAGIAN Magang (PPIC)

BULAN 23 Desember 2017 - 22 Januari 2018

SAKIT	IZIN	ALPA	LAMBAT	LAIN <sup>2</sup>

Tgl.	Pagi		Siang		Lembur		Jam
	Masuk	Keluar	Masuk	Keluar	Masuk	Keluar	
1							
2							
3	07.40	17.00			OP		
4	07.50	17.00			OP		
5	07.50	17.00			OP		
6	~	~	LIBUR		~	~	
7	~	~	LIBUR		~	~	
8	07.50	17.00			OP		
9	07.50	17.00			OP		
10	08.00	17.00			OP		
11	07.55	17.00			OP		
12	07.55	17.00			OP		
13	~	~	LIBUR		~	~	
14	~	~	LIBUR		~	~	
15	08.00	17.00			OP		

### 2. Period December 23<sup>rd</sup>, 2017 – January 22<sup>nd</sup>, 2018, Side 2

No. .... Nama Rico Shandy M.

BAGIAN Magang (PPIC)

BULAN 23 Desember 2017 - 22 Januari 2018

SAKIT	IZIN	ALPA	LAMBAT	LAIN <sup>2</sup>

Tgl.	Pagi		Siang		Lembur		Jam
	Masuk	Keluar	Masuk	Keluar	Masuk	Keluar	
6	08.00	17.00			OP		
7	08.00	17.00			OP		
8	~	~	IZIM		~	~	
9	~	~	IZIM		~	~	
10	~	~	LIBUR		~	~	
11	~	~	LIBUR		~	~	
12	~	~	IZIM		~	~	
13							
14							
15							
16							
17							
18							
19							
20							
21							

3. Period January 23<sup>rd</sup>, 2017 – February 22<sup>nd</sup>, 2018, Side 1

No.		NAMA Rico Shandy Handoyo			
DEPT.		Universitas Atma Jaya Yogyakarta		DEPT. 23 Jan 2018 - 22 Feb 2018	
HADIR	HARI/ JAM	TDK. HADIR	HARI/ JAM	LEMBUR	HARI/ JAM
Masuk Tepat.		Sakit		Masuk Tepat.	
Masuk Lambat		izin		Masuk Lambat	
Keluar Awal.		Alpa		Keluar Awal.	

Tgl.	Pagi		Siang		Lembur		Jam
	Masuk	Keluar	Masuk	Keluar	Masuk	Keluar	
16							
17							
18							
19							
20							
21							
22							
23			IZIN				
24			IZIN				
25			IZIN				
26			IZIN				
27			LIBUR				
28			LIBUR				
29	08.00	17.00					
30	08.00	17.00					
31	08.00	17.00					

4. Period January 23<sup>rd</sup>, 2017 – February 22<sup>nd</sup>, 2018, Side 2

No.		NAMA Rico Shandy Handoyo			
DEPT.		Universitas Atma Jaya Yogyakarta		BULAN 23 Jan 2018 - 22 Feb 2018	

**KARTU ABSENSI**  
Nilai waktu adalah Produktifitas.

Tgl.	Pagi		Siang		Lembur		Jam
	Masuk	Keluar	Masuk	Keluar	Masuk	Keluar	
1	08.00	17.00					
2	08.00	17.00					
3	~	~	LIBUR				
4	~	~	LIBUR				
5	08.00	17.00					
6	08.00	17.00					
7	08.00	17.00					
8	08.00	17.00					
9	08.00	17.00					
10	08.00	15.00					
11	~	~	LIBUR				
12	08.00	17.00					
13							
14							
15							

**Appendix 3 – Student ID during the Internship**





**Appendix 4 – Certificate of Internship Completion**

