INDUSTRIAL PRACTICE REPORT

IN PT STAINLESS STEEL PRIMAVALVE MAJUBERSAMA

Submitted by:

Pradisty Herlina Setiabudi

NPM: 15 14 08610

INDUSTRIAL ENGINEERING STUDY PROGRAM

FACULTY OF INDUSTRIAL TECHNOLOGY

UNIVERSITAS ATMA JAYA YOGYAKARTA

2018

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 3rd, 2018 to February 2nd, 2018, by:

Name : Pradisty Herlina Setiabudi

Student ID : 15 14 08610

has been approved.

Yogyakarta, February 2nd, 2018

On-site Supervisor	Faculty Supervisor
PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA	
Aang Chris Harjanto, M.T.	V. Ariyono, S.T., M.T.

No : ...../HRD-SPVMB/CER/II/2018

Certification of Completion

OF EXCELLENCE

This Certificate is Presented to

PRADISTY HERLINA S

Has Succesfully Completed The Intership Program
At PT. Stainless Steel PrimaValve Maju Bersama

From 30th Nov 2017 - 2nd Feb 2018

Tangerang, 28 Februari 2018

Arif Wibowo
HRGA Manager

PT. STAINLESS STEEL PRIMAVALVE MAJUBERSAMA

Sopandi
General Manager Operational

ACKNOWLEDGEMENT

This internship report was written in order to meet the academic requirement for doing the final presentation. This report explains about the internship that was already done by the author at PT Stainless Steel Primavalve Majubersama. This report explains about the company as a place for doing the internship. Start with an introduction for doing the internship, overview, overview of the company, and the internship assignment that should be done by the author.

Author also would like to thank to Mr. V. Ariyono, S.T., M.T., as author's academic advisor because his advices and suggestions about doing the project during internship and writing the internship report.

Special thanks to PT Stainless Steel Primavalve Majubersama who supports author to do internship there. Thanks to Mr. Aang as a PPIC Manager, Mr. Sujadi as a Mentor in PPIC Department. for all of your guidance to the author during internship. Thanks to Mr. Gith, Ms. Merliana Waluyo, for giving the feedback about every solution that I have suggest.

Author would like to thanks to author's parents and friends for giving supports. Also, moral support, they were always taking care to the author. They always reminded author to work hard and keep healthy.

Yogyakarta, 30 April 2018

Author

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CHAPTER I

INTRODUCTION

This chapter discusses about the background, goals of technical practice, and also brief explanation about the duration and place to do technical practice.

1.1. Background

Department of Industrial Engineering (PSTI), Faculty of Industrial Technology, University of Atma Jaya Yogyakarta (PSTI UAJY), commands all students to do technical practice along with the stated curriculum in department. PSTI UAJY sees industrial practice as a media for students to know the environment of work, industry, and also grow, elevate, and innovate the ethic of professional working, as an Industrial Engineering graduate ahead.

Industrial practice can be said as a professional simulation for Industrial Engineering students. The paradigm is that within technical practice working days, students work in their chosen company. Work, in this statement includes planning, designing, improvement, implementation, and solution. Therefore, in technical practice, the activities done by students are:

a. Recognizing the scoop of company.
b. following the business process continously of a company.
c. Doing the assignments given by supervisor or field coach.
d. Observing the system.
e. Compiling written report.
f. Doing technical practice's examination.

Industrial Engineering is a field of study related with planning, designing, improvement, and installation of an integrated system, consists of Man, Machine, Material, Method, Money, Energy, Environment, and Information. In addition, scope of Industrial Engineer are an integrated system between aspects mentioned above (Man, Machine, Material, Method, Money, Energy, Environment, and Information). This means that in doing the responsibilities, Industrial Engineer has to see the activities based on its integrated system's point of view.

Area of comptencies for Industrial Engineer are including:

1. Work System Design and Analysis.
2. Production Planning and Controlling.
3. Inventory Management.
4. Quality Control System.
5. Material System.
6. Logistics and Supply Chain Management.
7. Product Design and Improvement.
8. Occupational Safety and Health.
9. Manufacturing Facility Planning.
10. Organizational Management.
11. Cost Analysis.
12. Industrial Feasibility Analysis.
13. CAD/CAM and Process Design, and others.

1.2. Purpose

Things to be achieved through the implementation of industrial practice are:

a. Practice self-discipline
b. Practice the ability to interact with employees
c. Practice the ability to adapt with working environment
d. Observe directly the activity of company in running the production and business
e. Complete the theories in college with the real condition in factory
f. Enhance the knowledge about production and business system

1.3. Date and Place

This industrial practice started from January 3 2018, up to February 2 2018, in PT. Stainless Steel Primavalve Maju Bersama (SPVMB), Industrial and Warehouse District Cikupa Mas, Mitra Mas Street Number 2, NA. 11, CA. 04, Talagasari, Cikupa, Tangerang, Banten, 15719. The performance of this technical practice will be continued with preparation of report, assessment, and also examination of technical practice.

In this technical practice activity, student was placed in PPIC Department (Production Planning and Inventory Control)

CHAPTER II

OVERVIEW OF COMPANY

This chapter discusses about the history, organizational structure of company, and management in PT. Stainless Steel Primavalve Majubersama.

2.1. Brief of Company's History

This subchapter will discuss about location or relocation of company, outgrowth of a company and its products, sertification or achievement of company, characteristic of a company, and more.

2.1.1. Location of Company

The factory of PT. Stainless Steel Primavalve Majubersama (SPVMB) is located in Industrial and Warehouse District Cikupa Mas, Mitra Mas Street Number 2, NA. 11, CA. 04, Talagasari, Cikupa, Tangerang, Banten, 15719. This factory has overall area about 10.000 m^2.

2.1.2. History of Company

PT. Stainless Steel Primavalve Majubersama is a manufacturer and distributor of stainless steel based equipment. Established in 1994 and has grown rapidly to become one of the major stainless steel equipment manufacturers in Indonesia.
In 1996 the Stainless Steel Investment Casting Division was established to produce Stainless Steel Sanitary components and other precision cast component. In 2005, Automation machine and new testing equipment were deployed to ensure accuracy and to increase productivity. Company expansion was also include the establishment of Surabaya branch office and warehouse in 2006. In 2010, the company head office moved to a new facility in Cikupa Mas, occupying a 10.000 m2 area which is also include a technologically advanced factory.

2.1.5. Achievement of Company

PT. Stainless Steel Primavalve Majubersama has got several achievements and awards in several aspects, such as:

a. SKT Migas No. 0079/SK03/DMT/2015

b. Quality Management System ISO 9001:2008

c. Reg. No: 01 100 023813 from TUV Rheinland Germany

d. SKUP No. 4113/19.07/DMB/2015 (SKUP scope: Valves, Machinery Accessories, Instruments)

e. PTK 007/PTK/VI/2004 from BP MIGAS

f. API-6D No. 6D-1375

g. ANSI/API STD 607 No. 247429

2.2. Organizational Structure

This suborder will discuss about the organization structure, and also job descriptions for each departments.

2.2.1 Organizational Structure of Company

Organizational structure is a brief explanation for job descriptions and responsibilities to individuals or departments of an organization. Organizational structure has an importsnt role in order to determine and ensure the business of company. Organizational structure describes job descriptions, authorities, responsibilities, and also work relationship between each other, so all employees know clearly their jobs, and source they get order, and to whom they should responsible to. By making organizational structure and fixed job descriptions will create good working environment, because the order received by subordinate from the top level won't overlap by another order received by another subordinate from another top level.

2.2.2. Job Descriptions

Job descriptions of each of titles in PT. Stainless Steel Primavalve Majubersama are described below.

A. Sales Manager

Area/Section: SBU OEM / Sales

Department: Commercial

Responsible to: Director

Responsibilities:

1. Run the work system of Sales SBU OEM along with quality management system ISO 9001
2. Make annual selling plan
3. Do visiting to customer to get new opportunity / new sales order
4. Responsible to outstanding customer

5. Responsible to after sales customer
6. Make new quotation
7. Follow up production
8. Search new opportunity by website
9. Maintain excisting customer and new customer

Authorities:

1. Make annual selling plan
2. Give budget discount

Work Relationship:

1. Internal
   a. Have access in all Strategic Business Unit (SBU) and all related departments.
   b. Cooperate with all departments, related to implementation of quality management system ISO 9001, API Q1, System AX, Corporate Compliance, Customer Compliance, HSE, 5R, and other related application system.
2. External
   a. Customer related to Product Compliance, and Negotiation Price

B. Sales

Area/Section: SBU OEM / Sales

Department: Commercial

Responsible to: Sales Manager

Responsibilities:

1. Run the work system of Sales SBU OEM along with quality management system ISO 9001.
2. Make annual selling plan.
3. Do visiting to customer to get new opportunity / new sales order.
4. Responsible to outstanding customer.
5. Responsible to after sales customer.
6. Make new quotation.
7. Follow up production.
8. Search new opportunity by website.
9. Maintain excisting customer and new customer.

Authorities:

1. Make annual selling plan.
2. Give budget discount.

Work Relationship:

1. Internal
    a. Have access in all Strategic Business Unit (SBU) and all related departments.
2. External
    a. Customer related to Product Compliance, and Negotiation Price

C. Sales Admin

Area/Section: SBU OEM / Sales

Department: Commercial

Responsible to: Sales Manager

Responsibilities:

1. Run work system of Sales SBU OEM along with quality management system ISO 9001.
2. Process PO from Customer to System AX.
3. Do saving File Export & Local.
4. Process Inquiry from Sales.
5. Do correspondency with PPIC, Production, and Warehouse to follow up goods that will be transferred.
6. Do correspondency of forwarder team to process Coc Export (NPE, PEB, AWB, BL, etc).
7. Make and process goods' return.
8. Process (pengajuan biaya dinas sales)

Authorities:

1. Inquiry process to Customer

Work Relationship

1. Cross department in order to run ISO 9001 program.

D. Account Officer

Area/Section: SBU OEM / Sales

Department: Commercial

Responsible to: Sales Manager

Responsibilities:

1. Run work system of Sales SBU OEM along with quality management system ISO 9001.
2. Process PO from Customer to System AX.
3. Do saving File Export & Local.
4. Process Inquiry from Sales.
5. Do correspondency with PPIC, Production, and Warehouse to follow up goods that will be transferred.
6. Do correspondency of forwarder team to process Coc Export (NPE, PEB, AWB, BL, etc).
7. Make and process goods' return.
8. Process (pengajuan biaya dinas sales)
9. Process the RFQ to customer.

Authorities:

1. Do RFQ process to Quotation

Work Relationship

1. Cross department in order to run ISO 9001 program.

E. Technical Support

Area/Section: SBU OEM / Sales

Department: Commercial

Responsible to: Sales Manager

Responsibilities:

1. Run work system of Sales SBU OEM along with quality management system ISO 9001.
2. Do Visit Customer with target is 3 customers/week.
3. Do presentation, handling complaints, survey specifications.
4. Analyse and trouble shooting.
5. Check the specifications BQ/Inquiry
6. Training TO Sales and AO.
7. Make and process goods' return.

Authorities:

1. Give advice to handling complaints and also technical specifications.

Work Relationship

1. Cross department in order to run ISO 9001 program.

F. Marketing Communication

Area/Section: SBU OEM / Sales

Department: Commercial

Responsible to: Manager

Responsibilities:

1. Run work system of Sales SBU OEM along with quality management system ISO 9001.
2. Update contents for website and social media.
3. Update design for collateral marketing (Brochure, Catalogue, Company Profile Calendar, etc.).
4. Update presentation for Sales.
5. Do presentation and execution for exhibition.
6. Email-blasting of promotion's material.
7. Edit the video promotion and corporate.

Rights:

1. Update company's website.

Work Relationship

1. Cross department in order to run ISO 9001 program.

G. Operational Manager

Area/Section: Operation SBU OEM

Department: Operation

Responsible to: Director

Responsibilities:

1. Lead, control, and supervise all of Operational area of SBU OEM (Original Equipment Manufacturer), including working area of Casting Production, Machining Production, Engineering, PPIC, QA/QC, Maintenance and Warehouse.
2. Implement quality management system of ISO 9001 and API Q1
3. Cooperate, control, and run operation of SBU OEM along with fixed KPI.
4. Monitor and analyse productivity, effectivity, and efficiency of system.

5. Do continuous improvement program in production area, including human resources, machines, work environment, materials, consumable, products, and shipments.
6. Run HSE and 5R program.

Authorities:

1. Give advice to Board of Directors, related to improvement in Operation.
2. Solve problem strategically and technically related to productivity.
3. Implement the analysis and improvement of product.
4. Arrange and give instructions to all working area, and also give KPI (Key Performance Indicator) to Operation team.
5. Determine operational budget plan, including human resource, material, consumable, and product.

Work Relationship

1. Internal:
   a. Have all access in all Strategic Business Unit (SBU) and all related departments.
   b. Cooperate with all related departments related to implementation of quality management system ISO 9001, API Q1, System AX, Corporate Complince, Customer Compliance, HSE, 5R, and other related systems.
2. External
   a. Customers related to Product Compliance, Facility.

H. Product Engineer

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Engineering Manager

Responsibilities:

1. Run Engineering work system, along with quality management system ISO 9001.
2. Make drawing standard to all products, tools, fixtures, jig, and others.
3. Make casting simulation's processs
4. Do follow up to all processes related to casting, done in subcontractor to approved result, accepted by originator.

Authorities:

1. Calculate casting's estimation in casting product.
2. Mould, tools, fixture, and jig's procurement.
3. Make standard of process and parameter of process, of casting product.

Work Relationship

1. Have access to production area and marketing, related to casting product.
2. Have access to production area, including trial of material, method, changing of product specification.
3. Have access related to engineering's documents, related to quality management system.

I. Process Engineer

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Engineering Manager

Responsibilities:

1. Run Engineering work system, along with quality management system ISO 9001.
2. Do improvement on product and process in Production SBU OEM's area.
3. Make report of trial improvement, including cycle time and reject rate.
4. Run trial to decrease product's reject rate.
5. Run trial of material's efficiency.
6. Run trial to decrease cycle time.

Authorities:

1. Run the trial improvement process and changing process.

Work Relationship

1. Have access to production area and marketing, related to casting product.
2. Have access to production area, including trial of material, method, changing of product specification.
3. Have access related to engineering's documents, related to quality management system.

J. Estimator Engineer

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Engineering Manager

Responsibilities:

1. Run Engineering work system, along with quality management system ISO 9001.
2. Run process cost's estimation based on inquiry from Marketing.
3. Do calculation of cycle time to new product and improvement of product.
4. Make and update production process' standard (QCPC, WRS)
5. Create Line BOM
6. Create Route BOM

Authorities:

1. Calculate estimation of casting for casting product.
2. Make process' standardization and process' parameter of casting product.

Work Relationship

1. Have access to production area and marketing, related to casting product.
2. Have access to production area, including trial of material, method, changing of product specification.
3. Have access related to engineering's documents, related to quality management system.

K. Drafter Engineer

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Engineering Manager

Responsibilities:

1. Run Engineering work system, along with quality management system ISO 9001.
2. Make drawing standard to all products, tools, fixture, jigs, etc.
3. Make simulation of casting process

4. Do follow up to all processes related to casting, done in subcontractor until it is being approved and accepted by originator.

Authorities:

1. Make process' standardization and process' parameter of casting product.

Work Relationship

4. Have access to production area and marketing, related to casting product.
5. Have access to production area, including trial of material, method, changing of product specification.
6. Have access related to engineering's documents, related to quality management system.

L. Machining Engineer

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Engineering Manager

Responsibilities:

1. Run Engineering work system, along with quality management system ISO 9001.
2. Make machining process design to each product.
3. Decrease reject rate of machining process.
4. Increase productivity of machining process.
5. Do machining efficiency trial and consumable process machining.

Authorities:

1. Make standard process and parameter process of casting product.

Work Relationship

1. Have access to production area and marketing, related to casting product.
2. Have access to production area, including trial of material, method, changing of product specification.
3. Have access related to engineering's documents, related to quality management system.

M. PPIC Supervisor

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: PPIC Manager

Responsibilities:

1. Run PPIC work system, along with quality management system ISO 9001.
2. Create Production Planned Order.
3. Make Master Production Planning, including:
    a. Monthly Production Schedule
    b. Monthly Material Requirement Planning
    c. Monthly Man Hour Planning
4. Control production activity to fulfil marketing demand.
5. Report as finished Casting & Marketing.
6. Control Raw Material Stock.
7. Control progress of production subcont.

Authorities:

1. Determine estimation of production process form marketing.
2. Determine Material Requirement Planning based on Bill of Material
3. Determine Man Hour Requirement based on Bill of Material.
4. Determine Subcont's process based on actual capacity.
5. Determined overtime based on actual budget.

Work Relationship

1. Internal:
    a. Have access with production area and marketing, related to casting product
    b. Have access with production area including material's trial, method, changing of product specification.
2. External:
    a. Vendor, related to subcontract's process.

N. PPIC Planner

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: PPIC Supervisor

Responsibilities:

1. Run PPIC work system, along with quality management system ISO 9001.
2. Create job card
3. Create Transfer Order (Warehouse & Subcont)
4. Control production activity to fulfil demands from marketing.

Authorities:

1. Determine estimation of production process form marketing.

Work Relationship

1. Have access to production area and marketing related to casting product.
2. Have access to production area, including material's trial, method, changing of specification product.

O. PPIC Admin

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: PPIC Supervisor

Responsibilities:

1. Run PPIC work system, along with quality management system ISO 9001.
2. Create Route Card.
3. Create Transfer Order (Warehouse & Subcont).
4. Create Picklist.
5. Create Inventory Movement.
6. Create Planned Purchase Order.
7. Create Stock Counting.

Authorities:

1. Do stock counting in production area and PPIC.
2. Release Purchase Request of Operational Team.

Work Relationship

1. Have access with production area and marketing, related to inventory management, transfer order, and counting.

P. Production Manager

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Operational Manager

Responsibilities:

1. Run SBU production OEM work system, along with quality management system ISO 9001.
2. Cooperate with PPIC in making work plan and production schedule.
3. Cooperate and control and direct the job description to Supervisor, Foreman, Leader in casting production area
4. Responsible for material's controlling and efficiency of labours, machines, and tools.
5. Run HSE & 5R program and make sure all of staffs use safety properties (APD)
6. Make daily report related to materials, products, and machines.
7. Maintain productivity and give a performance indicator of 5R & HSE.

Authorities:

1. Evaluate performances of Supervisor, Foreman, and Leader.
2. Control operations of machines.

Work Relationship

1. Have access to cross department related to quality of product, delivery of product, material, procedure, and productivity.

Q. Supervisor

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Production Manager

Responsibilities:

1. Run SBU production OEM work system, along with quality management system ISO 9001.
2. Cooperate, control, and also give instructions to Foreman and Leader in casting production.
3. Responsible for material controlling and efficiency of labours, machines, and tools.
4. Delegate daily duty and responsibility.
5. Make production report in all working area.

6. Run HSE & 5R program.

Authorities:

1. Evaluate performances of Supervisor, Foreman, and Leader for production target.

Work Relationship

1. Have access to cross department related to products and production scheduling.

R. Production Leader

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Production Supervisor

Responsibilities:

1. Run SBU production OEM work system, along with quality management system ISO 9001.
2. Cooperate, control, and also give instructions to Foreman and Leader in casting production.
3. Responsible for material controlling and efficiency of labours, machines, and tools.
4. Delegate daily duty and responsibility.
5. Make production report in all working area.
6. Run HSE & 5R program.

Authorities:

1. Evaluate performances of operator for production target.

Work Relationship

1. Have access to cross department related to products and production scheduling.

S. Production Admin

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Production Supervisor

Responsibilities:

1. Run SBU production OEM work system, along with quality management system ISO 9001.
2. Create Route Card.
3. Create Picklist.
4. Create Report as finished.
5. Process leave permit, SIL.
6. Update daily production output.

Authorities:

1. Do report as finished of production output.

Work Relationship

1. Have access to production area and marketing, related to leave permit, or SIL.

T. QA/QC Manager

Area/Section: SBU OEM / Casting

Department: Operation

Responsible to: Operational Manager

Responsibilities:

1. Manage all activities in QA SBU OEM field, related to Quality Control incoming process, inprocess, final check & outgoing inspection, monitor & maintain API Q1 and implement ISO 9001, including document controlling's system.
2. Monitor and report quality of product and make internal corrective & preventive actions.
3. Review, make analyse, and give corrective action to customer's complaints.
4. Improve quality control system to improve quality of product.
5. Desain new product characteristics' controlling plan from process standard until finishing product.
6. Make & plan the annual internal quality audit based API & ISO 9001 and also requirement of improvement's training to all human resources.

Authorities:

1. Do selections and determine quality of process, starting from material until finished product.
2. Control the quality of product.

Work Relationship:

1. Internal:
    a. Have access in all Strategic Business Unit (SBU) and all related departments.
    b. Cooperate with all related departments, related to implementation of quality management system ISO 9001 API Q1, System AX, Corporate Compliance, Customer Compliance, HSE, 5R, other related system applications.
2. External:
    a. Customers, related to customer's complaint.
    b. Vendors, related to product complaint.

U. Quality Assurance

Area/Section: Energy

Department: Quality Control

Responsible to: QA/QC Manager

Responsibilities:

1. Manage all activities in QA SBU OEM field, related to Quality Control incoming process, inprocess, final check & outgoing inspection, monitor & maintain API Q1 and implement ISO 9001, including document controlling's system.
2. Cross-check of implementation of production parameter process, based on QCPC.
3. Review performance of production inhouse.
4. Review upcoming release product.
5. Review procedures related to Quality aspects, including documents from customer (product compliance), whether new documents or existing documents.
6. Follow up CPAR (Corrective, Preventive Action Request) from customer's complaint and internal quality issue, including efficiency.

Authorities:

1. Do selections and determine quality of process, starting from material until finished product.
2. Control the quality of product.

Work Relationship:

1. Cross department in order to run ISO 9001 & API Q1 program

V. Supervisor

Area/Section: Warehouse

Department: Operational

Responsible to: Operational Manager

Responsibilities:

1. Manage all activities in Warehouse of SBU OEM field, along with quality management system ISO 9001 and API Q1.
2. Cooperate and control and also give instructions of work to Foreman and Leader in Warehouse.
3. Responsible to material procurement and efficiency of man-hour, machines, and tools.
4. Delegate daily tasks and responsibility to Foreman and Leader.
5. Check product arrival or purchased material.
6. Run HSE & 5R program.
7. Print Receiving Note (RN).
8. Prepare material based on production request.
9. Make Purchase Request (PR)
10. Input Transfer Order to Subcont.

Authorities:

1. Do warehouse's stock opname.
2. Do inventory movement Adj.

Work Relationship:

1. Cross department in order to run ISO 9001 program.

2.3. Company's Management

This subchapter will describe about vision and mission, value of the company, employment, marketing, and facilities.

2.3.1. Vision and Mission

a. Vision

being a company which be able to compete in a global market and satisfy stakeholders.

b. Mission

a. Competitive in quality

b. Competitive in price

c. Competitive in delivery

d. Competitive response and service to customer

e. Competitive in product development

2.3.2. Employment

a. Staffs/Employees

The total employees in PT. Stainless Steel Primavalve Majubersama are 430 people. Employment in this company are divided into 4 Strategic Business Unit (SBU). The detail for the total employees in this company will be describe in Table 2.2. below.

Tabel 2.1. Number of Employees in PT. SPVMB

No.	SBU	Number of Employees
1.	*Casting (Staffs and Operators)*	205
2.	*Dstribution*	95
3.	*Energy*	53
4.	*Support*	77

b. Working Hours

To make workers feel comfortable while working and maximise their ability to work, it is needed a Standard Operational Procedure or SOP of workers, especially for working hours. The standard working hours stated by PT. Stainless Steel Primavalve Majubersama is 40 hours in a week. If it exceeds, it is considered as overtime. Working days is normally in six days for operators and outsources. Each of shifts has total working days for seven hours and an hour for break time. For Saturday, the total working hours are only six hours.

Employees in production work by following the shifts, where in each of shift has seven working hours, and an hour break time. The classification of shifts will be described below.

a. *Shift* 1: 07.00-16.00, break time is at 12.00-13.00

b. *Shift* 2: 16.00-22.00, break time is at 18.00-19.00

c. *Shift* 3: 22.00-07.00, break time is at 00.00-00.30

For Friday, there is a little difference especially in break time because there is a Friday prayer service for Moslems. So the classification of shifts is:

a. *Shift* 1: 07.00-16.00, break time is at 11.30-13.00

b. *Shift* 2: 16.00-22.00, break time is at 18.00-19.00

c. *Shift* 3: 22.00-07.00, break time is at 00.00-00.30

As the classification of working hours for operator and staffs are different, the working hours for staff will be described below.

a. 08.00-12.00 WIB: working time.

b. 12.00-13.00 WIB: break time.

c. 13.00-17.00 WIB: working time.

Each of shift will have a schedule rotation in every week. The rotation follows the regulation ruled by PT Stainless Steel Primavalve Majubersama.

Standard working time stated by Department of Manpower are 40 hours in each week. PT. Stainless Steel Primavalve follows the regulation of Department of Manpower for working hour for staffs. For operators in production, PT. Stainless Steel Primvalve has stated 46 working hours every week because the regulation of working hours is the authority of a company and employees must follow the regulation. If operators or staffs work and exceed the normal time, than operators or staffs will get extra incentive. For overtime rate and the calculation of overtime, is oriented to the regulation of legislation. To push the performance of workers, company gives commission and incentive to their workers.

c. Wage System

Wage or salary is a reception as a reward from company to their workers, for paying what workers have done to the company, rated in a form of agreement and constitution. There are many ways for regulate wage system for a company. Every company has different wage system. By having the system, it is as a base that will lead company to a benefit, without prejudicing all employees.

The wage system of PT. Stainless Steel Primavalve Maju Bersama is given in every beginning of a month, it is on the first day. And for the regulation of overtime will be described below.

1. First overtime hour: 1,5 x wage rate.

2. Next overtime hour: 2 x wage rate.

3. Ninth overtime hour: 3 x wage rate.

4. Tenth overtime hour: 4 x wage rate.

For regular working days, it is from Monday to Friday, maximum overtime is three hours. For Saturday and Monday maximum overtime is eight hours.

For staffs, if they work in overtime hour, they will be paid by allowance. The categories of allowance will be discussed in next section.

d. Off Work/Leave

All empolyees in PT. Stainless Steel Primavalve Maju Bersama have rights to have annual leave. The regulation of annual leave is 12 days in a year, and this is valid for employees who have minimum a year period of working.

Annual leave can not be taken at once for no good reason, and it can not be accumulated to the next year oif within a year, annual leave is not taken or not used. Annual leave entitlements can not be compensated in any form, including reimbursement with money. The granting of annual leave is done for the sake of the implementation of employees' annual breaks with their families. In addition to annual leave, female employees also receive other leave such as maternity leave and maternity leave for 3 months (1.5 months before and 1.5 months after delivery).

e. Welfare

PT. Stainless Steel Primavalve guarantees employee welfare and safety by including all employees in the Health and Employment of BPJS (Badan Penyelenggaran Jaminan Sosial Kesehatan) program, as well as in the LIPPO Insurance program for all staffs and directors.

f. Allowance

PT. Stainless Steel Primavalve Maju Bersama has some allowances for the employees. The classification is given below.

a. Staffs' Allowance: transportation (with terms and conditions), absence, pension time, lunch
b. Operators' Allowance: skill allowance

CHAPTER III

REVIEW OF ENTERPRISE SYSTEM

3.1. Company's Business Process

Business process of PT. Stainless Steel Primavalve Majubersama generally contains of five steps, such as planning, production, quality control, warehouse, and distribution. The flow of business process of PT Stainless Steel Primavalve Majubersama are as follow:

1. Sales of SBU OEM receives Inquiry Order from Customer
2. Sales does a contract review along with OEM team, including:
   a. Operational Manager, Engineering, PPIC OEM
   b. Purchasing
   c. Management Representative (MR)
   d. HRGA (if there is a condition related to Legal, Government Compliance, or Specific Skill Competence)

Notes:

a. The purpose of contract review is for new order and repeat order
b. Minutes of Meeting (MoM) of contract review is being distributed to all meeting attendants

3. Sales gives order review with two types of inquiry and one order:
   3.1. If **New Order,** Sales will give information to Operation Manager and Engineering OEM to make Standard Costing and Bill of Material (BoM), along with also meeting the formulation is System AX.
   3.2. If **Repeat Order,** Sales will give information to PPIC OEM to ask about delivery schedule to customer.
   3.3. If **Fulfilling Safety Stock (Min-Max),** Sales will give data quantity of Min-Max to be processed by PPIC OEM.
   3.4. If **Order from Other SBU,** then Internal Verbal Order (IVO) will be used.
4. If **New Order (Point 3.1.),** then steps to be followed are:
   4.1. Sales asks New Coding to Cataloguer.
   4.2. Engineering checks specification and drawing from new inquiry.
   4.3. Engineering makes standard calculation of costing and Bill of Material (BoM)

4.4. Engineering inputs data of BoM in System AX along with New Coding done in AX.
4.5. Engineering gives information to Accounting team to review and finalise the process costing.
4.6. Accounting does process costing and gives information to Sales about Unit Price, got from System AX.
4.7. Sales makes Quotation to customer based on data of unit price, given from Accounting
4.8. Sales gets PO from approved Quotation (made by customer).
4.9. After getting PO from customer, Sales gives information to Operation and Engineering to do trial and sample, also gives information to PPIC to get delivery schedule.
4.10. After getting delivery schedule, Sales will input the confirmation order to System AX.
4.11. Trial development process is done to make sure the product sample process to Sample Approval from customer.
4.12. Engineering OEM has to make and state standard parameter of process, along with standard document process, including Acceptance Criteria or ITP as the parameter from Technical Agreement, which is a parameter for Production and QC team.
4.13. After customer approve the sample, mass-production can run along with **Point 3.2.**

5. If **Repeat Order (Point 3.2.),** steps to be followed are:
5.1. Sales gives information about order review to PPIC OEM to asks for delivery schedule.
5.2. PPIC OEM gives confirmation about “delivery schedule” along with condition of machine loading, capacity, and conformity with delivery time, asked by Sales
5.3. Sales gives an updated price, on behalf of quotation to customer, if it is necessary.
5.4. Sales gets O and inputs Confirmation Order (CO) in System AX.
5.5. Sales gives information about CO to PPIC OEM.
5.6. PPIC OEM makes sure the data of BoM in System AX is completed and updated by checking in System AX (product information management)

5.7. PPIC OEM processes the issue of document to process the production, along with completion, including material procurement and manpower (according the needs).

5.8. Production of OEM run production process to complete the order based on received CO.

5.9. PPIC OEM and Production OEM make sure the achievement of order fulfillment, based on fixed timeline.

6. If **Fulfilling Safety Stock (Min-Max) (Point 3.3.)**, steps to be followed are:

6.1. Sales give information about Qty Min-Max to fulfillment of Safety Stock.

6.2. Sales update Min-Max data into System AX.

6.3. PPIC OEM process min-Max data from System AX to make timeline of fulfillment of Min-Max, including aspects needed.

6.4. PPIC OEM make sure BoM data in completed and updated System AX by checking the system (product information management).

6.5. PPIC OEM process the document issue to process the production, aong with the completion, including material procurement and manpower (according the needs).

6.6. Production of OEM run production process to complete the order based on received CO.

6.7. PPIC OEM and Production OEM make sure the achievement of order fulfillment, based on fixed timeline.

7. If **Order from Other SBU (Point 3.4.)**, steps to be followed are:

7.1. Sales ask for Internal Verbal Order (IVO)'s issue from related SBU.

7.2. Sales give information of IVO to related SBU with options as follows:

a. Information to Engineering OEM for new products.

b. Information to PPIC OEM for existing products.

7.3. Sales give information of delivery schedule to related SBU.

7.4. PPIC process in System AX in menu of "Planned Production Order" by referring number of IVO.

7.5. This fulfillment refers to **Point 5**.

8. After all POs form customer and internal order from other SBU has been inputed into the system by Sales (in a form of Confirmation Order), PPIC OEM will follow those steps:

8.1. Make Master Production Schedule (MPS) along with delivery schedule given by customer.

8.2. Make sure data of BoM in System Ax is already completed and updated by checking the system (product information management).

8.3. Process in Planned Order in System AX, then continue in Planned Production Order.

8.4. Process the approval and firm in Planned Production Order to release Job Card (JC) with two types of JC.

a. Job Card Casting (CST) □□for Work In Process (WIP) or Finished Goods (FG) of casting.

b. Job Card Machining (MCS) □□for Finished Goods (FG).

8.5. Process the Job Card in All Production Order, up until status of Job Card is 'start'.

8.6. PPIC OEM release Transfer Order (TO) and Picking List (PL) to pickup and material procurement for production process.

9. Production OEM team receive Job Card fro PPIC OEM and run production process along with MPS made by PPIC OEM. If it is accepted by QC, Production will release:
   a. PDE Casting
   b. PDE Machining
10. After production has finished, PPIC OEM do "Closing Job Card" process to refer to "Cost Production" reporting in AX.
11. PPIC OEM and Production OEM do "Stock Opname" ij production area for materials and products routinely at the end of the month, and give the report to Accouting in a form of System AX.
12. PPIC OEM & Warehouse give information to Sales that product has been finished and ready to deliver to customer.
13. Sales Admin will release PN (Picking Note) as a delivery order to Warehouse.
14. After receiving PN, Warehouse will:
    14.1. Pack the product along with standard of packaging product and quantity in PN.
    14.2. Release DN (Delivery Note).
    14.3. Offer fleet to do delivery process to customer.
    14.4. Product loading process to the fleet.
    14.5. Fleet goes to customer to deliver the order.
    14.6. Warehouse monitor the fleet, up until customer receives the order.
    14.7. Driver takes DN back to SPV after customer receives the order.

14.8. Warehouse give information to Sales that product has been sent and received to and by the customer.

14.9. Warehouse send DN to the Finance.

15. Finance receive DN from Warehouse and do billing process.

3.2. Production Process

Production Process for Casting product includes 10 main process:

a. Molding Injection

This process requires wax as main material to do molding. The process takes about four hours.

b. Dipping process

Dipping process is giving the molded wax a liquid and sand, up until many layers. The objective is to push out the gas inside the molded wax.

c. Lost wax

Lost wax is the process to take the rest of unused wax inside the molded wax.

d. Heating process

After the process of lost wax, the molded wax will be heated in 1000 degress Celcius. The objective is to get used to heat for molded wax, because the next step, molded wax will go to heat treatment.

e. Pouring process

This process is to heat the wax in 1600 degrees Celcius, hotter than the previous process.

f. Cutting process

In cutting process, the machine used is semi automated cutting machine like band saw.

g. Tensile test

h. Machining

In machining, there are many machines that support the activity in machining area, there are lathe machine, grinding machine, milling machine, pressing machine, and welding machine.

i. Painting

In paiting area, the product will be painted by using kind of spray gun.

3.3. Products

The categories of product are:

a. Valve Energy
b. Valve Hygienic
c. Industrial – Control Valve
d. Industrial – Butterfly Valve
e. Industrial – Check Valve
f. Industrial – Safety Valve
g. Industrial – Ball Valve
h. Industrial – PRV
i. Industrial – Blow Down Valve
j. Hygienic – Pipe Fitting
k. Hygienic – Accessories
l. Filtration
m. Steam Traps
n. Strainer
o. Hydrant
p. Compressor

The example of type of products can be seen in Figure 3.1. and Figure 3.2.

Figure 3.1. API 600 00 GATE VALVE – VALVE ENERGY

Figure 3.54th2. Buterfly Series – VALVE HYGIENIC

3.4. Production Facility

PT. SPVMB as a national company obviously has facilities that support their production activities. This section will discuss the facilities that PT. SPVMB has to support production and material handling.

a. Scrap area
b. Lost wax area
c. Dipping are
d. Injection machine
e. Pouring area
f. Cutting area
g. Welding area
h. Pressing machine
i. LPT area
j. Polishing area
k. Inspection area
l. Maintenance area
m. Lathe machine
n. Miling machine
o. CNC machine
p. Hydrotest area

q. Assembly area

r. Painting area

s. Spectrometer room

t. QC room

Material handling facility in PT. SPVMB:

a. Forklift

b. Pallet

c. Truck

CHAPTER IV

AREA OF STUDENT

This chapter talks more detail about the scoop of an intern, containing job description, responsibility, authorities, methodology of intern's job description, the and the output after doing industrial practice.

4.1. Area of Student

The student did an industrial practice in PT. Stainless Steel Primavalve Majubersama for about 25 working days, and was placed in Production Planning Inventory Control, or PPIC Department. Intern did the industrial practice starting from January 3rd 2018 to February 2nd 2018.

Althoughstudent was placed in PPIC Department, but intern was allowed to observe to other departments, such as Quality Control, Warehouse, or even Production, to know how production in the factory runs, and know the jobs of other departments.

4.2. Responsibilities and Authorities in Work

Student did industrial practice by following all of the rules and orders in PT. Stainless Steel Primavalve Majubersama. In the first day of work, student was invited to get around the area of company, and the factory also, to know the work situation and the work environment. This was to introduce the company to student, so student would understand the scope of a company in general.

Student learned and understood the system of each of departments, and also learn the procedures and work instructions in all parts. Student was also given some duties by the supervisor to recognize more about the scope of work. During industrial practice, student was given authorities by the supervisor, which can be seen below.

a. Student was allowed to observe directly the work system in all units, and allowed to do documentation.
b. Student was allowed to ask for required data and information.
c. Student was allowed to do interview and entwine the relations with employees and also operators.

d. Student was allowed to use facility given in the office, along with the given jobs.

4.3. Methodology of Work Implementation

The implementation of industrial practice was done by using certain methods as needed. Here are the methodologies used during the industrial practice, such as:

a. Observation

In this stage, student would observe all activities needed to be observed. At this point, student observed mostly activites in production, run in PT. Stainless Steel Primavalve Majubersama. From this observation, student would know the processes, tools, and resources used in running the production. From this stage also, student might found the problem in the department.

b. Discussion and Interview

in this stage, doing communication and interaction directly by discussing or even interviewing with the field supervisor, or operator in PT. Stainless Steel Primavalve Majubersama.

c. Secondary Data Collection

Student obtained the secondary data from review of literature, data from the company, or even from the internet as complementary and supportive data.

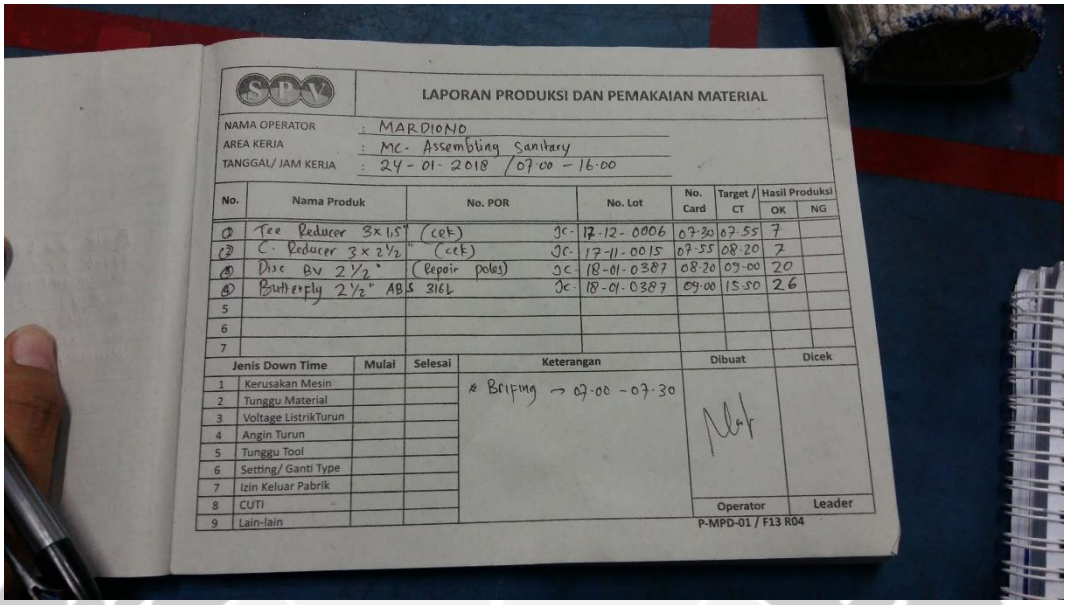
4.4. Result of Work

Here are the explanation of result of work, during the industrial practice in PT Stainless Steel Primavalve Majubersama, specifilcally in Department of Production Planning and Inventory Control.

4.4.1. Proposed Document of Production Report

In every area of production, there are a worker who is in charge or responsible to its area, called Leader. One of a job of Leader is to sign the daily production report of all workers in the are a Leader in charges in, and control and monitor all operators' work in his area.

The production report form in PT. SPVMB is given in Figure 4.3. below.



LAPORAN PRODUKSI DAN PEMAKAIAN MATERIAL

NAMA OPERATOR : MARDIONO
AREA KERJA : MC - Assembling Sanitary
TANGGAL/ JAM KERJA : 24 - 01 - 2018 / 07.00 - 16.00

No.	Nama Produk	No. POR	No. Lot	No. Card	Target / CT	Hasil Produksi OK	Hasil Produksi NG
1	Tee Reducer 3x1,5" (cek)	JC-	17-12-0006	07.30	07.55	7	
2	C. Reducer 3 x 2½" (cek)	JC-	17-11-0015	07.55	08.20	7	
3	Disc BV 2½" (Repair poles)	JC-	18-01-0387	08.20	09.00	20	
4	Butterfly 2½" ABS 316L	JC-	18-01-0387	09.00	15.50	26	
5							
6							
7							

	Jenis Down Time	Mulai	Selesai
1	Kerusakan Mesin		
2	Tunggu Material		
3	Voltage ListrikTurun		
4	Angin Turun		
5	Tunggu Tool		
6	Setting/ Ganti Type		
7	Izin Keluar Pabrik		
8	CUTI		
9	Lain-lain		

Keterangan: * Briping → 07.00 - 07.30

Dibuat: Operator
Dicek: Leader

P-MPD-01 / F13 R04

Figure 4.3. Curent Production Report

As it can be seen above, the current production report has a column ‘Target (CT)’ but filled with the time the operator has finished working. For the column ‘No. card’, it is filled with the starting time for the operator when he starts working. Based on the completion of production report above, student tried to develop a new production report. So the operator will not have to fill information in unrelated column.

The proposed production report will be given in Figure 4.4. below.

LAPORAN PRODUKSI DAN PEMAKAIAN MATERIAL

NAMA OPERATOR :
AREA KERJA :
TANGGAL/JAM KERJA :

JADWAL				PRODUKSI			
No.	JOB Card	Nama Produk	Order Qty	Mulai	Selesai	Aktivitas	Jumlah

	Jenis Down Time	Mulai	Selesai	SUMMARY		Dibuat	Dicek
1	Kerusakan Mesin			Nama Produk/JOB Card	PDE		
2	Tunggu Material						
3	Voltage Listrik Turun						
4	Angin Turun						
5	Tunggu Tool						
6	Setting/Ganti Type						
7	Izin Keluar Pabrik						
8	Cuti						
9	Lain-lain					Operator	Leader

Figure 4.4. Proposed Production Report

In this proposed production report, there are specific columns for start and completion time for operator to do activities. These columns have to be filled by operator for any of his activities, including the idle time (drinking, talking, etc.). this is to make sure and control that production runs well and the operator is doing productive activities, and can finish the job on time.

4.4.2. Calculating Cycle Time and Takt Time of Part Family of Butterfly

PT. SPVMB has an area named Assembly Sanitary Area. This area is to assembly kind of Sanitary products (Butterfly series). Student observed the total time needed in assembly area and how many Butterfly series can be produced.

There are four workers (Mardiyono, Prapto, Salman, and Rolis). Each of them has different task. Mardiyono is to assembly and polish Butterfly 2 in. and Disc Butterfly 3 in., Prapto is to assembly and polish Butterfly 4 in., Salman is to clean the materials (handle, silicon, hose butterfly), and Rolis is to inspect Butterfly series that Mardiyono and Prapto has made.

The cycle time observed were divided into three types of butterfly series, those are Butterfly 2 inches, Butterfly 3 inches, and Butterfly 4 inches. The method to find

cycle time is by observing 30 times for each Butterfly times and find the average because normally in statistics the sampling is done with minimum 30 samples.

The calculated cycle time are presented in Table 4.1. (in minutes).

Table 4.1. The Calculated Cycle Time

No.	2 in	3 in	4 in
1	12	12,5	28,5
2	11,1	12,5	28,5
3	11,2	12,4	28,6
4	13,5	12,2	28,5
5	11,9	12,2	28,7
6	12,1	12,3	28,9
7	12,8	12,5	28,9
8	12,4	12,6	28,7
9	11,6	12,5	28,5
10	11,5	12,5	28,5
11	11,67	12,6	28,5
12	11,88	12,6	28,6
13	11	12,3	28,6
14	11,6	12,3	28,7
15	11,5	12,3	28,3
16	11,67	12,2	28,3
17	11	12,45	28,5
18	11	12,38	28,75
19	11	12,3	28,6
20	11,8	12,3	28,6
21	11,5	12,4	28,6
22	11,8	12,3	28,6
23	11,79	12,3	28,4
24	11,2	12,3	28,3
25	11,5	12,2	28,4
26	11,78	12,3	28,4

Table 4.1. Continued

27	11,9	12,28	28,5
28	12	12,2	28,5
29	11,8	12,2	28,5
30	11,7	12,2	28,5

As the demand of Butterfly is uncertainty, the workers usually make only 8 until 10 pieces of Butterfly series. This is caused by not only uncertainty demand but Butterfly series is made by stock, so there are over stock in warehouse, and also some workers in Assembly Sanitary Area works in other area. This observation took one week (5 days working).

Takt Time is the expected time in production to finish the making of product. The equation of Takt Time are available hours divided by demand.

As the total hours available in a week (5 days working) are 40 hours, and the demand of that week are 30 units per each, so the calculation of Takt Time:

$$Takt\ Time = \frac{40}{30}$$

$$Takt\ Time = 1{,}33\ hours$$

The calculated cycle time doesn't exceed the calculated takt time. It is still safe to run the production.

4.4.3. Re-designing worktable of Assembly Sanitary

In the area of Sanitary product, they have a big table which the area is about 103,5 cm times 207,5 cm. this table is clear to assemble the sanitary product, mostly butterfly type. The initial condition is given in Figure 4.5. below.

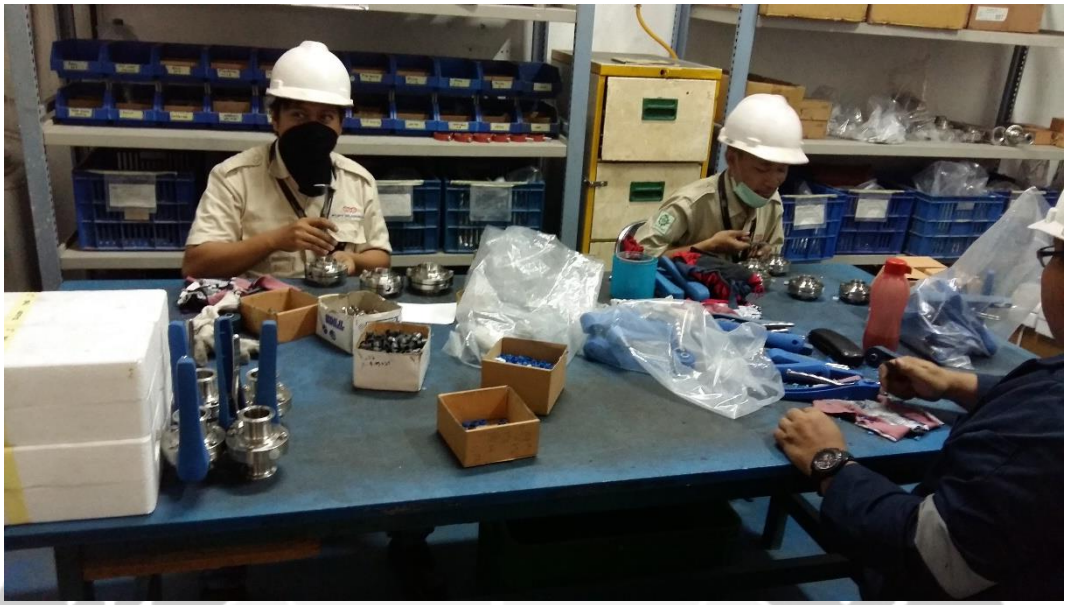


FIgure 4.5. Condition of Work Table Before Redesigned

The proposed design is to add additional four cylinders to place the oil, liquid soap, and two others is to lubricants. The diameter is 11 cm. this is for one operator to clean a part of Butterfly product.

The other cylinders for blue is to place the tools like uts and bolts, but this is for two operator which has the job to assemble.the diameter is 13 cm. The area is divided by using a red sign for each of operators.

The latest condition after being redesigned is captured in Figure 4.6. below.

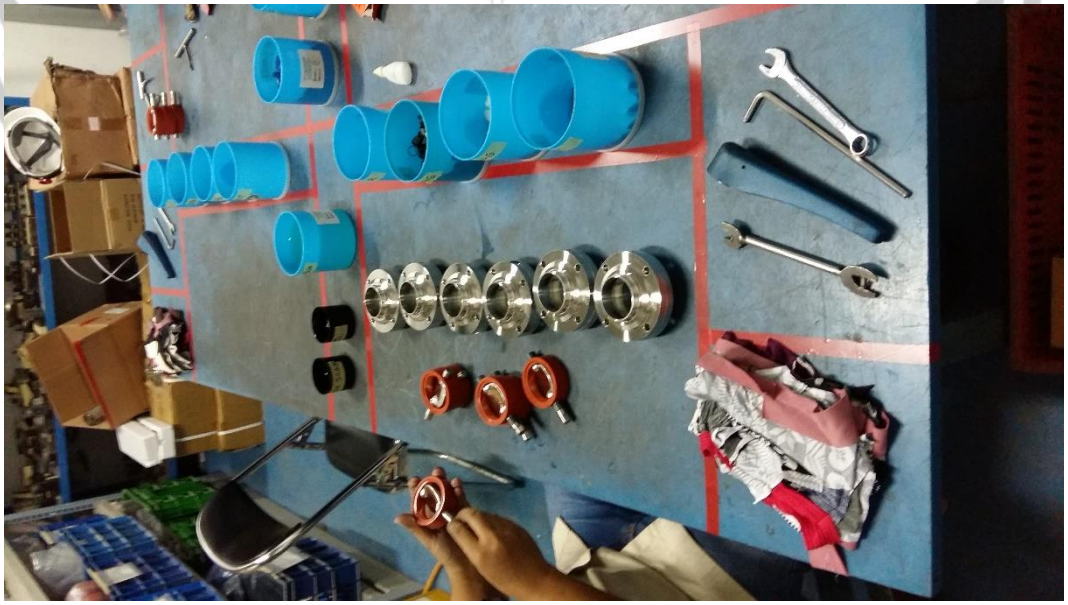


Figure 4.6. Result of Redesigned Layout

4.4.4. Stock Checking

Everyday there are stock checking activity. This is to check to all area (machining, painting, CNC, etc.) about the progress of each area. The simple explanation is the worker receives an order to make suppose 30 units and must finish in a week. So starting from the day of receiving order, the PPIC does stock checking about how many units have the workers finished, what is the worker doing, estimation of the product whether the product can be finished in a week or not.

In doing stock checking, it is still manual. The PPIC worker goes to production area and check one by one and write it in a form. After writing in a form, make a resume in a spreadsheet. The captured stock checking paper is captured in Figure 4.7. below.

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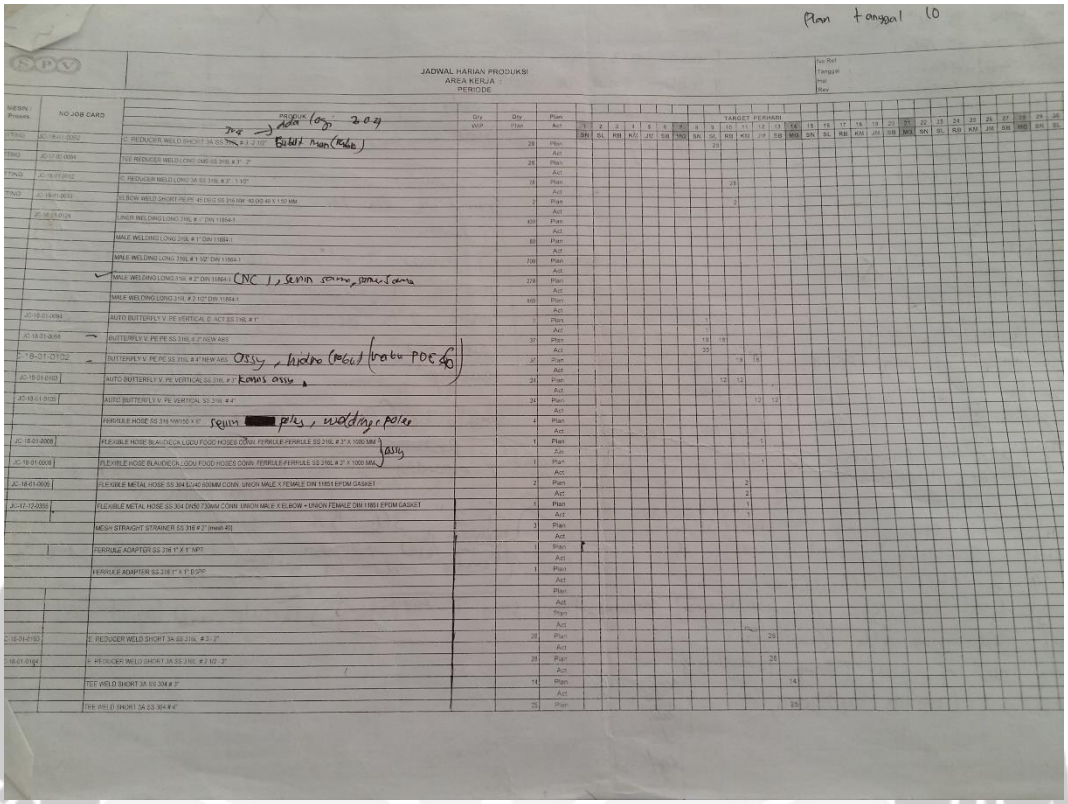

Figure 4.7. Table of Stock Checking

CHAPTER V

CONCLUSION

This chapter will discuss about the conclusions of all of the chapters above, based on what student has proposed and has been implemented.

5.1. Conclusion

a. By implementing proposed production report, operator will have specific column to fill specific needed information, and each of Leader can monitor and control each of their operators easier.
b. By implementing the redesigned layout for Assembly Sanitary Area, the operator will minimize the time for searching tools or materials, time for transporting the product, and the table will get cleaner.
c. The calculation of cycle time is needed, to know the time to finish one unit of one type of product. The cycle time also is useful especially in scheduling, to know what exactly the time required to finish the product, and can predict the completion time.
d. The simulation for applying proposed production report and the job in Assembly Sanitary Area are required. This is to know the impact of proposed production report to the habit of operators. For cycle time, this is to know whether operator can finish assembling the product exactly the same with its cycle time or not.
e. The actual schedule and calculated schedule are much different because in actual schedule, the operators have much idle time.

5.2. Limitation

a. The calculated cycle time and takt time must be considering other factor such as safety stock, human factor, while the student didn't get the data.
b. It is required to do data adequacy test because student always gets error whenever student did the test.
c. The complicated system of stock checking because the data in production field and in office always not match.

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