





# INDUSTRIAL TRAINING FIELD REPORT

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# **TABLE OF CONTENT**

Acknowledgement	2
1.0 Introduction	3
2.0 Content	4
2.1 Organization Chart & History of the Company	4-5
2.2 Process Flow	6-9
2.3 Weekly activity	10-17
2.4 Description of Task Assigned	18-28
3.0 Conclusion	29

### **ACKNOWLEDGEMENTS**

Praise to the one and the almighty Allah SWT because I managed to write this full industrial training report.

This report outlines the duties of an internship that undergo at Kuroda Precision Malaysia (KPM), Bukit Raja, Selangor through Minda Jaya Resources as an employee agent. KPM is a company that provide high quality stator for DYSON vacuum and hairdryer product which is one of the worldwide brands. There are four department which is Press, department that creating the product from coil, Offline, department that confirm the product quality, Quality control, department that ensure the product quality is meet the customer satisfaction and Maintenance, department that ensure all equipment and important tools are always in top condition.

As duty as an operator, all the production quality should be monitored from time to time and responsible to inform technician or leader whenever there is problem occurred. Within four months of training, there is so much to learn and experienced in this company, the biggest things that to be experienced is to work 12 hours and six days a week also rotating shift for each week.

I take this opportunity to say thank you to my precious parents, family and my beloved members who helped me and always giving me ideas and support while I am completing this report. I also would like to thanks all of the lecturers in UiTM Pasir Gudang, especially the lecturers in Chemical Engineering Department that had helped me in giving a guide in writing this industrial training report and sharing all their knowledge with me while I am a student in there.

## 1.0 INTRODUCTION

Industrial Training (CHE353) is a final subject that need to be taken by diploma student of Chemical Engineering (EH110). The Industrial Training is important for student to applied all the theories learned during semester 1 until semester 5 in a real working environment. The students are free to choose the company to undergoes the Industrial Training according to the allowance provided, location of the company and the relevance to career path. During the Industrial Training, student will be able to perform the basic engineering practice and improving their career skills such as communication skill, leadership skill and problem solving skill. Students also be able to learn about the work ethics, disciplinary, punctuality and have a high level of integrity. All of these skill will be needed when the student want to pursue their career in the future. The duration for Industrial Training is 14 weeks with 7 credit hours.



Figure 1.1: Location of Kuroda Precision Malaysia via Google Map



Figure 1.2: Kuroda Precision Industries (M) Sdn. Bhd factory view

## 2.0 CONTENT

2.1 Organization Chart and History of the Company

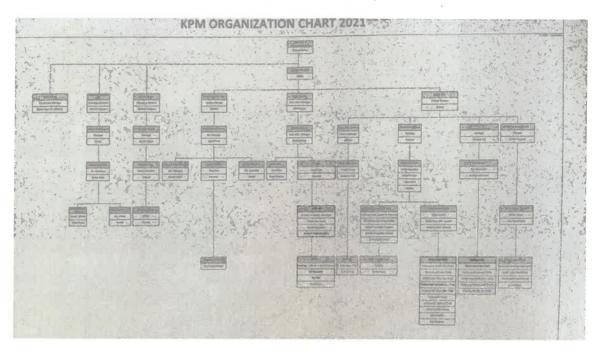


Figure 2.1.1 : Kuroda Precision Industries (M) Organization Chart

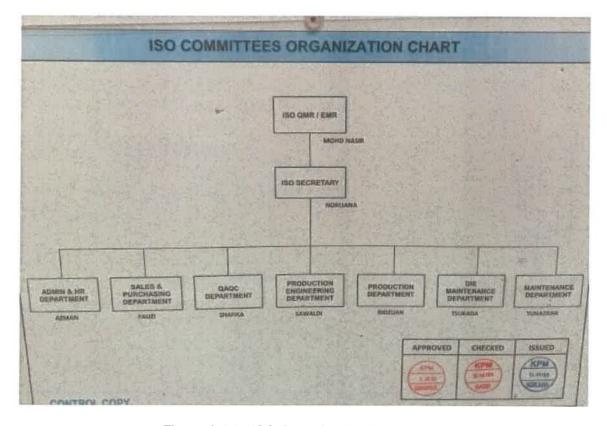


Figure 2.1.2 : ISO Organization Chart

## KURODA

## Figure 2.1.3 : Organization Logo

Kuroda Precision Industries (M) LTD or its short name KPM is first established during 1996. Kuroda Precision Industries is a factory that produce tool and die equipment. In 1997 Kuroda Precision Industries produce motor core lamination for Iphone vibrate plate. During this present time Kuroda Precision Industries is running model V10 stator product for DYSON vacuum and the products made will be send to DYSON customer.



Figure 2.1.4 : Sample Die

Kuroda Precision Industries main activity is producing tool and die equipment and precision stamping on 40 to 60 ton pressed equipped with laser welding system. Kuroda also do maintenance service for progressive die and manufacturing tool and die components for motor and transformer lamination. The picture above shows one of DIE sample with 4 four rows and 8 laser units that had inside the Kuroda Factory. There are 26 DIE contain inside the factory following using alphabet from DIE A to DIE Z.

#### 2.2 PROCESS FLOW

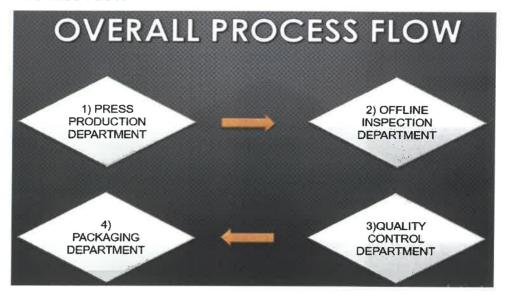


Figure 2.2.1: Overall Process Flow in KPM Factory

In Kuroda Precision Industries (M), there are four department which are Press Production Department, Offline Inspection Department, Quality Control Department and Packaging Department.

Press production department is a department where the product "V10" was been produced from the coil. The products then will be observe by using microscope to find whether there is an NG (not good) products or not. The NG product will then separate from OK products. All of the OK product need to be peel off the extra layer before send it to Offline inspection department. In Offline inspection department, the products will be cut using stack height adjustment to make sure the height of the product is precise. Then, the product will be inspect by using microscope and V10 Inspection Automation machine to spot whether there is any NG on the product. Then the will be put into a tube and sent to the Quality control department. In Quality control department, the product quality will be observe to make sure that all the product is meet the customer requirement. Then the product will be sent into a Packaging department to put it into dryer before been export to the customers.



Figure 2.2.2 : Press Production Department



Figure 2.2.3 : Offline Inspection Department



Figure 2.2.4 : Quality Control Department



Figure 2.2.5 : Packaging Department

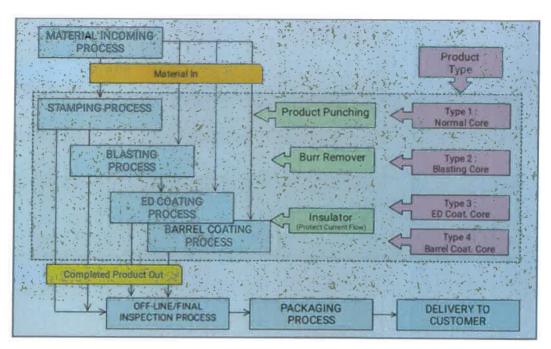


Figure 2.2.6: Flowchart of Product Exportation

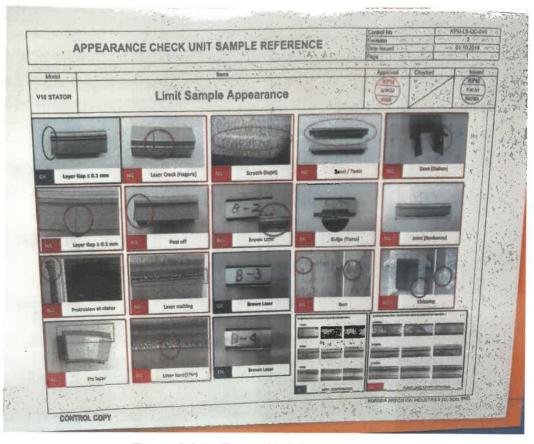


Figure 2.2.7: Type of NG Products

## 2.3 Daily/ Weekly Activity

F	
Week 1 (21/3/2021 - 26/03/2021)	<ul> <li>All of the students were given a introduction to the company by HR executives. The content of the introduction was the to explain about the background of the Kuroda Precision Industries (M) and review the flow of production process. The training were also conducted during this week to make sure that the student understand the works in each departments. The students were also been exposed to the SOP and 5S off all departments.</li> </ul>
Week 2	- Training at offline department
(29/03/2021- 2/04/2021)	- This week, the students have to be trained at offline department under the supervision of Ms. Asma, the leader of offline department.
	<ul> <li>The training for this week consist of visual (to identify the NG products while memorizing the types of NG products), stack height adjustment (how to cut the product into desire height), making barcode (to categorize the DIE of the products) and appearance check (to observe NG products).</li> </ul>
Week 3	- This week, the students still undergoes the same
(5/04/2021 –	training at offline department with additional training
9/04/2021)	<ul> <li>and less supervision. The purpose is to make sure that students will be able to work independently.</li> <li>The additional training was CV inspection, where the students need to identify over and minus product that still acceptable by using the tool 'stack height master'. The OK products reading are in range of 21.850 to 22.150.</li> </ul>
Week 4	- This week the student learn how to using the V10
(12/04/2021-	Inspection Automation Machine. All the products that
16/04/2021)	go into the machine will be separated to 2 types which are NG products and OK products.

	The Old man developing the form did to the little of the
	- The OK product will be insert into tube and before that
	the products will need to be observe by using
	microscope and straightness jig to make sure that the
	product is not an NG products.
Week 5	- This week, I was transferred to the Press Production
(19/04/2021-	Department. This is a production department where it
23/04/2021)	only focusing on production of V10 products.
	- There are 14 machine which are called as Line. I was
	transferred to become an operator of Line 10 with the
	pair of DIE K and DIE F.
	- I learned about how to remove peel off from the
	product and also how to write a lable on Press
	Transfer Card and QC Inspection Transfer Card.
Week 6	- This week, I learned how to read a thickness of the
(26/04/2021-	coil for model V10 material. This thickness have to be
30/04/2021)	write down every time the coil changed.
	- I also learned how to paste the coil lable material on
	V10 Model Press Department book for DIE K and DIE
	F at Line 10. And also continue to train on how to write
	a lable transfer card and read thickness of the coil.
Week 7	- This week, I undergoes training on how to cleaning
(3/05/2021-	DIE under the guidance of Press Department
7/05/2021)	Technician and under supervision of Mr. Faizal, the
	Senior Leader Technician of Press Department.
	- Cleaning DIE is required to stabilize the DIE and the
	lifelong of DIE to be operate. This also important to
	avoid NG Dakon (dents) on products.
	- I also learned how to avoid laser melting on the
	product by wiping the pair mirror of laser unit because
	of the oil stain on the surface of the mirror.
Week 8	- Hari Raya Eid Fitri Celebration
(10/05/2021-	
14/05/2021)	

Week 9	The Head of Engineering Department explain about
	- The Head of Engineering Department explain about
(17/05/2021-	how to handle the chemical substance such as
21/05/2021)	Blanking Oil. The operator were required to wear a
	gloves and safety spectacles when handling the
	chemical substance.
	- There are also safety equipment on every line such
	as safety helmet, safety glasses and safety earplug to
	make sure that the safety of the employees.
Week 10	- I learned about how to Open DIE for Regrinding. This
(24/05/2021-	is required when the stroke of DIE has reached its limit
28/05/2021)	and need to be change to its DIE pair.
	- Open DIE also can be performed when there is quality
	problem on the product that make the press machine
	unable to continue its production.
Week 11	- This week I learned on how to setting DIE into Press
(31/05/2021-	machine. Setting DIE is performed after the Open DIE
4/06/2021)	has been completed.
	<ul> <li>First step is to insert the DIE clamp into DIE. After that,</li> </ul>
	insert pil tube, vaccum hose tube, scrap hose pilot, air
	supply for ODD, fiber laser unit and lastly laser unit
	cap in front of laser unit.
	- Then, inching the coil and check whether there is a
	problem and lastly check the Bara and product if there
	is a NG or not on the products.
Week 12	- I learned how to setting coil in Press machine for this
(7/06/2021-	week.
11/06/2021)	- Firstly, the operator need to wear glove because the
	coil is sharp. Then, the coil need to be cut in one loop
	and take off the sticker lable on the coil and paste it
	on Press department book.
	- After that, insert the coil until the Press machine cutter
	and add stopper to make sure coil unable to move.
	Inching 1 round and push the coil until it touch the end
	of the DIE and the open feeder.

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Week 13	- This week I learned how to do all the checklist on the
(14/06/2021-	Press machine equipment by Press department
18/06/2021)	technician. The checklist is daily check card of Press
	machine, Laser Box monitoring, 5S cleaning checklist
	and Press machine output graph.
	- I also undergoes training for Laser Brown NG to
	decreased the laser brown NG. This NG happened
	because of the oil stain or excess oil on the ODD that
	make the laser unit unable to work properly.
Week 14	- This week, I learned on how to update stroke for Open
(21/06/2021-	DIE for Regrinding. The stroke can be updated by the
25/06/2021)	operator by observing the stroke count on the
	machine control box.
	- If the stroke count is already reached 900000, the DIE
	need to be change.
Week 15	- The supervisor of Press department, Ms. Tuhaizu,
(28/06/2021-	ask the press operator to update non NG product and
2/07/2021)	can be use product on yellow plastic. This products
	then will be observe by Ms. Tuhaizu to confirm
	whether the product still can be use or not.
	- I also learned to counting the balance coil for press
	department because of inventory press stock count
	for end of the month.
	- The offline department will count the product box
	made from the Press department.
Week 16	- Due to the MCO, the factory are closed and the
(5/07/2021 –	student were given the task from the supervisor, Ama
9/07/2021)	bin Maruf. The task is to conduct a research on
	Blanking Oil.
	- The Blanking Oil is one of the chemical used in Press
	department, this oil is a lubricant for the coil. I search
	the Safety Data Sheet (SDS) of Blanking oil and know
	about the hazard and how to handle this chemical.
	and the state of t

Week 17 (12/07/2021-16/07/2021)

The factory is also closed during this week so the supervisor, Ama Bin Maruf give the student one more task which is to do a research on the V10 product and I found out that this V10 product is actually one of the vaccum product that been developed by Dyson. It is called as Dyson Cyclone V10 vaccum. However there are not much that can be learned due to the limited resources. So, I asked the supervisor to do the logbook and industrial training report during this week.

Table 2.3.1 : Weekly Activity



Figure 2.3.1 : Press Department Machine Control Box

The machine control box is use to on and off press machine. The machine control box is also use to control the movement of the press machine and SPM (speed per minute) of the stamping machine.



Figure 2.3.2 : Fastec Controller

Fastec Controller is use to control the laser welding process. It is also use to control the layer setting of product the length of product.



Figure 2.3.3 : Laser Box

The laser box is used to produce a laser and control its voltage, temperature and joules (mon).



Figure 2.3.4 : Uncoiler Machine

The uncoiler machine is use to supply coil into the press machine (DIE).

The working hours at Kuroda Precision Industries (M) is a 12 hours shift. There are two shift which are shift A and shift B. Shift A is as a normal shift, the working hours is from 8.00 in the morning until 8.00 in the night. Meanwhile, the shift B is a night shift, the working hours is from 8.00 in the night until 8.00 in the morning. Kuroda Precision Industries (M) factory operate everyday from Monday to Sunday. However, the workers can choose whether to go to work or not on Sunday. During 12 hours shift, there are three time break for rest/lunch at 10.00 am - 10.20 am, 12.00 pm - 12.40 pm and 4.00 pm - 4.20 pm. This time break is also the same for night shift. On Friday, the afternoon break is longer than usually break because to give time for muslim employees to pray. During fasting month, the factory start operate and end work 1 hour earlier than normal working hours. This is to ensure that muslim employee can iftar on time.

Days	Start	First Break	Second Break	Third Break	End Shift
	Shift				
Monday - Thursday	8.00am	10.00am-	12.00pm-	4.00pm-	8.00pm
		10.20am	12.40pm	4.20pm	
Friday	8.00am	10.00am-	12.00pm-	4.00pm-	8.00pm
		10.20am	1.40pm	4.20pm	
Saturday - Sunday	8.00am	10.00am-	12.00pm-	4.00pm-	8.00pm
		10.20am	12.40pm	4.20pm	

Table 2.3.2 : Normal Working Hours

Days	Start	First Break	Second Break	Third Break	End Shift
	Shift				
Monday - Thursday	7.00am	10.00am-	12.00pm-	4.00pm-	7.00pm
		10.20am	12.40pm	4.20pm	
Friday	7.00am	10.00am-	12.00pm-	4.00pm-	7.00pm
		10.20am	1.40pm	4.20pm	
Saturday - Sunday	7.00am	10.00am-	12.00pm-	4.00pm-	7.00pm
		10.20am	12.40pm	4.20pm	

Table 2.3.3: Working Hours During Fasting Month

## 2.4 Description of Task Assigned

## 2.4.1 Press Department Standard of Procedure

In this section will be showing of the different training and project that I had been through on press department such as product collection, setting coil, Open DIE for regrinding, setting die after regrinding, cleaning DIE and laser adjustment.

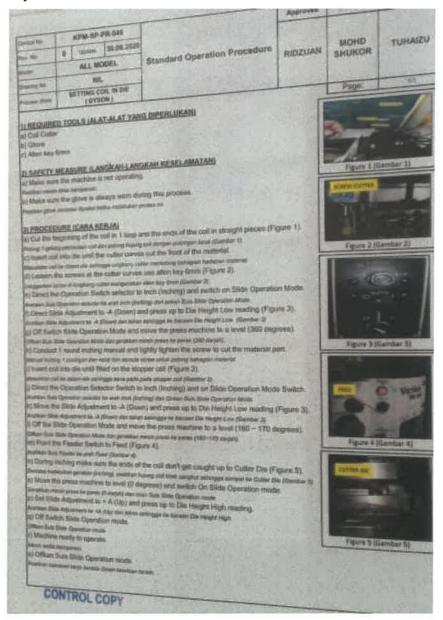


Figure 2.4.1 : SOP of Setting Coil

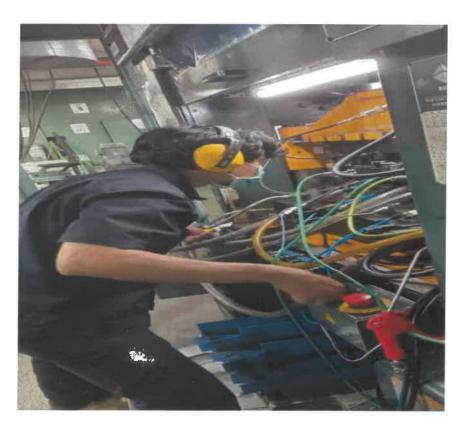


Figure 2.4.2 : Setting coil using inching method and position while setting coil in Dyson V10 press machine (DIE)

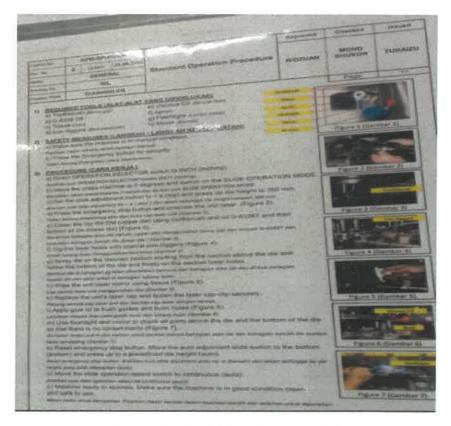


Figure 2.4.3 : SOP of Cleaning DIE



Figure 2.4.4 : Cleaning DIE bucket with toothbrush and huge brush with punching oil as lubricator

Cleaning DIE is necessary when coil has finish on press machine (DIE) and need to be clean so that the DIE can stabilize and avoid NG on V10 product model.



Figure 2.4.5 : Cleaning DIE Mirror

The mirror is used to so that the operator can see the upper surface of DIE to brush the dirt off easily.

#### 2.4.2 Product Collection and Transfer



Figure 2.4.6: Product Collection SOP



Figure 2.4.7: Microscope Check Section

Before collecting V10 product first the operator needs to check the appearance all four rows condition of V10 product model before collecting it.



Figure 2.4.8 : Product Collection Box

After confirming the appearance check of V10 product model condition is good and free from NG (Not Good) the operator can carry the tray and pour it into the tray box containing verzone anti rust to keep the product safe and free from rust. Make sure that the operator is wearing gloves while holding V10 product model.



Figure 2.4.9 : Peel off tray box after appearance check on microscope section

After appearance check and V10 product model is free from NG the operator can pour into four of these boxes according to row 1 until row 4. After that the operator can remove the peel off from V10 product model and put it below the box.



Figure 2.4.10 : Press Transfer Card Label

After completing removing peel off from V10 product model. The operator needs to write label card that need to stick to the box to be send to the offline department.

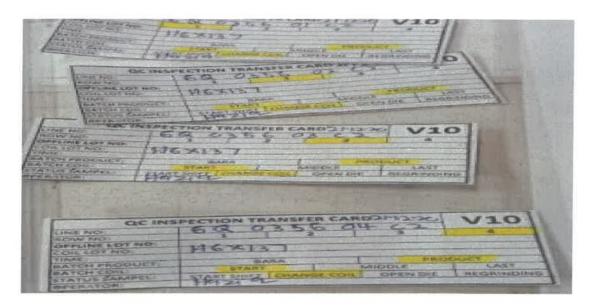


Figure 2.4.11 : Quality Control Inspection Card

Quality Control card will only be written when the V10 product model is on four state which is starting shift, change coil on press machine DIE, Open DIE because if Quality Problem and Regrinding Change DIE pair.

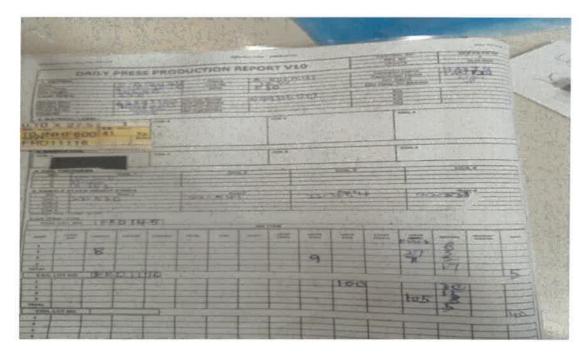


Figure 2.4.12 : Press Department Book

Each operator on every line will be supply with press department 2 pair DIE book to record NG of product, counting coil thickness, record stack height length straightness of product every coil change and count stroke quantity of press machine DIE output everyday.

## 2.4.3 Open DIE for Regrinding



Figure 2.4.13: Counter Stroke

Open DIE for regrinding is required when the stroke is already reaching its limit. As shown in the diagram above the counter stroke has reach about nine thousand which require open DIE for regrinding for the press machine to change its DIE pair to continue production without harming the life shelf of DIE.

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Figure 2.4.14 : Maintenance V10 Running Machine Stroke Record

Every open DIE for regrinding requires the notice from the maintenance department. Every time when closing the factory, the maintenance will round machine to machine and line to line to update the stroke on every press machine in order to tell the operator or the technician to open the DIE for regrinding or not. The purpose of maintenance record V10 stroke machine on press machine DIE is to aware that the DIE ODD need to be grind or not so that the DIE is not damaged and can be used for a long time.

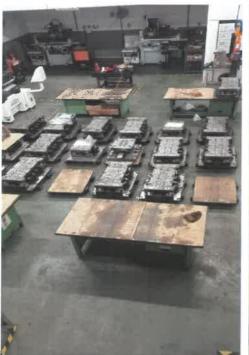




Figure 2.4.15: Sample of DIE that need to be grind

Inside the maintenance station the DIE will be grind so that the punch of DIE ODD will be sharp and able to cut the coil to avoid chipping occurrence on V10 model product. Inside the maintenance station is also where the technician sends the DIE that has been opened to send it to the maintenance station.



Figure 2.4.16 : Sample of ODD inside DIE

Inside every DIE there is an ODD where the product of V10 model is formed when press stamping machine is punching and laser welding is shooting to form one V10 product model every second. The ODD must be taken care carefully to avoid production interference because without the ODD the press machine DIE is unable to operate producing products and can't make production.

During MCO, the Kuroda Precision Industries (M) factory have to shut down the operation to prevent virus Covid-19 to spread. The supervisor, Ama Bin Maruf have assigned us a task to do when I at home. The task is to find the information of Blanking Oil or Punching Oil. This Blanking oil is a one chemical use in machine to produce the V10 products.



Figure 2.4.17 : Sample of Blanking Oil



Figure 2.4.18 : Blanking Oil Container

Blanking oil is used to increase the shelf life of punch and die. The blanking oil can stabilize the cutting process of product and most importantly the blanking oil is important to control the quality of product to avoid NG dakon and twist etc. The blanking oil drop to machine is about two to five seconds per drop.

### 3.0 CONCLUSION

During the Industrial Training at Kuroda Precision Industries (M) LTD, its technician and operator department have long been exposed to various activities and tasks in this company indirectly, trainees also must know every responsibility and role in the company. Exposure to real working environment is good for student as trainers, especially to open the minds and brains to be more creative and highly knowledgeable, students can also identify and address issues that often arise in real work situations. It will further enhance the student's ability to think, learn independently and solve problems effectively and more importantly can produce creative work and quality.

During training in operator department coach can identify some strengths and weaknesses of the company. However, this drawback can be overcome and repaired. Principles of organization and administrative functions play an important role in creating a robust organizational planning, coordination and control is essential to coordinate all tasks. An organization must be established and excellent efficient and effective decision-making and planning, and this is the main principle in the management of an organization. Through the Industrial Training, the training objectives have been achieved during the training conducted for 17 weeks. Therefore, it can be concluded that all the exposure that has been given to the trainees during training is very useful and should be exploited in the future. Such training also will produce graduates who are knowledgeable and a great personality.

However, it is recommended that the Industrial training duration week to be extend because of the Kuroda Precision Industries (M) factory was closed during the MCO due to the increases Covid-19 cases. The students are also recommended to accept to do the training related to the diploma programme because the chemical engineering scope of the training I receive at Kuroda Precision Industries (M) is limited.