

Report On  
Implementation of Kaizen in PRAN-RFL Group

By

MinhazulAbedinAbir  
Student ID: 17364020

An internship report submitted to the BRAC Business School in partial fulfillment of the  
requirements for the degree of  
Master of Business Administration

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## **Declaration**

It is hereby declared that

1. The internship report submitted is my/our own original work while completing degree at Brac University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

**Student's Full Name & Signature:**

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**Minhazul Abedin Abir**  
Student ID: 17364020

**Supervisor's Full Name & Signature:**

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**Md. Shamim Ahmed**  
Lecturer & Deputy Registrar, BRAC Business School  
BRAC University

## Letter of Transmittal

Md. Shamim Ahmed  
Lecturer & Deputy Registrar,  
BRAC Business School,  
BRAC University  
66 Mohakhali, Dhaka-1212

Subject: Submission of report on “Implementation of Kaizen in PRAN-RFL Group”

Dear Sir,

With due respect, I have the honor to inform you that I have prepared the report titled on “Implementation of Kaizen in PRAN-RFL Group” as per your instruction.

I have tried my level best for preparing the report and tried to make this report as informative and comprehensive as possible. This report has enabled me to gain knowledge about Implementation of Kaizen in manufacturing company. The information of the report based on internet sources and my practical experience on PRAN-RFL Group. Without your inspiration this report would have been an incomplete one.

I therefore, hope that the report will meet your expectation, and I will be very pleased to answer any questions from you.

Thank you.

Sincerely yours,

---

Minhazul Abedin Abir  
Student ID: 17364020  
BRAC Business School  
BRAC University  
Date: January 5, 2020

## **Non-Disclosure Agreement**

This agreement is made and entered into by and between PRAN-RFL Group and the undersigned student at BRAC University Minhazul Abedin Abir

## **Acknowledgement**

First, I am very thankful to Allah who is most beneficent and merciful who gave me strength and knowledge to complete this Report. This report has been completed due to the support of many people and we wish to acknowledge them here.

I have been deeply appreciated by my Supervisor Md. Shamim Ahmed who always guide me to shape the report. I thank him for his enthusiasms, encouragement and guidance for a great work.

Finally, I am also thankful to Saffat Rafsan Akand, Deputy Manager (Development, RFL) and Arafat Chowdhury, Assistant Manager (Development, REL) for helping and guiding me, for that I have completed my report effectively and moreover on time. They gave me many helpful comments which helped me a lot in preparing this report.

## **Executive Summary**

PRAN-RFL Group is one of the most beneficial organizations in Bangladesh which has now converged with several unique items. They have spread their business in different nations everywhere throughout the world by constantly growing their endeavors. Since 1981 they are attempting to build up our nation's horticultural and country territory. Presently they have six modern park in Bangladesh and one in Kolkata, India. They are taking activities to open more industrial facilities outside the nation. They have presented Food and Plastic business and advanced their items under various brand names through their solid showcasing group at home and abroad.

In this report, right off the bat I have quickly examined about the starting point of the report, destinations of the investigation, system and confinement of the examination, after that the diagram of the organization including organization's vision, strategic, esteem and furthermore the results of PRAN-RFL. At the following segment I have talked about Kaizen, other than I have given short depiction of the nonstop advancement in PRAN-RFL production line.

After that I have examined the specialized advancement from the perspective on the hypothetical definition and the down to earth use of the organization. At long last I am finished up by giving a few suggestions with respect to successful execution procedure of Kaizen.

**Keywords:** Kaizen; Five S framework; PDCA cycle

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## List of Acronyms

PRAN	Programme for Rural Advancement Nationally
RFL	Rangpur Foundry Limited
REL	RFL Electronics Limited
CI	Cast Iron
PVC	Poly Vinyl Chloride
PIP	PRAN Industrial Park
RIP	RFL Industrial Park
HIP	Habiganj Industrial Park
DIP	Danga Industrial Park
AMCL	Agricultural Marketing Company Limited
DPL	Durable Plastic Ltd.
RPL	RFL Plastics Ltd.
RCL	RFL Constructions Ltd.
TEL	Trade Environment Ltd.
BPIL	Banga Plastic International Ltd.
PLC	Programmable Logic Controller
ETP	Effluent Treatment Plant
IR Filter	Infrared Filter
CSD	Canteen Stores Department
EOT	End-Of-arm-Tooling
IML	In-Mould-Labeling
PE	Polyethylene
HMI	Human-Machine Interface
IOT	Internet of Things

# Chapter 1

## Introduction

### 1.1 Origin of the Report

This report is started as the academic report of the MBA program at BRAC University and which means to mirror the expert perspective on true workplace. I got appropriate supervision of my academic advisor Md. Shamim Ahmed, Lecturer and Deputy Registrar, BRAC Business School, BRAC University all through chose term for the fruitful consummation of the report titled - "Usage of KAIZEN in PRAN-RFL Group".

The study has following purposes:

- To satisfy the necessity of the MBA program.
- To relate this present reality with the exercises learned in MBA program.
- To learn about the implementation of KAIZEN.
- To get exposed in the real business world.

### 1.2 Objectives of the study

The main objectives of the report are given as follows:

- To study the thoughts and strategies utilized in PRAN-RFL Group.
- To understand the overall PRAN-RFL Group structure.
- To evaluate the Manufacturing & Production processes of PRAN-RFL Group.
- To figure out how PRAN-RFL Group utilizes KAIZEN.
- To see how to be the market head by making the best employments of the chances.
- To see how the company implement Kaizen both in factory and corporate office.
- To understand the Operation Process of PRAN-RFL Group.
- To observe how the organization continuously improve their process, product & service.
- To merge theoretical knowledge with practical experience.

### **1.3 Methodology**

So as to think about usage of Kaizen in PRAN-RFL Group ; primary and optional methodology were applied to gather the data from important innovative work done by activity, improvement, generation, quality control, dissemination, advertising, deals, administration and different divisions. The means are:

**a. Primary Sources:**

- Conversation with the activity supervisors, creation line directors, HRM and advancement group.
- Observing the activities of different factories and production line.
- Importers, distributors, sales and service team etc.

**b. Secondary Sources:**

Sources of secondary information:

- Annual Report
- Sales Record
- Company Magazine
- Continuous Improvement
- Factory Visit
- Internal Information

### **1.4 Limitations of the study**

The accompanying issues are the constraints of this examination:

- Due to mystery of business procedure, the authority of PRAN-RFL would not like to reveal the data in regards to association.
- The Information about PRAN-RFL is not available on the internet that much.
- In this sort of work time is a central point, so I didn't get sufficient opportunity to do the work as it ought to be.
- As it was a peak time for selling the product, including me all the employees were busy for the production and development.

## **Chapter 2**

### **Company Overview**

#### **2.1 Historical Background**

PRAN-RFL is an aggregate organization. PRAN began its activity in 1981 as processors of leafy foods in Bangladesh and RFL started its voyage with cast iron (CI) items in 1980. In 1981 when PRAN and RFL combine it gets one of the greatest business bunches in Bangladesh. PRAN RFL is right now one of the most appreciated nourishment, refreshments and plastic brand among the huge number of individuals of Bangladesh and other 110 nations of the reality where PRAN-RFL Products are normally being traded.

PRAN stands for "Program for Rural Advancement Nationally" and RFL means "Rangpur Foundry Limited".

PRAN is the pioneer in Bangladesh to be associated with contract cultivating and gets crude material straightforwardly from the ranchers and procedures through best in class apparatus at our few manufacturing plants into cleanly pressed nourishment and beverages items. The brand PRAN has set up itself in each class of nourishment and refreshment and other industry and can help an item run from Juices, Carbonated Drinks, Confectionery, Snacks, and Spices, fabrics and to even dairy items.

PRAN's greatest resource is their skillful group of hands-on chiefs and devoted 40,000 workers. PRAN is Bangladesh's biggest cultivator and processor of products of the soil. Their agreement cultivators develop the choicest foods grown from the ground, which are handled in their cutting edge and clean production lines to highest caliber and universal measures.

RFL's essential objective was to ensure pure water and sensible water framework instruments for improving rustic life. Today the organization has its wide extents of CI items like siphons, tube wells, heading, and gas stoves etc. what's more, has achieved the distinction as the biggest cast iron foundry and light engineering workshop in Bangladesh. With a dream to serve the average citizens of Bangladesh with quality fundamental items, RFL expanded its activity into PVC class in 1996 and in plastic part in 2003.

At present it is at the main situation in all these three areas; cast iron, PVC and Plastic in the nation. Sizeable sum is likewise sent out to various nations. It is furnished with in house R &D offices to design and grow new things. A proficient asserted testing research focus is used to ensure quality things. RFL has been allowed with BSTI testament and ISO9001 Certificate for its serious consistence with the standard set by both the affiliations.

The organization claimed production line locales are the mechanical parks of 500,000 sq. meters, which is totally furnished with the workmanship infusion shaping machines,

expulsion with transformation limit of in excess of 20,000 tons for every month. RFL starting at now utilizes 1600 shape through 500 machines, 04 foundry and 250 expulsion machines having own apparatus offices. They are very solid association of 12,000 workers who are committed to giving tweaked and quality plastics, PVC and CI items. RFL has transformed into a benchmark for contenders on the lines of value by assembling premium quality things to give clients great administrations what's more, genuine incentive for cash. The unequaled things have given a major name in the neighborhood advertise. This is conceivable in light of the fact that the organization is expertly managed and progressed by people who guarantee inventiveness.

The organization runs its activity in seven different production lines including RIP, HIP, PIP, DIP, Comilla Factory, Rangpur Factory and Vulta Factory.

## **2.2 Company's Vision, Mission and Aim**

### **Vision:**

Destitution and Hunger are Curses. The association believes that destitution and craving is a revile for country and they are attempting to defeat the neediness.

### **Mission:**

Improving Livelihood. Improving the individual's expectation for everyday comforts in the public eye and make the regards what's more, success for the country.

### **Aim:**

To produce work and acquire pride and sense of pride for our countrymen through beneficial ventures.

## **2.3 Company's Value**

PRAN-RFL Group has faith in giving quality by thinking about the clients' requests and desires. Persistent progression and improvement is the thought process of this association by centering clients and endeavors to keep up decency and straightforwardness in all portions. The corporate qualities for PRAN-RFL Group are as beneath-

- Consumer care
- Supplier care
- Employee care
- Trade care

## **2.4 Awards and Certification**

For brightness in trade advertise including item headway, showcase advancement thus on; they have been granted different trophies in home and abroad. In acknowledgment of commitment towards acquiring outside money, PRAN accomplished "Best National Export Grant" for 11 back to back monetary years (FY 2002-03, 2003-04, 2004-05, 2007-08, 2009-10, 2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16).

As of late, PRAN has granted "UDC BUSINESS AWARDS 2016" as the best nourishment and refreshment things maker in Malaysia. PRAN-RFL just because has gotten IMS authentication as the principal nourishment handling organization in Bangladesh. IMS is known as blend of Natural Management System ISO14001:2004 and British Standard Occupational Wellbeing Safety Assessment Series (BS OSHAS) 18001:2007. In 2016, PRAN-RFL Group has got Best Brand Award from the Bangladesh Brand Forum.

## **2.5 Total Concerns of PRAN-RFL Group**

Step by step PRAN-RFL Group is expanding their business quickly by presenting new products. Presently they are one of the biggest assembling organizations in Bangladesh. PRAN-RFL Group has the accompanying concerns.

### **Concerns of PRAN:**

1. Agricultural Marketing Company Limited (AMCL)
2. Beverages
3. Biscuit and Bakery
4. Culinary
5. Dairy
6. Frozen Foods
7. Snacks
8. Sugar Confectionery

### **Concerns of RFL:**

1. Durable Plastic Ltd. (DPL)
2. RFL Plastics Ltd. (RPL)
3. RFL Constructions Ltd. (RCL)
4. Rangpur Foundry Limited (RFL)
5. Banga Building Materials Ltd. (BBML)-Door
6. Banga Building Materials Ltd. (BBML)-Tank
7. RFL Stationary

8. Rangpur Metal Industries Ltd. (RMIL)
9. Trade Environment Ltd. (TEL)
10. RFL Electronics Ltd. (REL)
11. Allplast Bangladesh Ltd. (APBL)
12. Banga Plastic International Ltd. (BPIL)
13. Erum Bangladesh Ltd. (EBL)
14. Regal Furniture
15. Best Buy
16. RFL Bike
17. Rainbow Paints
18. Walker Footwear
19. Getwell Pharmaceuticals

**Other concerns of PRAN-RFL Group:**

1. Chorka Textile Ltd.
2. Property Lifts



## **Chapter 3**

### **Background of Kaizen**

#### **3.1 Kaizen**

Kaizen is the procedure of constant improvement after some time. Simply, associations who pursue Kaizen have confidence in "one-time" or "bit by bit improvement" of their procedures. Subsequently, they probably won't finish an assignment in one go yet rather bit by bit improvement of the said errand and persistently improve in little habits.

Kaizen is a Japanese word involving two concepts: Kai (change) and Zen (to improve things) (Palmer, 2001). It characterizes how a supervisory crew just as a cleaning team involves in the continuous improvement. Enhancements are commonly practiced at little or no costs. These little enhancements signify big results as far as benefit or expanded profitability. It consists of improvement of complex procedures by breaking them into small forms, adjusting them and afterward improving them.

#### **3.2 Features of Kaizen**

- Kaizen improves the procedures along these lines conveying better outcomes for the association
- It utilizes suitable information to improve in this manner improving precision
- Because of ceaseless improvement theory, Kaizen expels the issues and issues from the root and may totally change the operational stream.
- It urges workers to think of thoughts and directors to follow up on them to improve forms.
- It brings about the disposal of poor procedures and issues which are making issues, steps which are not required and helps in the general working of the association.
- If an association pursues the way of thinking of Kaizen, at that point everybody – from the CEO to the workers – are answerable for persistent improvement in their association.

Kaizen can contribute in assembling as well as each other office in an organization.

### 3.2 The Cycle of Kaizen for continuous improvement

There is a constant cycle of Kaizen which exists with the sole focal point of progress. It is a guide on the most proficient method to recognize the inadequacies and enhance them for a superior and progressively productive procedure. The Kaizen cycle has 7 stages and they are as per the following:

1. Involve Employees
2. Process analysis / Finding problems
3. Think of the solution
4. Implementing the solution
5. Analysis of results
6. Standardize if results are optimal
7. Repeat (Thus the cycle of Kaizen is reshaped. The cycle can likewise be repeated after the stage 5 if the new procedure actualized isn't found up to check.)

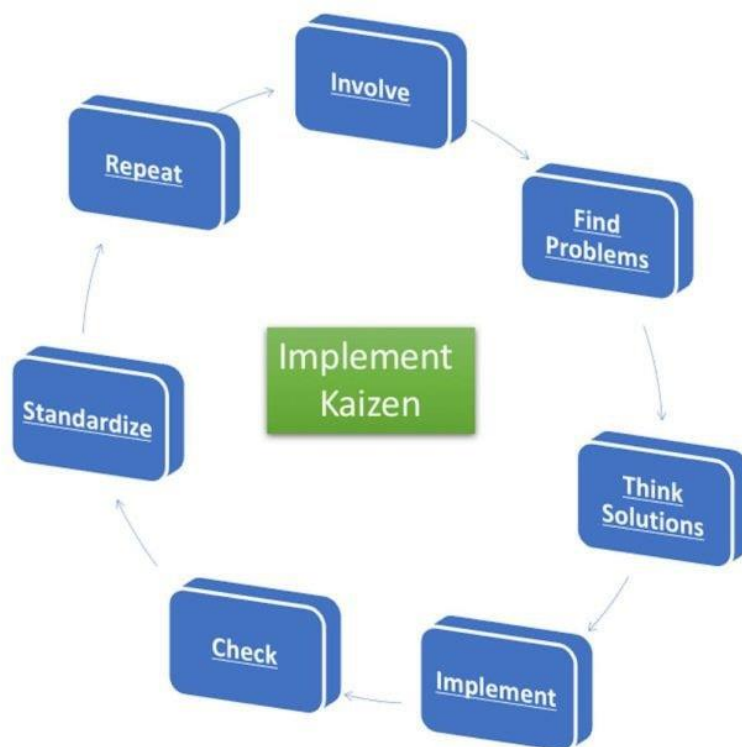


Figure-3.2: Cycle of Kaizen for continuous improvement

### 3.3 The PDCA cycle of Kaizen

This cycle is known as the Shewhart cycle or the PDCA cycle. It is comparative on the grounds that the net outcome is equivalent to the 7-advance persistent cycle of Kaizen.

The four stages of PDCA cycle are:

1. Plan – Think and plan the upgrades which are required.
2. Do – Implement the adjustments in the association.
3. Check – Check the usage and the similarity of the change with existing procedures.
4. Act – Act on the discoveries again and rehash the procedure and continue distinguishing procedures and components which should be improved.

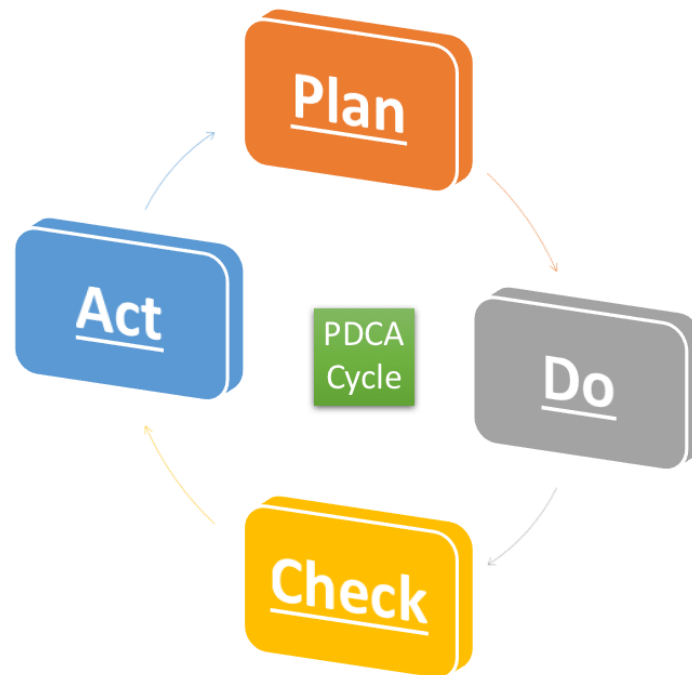


Figure-3.3: PDCA cycle of Kaizen

### 3.4 The Five S Framework and its role in Kaizen

The 5S structure manages the representatives on the most proficient method to keep up their work space, how to have a superior and effective design of the work space, how to guard themselves and so on.

**5S is the name of a workplace organization method that uses a list of five Japanese words: seiri, seiton, seiso, seiketsu, and shitsuke.**



Figure-3.4: Five S framework

The 5S system remains as pursues:

1. **Seiri (Sort)** - The idea of Seiri or Sorting fundamentally says that representatives can get diverted with pointless items and this interruption can influence their effectiveness and profitability.
2. **Seition (Set all together)** - Seition implies setting objects all together with the goal that it is simpler for them to be expelled.
3. **Seiso (Shine)** - Cleanliness is righteousness. On the off chance that it wasn't individuals wouldn't wash day by day. What's more, this is actually implied by Seiso for the working environment – Keep our work environment clean so our psyche is clear and can help with progress.
4. **Seiketsu (Standardize)** - Good things ought to be a standard and not an infrequent thing. They ought to be pursued day by day and gotten done right. Thus, on the off chance that there is a system which is functioning admirably, at that point, a similar procedure ought to be institutionalized.
5. **Shitsuke (Sustain)** - Shitsuke assists with keeping up request and discipline and guaranteeing that there is persistent execution after the sum total of what procedures have been institutionalized.

### **3.5 Importance and Benefit of Kaizen**

The ultimate result of the Kaizen is:

- Increased productivity
- Quality products
- Reduction in wastage
- Less rework
- Reduced human efforts
- Low manufacturing cost
- Optimal use of resources
- Empowerment
- Continuous improvement

### **3.6 Limitations of Kaizen**

All things considered, kaizen has its restrictions. One significant kaizen inconvenience is that it mutilates the whole administration framework. Kaizen could be hard for organizations to return to past frameworks. Likewise, representatives may be reluctant to change the framework that they have been utilized to. Moreover, preparing staff to adjust to new changes could be costly and requesting. On the off chance that representatives don't have their impact in embracing these changes, the measure of time and assets spent will go to squander. At last, the reason for actualizing kaizen is vanquished.

## Chapter 4

### Implementation of Kaizen in PRAN-RFL Group

A great many little and medium scale ventures are available in Bangladesh. All are confronting sure issues bringing about deficiency of generation and quality issues. Improving client support, making activity quicker, more activity and decrease in costs are difficulties looked by producers today. To address these difficulties numerous organizations in Bangladesh looking to improve their capacity to contend internationally. Wastage during generation process is quickly developing step by step in enterprises. This is a direct result of progress in taste of the client. Which will prompt increment underway expenses.

Kaizen method has gigantic impact on tasks of a firm, including structure, dissemination, advertising and so forth and in this manner all degree of a company's management. Kaizen is basic in practically all assembling ventures like PRAN-RFL. Kaizen demonstrates a procedure of "consistent improvement". The explanation behind the fame of Kaizen is straightforward. This is on the grounds that Kaizen improves profitability, builds benefit and diminishes cost.

#### 4.1 Kaizen activities of PRAN

- Habiganj Industrial Park (HIP) has recently completed KAIZEN work on M&S forming machine at M&S production line of PCL to increase the production capacity by increasing M&S forming machine capacity and full filling the sales demand by existing m/c without any investment. They have completed some works in this machine to increase the productivity like changed the Gear sprocket, modify the Gear box plate, set newly mold for product shape quality, Increase cooling temperature and so on. As a result, productivity has increased almost 47.8% with the consuming electricity as before.
- Chorka Textile Limited (CTL) has recently completed some KAIZEN works in the factory. They have improved Method with Arm hole binding that increased the productivity and achieved required quality. Besides, they are implementing new method by utilizing batch label attach with pattern instead of batch label attach with mark that improve the production capacity and save time & money. Meanwhile, they have developed a method for Drawstring insert process that reduced 55% of cycle time, increased the productivity, reduce time and save money.
- Mymensingh Agro Limited (MAL) has completed 23 KAIZEN works at the factory in Engineering Workshop, CSD, Plastic, Drinks, Candy sections which saved BDT 75, 88,143.

They set auto water drain valve in airline before CSD blowing machine and drinks line to reduce production breakdown & parts damage by providing water free air, Nonmoving IR filter use at LP compressor by some modification without buying new parts, completed

HF filler damage condenser tube modification work, Completed the automation work of LP Compressor at Wafer line instead of manual running, and increased the lathe capacity by using scrap material in Engineering Workshop.

- PRAN Factory Ghorashal has completed the KAIZEN work of Vacuum Cooker Water Circulation of HBCL that will save more than half a million per year. Now they are using water circulation system for Vacuum cooker. As a result saved treated water demand, less deep tube well running time, less ETP inlet water pressure, Reduce ETP chemical cost, Reduce wastage of water and reduced the environment pollution.



Figure-4.1(a): PRAN Factory Ghorashal ETP Plant

- PRAN Agro Limited (PAL) has recently organized a training program on KAIZEN and handed over the KAIZEN Award to the best performers. The employees who are involve with KAIZEN were present in this program and introduced themselves.



Figure-4.1(b): PRAN Training & Award program of Kaizen



## 4.2 Kaizen activities of RFL

### ✓ Automation in PE Compound machine of kitchen shelf plastic paint resin with PLC & HMI under the process of Kaizen

DIP DPL has built a great automation in PE Compound machine. With the help of DPL Development team, they introduced entire automation on the PE compound machine with all necessary safety. Now, after a certain period, when all the heaters are ON, The operator can be able to run the extruder, Otherwise He can't run the machine. Hence, no damage on the Main Motor. Previously, Operator manually did the opening & closing of the water tank valve according to the temperature requirements & it was time consuming & loss of efficiency as well. Now with the help of temperature sensor, PLC itself open & close those valves according to the set temperature. Now they are able to see the total running hour of the machine. Now they can see the efficiency of the machine that how much time the machine is running in a day. Operators & Maintenance team needs to do a preventive maintenance after a certain period of time, otherwise they will not be able to run the machine when the time is over. This ensures the preventive maintenance. With the help of PLC, HMI & lot. Authorized person can see the machine status from Head office or any places if he connected with the software via internet. If needs to shut down the machine, He could do that. On the monitor, anyone can see the times of power disruption occurred in a day or month.



Figure-4.2(a): Automation in PE Compound machine of kitchen shelf plastic paint resin with PLC & HMI

### ✓ One Power pack hydraulic system for use two compounding machine filter change to reduce power cost by using six sigma kaizen

Previously every re-process compounding machine had a separate hydraulic power pack which has been used for change filter screen, which means one compound machine had one hydraulic power pack which operated by manual liver type directional valve. Now after brainstorming they are using only one hydraulic power pack for two compounding machine by using duel valve in one manifold. So now One hydraulic power pack remain as spare and saving 750/= approx. from power cost.





Figure-4.2(b): Before & after Kaizen of One Power pack hydraulic system

✓ **Robot modification to run the normal robot as IML robot**

We have to use in-mold foil for many of our products. To decrease cycle time, we were planning to use robot to insert the foil, but we saw below problems in this issue:

1. Normal robot can't install the foil on to the mold.
2. IML robot is costly compared to Normal Pick & place robot.
3. Higher cycle time of production without IML robot where IML is required.

After analysis we did below works on our regular robot so that they work like an IML robot. We have modified the EOT so that it can take the foil as well as pick the product also. To do that we have changed the horizontal/Vertical cylinder by 180 degree. We used two vacuum system there to pick the foil & the product. Also used grip system where it may require. Added foam to make the foil & the mold clearance air free.

Financial Benefit:

- i. IML robot purchase cost saved.
- ii. Manpower utilization increased.
- iii. 30% higher productivity.



Figure-4.2(c): Normal robot converted to IML robot

✓ **Developed Mold's Heater & Thermocouple Checking Device**

**Previous Condition:** Each day, minimum 30 mold's heater & thermocouple were checked before setting up in the machine.

30 minutes\*30 Molds= 900 minutes spent to check this

**Present Condition:** They have developed a checking device by PLC which can check each mold by 1 minute.

1 minute\* 30 Molds= 30 minutes spent

The benefits through this modification as follow:

- They have saved 870 minutes in each factory in a day.
- Very friendly to use.
- Reduced the engagement of the electrician to check the mold.
- Now anyone can check the mold with this device.

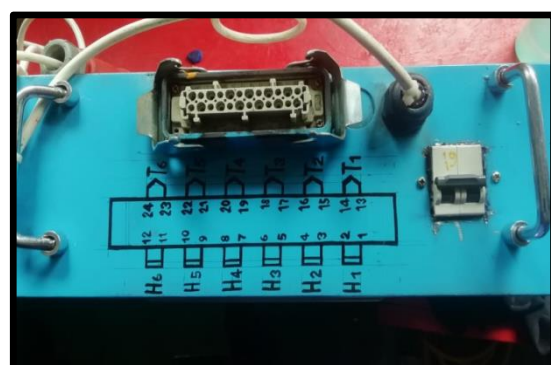


Figure-4.2(d): Mold heater & Thermocouple checking device

## **Chapter 5**

### **Recommendations & Conclusion**

#### **5.1 Recommendations**

The business operations of PRAN-RFL Group are world standard and well established. They are always trying to introduce new items by ensuring the quality as well. By this trend PRAN-RFL Group can follow these recommendations:

- ✓ Key factors in effective execution of kaizen costing are twofold. First after the cost-decrease target is built up, at that point the work cell ought to be considered responsible to these. Second, the kaizen procedure should be steady and repeatable. It must turn out to be a piece of the way of life for the work cell to consistently endeavor to meet their objective and have the option to perceive the advancement made through the span of the year.
- ✓ Kaizen team involves people from each section of the organization. People involvement is the key for successful implementation of Kaizen. Team selected should understand the process and set targets like elimination of the waste. Proper understanding is the base for analysis and generation of the improvements. The improvements generated by Kaizen team is implemented and standardized. Kaizen is a process and is an evolutionary concept so organizations should strive for its applications.
- ✓ PRAN-RFL has to conduct various training program about the concept of Kaizen and its application for the better understanding of their operators.

#### **5.2 Conclusion**

This paper emphasis on the fact that Kaizen philosophy if implemented well will produce marvelous result. In this manufacturing industry the Kaizen reduced the cycle time for various processes. Kaizen toolbox helped to find the cause of the extra time taken by the operators. This study is the proof that Kaizen will help organizations to outperform peers and achieve high performance with optimum use of resources. Kaizen is a continuous process and needs regular attention. It can be concluded that if implemented well Kaizen can improve overall efficiency of assembly line.

## References

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## Appendix A.

ETP	Effluent Treatment Plant or <b>ETP</b> is one kind of waste water treatment technique which is especially intended to cleanse modern waste water for its reuse and its point is to discharge safe water to condition from the hurtful impact brought about by the pro fluent.
PLC	A programmable logic controller (PLC) or programmable controller is a mechanical advanced PC which has been ruggedized and adjusted for the control of assembling forms, for example, sequential construction systems, or automated gadgets, or any action that requires high dependability control and simplicity of programming and procedure deficiency conclusion.
IML	Heat and pressure are applied to liquefy the substrate film, which is unequivocally changed in accordance with the plastic material, with the dissolve acquainted with structure the last item in the filling and holding cycles.