OVERVIEW OF THE COMPANY

An ISO 9001:2015 & SQ Certificated Company

Figure 1. Company photo

ADS Associates an ISO 9001:2008 certified company is a partnership organization, started its business in the year 1999 as a manufacturer and supplier of Injection Molded Components, Rubber Extrusion Profiles, Plastic Molded Components & Plastic Extrusion Profiles. Our range encompasses Cowl Top Under Cover, Battery Holder, Cover-RR Bumper, Plastic File Clip, Automobile Center Tube, Anti Rattle Sleeves, Polystyrene Tube, Automobile Rest Foot, Dip Tube Disperser, Plastic Trim Hooks, Plastic Components, Track End Cap, Plastic Headrest and many others. Our company extrudes profiles by utilizing different types of polymers, which include Polyethylene, Polypropylene, Polystyrene and Polycarbonate. Further, injection components are molded with Polystyrene, ABS, Polycarbonate and Polypropylene. Optimum quality raw material is used to manufacture these products that we procure from the selected and most reliable vendors of the industry. We also use advanced techniques in our production procedure, so as to keep ourselves in pace with the growing market tendency and clients' specifications.

Our organization is established by 3 technocrats D. Arunn Ganesh, S. Ramesh Kumar and MD. Vinoth Kumar, who are managing directors of our company. They all are from the Mechanical Engineering stream in which, two of them got specialism in Plastic Engineering from CIPET in 1999. The expertise they have acquired during CIPET Graduation has enabled us to start extruding Polypropylene (The stringent material for Extrusion) Profiles and molding complicated injection components, starting from the beginning. Valuable expertise of 11 years along with our technical know-how has made our company leading among the others manufacturer and supplier of Extrusion Profiles and Injection Components.

We possess a sophisticated and ruggedly constructed infrastructure, equipped with latest and all necessary business amenities. Ultramodern machines are installed by us through which, we are capable of manufacturing bulk and quality approved range within the scheduled time period. Our infrastructure consists of various departments such as production, quality control, R&D, sales and marketing, warehousing and packaging and many others that enable us to perform hassle free business operations.

Figure 2. Company photo

CHAPTER 1
INTRODUCTION

1.1 COMPANY PROFILE

ADS ASSOCIATES – We are one of the leading manufacturers of Plastic Extrusion Profiles and Injection components in South India. We extrude profiles using various types of polymers such as POLYPROPYLENE, POLYETHYLENE, POLYSTYRENE, PVC, ELASTOMERS, POLYCARBONATE etc., and we mould injection components with ABS, ASA, POLYSTYRENE, POLYAMIDES, TPE/TPR POLYCARBONATE, POLYPROPYLENE, EVA etc.,

ADS ASSOCIATES is the company formed in the year 1999 by three technocrats, all from Mechanical Engineering stream and two of them with specialization in Plastics Engineering from CIPET.

With the knowledge gained during the CIPET Graduation, we have started molding complicated injection components and extruding Polypropylene (The stringent material for Extrusion) Profiles, right from the beginning itself. We have indigenously developed many profiles and injection components, which have been imported earlier in the Automobile sector.

SRI ADS POLY INJECTIONS LLP

This company was started during 2017, to concentrate more on Injection Business, promoted by the same Partners that of ADS Associates. Since then this company is expanding its manufacturing range and the sales was increased by 50%. With this 5 years 11 new machines were purchased.

1.2 PRODUCTS MANUFACTURED:

Track End Cap

Figure 1.1 Track End Cap

Product Description

We manufacture and supply wide range of Plastic Trim Hooks that are fabricated with utmost accuracy. Quality being the sole concern, we fabricate the entire product range utilizing quality assured components and advanced methods and technologies. Our quality analyst stringently tests the entire product range at initial stage till the final dispatch, thereby ensuring its durability and reliability. These products are in compliance with global quality standards.

Applications:

Automobiles

Car Seating.

Plastic Injection Component

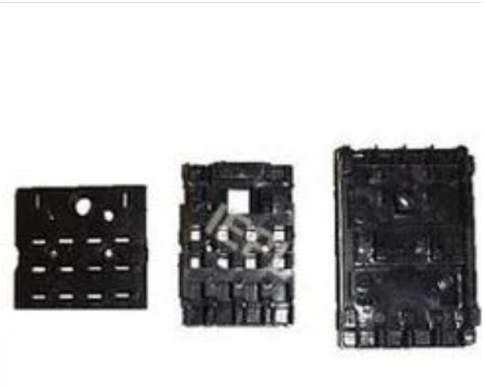

Figure 1.2 Plastic Injection Component

Product Description

Quality being main concern, we manufacture and supply wide array of Plastic Injection Components, that are widely acclaimed among the clients for its optimum quality and durability. These products are fabricated using optimum quality components and technically advanced machinery. They are available in different sizes and shapes and can be customized as per the client's requirement. They are thermostatically balanced and require minimum maintenance.

Features:

High strength

Available in different customized versions

Durable

Additional Information:

Item Code: ic-01

Injection Molded Automotive Component

Quality being the main concern, we manufacture and supply wide range of Interior Injection Molded Automotive Component, that are acclaimed among the clients for its optimum quality and easy operations. These products are dimensionally accurate in nature and are functionally efficient. These are quality tested on specific parameters, under the strict supervision of quality controllers. Moreover, clients can avail the entire product range at leading industrial arts.

Features:

Weather resistant

Cost effective

Fine finish.

Applications:

Interior Injection Automotive Component

Automobiles

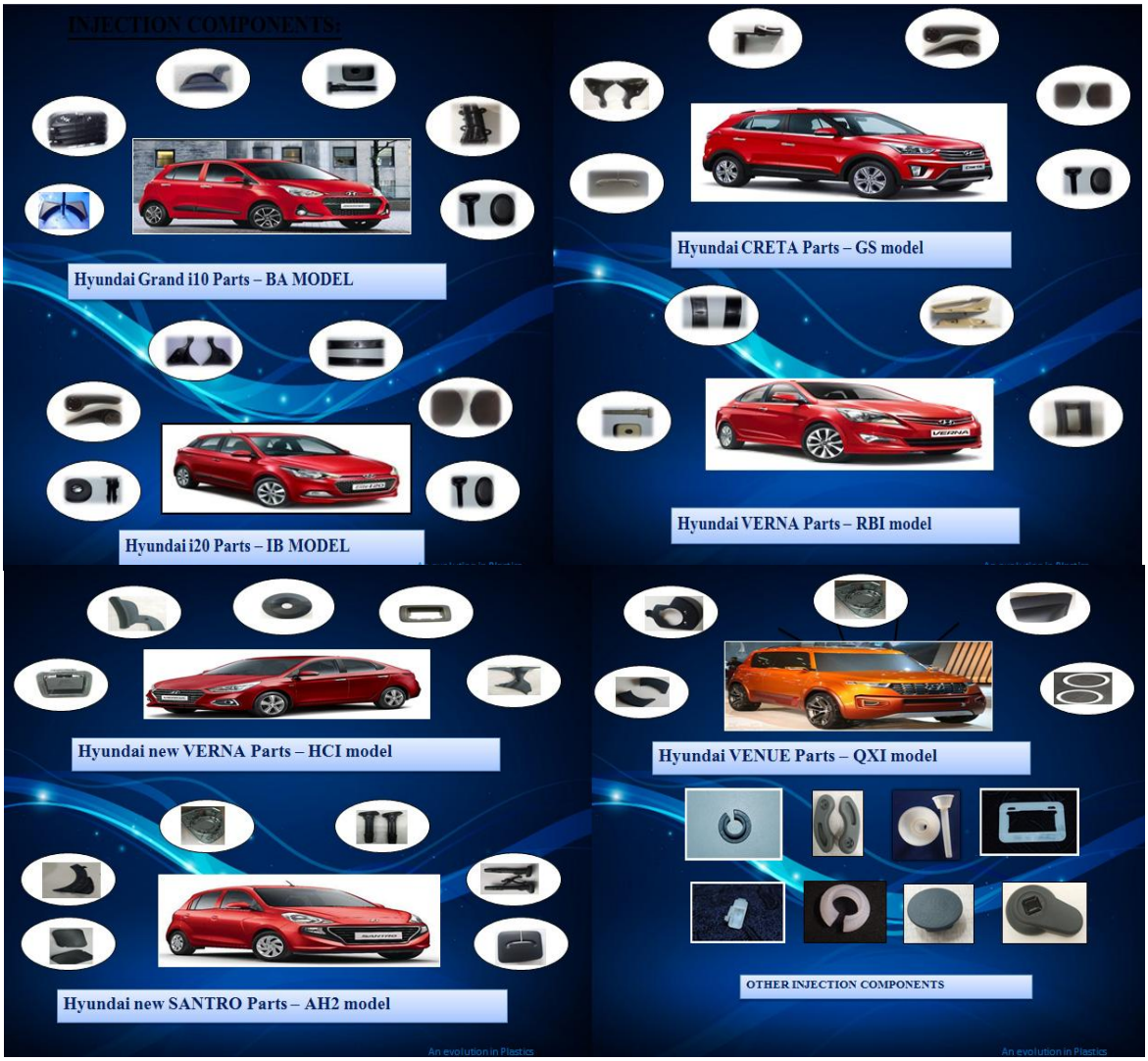

Figure 1.3 Automotive Component

Plastic File Clip

With the assistance of skilled and dedicated professionals, we manufacture and supply comprehensive range of Plastic File Clip. Our entire product range is easy to maintain and are seamless in performance. Our products are available in different colors and sizes and are used to hold the documents and assignments. Our entire product range is designed and developed as per the international standards of quality.

Features:

Fine finish

Cost effective

Long lasting

Figure 1.4 Plastic File Clip

Plastic Moulded Components

We are offering exclusive range of plastic moulded components like: - inner door handles, metal insert moulding, plastic molded automobile products, cam, levers, actuator covers, body, body latches, trunk hood, fuel openers, valves and doors etc.

Figure 1.5 Plastic Moulded Components

CHAPTER 2

FUNCTIONING OF VARIOUS DEPARTMENTS

2.1 INJECTION MOLDING

Injection molding is a method to obtain molded products by injecting plastic materials molten by heat into a mold, and then cooling and solidifying them.The method is suitable for the mass production of products with complicated shapes, and takes a large part in the area of plastic processing.Injection moulding is used to create many things such as wire spools, packaging, bottle caps, automotive parts and components, toys, pocket combs, some musical instruments (and parts of them), one-piece chairs and small tables, storage containers, mechanical parts (including gears), and most other plastic products available today. Injection moulding is the most common modern method of manufacturing plastic parts; it is ideal for producing high volumes of the same object.

Injection moulding uses a ram or screw-type plunger to force molten plastic or rubber material into a mould cavity; this solidifies into a shape that has conformed to the contour of the mould. It is most commonly used to process both thermoplastic and thermosetting polymers, with the volume used of the former being considerably higher.

Figure 2.1 Thermoplastic resin

2.1 INDUSTRIAL PROCESS

Usually, the plastic materials are formed in the shape of pellets or granules and sent from the raw material manufacturers in paper bags. With injection moulding, pre-dried granular plastic is fed by a forced ram from a hopper into a heated barrel. As the granules are slowly moved forward by a screw-type plunger, the plastic is forced into a heated chamber, where it is melted. As the plunger advances, the melted plastic is forced through a nozzle that rests against the mould, allowing it to enter the mould cavity through a gate and runner system.The mould remains cold so the plastic solidifies almost as soon as the mould is filled.

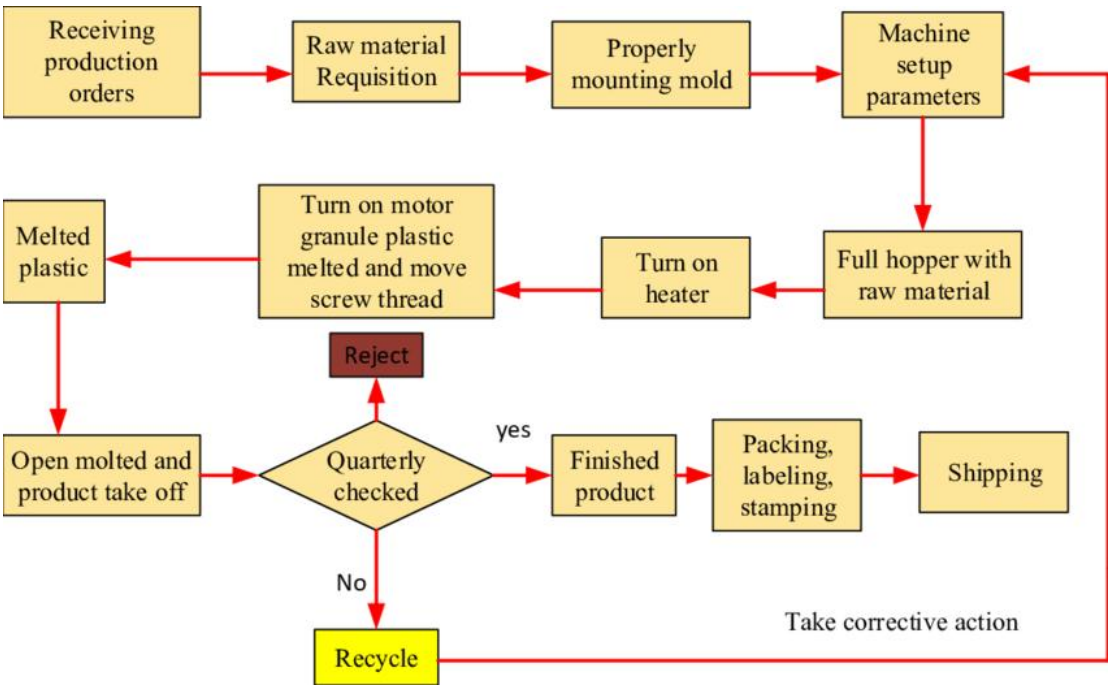

Figure 2.2 Industrial Process Flow

Mould

Mould or die are the common terms used to describe the tool used to produce plastic parts in moulding.

Since moulds have been expensive to manufacture, they were usually only used in mass production where thousands of parts were being produced. Typical moulds are constructed from hardened steel, pre-hardened steel, aluminium, and/or beryllium-copper alloy.The choice of material for the mold is not only based on cost considerations, but also has a lot to do with the product life cycle. Generally speaking, those who have matured, the need for mass production of the product selection of materials will be better, and hope that the mold circle time the larger the better so that the total cost will be reduced. For those who have just

developed, not very mature, just want to produce a small-scale market test products, the choice of material is often some lower cost of aluminum alloy and so on. These mould called rapid tooling. In general, steel moulds cost more to construct, but their longer lifespan offsets the higher initial cost over a higher number of parts made before wearing out. Pre-hardened steel moulds are less wear-resistant and are used for lower volume requirements or larger components; their typical steel hardness is 38–45 on the Rockwell-C scale. Hardened steel moulds are heat treated after machining; these are by far superior in terms of wear resistance and lifespan.

Typical hardness ranges between 50 and 60 Rockwell-C (HRC). Aluminium moulds can cost substantially less, and when designed and machined with modern computerized equipment can be economical for moulding tens or even hundreds of thousands of parts.

Figure 2.3 Mould Design

Injection moulding cycle

The sequence of the events during the injection mould of a plastic part is called the injection moulding cycle. The cycle begins when the mould closes, followed by the injection of the polymer into the mould cavity. Once the cavity is filled, a holding pressure is maintained to compensate for material shrinkage. In the next step, the screw turns, feeding the next shot to the front screw. This causes the screw to retract as the next shot is prepared. Once the part is sufficiently cool, the mould opens and the part is ejected.

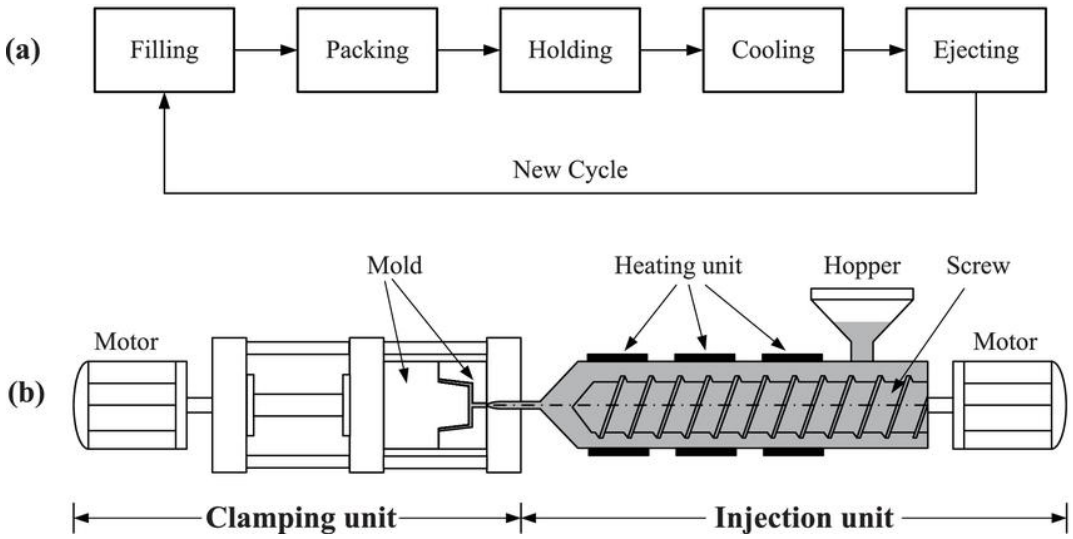

Figure 2.4 Model of an Injection

Moulding defects

Injection moulding is a complex technology with possible production problems. They can be caused either by defects in the moulds, or more often by the moulding process itself.

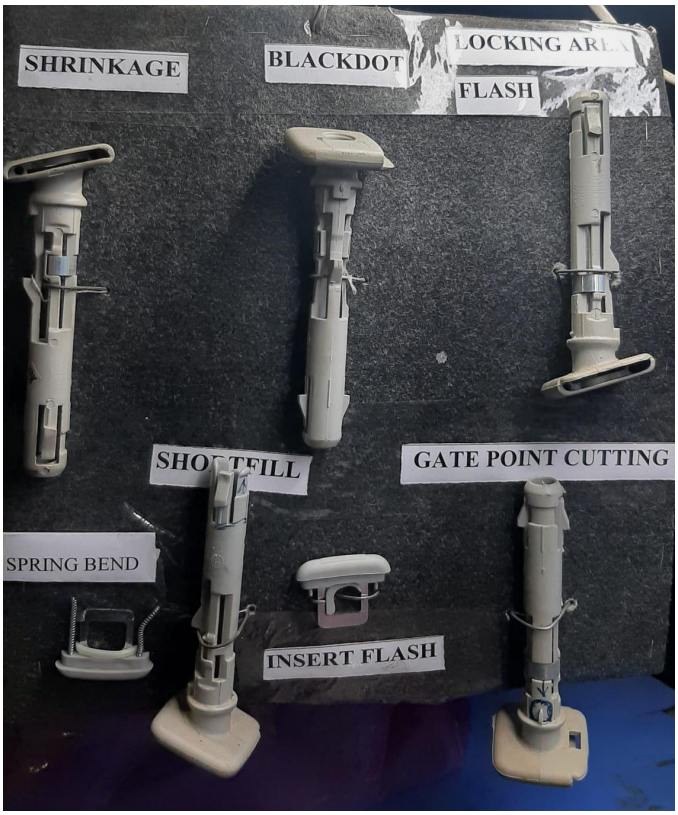

Figure 2.5 Defects in Injection

Machinery used in the Industry

MACHINE	SPECIFICATION	SPECIALITY
Vertical Injection Moulding machines (TAYU)	100 TON	Hydraulic Vertical Rotary.
Injection moulding Machine (Toshiba)	110 TON	All Electric Machine capable of producing accurate products consistently.
Injection moulding Machine (Toshiba)	110 TON	All Electric Machine capable of producing accurate products consistently.
Injection moulding Machine (Ferromatic Milacron)	110 TON	All Electric Machine capable of producing accurate products consistently.
Injection moulding Machine (Toshiba Make)	160 TON	All Electric Machine capable of producing accurate products consistently.
Injection moulding Machine (HAITIAN)	160 TON	Servo Hydraulic
Injection moulding Machine (Toshiba)	180 TON	All Electric Machine capable of producing accurate products consistently.
Injection moulding Machine (Shibaura)	180 TON	All Electric Machine capable of producing accurate products consistently.
Vertical Injection Moulding Machines (TOKIMA)	100 TON	Hydraulic Vertical

CHAPTER 3
LEARNING OUTCOMES

3.1 LEARNING OUTCOMES IN INDUSTRY

During the training, we learnt about the manufacturing techniques involved, measuring the efficiency percentage and testing of the products and raw materials used.

1. Mastering polyinjection processes
2. Implementing quality control
3. Adhering to safety protocols
4. Continuous learning and improvement

3.2 LEARNING RELATED TO PROGRAM OUTCOMES (PO's)

At the end of internship training, the students will be able to

1. Understanding polyinjection manufacturing principles.
2. Proficiency in operating injection molding machines.
3. Implementing quality control measures for high-quality production.
4. Developing problem-solving skills and ensuring compliance with safety and environmental standards.

CHAPTER 4

CONCLUSION

As a Quality Inspector in ADS Polyinjection LTD,Chennai. My role is pivotal in ensuring the integrity and reliability of our products. Through diligent inspection processes, we guarantee that each component meets rigorous quality standards before reaching the hands of our customers. Our dedication to precision and excellence not only safeguards the reputation of our company but also fosters trust and confidence among our client.

As we look towards the future, it is imperative that we remain vigilant in upholding the highest standards of quality and safety. By embracing new technologies, refining our processes, and nurturing a culture of quality throughout the company, we position ourselves for sustained success and growth in the dynamic landscape of the polyinjection industry.

Overview of the manufacturing process: Hands-on experience in the assembly of components Quality control procedures and inspections during the manufacturing process

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Quality Assurance and Testing Department: Insight into quality control measures and standards. Learning about quality management systems and compliance with industry regulation

Supply Chain and Logistics Department: Overview of the raw material and component procurement process, with an emphasis on inventory control and logistical procedures. observing how the flow of materials is coordinated for effective production

WEB REFERENCES

1. https://www.adsassociates.net/

2. https://www.adsassociates.net/about.php

3. https://www.adsassociates.net/llp_polym.php

4. https://www.adsassociates.net/quality.php

PHOTO GALLERY

Figure 4.1

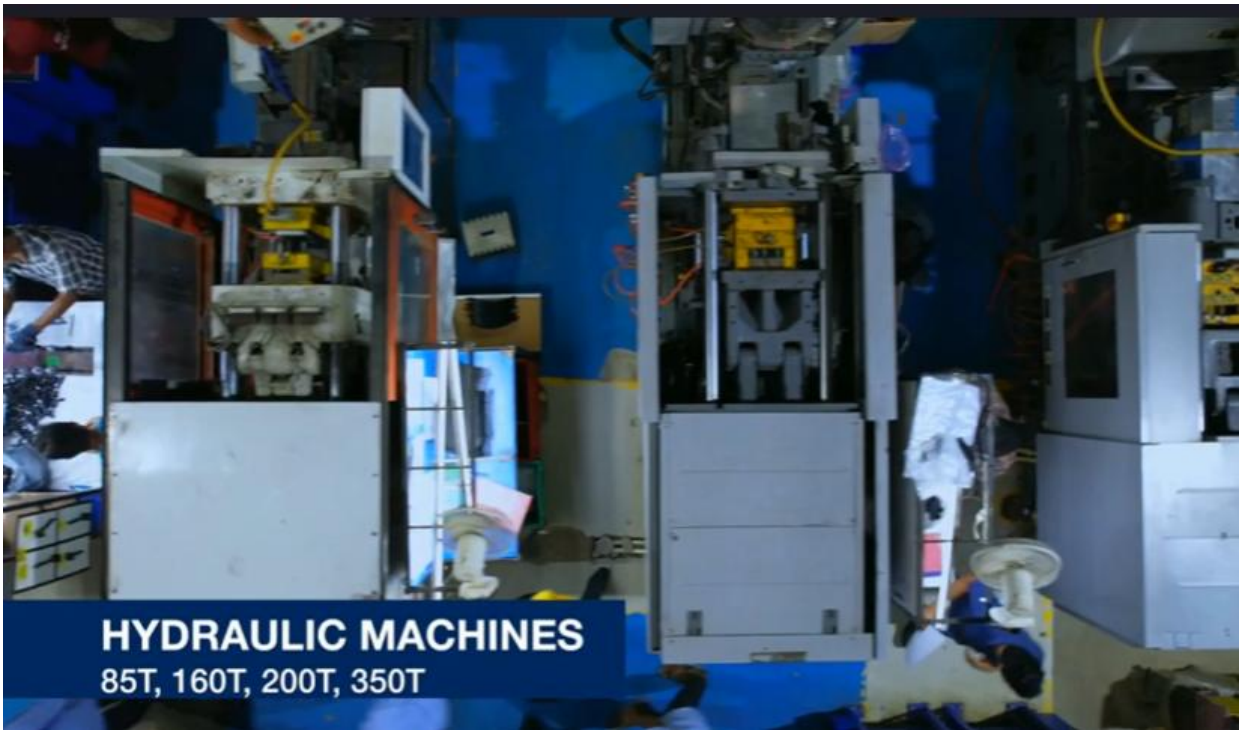

Figure 4.2

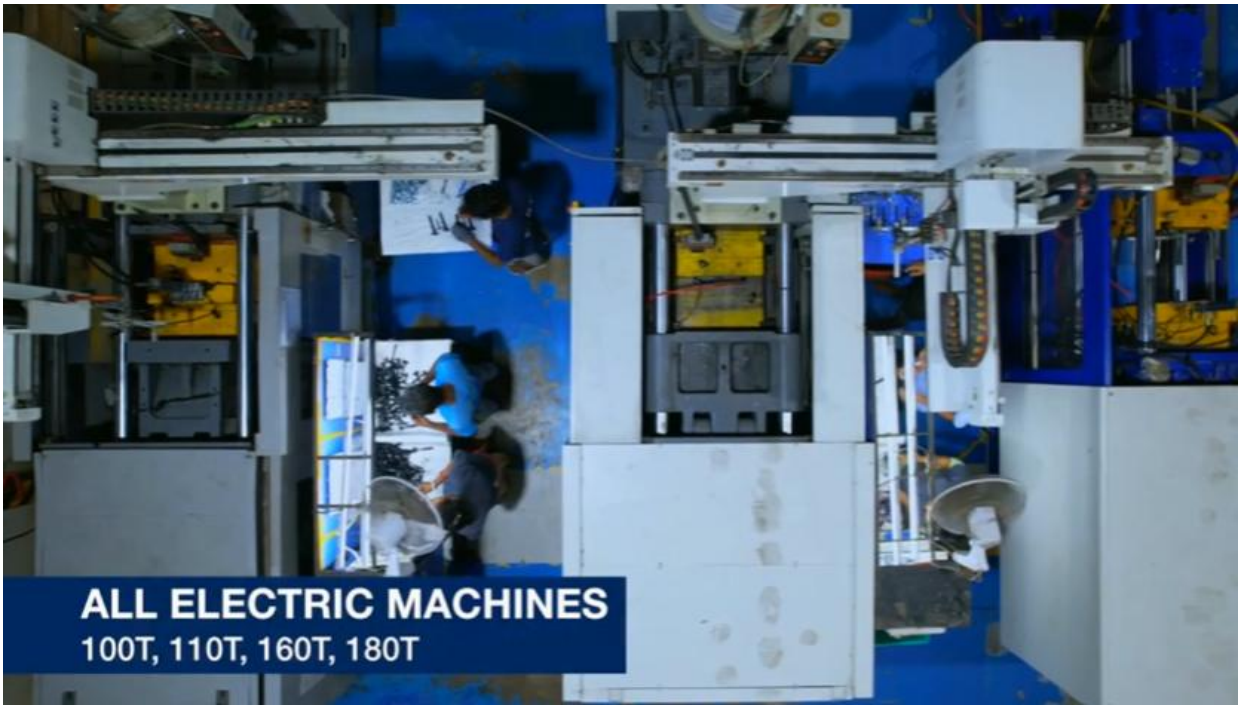

Figure 4.3

Figure 4.4