INDUSTRIAL TRAINING REPORT

ON

ERHARDT + LEIMER (INDIA) PVT. LTD

Submitted in partial fulfillment towards the degree of

BACHELOR OF TECHNOLOGY

IN

MECHANICAL ENGINEERING

Prepared by

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BONAFIDE CERTIFICATE

Certified that the industrial training report titled **'ERHARDT + LEIMER (INDIA) PVT. LTD'** is the bonafide work of **Sharvil Acharya, Roll No. MH-02 (ID-20MHUOD011)**who carried out the industrial training work under our supervision.

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Sharvil Acharya

ABSTRACT

Internship at Erhardt+Leimer (India) Pvt. Ltd offered me an excellent opportunity to understand the practical concepts whose theory has been taught in the college. Practical knowledge helps us to understand the concepts better. I had an opportunity to interact with the experienced person at the office and came to know about various applications. By doing internship at Erhardt+Leimer i had an opportunity to gain knowledge about Web Guiding Systems. I had the privilege to understand the basics of Automation Technologies, Lean Management and Web Guiding Systems. This report throws light on Industrial Training and Project Internship. It highlights the lessons, activities, gains, company profile and product details observed as a part of Project Internship. With the modern technology available at the industry I came to know about new methodologies of Designing and Manufacturing and was lucky enough to see it which would not have been possible otherwise. I also came to know about different commands used in modelling and the factors affecting the life of the product. To do justice to the report, it concludes with a vision of a Mechanical Engineer

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Introduction to Company

1.1 Introduction of Erhardt+Leimer

Erhardt+Leimer is a global supplier of automation technology and control systems for the textile, paper, printing, and packaging industries. The company was founded in Germany in 1919 and has since expanded its operations to over 50 countries worldwide.

Erhardt+Leimer offers a wide range of products and services including web guiding systems, tension control systems, web inspection systems, printing inspection systems, surface inspection systems, and automation solutions. The company's products are designed to improve the efficiency, productivity, and quality of its customers' operations.

Erhardt+Leimer is committed to environmental responsibility and sustainable development. The company's products are designed to reduce waste, minimize energy consumption, and improve the overall sustainability of its customers' operations.

1.2 History of Erhardt+Leimer

1919- Foundation of the company for sale and servicing of industrial clocks and signal systems by Manfred Erhardt.

1925- Electrical engineer Albert Leimer joins as the first specialist for the creation of a precision mechanics workshop.

1933- Death of company founder Manfred Erhardt.

1935- Development and manufacture of the first precision mechanical units for the textile industry.

1943- Albert Leimer becomes a shareholder of the company Manfred Erhardt+Co.

1949- First development and manufacture of web guiding devices for textile industry.

1960- Field of activity widened to the paper and foil industry.

1972- Death of Albert Leimer. Erhardt+Leimer KF loses its founder who, for the textile industry, was one of the most significant entrepreneurs of the post-war period.

1977- Hannelore Leimer, daughter of Albert Leimer, becomes the chair of the management board.

1986- The Albert Leimer Foundation is set up. The chair of the board is Hannelore Leimer.

1995- Introduction of DCS digital technology as the standard control technology of E+L.

1996- Expansion of the management board of Erhardt+Leimer GmbH with the addition of Dr. Michael Proeller, grandson of company founder Albert Leimer.

1999- Dr. Michael Proeller becomes co-partner and CEO of the Erhardt+Leimer group of companies.

2000- Entry into the world of inspection and camera technology.

2004- Erhardt+Leimer positions itself worldwide as a complete provider for the printing industry with web guiding (ELGUIDER), web monitoring (ELSCAN), and web inspection (ELSIS).

2009- Erhardt+Leimer celebrates its 90th company anniversary.

2014- Foundation of the ELCARE Foundation of Erhardt+Leimer GmbH on the occasion of the company's 95th anniversary. Erhardt+Leimer acquires the Theta Print product division of the Theta System Elektronik GmbH.

2015- Erhardt+Leimer takes over the company Dr. Noll inn Bad Kreuznach.

2016- Foundation of ELBG Erhardt+Leimer Beteiligungsgesellschaft GmbH.

2019- Erhardt+Leimer celebrates its 100th anniversary.

2020- Due to COVID-19 pandemic, a large proportion of employees works from home. This leads to a massive digitalization push within the group.

2021- Erhardt+Leimer achieves the best results in the company's history.

1.3 Products of Erhardt+Leimer

Erhardt+Leimer provides wide range of pproducts in the following fields:-

1. Drive Technology
2. Automation Technology
3. Web Guiding Technology
4. Web Cleaning Technology
5. Inspection Technology
6. Measuring Technology
7. Cutting Technology
8. Belt Position Control Technology

1.4 Introduction to Ahmedabad Plant

Erhardt+Leimer India Pvt. Ltd. in Ahmedabad/Gujarat was founded in 1978 as a joint venture with ATE Bombay. The production floor space was already expanded in 1982. In 1997, E+L India was awarded ISO 9000 certification, and as an extension of the workshop at head office it took on production of the KF 20 Web Guiders product line. In 2013, E+L India was completely taken over by Erhardt+Leimer Augsburg.

With a total of six sales and service stations across the whole of India, E+L India has a closely-knit network that enables it to meet all its customers' requirements. Almost 300 employees work for the whole group in a combination of roles in customer service and in the creation of complex software solutions.

Figure 1.1: Ahmedabad Plant

1.5 Products of Ahmedabad Plant

1.5.1 Web Guiding System:-

A. Textile Industry Machines
B. Tyre Industry Machines
C. Paper Industry Machines
D. Corrugated Industry Machines
E. Converting Industry Machines (Coating and Lamination)
F. Sanitary Industry Machines

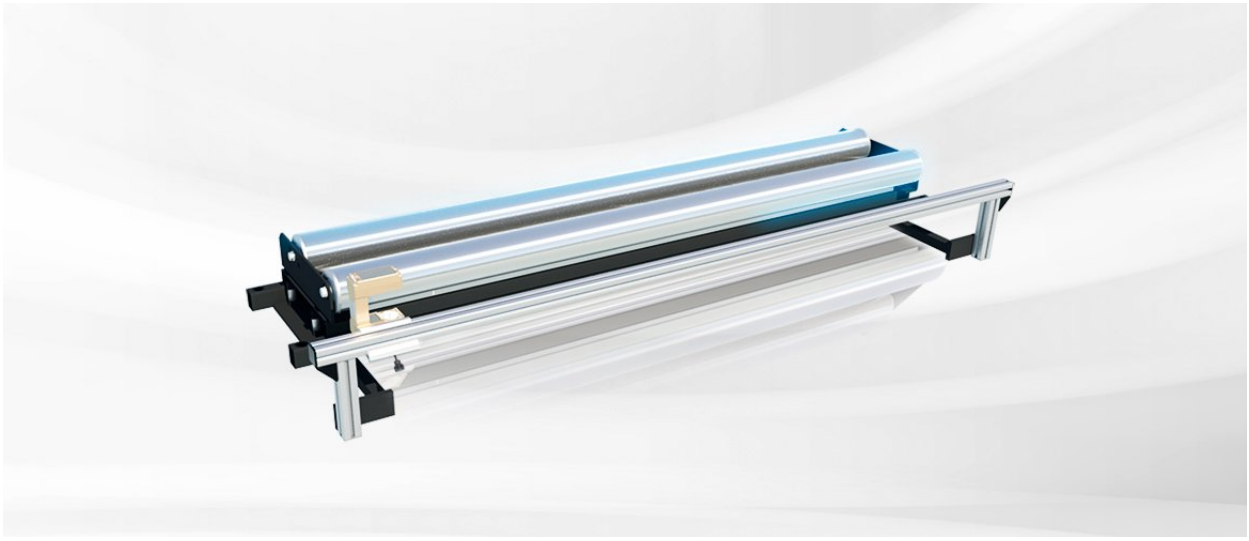

Figure 1.2: Web Guiding System

1.5.2 Load Cell

Figure 1.3: Load Cell

1.5.3 Tension Control

Figure 1.4: Tension Control

1.5.4 Control Panel

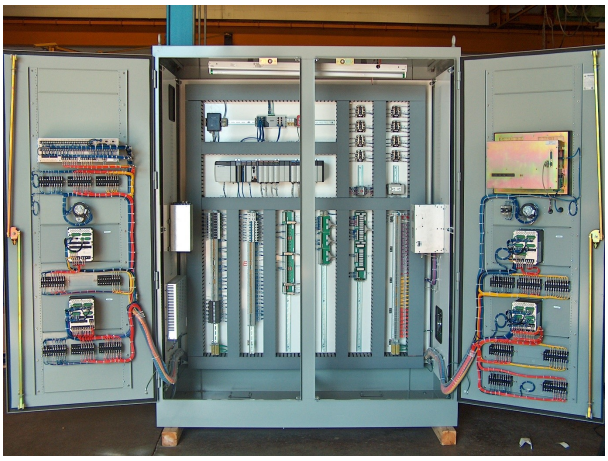

Figure 1.5: Control Panel

1.5.5 Project for Customized solution by Integrating Products

1.6 Departments under Ahmedabad Plant

1.6.1 Design Department

1.6.2 Production Department

1.6.3 Assembly Department

1.6.4 Service and Sales Department

1.6.5 Control and Automation Department

1.6.6 Logistics Department

1.6.7 Quality Management and Assurance Department

1.6.8 Marketing and Sales Department

1.6.9 Purchase

1.6.10 Finance Department

1.6.11 IT Analytics Department

1.6.12 Human Resource Department

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Textile Industry

1.7.2 Sales Division 2:-

Converting Industry

1.7.3 Sales Division 3:-

Paper Industry

1.7.4 Sales Division 4:-

Tires and Rubber Industry

1.7.5 Sales Division 5:-

Corrugated Industry

1.7.6 Sales Division 6:-

Project and Special application

1.7.7 Sales Division 7:-

Control and Automation Panel

CHAPTER 2

Basics of Web Guiding Systems

2.1 Web Guiding System

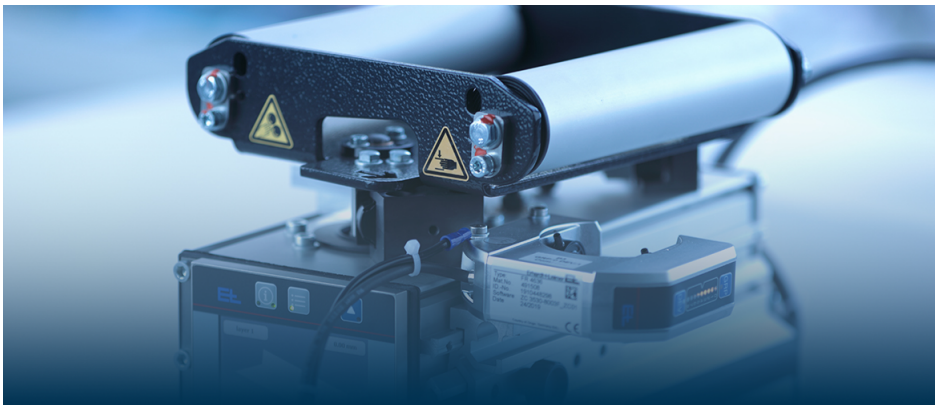

Figure 2.1: Web Guiding System

Web guides work to keep material aligned while being transported through a web. When moving through rollers, web materials tend to align themselves perpendicular to the axis of the rollers. Without a guiding system in place the material would misalign.

As any flexible material is transported through a web it is subjected to the "normal entry rule" – which basically means that the rollers in the converting machine must be aligned properly. Normal entry must be applied when transporting webs or the results will be much like the garden hose – misaligned. Normal entry is accomplished by deliberately setting or programming the axis of rotation of the guide roller in order for the material to be steered or guided into a different position.

2.1.1 Web Guiding System Components

The basic components of a typical web guiding system consist of a guide mechanism, an actuator, a position or web edge sensor, and a controller. A web guide mechanism is the mechanical device that makes contact and moves the web material. The mechanism comes in various shapes and sizes depending on the machine. Web guide mechanisms are guided along by an actuator, which moves the web to the correct location.

As the name suggests, a web edge sensor detects the position of the web as it travels through the web guide mechanism and the sensor's position is the reference point that the web will be guiding to.

Controllers are used to manage the web guiding system. The controller uses readings from the sensors to take necessary corrective measures and actions. Once processed, the controller sends a corrective command to the actuator to adjust the guide mechanism to actively control the web position.

2.1.2 Web System Types

Essentially, there are two types of web guides utilized in the industry. Displacement guides, also referred to as offset-pivot guides, and steering guides or remotely pivoted guides. Displacement guides are the more commonly used of the two. The simple design uses a two roller system that rotates around an "imaginary" offset-pivot point (hence the name). Properly installed displacements guides greatly reduce the stresses on a web. Displacement guides can utilize existing idler rolls for the "lead-in exit" rollers or can be provided with additional rollers for proper functionality performance following general geometric principles. Due to this they can fit into tight spaces and orientated however needed.

In contrast, steering guides correct by moving the web laterally while simultaneously pivoting the web in the same direction. This offsets the web's inclination to return to its prior position. The guide (single or double roller) must be installed after a long, free-entering span to avoid wrinkling while following general geometric principles for proper functionality performance.

Unwind Web Guides

Commonly called "shifting stands", unwind guides are a kind of terminal web guide that require no pivoting motion when aligning the web material into a converting machine. Unlike the terminal web guides, no pivoting motion is necessary for these types of web guides. Unwind guiding is obtained by automatically positioning an unwinding roll of material mounted on a laterally shifting roll stand carriage. A shifting idler roller is attached to the stand. The sensor is fixed and mounted independent of the stand.

Rewind Web Guides

Commonly called "shifting rewinds", are located at the end of roll-to-roll machines, and are one of the tools used to ensure that the wound roll is not telescoping. Rewind guiding commonly referred to "chasing" provides edge position controls by having the shifting stand and attached sensor 'chase' any web misalignment as the roll is winding to align each new wrap or layer of the wound roll. A fixed idler roller is required between the sensor and the rewinding roll.

CHAPTER 3

Products of Web Systems

3.1 Web Guiding System

3.1.1 Web Guiding Sytems - Tire Industry

The production of a tire requires different rubber webs, which are processed on different production machines. In the final step, the individual rubber webs are assembled on the tire building machine to an unvulcanized tire. To meet the stringent requirements in the automotive industry, in every process step the rubber webs need to be fed into the process with great positional accuracy.

Products of Tire Industry

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1. ELPLACER lateral displacement roller system
2. ELGUIDER Pivoting Frame System
3. ELROLLER Steering Roller System
4. ELSMART Segemented Roller Guider System

5. Belt Guiding
6. Tread Control
7. Carcass Control
8. Conveyor Belt Control
9. Complexer Laminating Station

3.1.2 Web Guiding Systems - Corrugated cardboard

The corrugated cardboard, to which glue has been applied on one side, must be fed in centrally to the laminating station so that the amount trimmed from the edges on the corrugated cardboard line can be reduced to a minimum. Here, precise web guiding is the key to ensuring that paper resources are used sparingly.

1. ELTrac Pivoting Frame System
2. SplitWeb Pivoting Frame System
3. CorrAligner Bridge Web Guiding System

3.1.3 Web Guiding Systems - Textile

The textile finishing process passes through several different process steps. Prior to each step. the woven or knitted fabric needs to guided with high positional accuracy and no creases. The key factor for ensuring the highest quality at the end of the process chain is the use of web guiding systems that operate with high precision.

1. ELSMART Segmented Roller Guider System
2. ELSWING Steering Roller System
3. ELTWIN Web Guiding System

3.1.4 Full width Expander System - Tires

Every tire structure contains a carcass made up of multiple layers as the load-bearing structure. In order to build this up, the tire cord must be guided on the calender line with a constant web width prior to the rubberizing process.

1. EPILiner Edge Spreading System
2. CordAligner Spreading Systems with two bow rollers
3. Spreading system with a CordAligner bow roller
4. Full Width X-Pander spreading systems with Skew Rollers
5. Half Width X-Pander spreading sytems with skew rollers

3.1.5 Positioning and follow-up control

The task of follow-up control systems is to ensure continuous position control for tools such as doctor blades, suction nozzles, spatulas, marking devices, and cutting units. An investment in the systems from Erhardt+Leimer will pay for itself in just a very short space of time.

1. ELPOSER positioning and follow-up control

3.1.6 Positioning and follow-up control systems - tires

When it comes to meeting the high quality requirements in the tire industry, accurate positioning of the dye bottles for application of the colored marking lines on the tread or precise positioning and follow-up of the cutting systems are decisive.

1. EL-Paps Ink Bottle Positioning
2. Blade follow-up

3.1.7 Positioning and follow-up control - corrugated cardboard

In the corrugated cardboard line, the automatic slitter/scorer needs to be precisely adjusted to follow a guide reference in order to ensure the correct width of the corrugated cardboard. 1. TrimMaster corrugated board positioning and follow-up control

3.1.8 Tenter insertion systems

The tenter is a core machine in textile production systems. For drying, woven or knitted fabric is picked up with clips or pins and guided through the dryer. The decisive thing is that the rails are run exactly

along the web edge, in order to guarantee safe take-up and avoid over-pinning.

1. ELFEED Rail Positioning system tenter guider

3.2 Web Cleaning Technology

There are two basic web cleaning technologies for breaking the boundary layer—contact and non-contact—and which is chosen depends on the materials being processed, the application, the flexibility required by the converting line.

1. ELClean contact less web cleaning
2. ELCLEAN textile web cleaning system

3.3 Inspection Technology

Web inspection systems typically require some type of sensor for inspection, a means of tracking position on the web or line, and a user interface (UI) for logging and monitoring system performance. Some systems have physical indicators further along the process line to mark the location of defects for manual removal from the web. In other systems, location can be tracked electronically by information sent to the control computer from each sensor. Different types of web inspection equipment can be distinguished by the type of sensor they employ.

3.3.1 Print Inspection System

Print inspection systems Undetected errors during web production cause high costs and material waste. Depending on the application and material, the control systems for inspection can even detect the smallest, lowest contrast defects and can classify them. This allows production processes to be optimized. The webs can reach higher speeds and production can become more efficient overall.

1. SMARTSCAN print inspection system

3.3.2 Web monitoring systems

Modern printing machines achieve production speeds of up to 800 m/min. However, from printing speeds of 30-50 m/min it is no longer possible to visually assess the print quality fully in roll-to-roll production.

1. ELSCAN web monitoring systems

3.3.3 Metal detection systems

During the finishing of textile webs, there is a risk of small metallic particles entering the woven or knitted fabric as a result of the different processing steps. If these are not fully detected, there is a risk of expensive resulting damage to the calender or shear blade.

1. ELMETA metal detection system

3.3.4 Pattern inspection systems for corrugated cardboard production

The production of corrugated cardboard sheets demands precise longitudinal and transverse cuts based on the cutting mark. The pattern inspection systems automatically checks the correct cutting position, in order to achieve the required quality.

1. ELCorrVision-Pattern pattern inspection

3.3.5 Surface inspection systems for tire production

Flawless surfaces are one of the key quality characteristics in the tire industry. Any flaws in the rubberization of tire cord or holes or dirt in rubber webs will lead to rejects. If defects are still not detected during the final check, the result can be expensive complaints.

1. Surface Inspection
2. Tire Building Inspection
3. Surface Inspection for Rubber
4. Inspection of the cord distribution

5. Hole and Splice inspection

3.4 Measuring Technology

A web edge sensor or a web position sensor detects the position of the web material. This measurement is used to determine and control the desired position of the material. The Controller is the brain of the web guiding system. The controller uses the measurement from the sensor to determined the necessary corrective action.

3.4.1 Systems for counting threads/stitches in the textile industry

Textile webs typically pass through a wide range of different production processes. Each material transport influences the stitch and thread density. The correction of the stitch and thread density in the production direction is essential before processes such as drying, thermosetting or sanforizing.

1. ELCOUNT pick and course counter system

3.4.2 Web tension measuring and control systems

Reliable web tension control using a tension sensor helps to reduce web tears and therefore keeps production costs down.

1. ELTENS web tension measuring system
2. ELTENS web tension control system
3. ELTENS block load sensor systems

3.4.3 Measuring systems for the tire industry

1. EL-Color Line Inspection color line monitoring system
2. EL-Length tread length measurement system
3. Width measurement
4. EL-CSA Cross Section Analyzer
5. EL-TRISCAN Offline offline profile measurement system

6. EL-TRISCAN TR online profile measurement system, traversing
7. EL-Thickness thickness measurement system
8. EL-TRISCAN LS online profile measurement system, light section
9. EL-Weight piece weight scales
10. EL-Weight weight per meter scales
11. Angle measurement
12. EL.EDGE Edge detection by laser triangulation

3.4.4 Web tension systems for corrugated cardboard production

In corrugated cardboard production lines, after application of glue on one side, the corrugated cardboard needs to be glued to the liner in the laminating station with correct and constant web tension. Bridge web tension controllers perform this task separately for each web. Uniform distribution of the web tension across the full width of the web is also required. Compensating rollers operating purely mechanically guarantee that the web tension is the same on the left and right-hand sides. All these functions of the TensionMaster prevent curvature in a longitudinal, transverse, or diagonal direction and ensure the highest possible sheet quality.

1. TensionMaster bridge braking system
2. ELCorr compensating roller

3.5 Cutting Technology

3.5.1 Cutting systems for the textile industry

1. ELCUT edge cutter
2. ELCUT center cut
3. ELCUT tube slitting
4. ELCUT edge cut on the tenter

3.6 Stand Alone Machines

3.6.1 Skiver Machine For Corrugated

With the skiver Line Machine, two narrow end rolls are glued together to form a wide paper web. For users in the paper industry, this means that paper end rolls can be combined into full-width paper rolls for further processing on the corrugated line.

3.6.2 Textile Straightening Systems

Textile Straightening Systems detect and correct bowing and skewing, which can occur in various production processes.

1. ELSTRAIGHT standard weft alignment system
2. ELSTRAIGHT Combination weft alignment system
3. ELSTRAIGHT Mini weft alignment system
4. ELSTRAIGHT Heavy duty weft alignment system

3.6.3 Infeed and exit for the textile industry

Every textile production line requires infeed and exit systems, whose task is to pull off the textile web from the stack or from the A-frame, to spread it, and to then feed it with high positional accuracy into the next downstream process.

1. ELWEBTEX infeed system
2. ELWEBTEX j-box storage
3. ELWEBTEX roller accumulator, chain
4. ELWEBTEX roller accumulator, spindle
5. ELWEBTEX belt accumulator
6. ELWEBTEX surface winder
7. ELWEBTEX center rewinder
8. ELWEBTEX center unwinder
9. ELWEBTEX two position winder

10. ELWEBTEX ascending batch winder
11. ELWEBTEX plaiter

3.6.4 Inspection machines for the textile industry

Textile materials in the form of a web often pass through a finishing process. The purpose of these individual process steps, whether for printing, laminating, dyeing, or impregnating, is to change the characteristics of the fabric. Prior to final assembly or packaging and dispatch to the customer, there is usually an inspection stage in which the finished goods are checked with optical systems.

1. Fabric inspection machine

3.6.5 Rope detwisting systems for the textile industry

The knitted fabrics produced on a circular knitting machines need to be converted from a tubular shape to a web shape for further processing.This task is performed by tube opening machines with rope detwisting, automatic tube slitting, and web guiding with spreading. Pre-cleaning systems, rope squeezers, or spreading squeezers are available as optional equipment.

1. Tube slitting system

3.6.6 Machines for tire industry

1. EL.TAG laminating machine for RFID tags

CHAPTER 4

Product Industry of Erhardt+Leimer

4.1 Textile, carpet and non-woven fabric industry

4.1.1 Pre-treatment

1. Singeing machine
2. Mercerizing system
3. Washing system
4. Bleaching system

4.1.2 Coloring and printing

1. CBD dyeing system
2. Thermosol dyeing system
3. Rotary printing machine
4. Flatbed printing machine
5. Transfer printing machine
6. Digital printing machine
7. Carpet printing machine

4.1.3 Dry equipment

1. Fabric drier with in-feed belt

2. Fabric drier with tensioning section
3. Sueding machine
4. Fabric inspection machine
5. Textile calendar
6. Raising machine
7. Sanforization system
8. Tenter

4.1.4 Coating and laminating

1. Flame laminating machine
2. Textile coating system

4.1.5 Other machines

1. sizing machine
2. Tube slitting system
3. Correction frame
4. Shearing machine
5. Carpet shearing system

4.2 Converting

1. Slitter rewinder
2. Coating system

4.3 Graphics

1. Label printing machine
2. Inspection rewinder
3. Digital printing machine
4. Web-fed offset printing machine

5. Flexo printing machine Cl
6. Gravure printing machine

4.4 Batteries

1. Coating system
2. Calendering system / press
3. Slitter rewinder
4. Die cutter
5. Assembling machine

4.5 Hygiene

1. Baby diaper machine
2. Feminine hygiene machine
3. Adult diaper machine
4. Wet wipe machine
5. Tissue converting machine

4.6 Plastics

1. Blow film extruder
2. Flat extrusion extruder
3. Bag making machine
4. Film stretching system

4.7 Corrugated

1. Corrugated board system

4.8 Tires and Rubber

1. Textile cord calender line
2. Steel cord calender line
3. Textile cord cutting line
4. Steel cord cutting line
5. Extrusion line
6. Tire cord treating line / DIP line
7. Tire building machine
8. EL.TAG laminating machine for RFID tags

4.9 Paper

1. Paper machine
2. Tissue machine
3. Coating system
4. Cellulose drier

4.10 Other industries

1. Labeling machine
2. Tube production system

CHAPTER 5

Project Internship in Design Department

5.1 Introduction to Design Department

Erhardt+Leimer has a dedicated design department that is responsible for developing new and innovative solutions for web-based production processes.The design process focuses on understanding the customer's specific requirements and designing solutions that are tailored to meet those needs. This involves close collaboration between the design team and the customer to ensure that the final product meets all the necessary specifications.

The design department utilizes the latest technologies and software tools to develop their solutions, including 3D modeling and simulation software. This enables them to create highly accurate representations of the final product, which can be tested and refined before production.

5.2 Project-1 :- Replacement of DIN standards with updated ones

DIN standards are a set of technical standards developed by the German Institute for Standardization, covering a wide range of products, materials, and processes.

The replacement of old DIN standards with new ones can provide several benefits to an industry, including:

1. Improved Safety: New DIN standards often include updated safety requirements and guidelines that take into account the latest technological advancements and best practices. This can help reduce the risk of accidents and injuries in the industry, improving overall safety.

2. Enhanced Quality: New DIN standards can include more stringent quality requirements, ensuring that products are manufactured to higher standards of quality and reliability. This can help improve customer satisfaction and confidence in the industry's products.

3. Greater Efficiency: New DIN standards may also include guidelines for improving manufacturing processes and reducing waste, leading to increased efficiency and lower production costs. This can help the industry remain competitive in the global market.

4. Innovation: The development of new DIN standards often involves collaboration between industry experts and researchers, leading to new ideas and approaches that can drive innovation and promote new product development.

5. Global Competitiveness: Adhering to updated DIN standards can help industries stay current with international standards and remain competitive in the global market, ensuring their products are accepted and trusted around the world.

5.3 Project-2 :- Replacement of ISO standards with updated ones

ISO standards refer to the series of standards developed by the International Organization for Standardization (ISO) to ensure consistency and quality in products and services across industries and borders. ISO is a non-governmental organization composed of representatives from various national standards organizations.

There are currently over 23,000 ISO standards, covering a wide range of topics, including quality management, environmental management, information security, food safety, and social responsibility. Some of the most commonly known ISO standards include:

1. ISO 9001 - Quality management systems
2. ISO 14001 - Environmental management systems
3. ISO 27001 - Information security management systems
4. ISO 45001 - Occupational health and safety management systems
5. ISO 22000 - Food safety management systems

Adopting ISO standards can help organizations improve their processes, products, and services, increase customer satisfaction, and gain a competitive advantage in the global marketplace.

5.4 Project-3 :-Designing in Solidworks

To design a 3d model in the CAD software and by application of constraints we can get values of stress, strain and deformation of the object. This model was made in the form of parametric modelling

Parametric modeling is a powerful feature of SolidWorks that allows you to create 3D models that can be easily modified and updated. In parametric modeling, the dimensions and features of a part or assembly are controlled by parameters that can be changed at any time, and the model will automatically update to reflect the changes.

Here are some key concepts of parametric modeling in SolidWorks:

Sketches: In SolidWorks, you typically start by creating a 2D sketch of the part or feature you want to create. Sketches can be fully defined with dimensions, constraints, and relations, or left open for later modification.

1. Features: Once you have a sketch, you can add features to it, such as extrusions, cuts, fillets, chamfers, and more. These features are parametrically linked to the sketch and can be modified later.

2. Design Intent: Design intent refers to the way a model is intended to function or be assembled. In SolidWorks, you can use features like mates, patterns, and configurations to define design intent and create models that are flexible and easy to modify.

3. Parameters: Parameters are variables that control the dimensions and features of a model. They can be linked to sketches, features, and even other parameters to create complex relationships. By changing a parameter, you can quickly and easily modify the entire model.

Overall, parametric modeling in SolidWorks allows you to create models that are flexible, robust, and easy to modify. By using sketches, features, design intent, and parameters, you can create complex designs that can be easily modified to meet changing requirements.

CHAPTER 6

Mission and Vision of company

Erhardt+Leimer is a global company that specializes in providing solutions for web-based production processes in various industries such as textiles, paper, printing, and packaging.

6.1 Mission

Erhardt+Leimer aims to deliver innovative solutions and excellent service to their customers by using their expertise and experience in web-based production processes. They strive to continuously improve their products and services to meet the evolving needs of their customers and the industry.

6.2 Vision

Erhardt+Leimer envisions being the leading provider of web-based production solutions worldwide. They aim to achieve this by focusing on innovation, quality, and customer satisfaction. They seek to be recognized as a reliable partner to their customers, providing them with the best possible solutions to their production challenges.

6.3 Philosphy

Erhardt+Leimer's philosophy is based on providing their customers with high-quality and reliable solutions for web-based production processes. They believe in innovation, expertise, and collaboration to deliver the best possible results for their customers.

They prioritize understanding the unique needs of each customer and tailor their solutions accordingly. Their solutions are designed to improve productivity, reduce waste, and enhance the overall efficiency of the production process.

Erhardt+Leimer also believes in sustainability and social responsibility, and they strive to implement environmentally friendly practices in their operations. They prioritize employee safety and well-being, and they aim to create a positive work environment that fosters creativity, collaboration, and growth.

Overall, Erhardt+Leimer's philosophy is centered on delivering value to their customers through innovation, expertise, and collaboration, while also prioritizing sustainability and social responsibility.

6.4 Values

Erhardt+Leimer's values are based on customer focus, innovation, reliability, and sustainability.

1. Customer Focus: They prioritize understanding and meeting the unique needs of each customer to deliver the best possible solutions and service.

2. Innovation: They strive to be at the forefront of innovation in the industry, continuously developing new and improved solutions that meet the evolving needs of their customers.

3. Reliability: They are committed to delivering high-quality solutions that are reliable and efficient, helping their customers to achieve their production goals.

4. Sustainability: They prioritize environmentally friendly practices

and products that help to reduce waste and minimize the impact on the environment.

5. Respect: They respect their customers, employees, and partners, fostering a culture of open communication and collaboration.

6. Integrity: They operate with honesty and transparency, maintaining the highest ethical standards in all their business operations.

Overall, Erhardt+Leimer's values are centered on delivering value to their customers while operating with integrity and respect for the environment and all stakeholders involved in their operations.

CHAPTER 7

Conclusion

In conclusion, the industrial training experience at Erhardt+Leimer as a mechanical design engineer for three and a half months has been an invaluable opportunity for professional growth and development. The exposure to cutting-edge technologies and real-world engineering challenges has provided a hands-on approach to learning that is difficult to achieve in a classroom setting.During the training period, I have gained practical experience in designing and developing innovative solutions for web-based production processes. I have also had the opportunity to collaborate with experienced engineers and designers to develop solutions that meet the specific needs of customers.

The culture of innovation, commitment to quality, and strong work ethics at Erhardt+Leimer have been a valuable source of inspiration and learning. The training has helped me develop new skills, improve my problem-solving abilities, and gain a deeper understanding of the engineering design process. Overall, the industrial training experience at Erhardt+Leimer has been an enriching and rewarding experience, providing a solid foundation for my future career as a mechanical design engineer. I am grateful for the opportunity to have learned from some of the best in the industry, and I am confident that the knowledge and skills gained during the training will serve me well in my future endeavors.

CHAPTER 8

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