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Starter Gear used in Engines Bays

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ABSTRACT: The “Inplant Training Report” is related with manufacturing process of Automotive starter gear. In below report I have mentioned all the points regarding how to convert raw material into finish part and working of various machine. Ring Plus Aqua Pvt. Ltd., a subsidiary of Raymond Group, is a leading manufacturer in the automotive components industry, specializing in precision-engineered products such as starter ring gears, flexplates, water pump bearings, and other transmission components. Established in India, the company serves a wide range of sectors including automotive, agricultural, industrial, and marine applications. With a strong focus on quality, innovation, and customer satisfaction, Ring Plus Aqua has earned a reputation as a reliable OEM supplier to major global automotive brands. Its commitment to advanced manufacturing technology, rigorous testing processes, and continuous improvement has enabled it to meet international standards and expand its footprint in both domestic and international markets.

With a strong commitment to engineering excellence, Ring Plus Aqua has consistently focused on innovation, quality, and technological advancement. The company operates state-of-the-art manufacturing facilities equipped with modern CNC machines, robotic automation, and strict quality control systems that comply with IATF 16949 standards. Its R&D team continuously works on product development and process optimization to stay ahead in a competitive market

I. INTRODUCTION TO INDUSTRY

Ring Plus Aqua Pvt. Ltd. operates within the automotive components manufacturing industry, a vital part of the global automotive ecosystem. This industry involves the production of high-precision parts used in vehicle assembly, engine performance, and drivetrain systems. As a key player in this sector, Ring Plus Aqua specializes in the manufacturing of starter ring gears, flexplates, water pump bearings, and other critical transmission components.

The automotive components industry is known for its high demand for quality, precision, and technological advancement. It supports both OEMs (Original Equipment Manufacturers) and the aftermarket, providing parts for a wide range of vehicles including passenger cars, commercial vehicles, tractors, and industrial engines.

Ring Plus Aqua has established itself as a reliable and globally recognized supplier, exporting to over 20 countries and serving major global automotive brands. Operating under the umbrella of the Raymond Group, the company has leveraged advanced manufacturing technologies, automated production systems, and rigorous quality controls to meet international standards like IATF 16949.

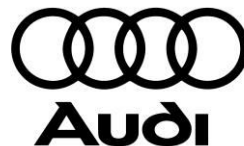
The company's position in this industry reflects the broader trend of India's emergence as a global hub for automotive component manufacturing, offering cost-effective production, skilled labor, and strong export capabilities.

With the automotive industry evolving toward electrification, sustainability, and smart mobility, Ring Plus Aqua is well-positioned to innovate and adapt, ensuring its continued growth and relevance in a dynamic global market.

1. Sales Network

Ring Plus Aqua Limited reported gross revenue of ₹431.12 crore for the financial year ending March 31, 2024, reflecting an increase from ₹374.81 crore in the previous fiscal year. The company's profit before exceptional items and tax was ₹80.20 crore for FY 2023-24, up from ₹55.17 crore in the prior year. Additionally, as of March 31, 2024, exports accounted for 58% of the company's revenue.

2. Major Customer:



II. TYPES OF GEARS

1: Part No 111N256A :-



- High Thickness
 - Heavy Weight
- Customer:- Maruti Suzuki

2: Part No 111S2437 :-



- Tooth Chamfering Process
 - Light in weight
 - Low Hardness
- Customer:- Volvo

3: 111N2834 :-



- Large size
 - Heavier in Weight
 - High Profile
- Customer:- TATA

4: Part No 411C311 :-



- Used for Flex Plate
 - For Automotive Vehicles
 - More Expensive
- Customer:- BMW

III. PROJECT WORK REPORT DURING THE INPLANT TRAINING

I did my inplant training at **Ring Plus Aqua Pvt. Ltd.**, which is a company that makes important parts for vehicles, like ring gears and bearings. The training lasted for about four weeks and was held at their factory in **Nashik**. It was my first time seeing how a real factory works, and honestly, it was a great learning experience.

In the beginning, we were given an introduction to the company—what they make, how they work, and who their clients are. Then, over the next few weeks, I got to visit and observe different departments like **production, quality control, maintenance, and R&D**. Each one taught me something new.

In the **production area**, I saw how metal parts are shaped and machined using huge automated machines like CNCs. It was cool to watch raw material slowly turn into a finished gear. I learned about how important it is to be accurate and efficient in every step of the process.

Then in **quality control**, I saw how the finished parts are checked to make sure they're perfect. They use special tools to measure everything, even the tiniest details, to make sure the parts will work properly in a vehicle. They showed me

how even a small defect can cause big issues later, especially in the auto industry where safety and performance really matter.

One of the small tasks I worked on was helping my supervisor observe the gear production process. I watched how long each step took, where things slowed down, and whether the workers had any issues. It wasn't a big project, but it gave me a better idea of how industries try to improve their workflow and save time.

I also spent a bit of time in the **maintenance department**, where they fix and maintain machines so they don't break down during work. It was interesting to see how scheduled maintenance prevents big problems before they even happen.

Towards the end, I got a glimpse of the **R&D (Research & Development)** section. That's where new designs and ideas are tested before they're used in real production. I didn't get to work there much, but just seeing the innovation side of things was inspiring.

This training really helped me understand how different teams in a factory work together. It also made the stuff I studied in class finally make sense in real life. I learned a lot about discipline, teamwork, safety, and how even the smallest role can make a big difference in the final product.

Overall, I enjoyed the experience a lot, and it gave me a much clearer idea of what it's like to work in the engineering or manufacturing field. I'd definitely recommend inplant training like this to anyone who wants real-world experience.

IV. CONCLUSION

In conclusion, the study and analysis of the starter gear have highlighted its critical role in ensuring the reliable ignition and operation of internal combustion engines. Through industrial evaluation, it was found that precision in design, material selection, and manufacturing processes are essential for optimal performance and longevity of the gear. Advancements in material science and production techniques have significantly improved durability, reduced wear, and enhanced energy efficiency. Continued focus on innovation and quality control will be vital to meet the evolving demands of modern automotive and industrial machinery. Future development should also consider sustainability and cost-effectiveness to maintain competitiveness in the global market.

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1. **Ring Plus Aqua Pvt. Ltd**
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3. Discussions with Company Staff and Mentors
4. My Own Notes and Observations

Web address:-

<https://www.ringplusaqua.com>



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