



Opposition template

About group: C

by: Guadalupe Paramos

Product

Handheld Vacuum Cleaner



Opposition report template for evaluation

Key strengths

- **What was well executed?**

All the basic requirements were executed in depth, especially the CAD model. Adding 3D pictures explaining each operation truly facilitated functional and assembly analysis.

- **Did the group show particular innovation or creativity? How?**

Yes. The improvement suggestions, such as standardizing screw types and parts modularization showed creativity in simplifying assembly without compromising functionality.

- **Were the chosen methodologies appropriate for the objectives?**

Yes. All the methods used, such as precedence diagrams, line balancing methods (LCR, Kilbridge & Wester, RPW) and DFA analysis, enhanced the results' quality.

- **Were technical justifications for design choices strong and well-supported?**

Yes.

- **Does the report suggest effective coordination and teamwork?**

Yes. The level of detail and the consistent formatting suggest strong collaboration.

Areas for improvement

- **Are there technical issues or missing information? (e.g., unrealistic assumptions, incomplete data)**

In general, the report includes all the necessary information. Although the use of parallel stations for operation 11 was explained, an earlier integration of automation solutions could have strengthened the automation narrative.

- **Are practical aspects properly addressed? (e.g., feasibility, implementation constraints)**

Yes. The group addressed the feasibility of the assembly operation by developing a customized fixture to improve precision and ergonomics.

- **Are there gaps in explanation or reasoning? (e.g., weak justification, missing steps)**

The gap identified regarding the factory layout was mentioned by the group to be developed later on for the final submission.

- **Is any part of the report unclear, ambiguous, or difficult to follow?**

No, everything is well structured and presented.

- **Are there weak arguments that need stronger evidence/references?**

Overall, the arguments are solid and well documented.

Opposition report template for evaluation

Assessment of implementation and results

- **Is there sufficient documentation of the process?**
Yes. The process is explained thoroughly from disassembly to optimization, including CAD models with exploded views and assembly sequence with time analysis.
- **Are the results/data valid and based on reliable sources?**
Yes. The majority of the data was obtained through observation and experimentation. The remaining data was obtained through valid references.
- **Are the explanations logically structured and easy to follow?**
Yes. The group made sure to write the report smoothly and logically which enhanced the understanding.
- **Did the group consider alternative approaches or compare different solutions?**
Yes. They included DFA suggestions and presented economic analysis on different types of assembly (manual and automated).

Report and presentation

- **Is the report structured logically and easy to follow?**
Yes.
- **Does the report cover all necessary information concisely?**
Yes.
- **Is there a logical flow of ideas and sections?**
Yes. The report is structured according to the steps from general disassembly to more deep analysis which facilitates the understanding.
- **Are figures, tables, and diagrams effectively used to support arguments?**
Yes. Tables and diagrams were well used and explicated.
- **Does the presentation effectively communicate the key aspects of the project?**
The structure and depth of the report represent the way the group highlighted key points visually and analytically.

Questions for discussion and suggestions

List 2-4 questions to discuss during opposition

1. If you had more time or resources, what part of the project would you improve or expand on, and why?
2. Looking back at the entire workflow—from disassembly to line balancing—what would you say was the most valuable insight you gained about assembly engineering?
3. How do you see technologies like digital twins or real-time assembly data monitoring fitting into your assembly line design?

Provide constructive recommendations

- While the group presented fixture concepts, I would recommend to also integrate ergonomic considerations such as operator reach zones, body posture, and visual accessibility in the workstation layout, using simple illustrations or simulation tools.
- The group could enhance their work by adding a section regarding maintenance or disassembly for repair. In this section they could briefly evaluate how assembly decisions affect the reverse process.

- **Final verdict** (provide a final comment summarising your overall impression of the project report).

In my perspective, Group C delivered a well structured and detailed report that meets, and in some sections exceeds, this project expectations. All the assembly technology principles addressed were well applied and justified. One of the biggest strengths of their report was the high-quality CAD modelling that enhanced clarity of the work performed. While there are still a few extra things to improve, this project serves as an examples of a good application of the course content, reflecting the intended outcome of the project assignment.

