



Project: Assembly & Detail Modelling

Time: 3 Hours (Secondary), 2.5 Hours (Post-Secondary)

Marks: 25 points

Given:

Secondary and Post-Secondary

- CAD files required to complete the assembly (Excluding Motor Adapter Flange-REV-B)
- Detail part drawing of Motor Adapter Flange-REV-B
- Part Dimensioning and Detail Key for Bowl Mounting Pins L\R
- General overview of **Lift Station** assembly
- Video of actual **Lifting Station**

1 Task:

Create the following:

Secondary and Post-Secondary

- 1.1 Fully constrained assembly model of **Lifting Station** that includes **Motor Adapter Flange-REV-B**, that you must create yourself and all other provided CAD models. Add all necessary fasteners that are in the BOM.
- 1.2 Assembly Drawings (2 Sheets)
 - Sheet 1 – Orthographic and isometric views of assembled models with overall dimensions for Width, Height and Depth.
 - Sheet 2 – Exploded view and isometric view of assembly, complete with parts list and balloons.
- 1.3 Part Detail Drawings (2 Sheets)
 - Sheet 1 – Recreated details of **Motor Adapter Flange-REV-B**
 - Sheet 2 – Detail drawing of **Bowl Mounting Pins L\R**, with views and dimensions based on key provided.
- 1.4 Use your Skills Canada B-size template for final layout and detail drawings.
- 1.5 Visually appealing rendered image of fully assembled **Lifting Station** exported as .jpg.
 - Leave the rendering open on the PC for evaluation upon completing the competition.
- 1.6 Animated video (30 seconds) of full assembly, exported as .mp4 or .avi, that follows the timeline stated below:
 - 1-5 Seconds: 360-degree revolution of unit
 - 6-19 Seconds: Step-by-step disassembly of unit
 - 20-25 Seconds: 360-degree revolution of disassembled unit
 - 26-30: Full Re-assembly of unit

2 Output:

Secondary and Post-Secondary

- 2.1 Create a single PDF file of your final drawings requested in the tasks specified above.
- 2.2 Name your file: ### Day1-**S**.pdf (### is your unique contestant number. “**S**” for Secondary, “**PS**” for Post-Secondary).
 - **Files using wrong names will be penalized 3 points per file.**
- 2.3 Create a visually appealing rendering of the **Lift Station** assembly and export as a .jpg in 1280 x 720 format. ***NOTE**: Most of the materials used are aluminium and have different finishes to them. Refer to the Drawing notes.
- 2.4 Create a 30-second animated video as outlined in 1.6 and export as .mp4 or .avi.

3 General:

- 3.1 Each task throughout the competition is independent from the others.
- 3.2 **DO NOT** include any part of your name, school, province/territory in documents, or when naming files and folders being submitted.
 - Any file, identified by any part of a competitors' name, school, province/ territory, will not be judged.
- 3.2 When you have finished working on a specific day, do not close project files or turn off your computer, Judges will view and mark your work on screen as needed.
- 3.3 Ask the judges before leaving the competition area as the judges may require your assistance accessing your work.

4 Assessment:

Task 4.1 Assembly Drawings

- Full orthographic/isometric representation of assembly with accurate overall dimensions: **4 points**.
- Assembly exploded in correct order, complete with balloons and parts list: **6 points**.

Task 4.2 Part Detail Drawings

- Faithful recreation of Motor Adapter Flange-REV-B part detail drawing provided: **4 points**.
- Bowl Mounting Pins L\R revision change noted: **1 point**.
- Drawing of Motor Adapter Flange-REV-B , detailed in accordance with key provided: **4 points**.

Task 4.3 Visually appealing rendered image of fully assembled Lifting Station.

- Judged based on visual appeal and conformity to specifications provided: **3 points**.

Task 4.4 Animated video (30 seconds) of full assembly

- Judged based on visual appeal, proper assembly sequence and conformity to specifications provided: **3 points**.