

# Manufacturing Report

## Team Members:

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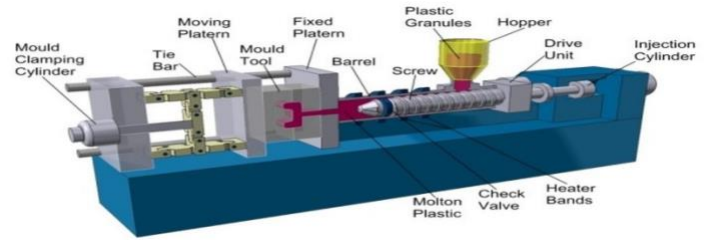
## Tray:

Process: Injection Molding with aluminum mold

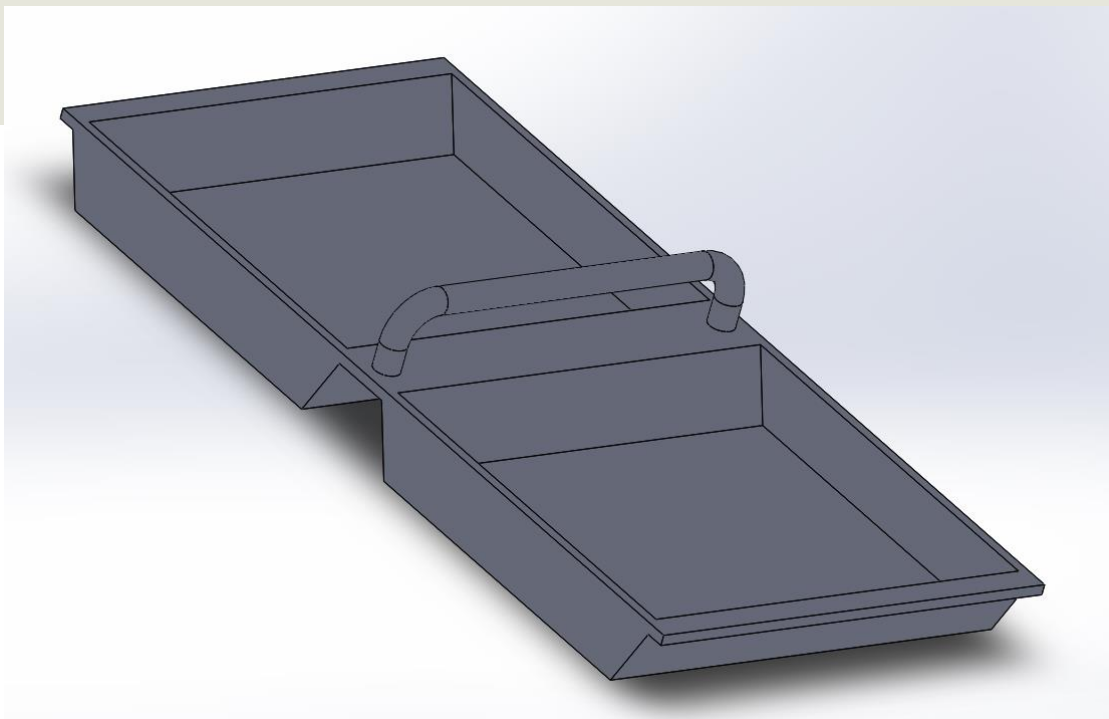
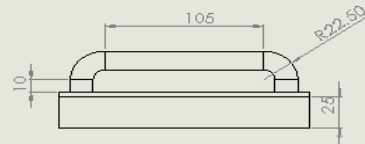
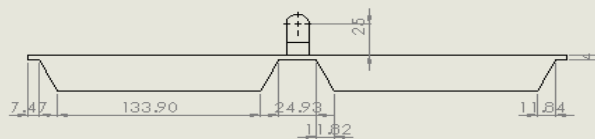
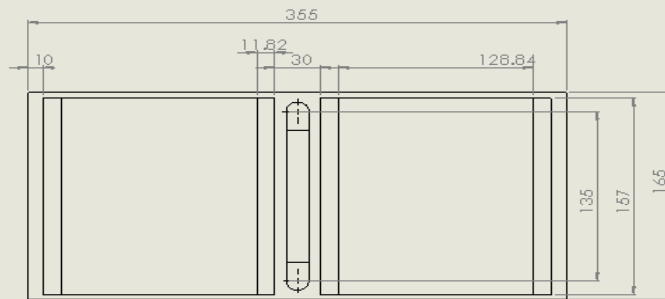
Raw Material: ABS pellets

Advantage:

1. Excellent impact resistance
2. Superior stiffness
3. Superior strength



Injection Molding

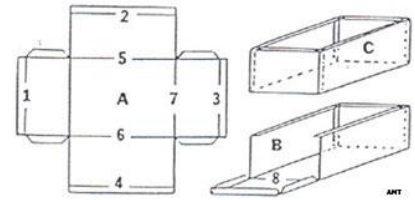


## Box:

Raw Material: 5mm stainless steel sheets

Processes:

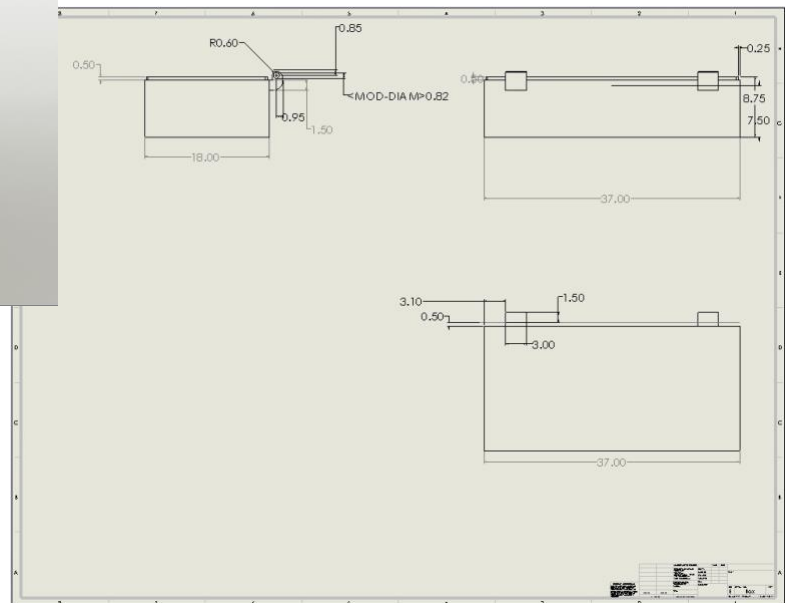
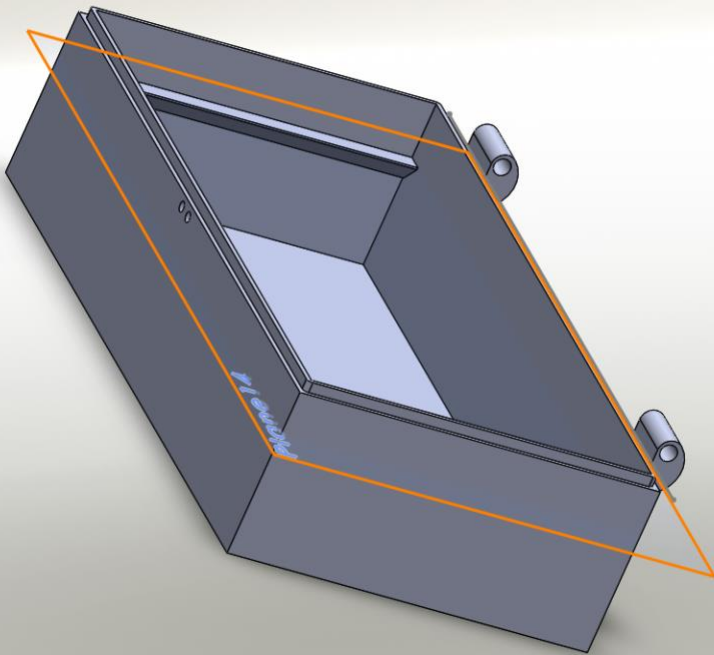
1. Plasma cutter to create template as in photo
2. Machining at the edges (1,2,3,4) to have different thickness
3. Edge bending (90°) at the edges (5,6,7,8) to enclose the sheet
4. Spot welding to fix the corners on each other
5. Get another sheet
6. Edge bending (120°)
7. Weld it on the side with number 1
8. Do the same thing for side with number 3
9. Hinges will be made by casting then welded
10. Drilling two holes 10mm apart with diameter 5mm



Spot Welding



Plasma Cutting



## Handle:

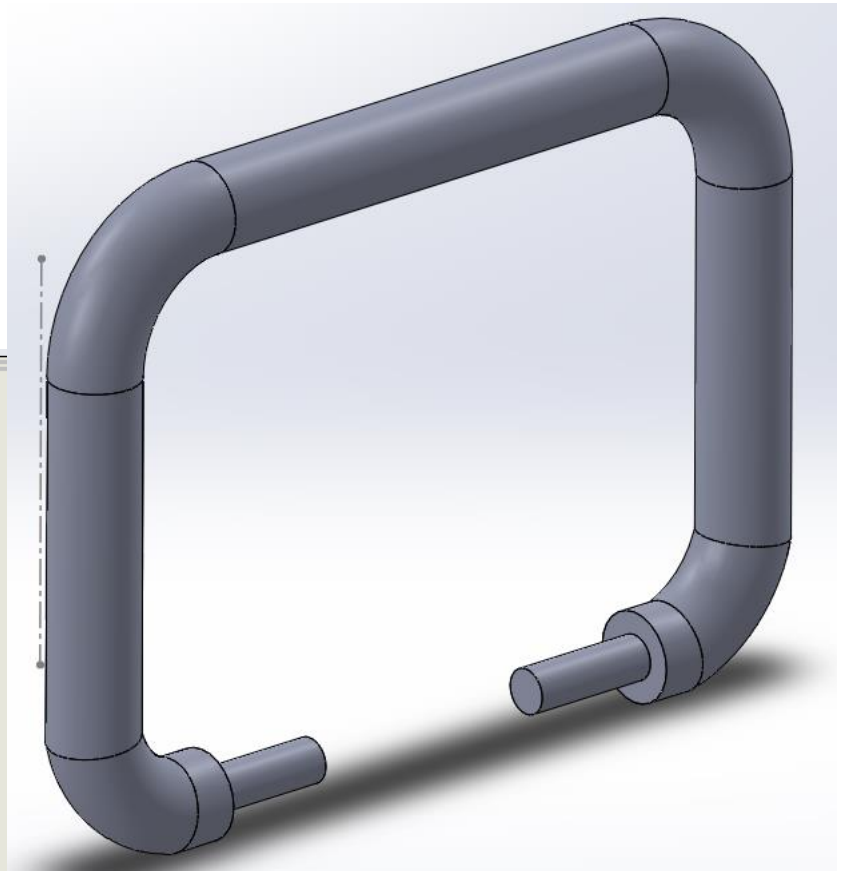
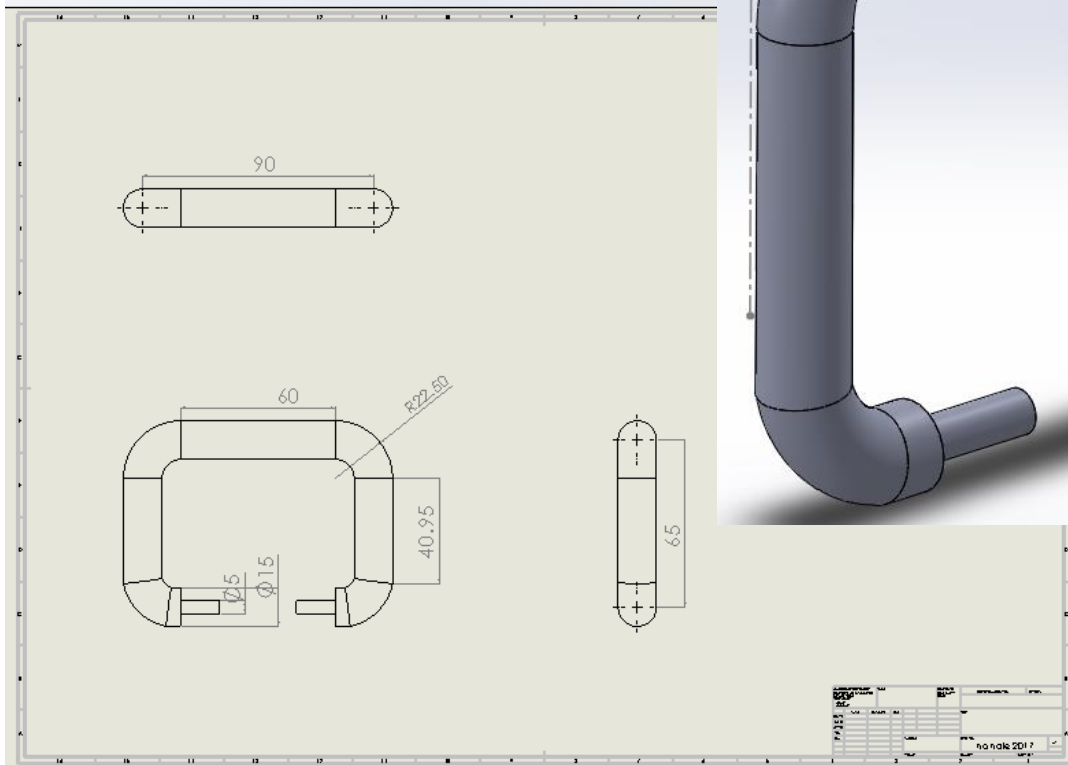
Raw Material: Stainless steel round billet with 95 mm diameter

Processes:

1. Extrusion to reduce the diameter to 20 mm and with a length of 300 mm
2. Face turning with a feed of 10 mm from each end to reduce the total length to 280 mm and improve surface finish
3. Side turning to reduce diameter to 10 mm and to improve surface finish
4. Side turning for each end to 5 mm with feed 15mm
5. Roll bending 90 degrees 30 mm from the center of the rod
6. Roll bending 90 degrees 15 mm from the end
7. Repeat the bending steps 5 and 6 for the other half of handle



Turning

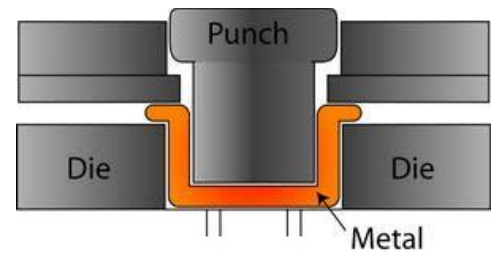


## Cover:

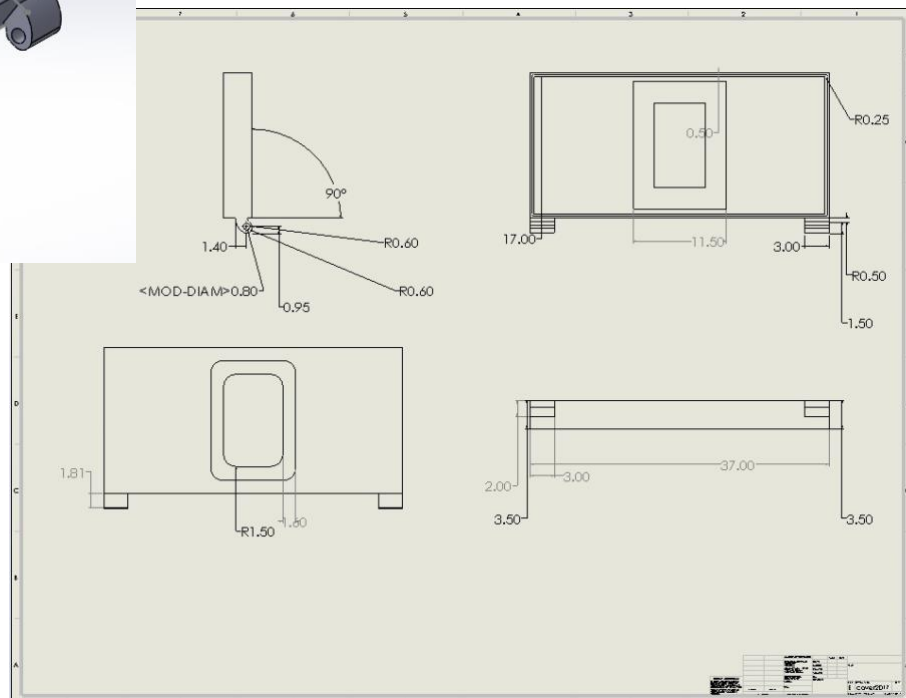
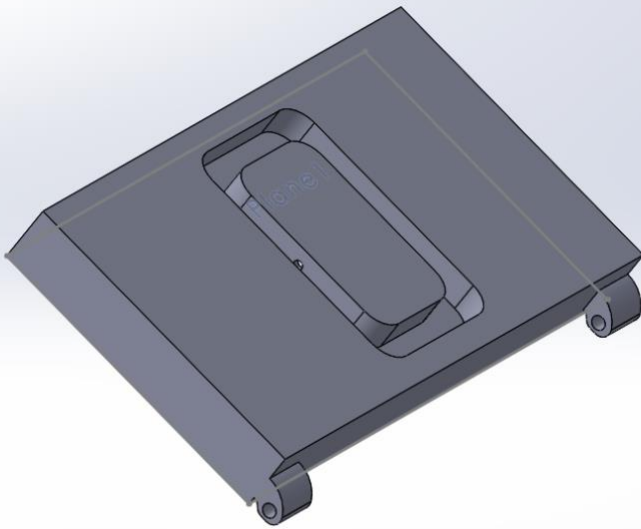
Raw Material: Stainless steel sheet of 5mm thickness

Processes:

1. Plasma cutting to reach a template similar to that of the box template
2. Machining at the edges (1,2,3,4) to have different thickness.
3. Drilling two holes with 5.5mm diameter for handle insert
4. Two deep drawing operations.
  - a. First: To create the large indentation in the middle of the cover
  - b. Second: To create the smaller indentation that is concentric to the first.
5. Edge bending (90°) at the edges to enclose the sheet
6. Spot welding to fix the corners on each other
7. Drilling two holes 10mm apart with diameter 5mm
8. Hinges will be made by casting then welded



Deep Drawing



## Final Product:

