

1. Stage 1 – Initial Part

Build this part in SOLIDWORKS.

Unit system: MMGS (millimeter, gram, second)

Decimal places: 2

Part origin: Arbitrary

Material: Alloy Steel

Density = 0.0077 g/mm³

All holes through all unless shown otherwise

Use the following parameters and equations which correspond to the dimensions labeled in the images:

A = 213 mm

B = 200 mm

C = 170 mm

D = 130 mm

E = 41 mm

F = Hole Wizard Standard: Ansi Metric Counterbore

Type: Hex Bolt – ANSI B18.2.3.5M

Size: M8

Fit: Close

Through Hole Diameter: 15.00 mm

Counterbore Diameter: 30.00 mm

Counterbore Depth: 10.00 mm

End Condition: Through All

X = A/3

Y = B/3 + 10mm

Hint 1: The dimensions that are to be linked or updated and are variable will be labeled with letters. Any dimensions that are simple value changes or refer to new features from one stage to another will be circled in the images.

Hint 2: To save the most time, make use of linked dimensional values and equations.

Measure the mass of the part.

What is the mass of the part (grams)? $\pm 0.5\%$

- a) 14139.65
- b) 14298.56
- c) 15118.41
- d) 14207.34