Test Project Day 4

Reverse Engineering from a Physical Model

WS2013\_TP05\_M4\_EN

Submitted by: Autodesk®

# Contents

This Test Project proposal consists of the following documentation/files/parts:

|  |  |
| --- | --- |
| 1. WS2013\_TP05\_M4\_EN.pdf (printed) | 1. A machined part |

# Introduction

Your company has received permission from the parent company to manufacture and sell parts under license. The first step in the process is to reverse engineer a specific part.

# Description OF PROJECT AND TASKS

After you have reviewed the part, you measure, sketch and model the part and produce a drawing.

The physical component will be removed after **2 hours**.

You have **4 hours** to complete the project.

# Equipment ALLOWED

In accordance with the competition tool list.

# Instructions to the competitor

## SKETCH AND MODEL THE PART

1. If required, create sketches on paper.
2. Use the following information to assist with measurement process.
   1. Measuring accuracy = ±0.2 mm when measuring across 2 machined surfaces.
   2. Measuring accuracy = ±0.5 mm when measuring across unfinished surfaces.
   3. Radii and chamfers 0.4 mm or less are not required.
   4. Neglect any surface irregularities.
   5. Review the part, instructions and illustrations (see note 1) for features that are modified or do not have to be modeled.
   6. Assume 1.5 degree draft angle where required.
   7. Review the attached sketches for dimensions (see note 2).
3. Create the model of the part and save the part using the competition file naming convention.

## CREATE DRAWING

1. On the first sheet, create 4 shaded isometric views to display the major features of the part.
   1. The machined surfaces should be Machined – Aluminum in appearance.
   2. The cast surfaces should be Aluminum – Cast in appearance.
2. On the second sheet, create a detailed drawing of the part.
3. To complete the drawing:
4. All annotation styles must meet ISO standards.
5. Dimension as required for manufacturing.
6. All main dimensions should be placed using one decimal place.
7. Apply GDT
8. Add surface texture symbols.
9. Add a note listing the volume of the part in mm3.
10. Create a rendered image, using Inventor studio
11. Save the file using the competition file naming conventions.

## REMARKS

1. All drawing sheets should be printed on an A3 size sheet.
2. All files should be saved in the following folder: Data Drive/Competitor number/Day 4.

# Marking scheme

|  |  |  |
| --- | --- | --- |
| **CRITERION** | **SUB-CRITERION** | **MARKS** |
| D1 | Presence of part features | 12 |
| D2 | Dimensions | 8.25 |
| D3 | Tolerances (including GDT) | 0.75 |
| D4 | Surfaces | 0.75 |
| D5 | Presentation | 3.25 |
|  | **Total**: | 25 |

# Additional information in appendix

Translation for words in Appendix:

Note =

Chamber =

Closed =

Edge of front flange =

Top view =