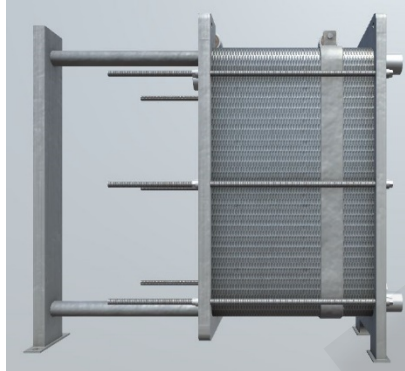# PLATE COOLER DRAFT

MODEL DESCRIPTION DOCUMENT (MDD)

Version – DRAFT v0.1

AUGUST 3, 2016

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DS FEDERAL FDA
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DOCUMENT REVISION HISTORY

Version	Description	Date
0.1	Draft	08/03/16

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1   MODEL OVERVIEW

1.1   DESCRIPTION

- Used to cool or heat fluids (milk)
- Stainless Steel, interchangeable plates

1.2   REFERENCES

- 3D_Model_Development_Process.docx
  - The 3D model development process details Dignitas Technologies' procedure for building 3D models.

Figure 1 Plate Cooler Model (Unity Render)

1.3   MODEL VERSION AND HISTORY

Information about the model version can be found in the "Model_Version.txt" file located in the model's directory (same directory the model's .fbx file is located).

Table 1 Model Revision History

Version	Description	Date
0.1	Initial release of the draft Plate_Cooler.fbx	08/03/16

1.4 MODEL SUMMARY

Table 2 Model Summary

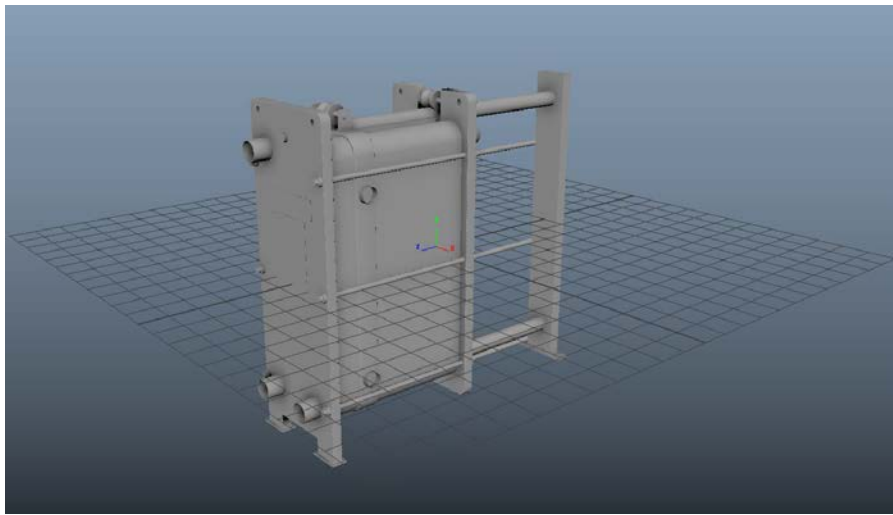| Model Name	Plate_Cooler.fbx
Model Units	Meters
Coordinate System	Cartesian X, Y, Z (see Figure 2 below)
Model Origin	Origin is located at center mass. (0, 0, 0) (*See figure 2 below*)
Model Orientation Runtime	Forward: Positive Y Up: Positive Z
Model Orientation Maya	Forward: Positive Z Up: Positive Y

Figure 2 Plate Cooler Origin on Cartesian X, Y, Z Coordinate System (Maya Software Render)

This model was imported into Unity 5.3 to verify the model (see Figure 3 below).

Figure 3 Plate Cooler (Unity View)

2   UNITY PACKAGE

2.1   IMPORTING THE UNITY PACKAGE

1. Download the "Plate_Cooler_08-03-16.unitypackage" file from Google Drive
2. Open the "Milk Factory" Unity Project in Unity 5
3. In the top menu bar go to "Assets →Import Package →Custom Package…"
4. A window should pop up showing you the contents of the Unity Package being imported
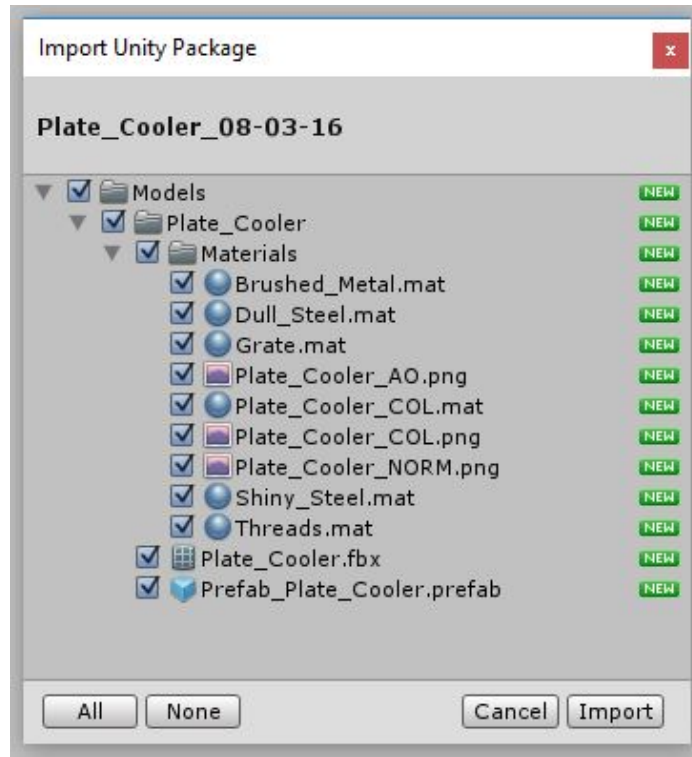   a. This Unity Package should look like this:

Figure 4 Unity Import Package

5. Press "Import" and the model and materials will be placed into the Assets section.
6. Make sure that when dragging the model into the scene that you select the "Prefab_Plate_Cooler.prefab" instead of the FBX as the prefab has the materials stored on it correctly.

3   MODEL ATTRIBUTES

3.1   POLYGON ALLOCATION

Polygon allocation is the number of triangles and vertices for a given state and Level of Detail (LODs) in the model. The method for calculating the number of polygons is to gather each model state then count the polygons present in each representation. Animations are not included in the polygon allocation. The RPZ Backflow Device model has a single LOD which is labeled LOD0.

Table 3 Polygon Allocation

Model	# of Triangles	# of Vertices
Plate_Cooler	7622	4368

3.2   LEVEL OF DETAIL (LODS)

TBD

3.3   TEXTURE MAPS

3.3.1   COLOR MAP

- File name: Plate_Cooler_COL.png (Diffuse)
- Resolution: 4096 x 4096 pixels
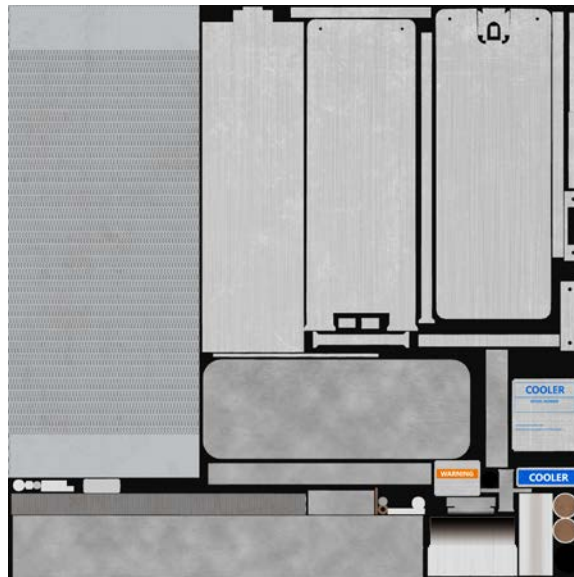- Version: 1.0

Figure 5 Plate Cooler Device Color Map

3.3.2   NORMAL MAP

- File name: Plate_Cooler_NORM.png
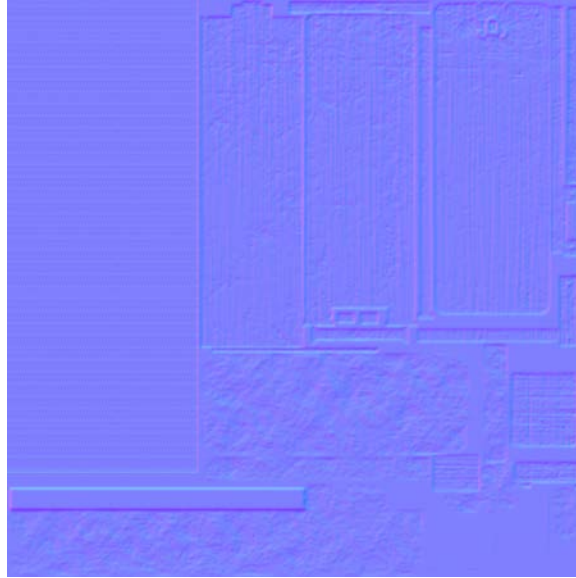- Resolution: 4096 x 4096 pixels
- Version: 1.0

Figure 6 Plate Cooler Normal Map

3.3.3   AMBIENT OCCLUSION MAP

- File name: Plate_Cooler_AO.png
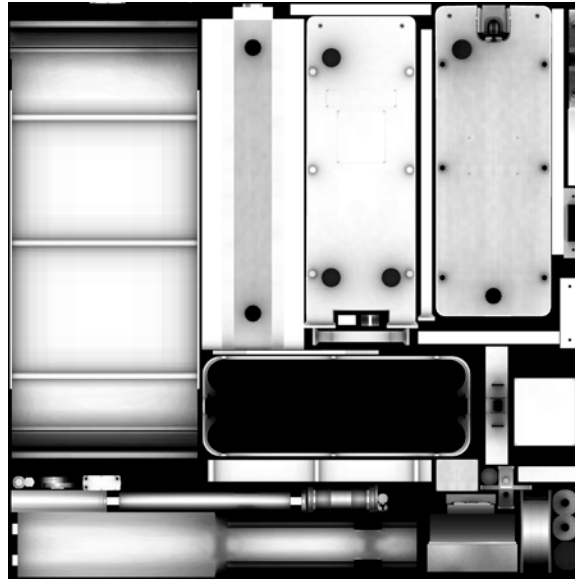- Resolution: 4096 x 4096 pixels
- Version: 1.0

Figure 7 Plate Cooler Ambient Occlusion Map

3.4   SENSOR VIEWS

N/A

3.5   MODEL STATES

N/A

3.6   SKELETAL STRUCTURE

N/A

4   ANIMATIONS

N/A

5   VERIFICATION APPROACH

5.1   RUNTIME SYSTEMS

The 3D model was tested using the following tools:

- FBX Viewer 2013.3
- Maya Mental Ray 2016
- Unity 5.3

6   LIMITATIONS

N/A

7   CONTACT INFORMATION

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