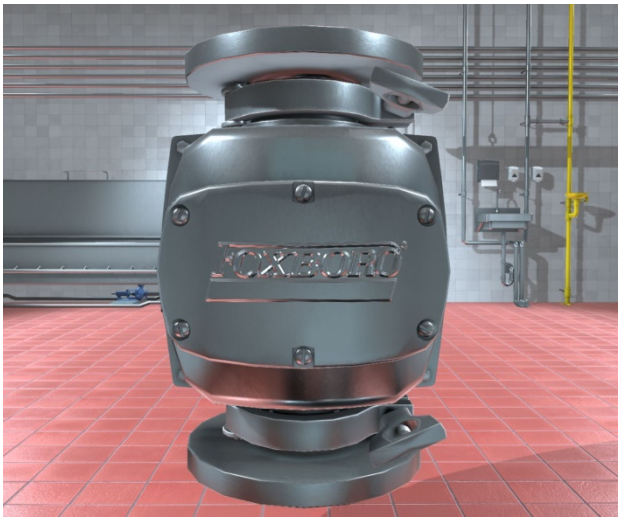
MAGNETIC FLOW METER

MODEL DESCRIPTION DOCUMENT (MDD)

Version – v1.0



MAY 16, 2017

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DOCUMENT REVISION HISTORY

Version	Description	Date
1.0	Final Release	05/16/17

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1 MODEL OVERVIEW

1.1 DESCRIPTION

- Measures the volumetric flow rate of almost any conductive liquid
- Stainless Steel
- Rubber

1.2 REQUIREMENTS

Requirements for each model are gathered based off of the needs of the customer. Reference images are then found and used to accurately build 3D models. The required components for this model include:

- Stainless Steel Texture
- Must include Sanitary Clamps
- Must include Brand
- Must have vertical orientation

Figure 1 Magnetic Flow Meter Reference Image

Figure 2 Sanitary Clamp Reference Image

1.3 REFERENCES

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

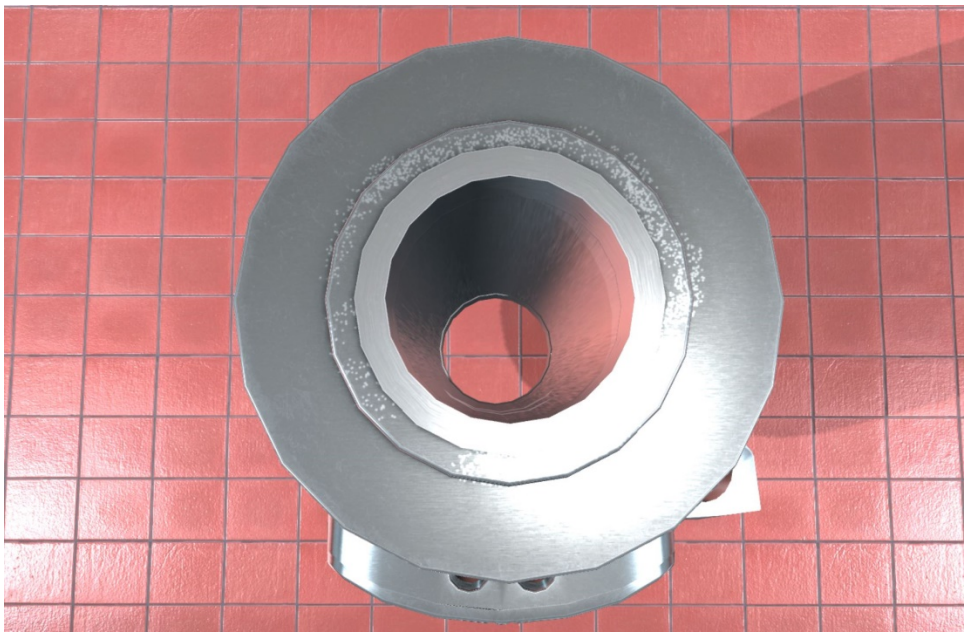

Figure 3 Magnetic Flow Meter Model (Unity Render)

1.4 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
1.0	Final release of the draft Magnetic_Flow_Meter.fbx	05/16/17

1.5 MODEL SUMMARY

Table 2 Model Summary

Model Name	Magnetic_Flow_Meter.fbx
Unity Package Name	FDA_Magnetic_Flow_Meter.unitypackage
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

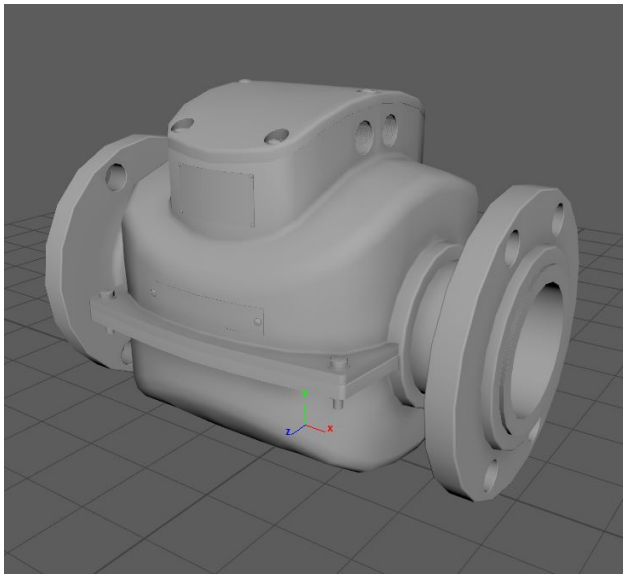

Figure 4 Magnetic Flow Meter Origin on Cartesian X, Y, Z Coordinate System (Maya Software Render)

This model was imported into Unity 5.5 to verify the model (see Figure 5 below).

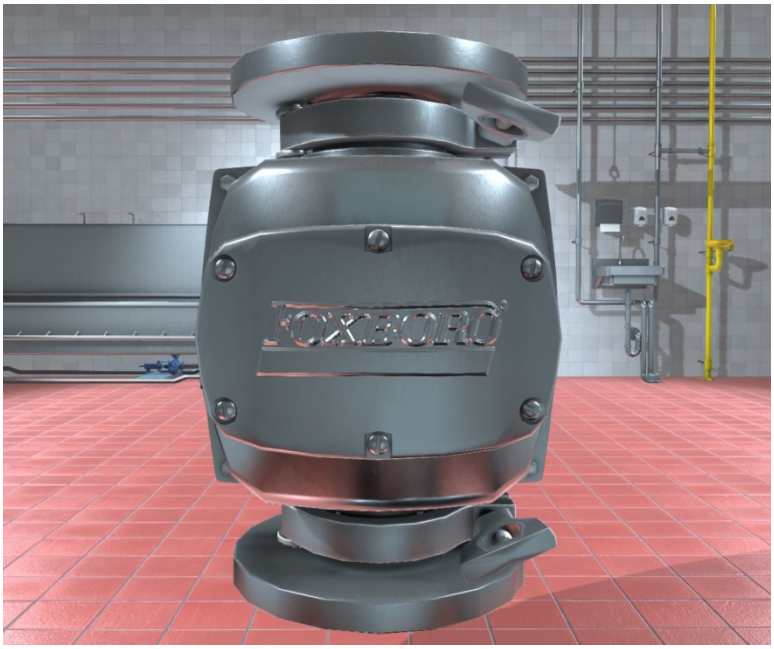

Figure 5 Magnetic Flow Meter – Front View (Unity)

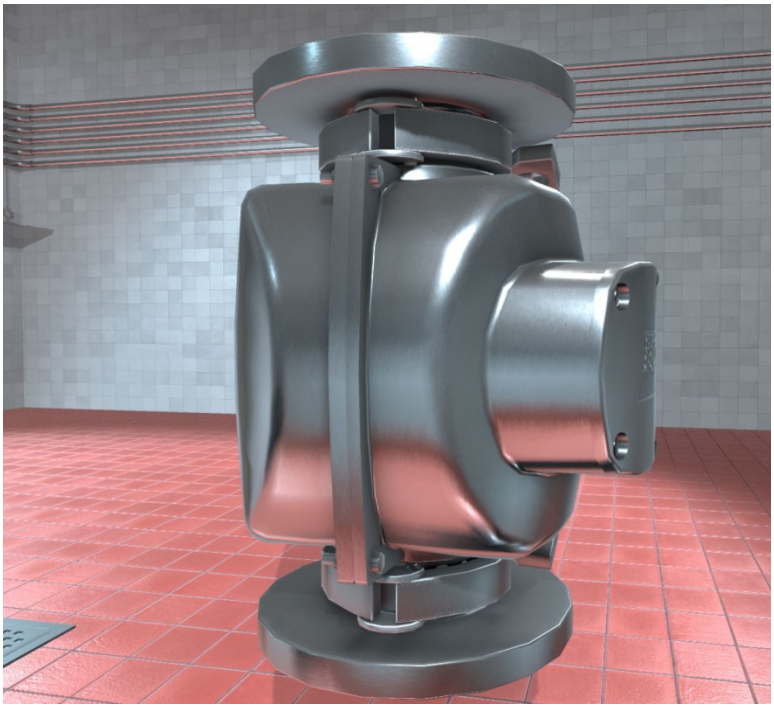

Figure 6 Magnetic Flow Meter – Side View (Unity)

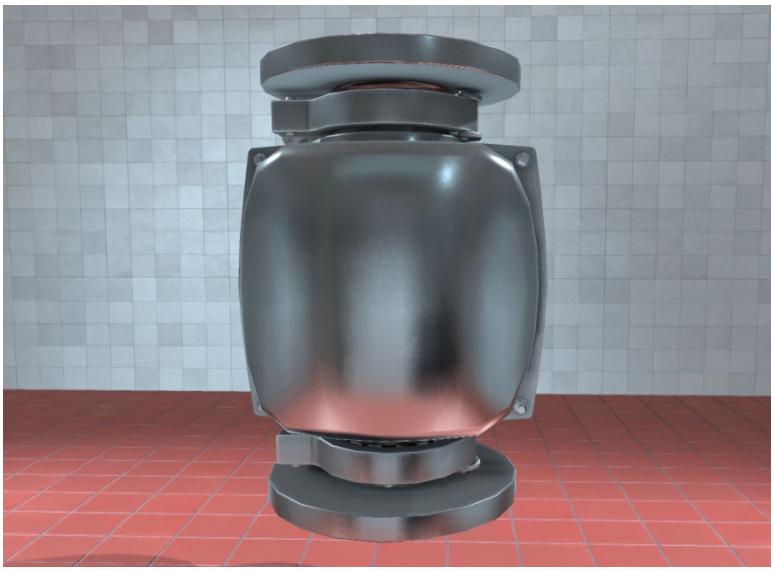

Figure 7 Magnetic Flow Meter – Back View (Unity)

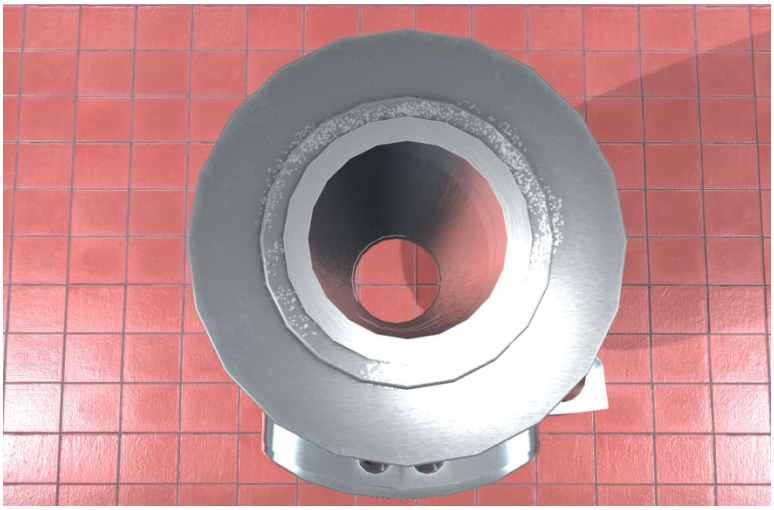

Figure 8 Magnetic Flow Meter – Top View (Unity)

2 UNITY PACKAGE

2.1 IMPORTING THE UNITY PACKAGE

1. Download the “FDA_Magnetic_Flow_Meter.unitypackage” file from Google Drive
2. Open the “DSVT 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:

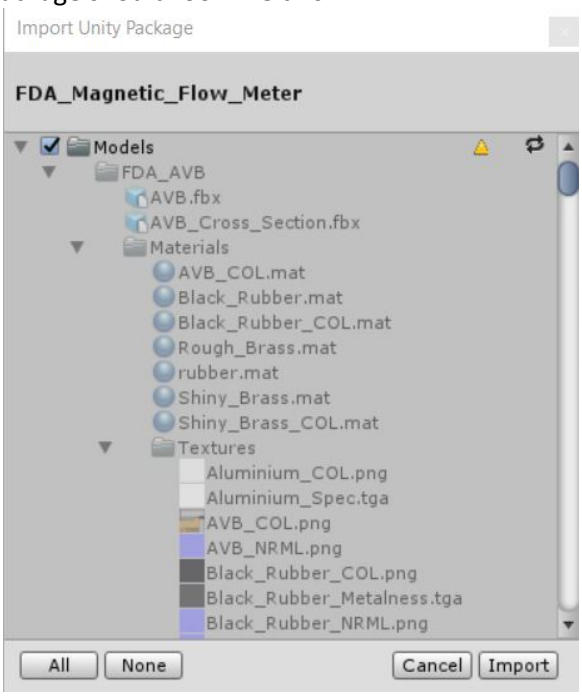

Figure 9 Unity Import Package

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_***.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
Magnetic Flow Meter	21588	12654

3.2 LEVEL OF DETAIL (LODS)

TBD

3.3 TEXTURE MAPS

For most models in this scene we used tileable textures, most of which comprise of diffuse, normal, metalness, and specular maps. For the materials that use specularity, the spec maps are found in the Alpha Channel of the Metalness maps.

1. Texture Map Formats – JPG, PNG, TGA
2. Texture Map Types – Diffuse, Normal, Metalness, Specularity
3. Average Texture Map Sizes – 2048 x 2048

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:

- Unity 5.5

6 LIMITATIONS

N/A

7 CONTACT INFORMATION

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