UAL Phantom

UAL Phantom Procedures

The image quality of the study scans will affect the quality of the image analysis results and scoring results. The imaging procedures depend on the quality of the acquired images. This quality depends on the quality of the scanner and the imaging equipment, adherence to the specified imaging protocol, and the performance of the technologist. The quality of the scanner is first checked and then subsequently monitored by imaging the Uniformity and Linearity (UAL) phantom with the MRI scanner used for this study.

Getting to Know the Qmetrics UAL Phantom

The Qmetrics Phantom is proprietary and has been designed for ease of use to make the site qualification process as efficient as possible. Please note that this phantom has built in handles, large gasket holes, a balancing foot on the bottom of the phantom, and a rugged design.

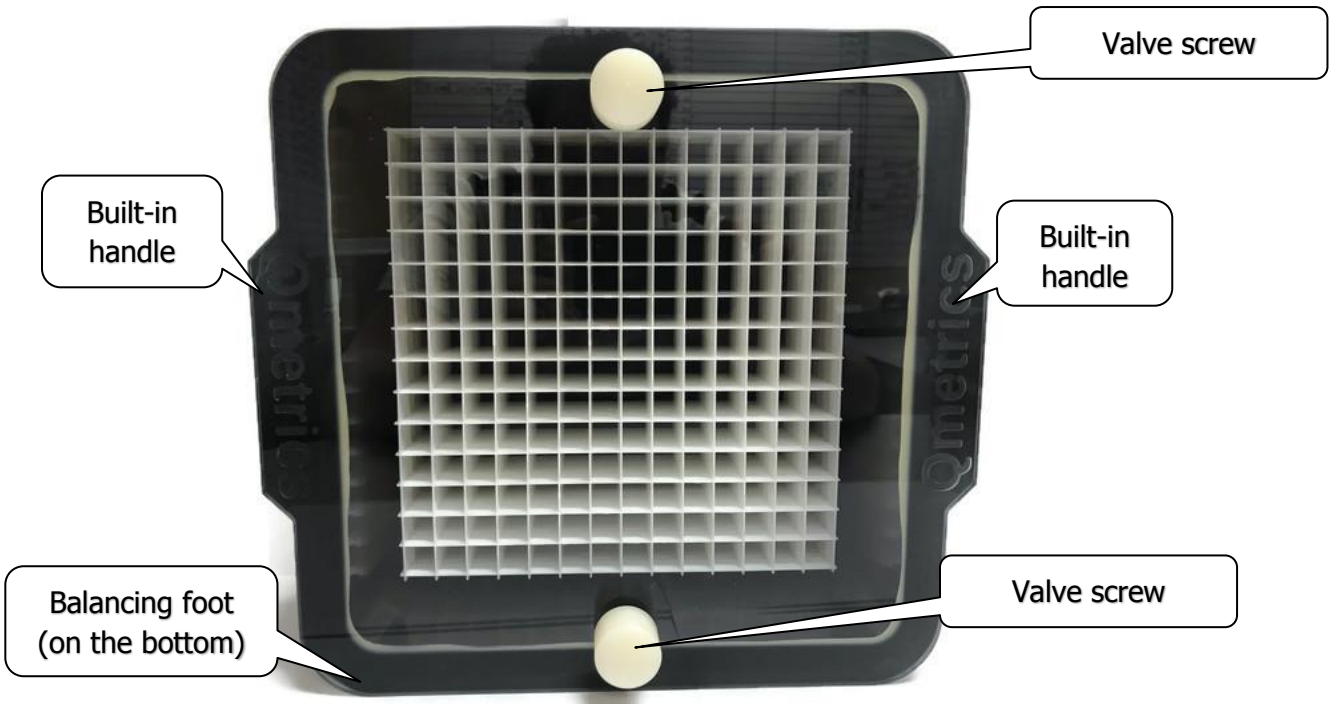

Figure 1 Qmetrics Phantom

Filling the Phantom with Distilled Water

Before imaging, lay the phantom flat on a table with the clear lid facing upward. Unscrew the two valves at the top of the UAL phantom (indicated in the picture below with the red arrows).

Set the screws aside for now. You will use one of the holes to begin filling the phantom with distilled water and the other hole will be for air to escape. Pour slowly to avoid bubbles. Continue pouring distilled water into the phantom until the inside is full to the top. Screw the valves back into the threaded holes and ensure a snug fit.

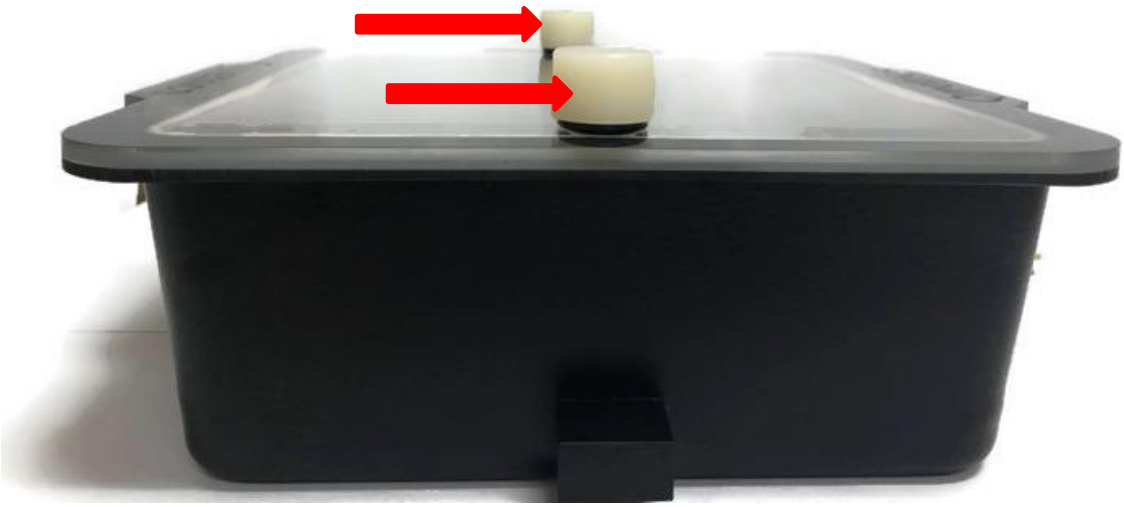

Figure 2 Qmetrics Phantom

MR Imaging the UAL Phantom

The phantom is imaged in both the coronal plane and in the axial plane. For coronal images, position the phantom flat on the MRI table; please do not remove the table pad. Below, the coronal view of the UAL Phantom is pictured.

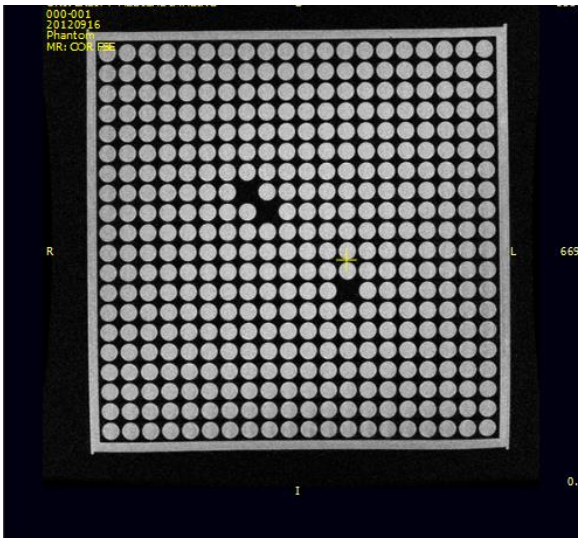

Figure 3 Coronal View

For axial imaging, position the phantom on the table so that it stands on its side across the width of the table. Secure it using Velcro straps. Below is an image of what the axial view of the UAL Phantom would look like:

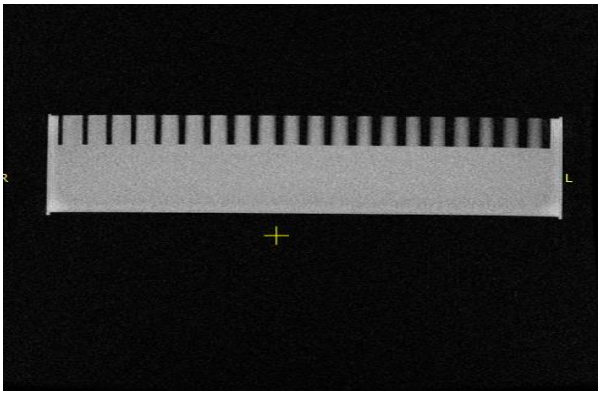

Figure 4 Axial View

UAL Phantom Quality Check

In order to ensure a high quality UAL Phantom scan, check that the following things have taken place:

- The landmark is at the center of the UAL Phantom
- The scan covers the entire UAL Phantom so that the first and last images do not have any part of the phantom in them
- The whole phantom needs to be in the image field without any corners being cut

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