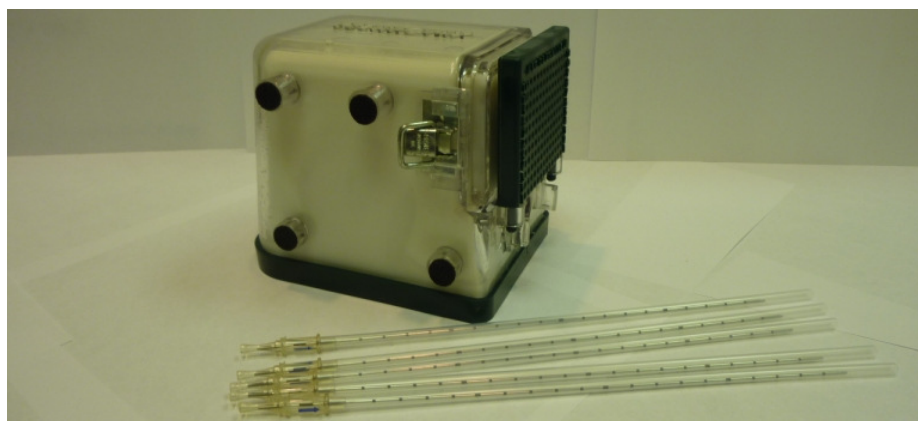


**YGI**YEZITRONIX GROUP INC  
Phantom Technologies  
Medical Simulation & Training  
www.yezitronix.com

# ***YEZITRONIX - Brachytherapy Prostate Phantom with Catheter Model***

***Most Accurate Prostate Phantom & Surrounding Tissues  
Mimicking Device for Ultrasound Applications***



Yezitronix **radioactive seeds implantation** Model S-B-2.3 Ultrasound Prostate Phantom is a multiple usage phantom developed for simulation and training for Brachytherapy procedures.

Its ingenious and versatile design makes the S-B-2.3 model an incredible useful tool for simulation and training of different ultrasound rectal probes and surgical elements involved in prostate medical procedures.

The prostate phantom construct mimics the exact 3D shape and size of:

- 40cc prostate
- Urethra
- Seminal vesicle
- Ejaculatory duct
- Rectal wall
- Partial bladder
- Fat muscle tissues
- Perineal tissue
- Numerous lesions located inside the prostate.

All organs & tissues are correctly adjusted to mimic exact ultrasound echogenicity seen by surgeon during OR procedure

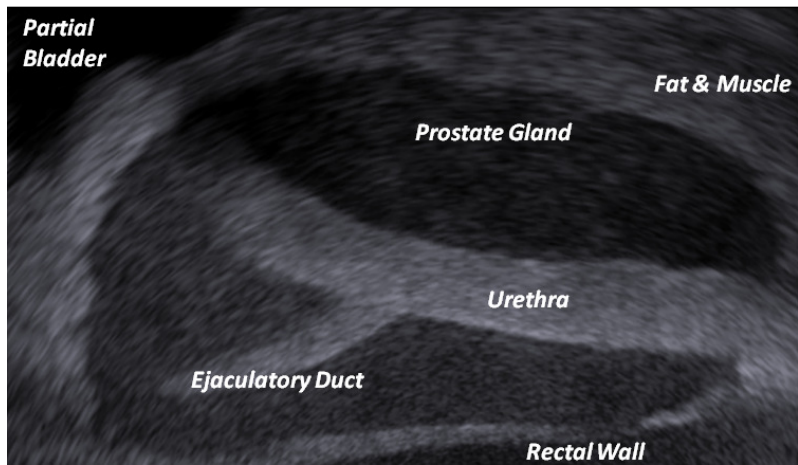
#### **Suitable for:**

OEMs' medical devices simulation,  
robotic System calibration,  
hospitals, clinics, med schools trainings  
and demonstrations.

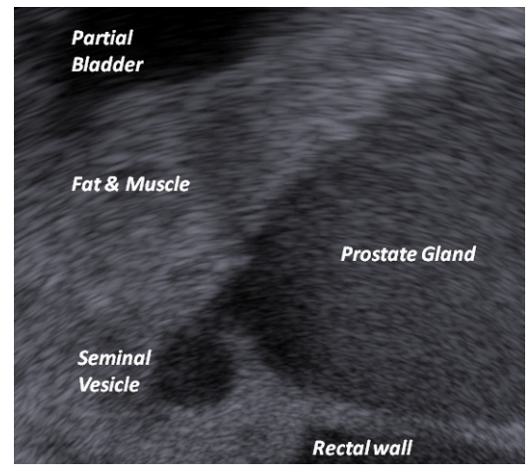
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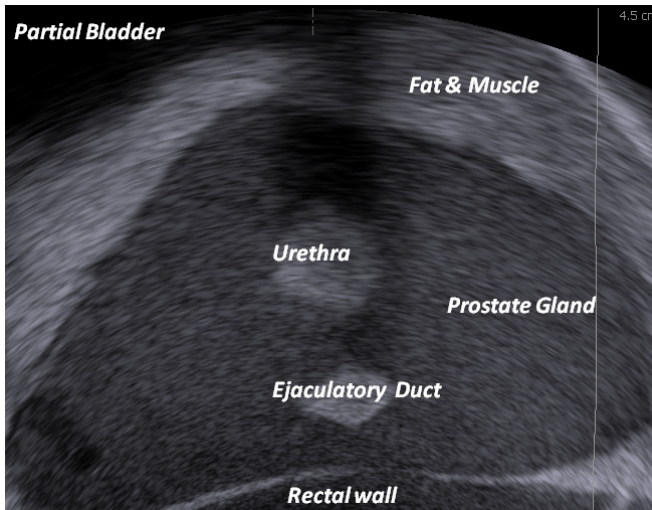
[www.yezitronix.com](http://www.yezitronix.com) [info@yezitronix.com](mailto:info@yezitronix.com)



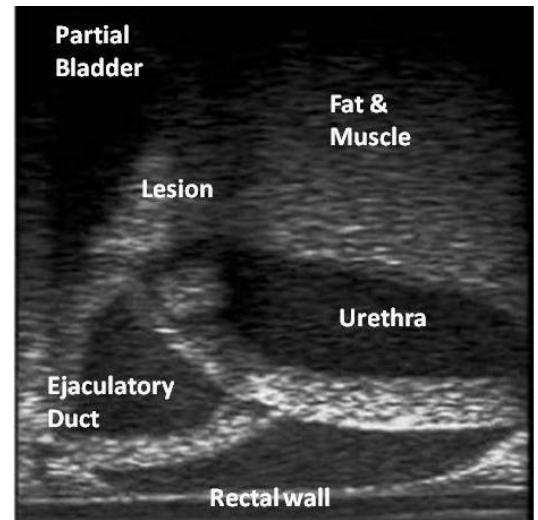
Ultrasound sagittal view of the prostate phantom components



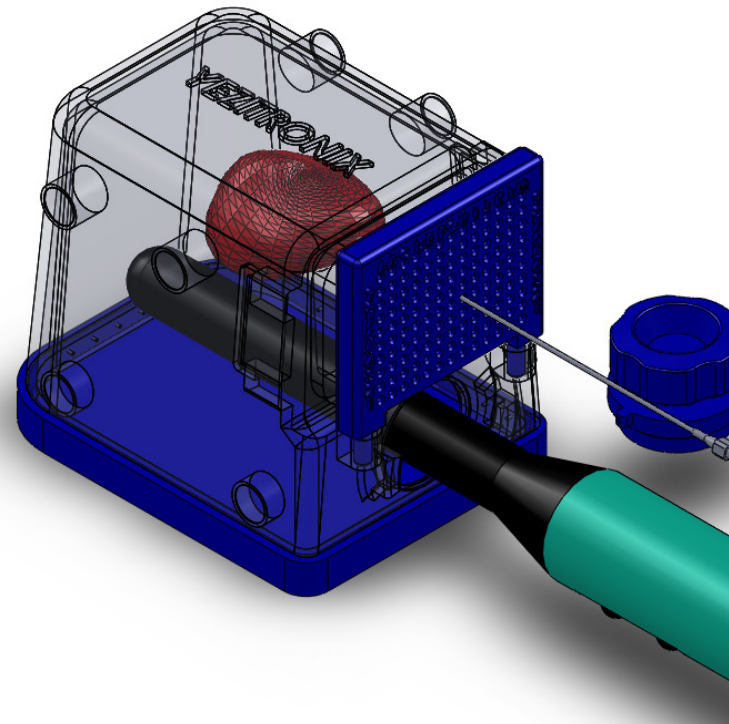
Ultrasound complementary sagittal view of the prostate phantom



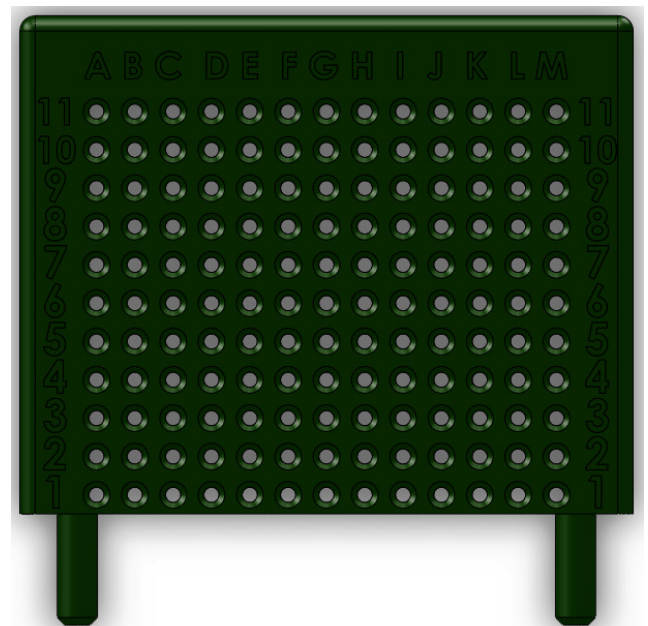
Ultrasound transverse view of the prostate phantom components



Lesion inside prostate phantom



Brachytherapy mode

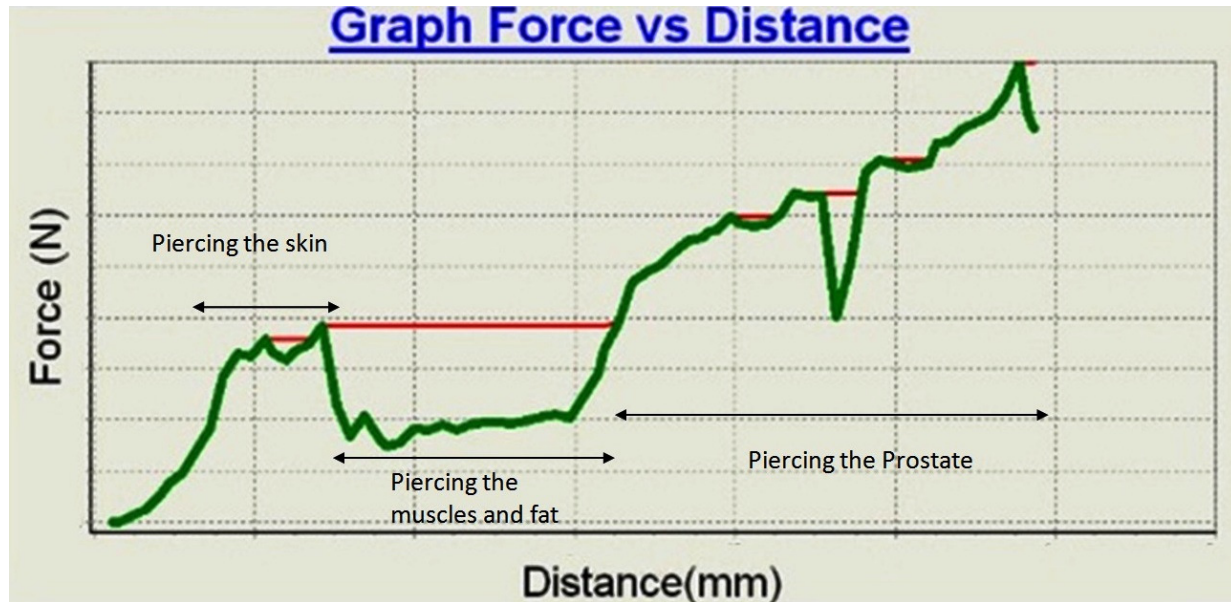


Brachytherapy Template included with the model

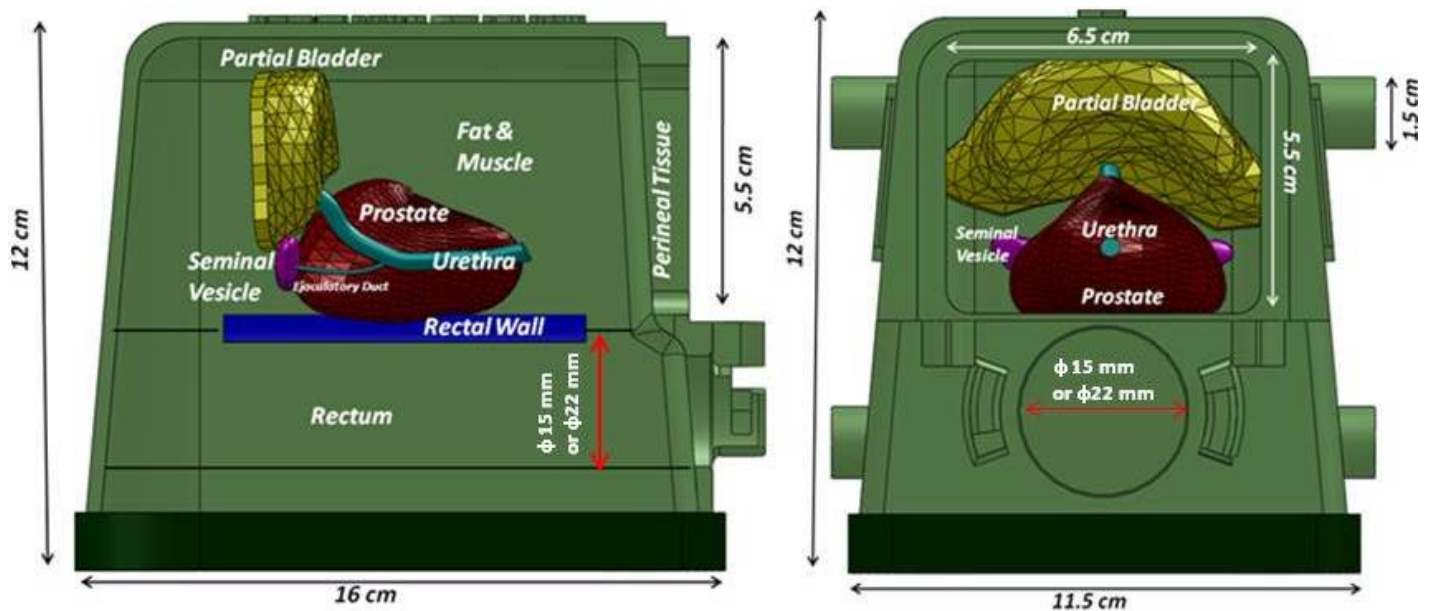


All phantom tissues mechanical properties are approximated to human tissues. All prostate phantom layers mimic the tissue behaviour (dynamics) when pierced.

When for example a needle is piercing the Multi-layer prostate phantom construct, it will generate a “Haptic Feedback (tactile)” to the user, simulating the real human tissue during biopsy or brachytherapy procedures.



Real time graph (Prostate phantom device test bed) - of force as function of needle depth penetration



Internal tissues setup of the brachytherapy prostate phantom  
 $\phi 15$  mm or  $\phi 22$  mm according client demand

## Specifications:

Multi-layer material – each tissue or organ is independent and has its own characteristics defined by a real 3D shape, echogenicity level and mechanical properties.

There are 4 embedded lesions in the prostate to help simulate biopsies or brachytherapies procedures.

Multiple usage of the same packaged phantom during an extended period of time.

### Enclosure:

16(L) x 11.5(W) x 12(H), Material – PVC, PC and metal latches. Front upper window 6.5(W) x 5.5 (H), Probe input diameter – 3.5 (all units in cm)

### Perineal tissue:

65(W) x 55 (H) x 3mm thick, approximate mechanical response of human tissue

### Fat & Muscles:

– Approximate mechanical response of human tissue

### Urethra:

6mm diameter and 61mm(L)

### Ejaculatory duct:

4mm diameter 28mm (L)

### Seminal vesicles

2 of 25(L)x6(W)x 4mm(Thick)

### Prostate gland:

40cc, approximate mechanical response of human tissue.

### Rectal wall:

81(L)x 75(W)x2.5(thick)mm, approximate mechanical response of human tissue.

### Partial bladder:

13.4cc

### Lesions:

4 Elliptic 0.3cc

### Template:

13 columns and 11rows  
φ: 2 mm

All components are based on Yezitronix's new unique MajesticMix material. Speed of propagation~ 1540m/s

## Other Available Models:

- a. Bi-plane (Side Fire) mode is:  
S – BP – 2.3
- b. Brachytherapy mode is:  
S-B-2.3
- c. End fire mode is:  
S – EF – 2.3
- d. Multi-modality mode  
(Ultrasound, CT, MRI) is:  
S-MM - 2.3
- e. Without lesions is: S-WL - 2.3
- f. Coloured components (Bladder, Urethra, Seminal Vesicles, Ejaculatory Duct)for  
Biopsy training is: S-CC - 2.3
- g. With hollow Urethra for catheter insertion is:  
S-HU - 2.3
- h. Custom design according to customer  
specifications is: S-CD - 2.3

Technology developed with the collaboration of the scientists from NRCC-National Research Council of Canada and surgeons at the department of urology at the London Health Sciences Centre in Ontario Canada. **Patent Pending**

