Mechanically Stretched Thin Gap Hybrid Detector

Update2/26 /26

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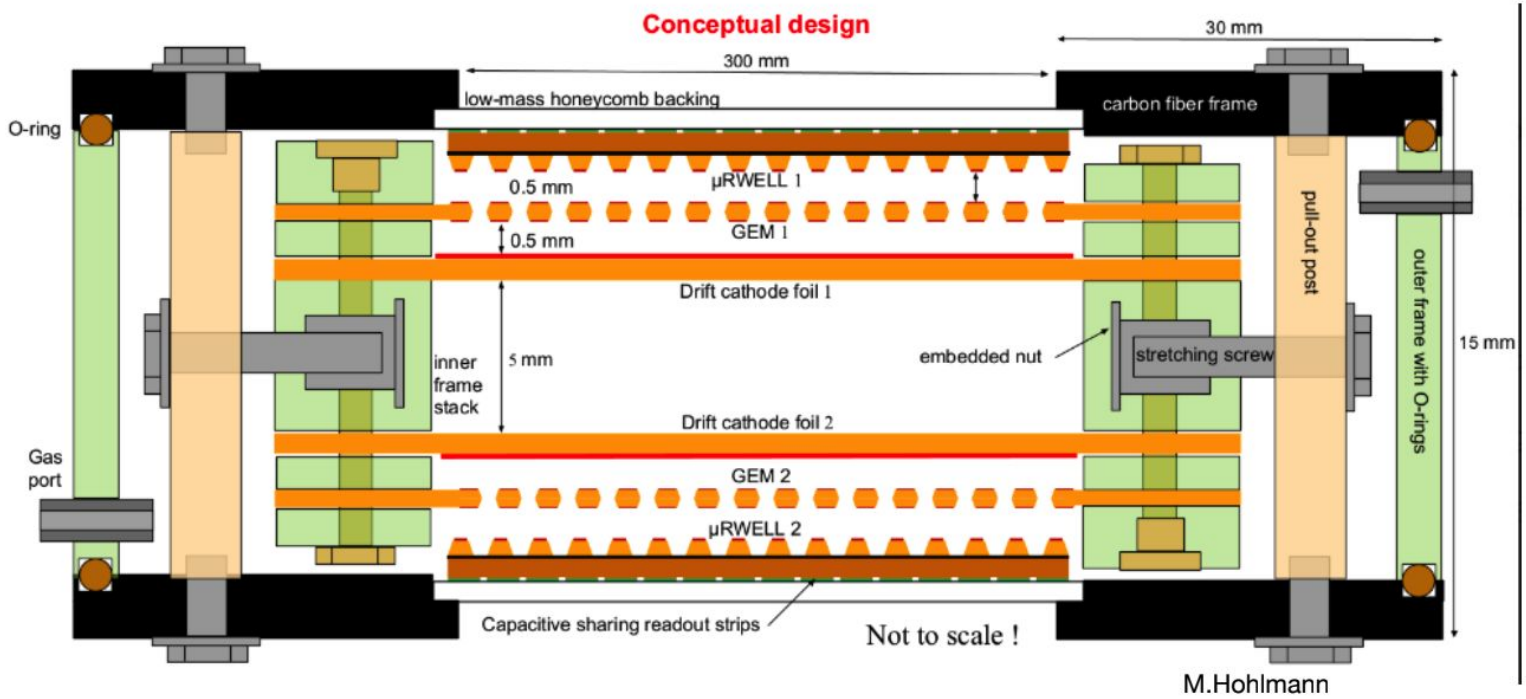
Conceptual Design of Double Hybrid Prototype



- In this version a µRWELL foils are supported by a composite base frame (black), GEM foils, drift foils between insulating spacer frames, an outer frame that surrounds the pull-outs , T-Nuts for stretching, & Outer O-ring frame for gas sealing
- Frame structure allows for purely mechanical stretching of GEM foils and drift foils and assembly with minimal application of glue

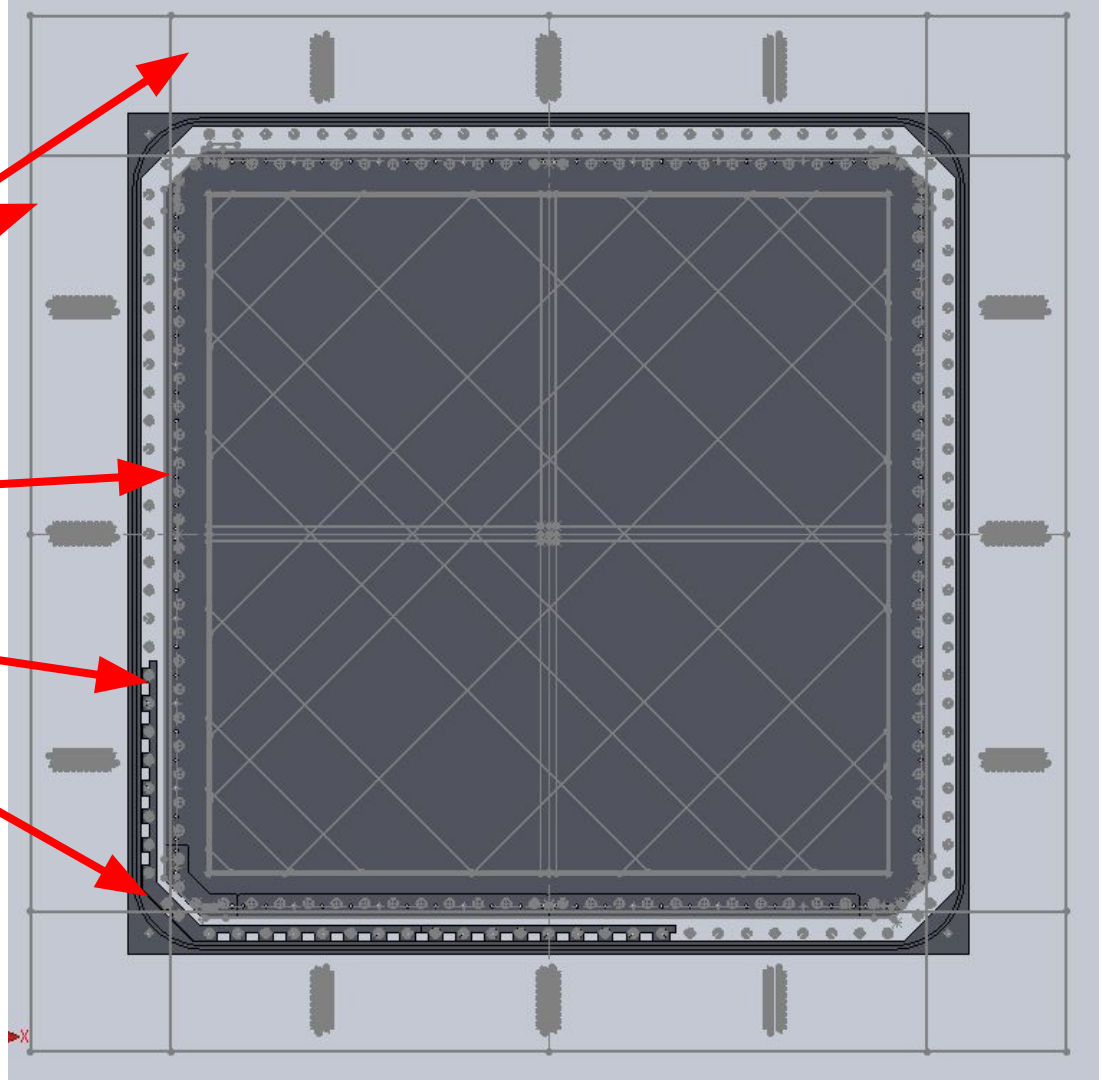
Overall Schematic

Carbon Frame w Urwell

Gem&Drift Spacer Stack

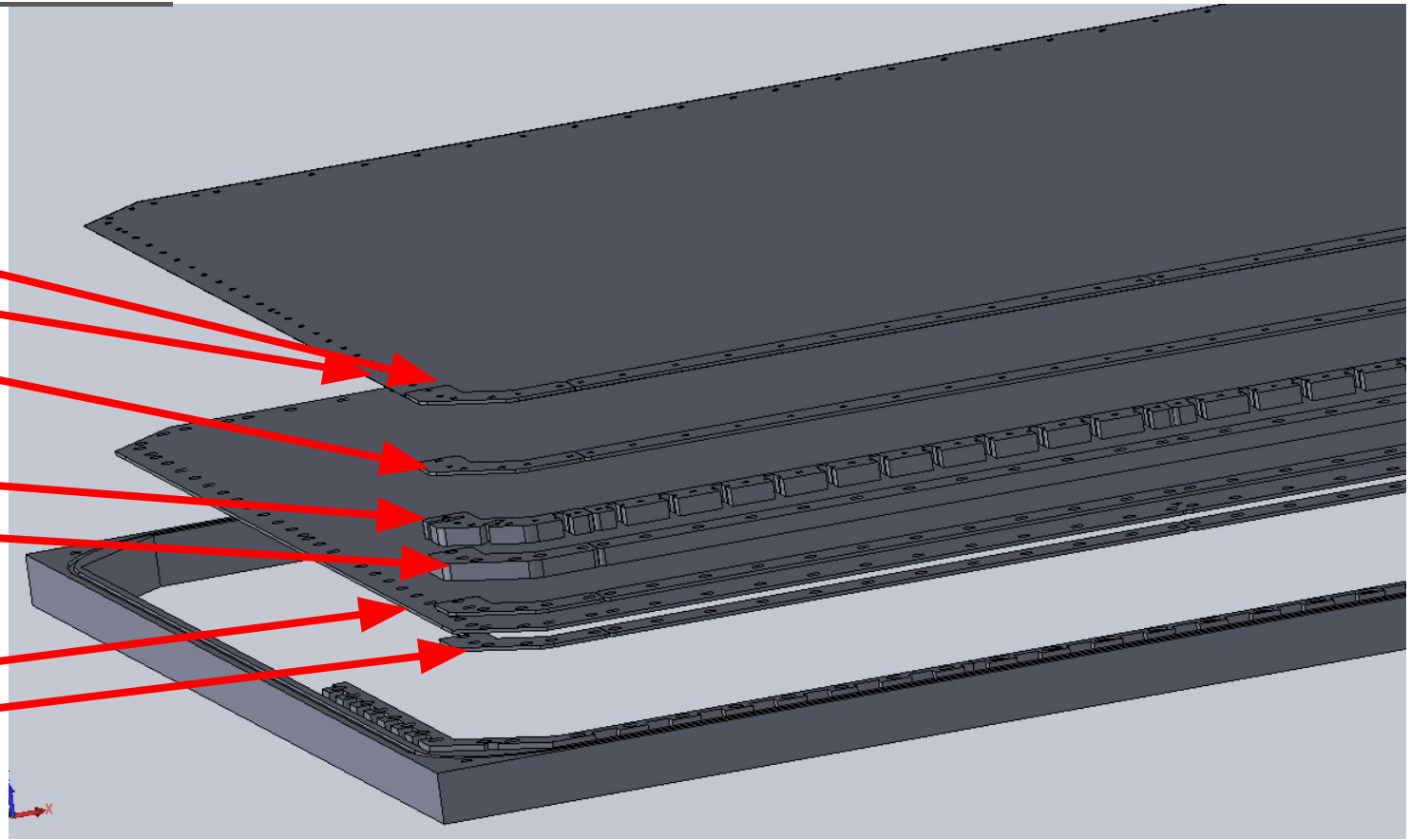
Pullouts

O-Ring Spacer w O-ring



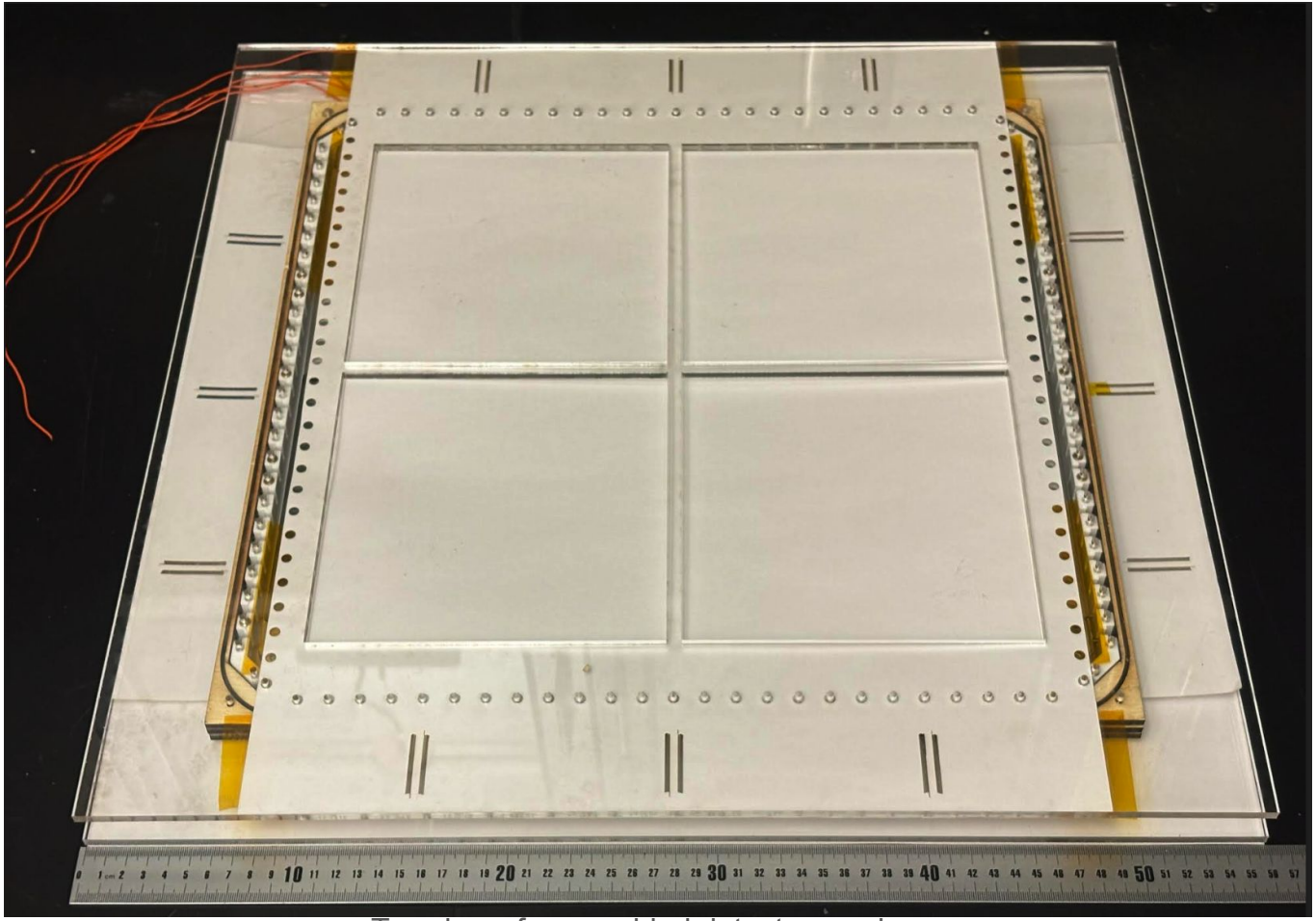
Gem/Drift Spacer Stack

Spacer
Gem Foil 1
Spacer
Drift Foil 1 (not shown)
Spacer (not shown)
Spacer (Thick T)
Spacer
Drift Foil 2(not shown)
Spacer
Gem Foil 2
Spacer

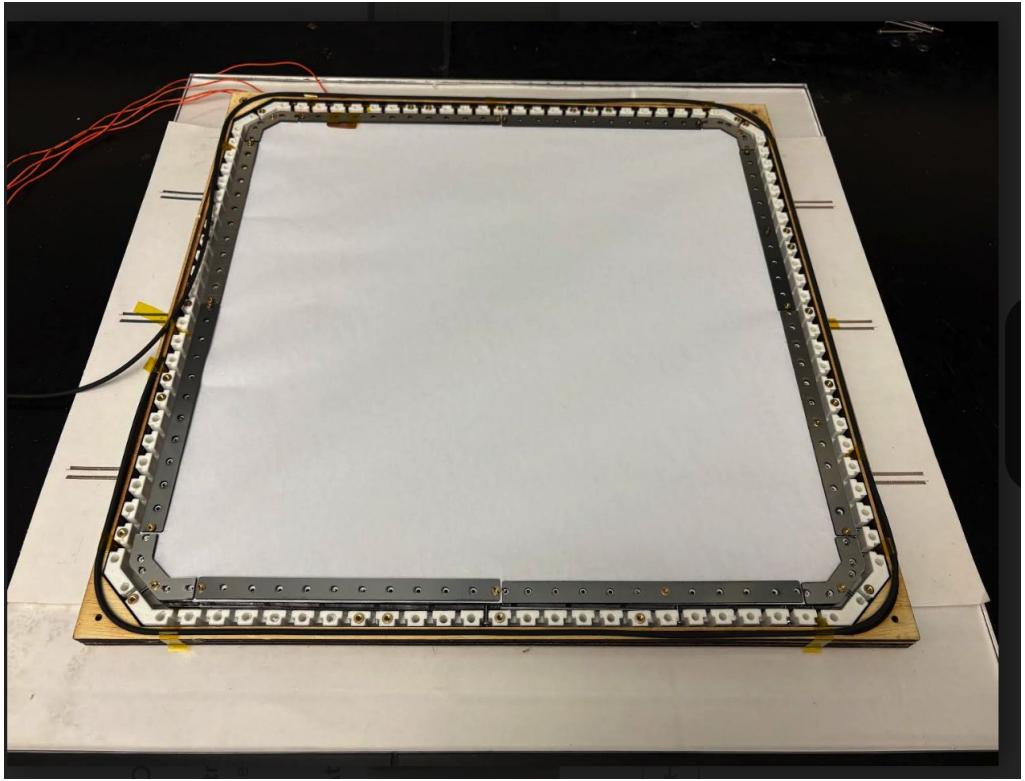


*Only 2 Gem foils are shown in figure

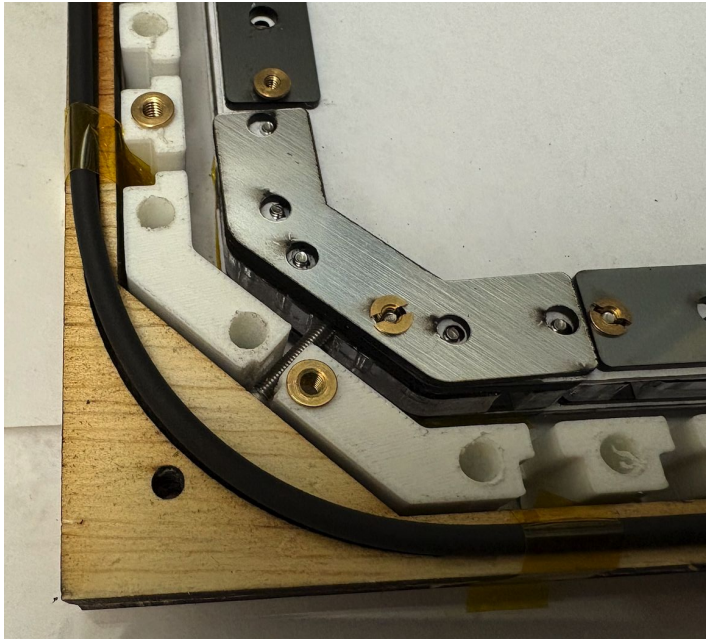
Assembled Mock Detector



Top view of assembled detector mockup



Left : View of inside of detector without urwell/ carbon top cover



Top: View of corner

Bottom: View of bottom screw with rubber washer