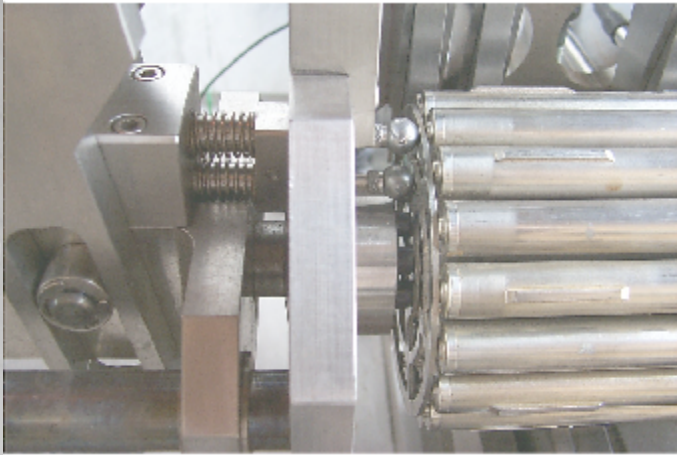


# In-Bay Fuel Inspection

# F.E.M.E.R

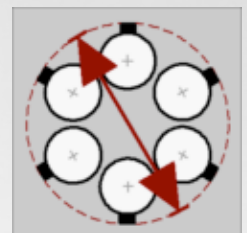
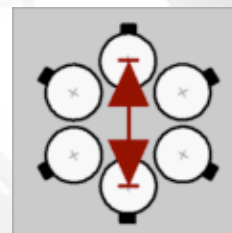
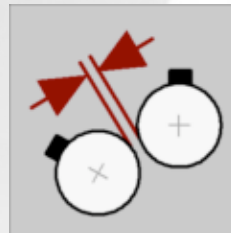
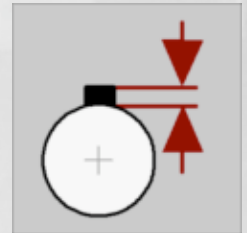
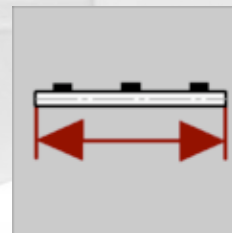


The Fuel Envelope MEasuring Rig (FEMER) was designed as a cost effective means of augmenting fuel inspection operations with the ability to measure the outer envelope of a spent fuel bundle to determine its length, element bow, bearing pad wear, and end plate deformation. In operation, the FEMER rests on the inspection table at the bottom of a fuel bay and attaches to

the end of a bundle manipulator. Its main features are positioning devices which centre and align the bundle and a pair of rotating latches attached

to pivoting arms which grip the end plates, lift the bundle off of the manipulator and rotate it against an array of displacement probes. Ten Linear Variable Differential Transformers (LVDTs) aligned perpendicular to the bundle axis measure the surface of the outer ele-

ments and four LVDTs, two at each end, contact and measure the profiles of the outer and middle end plate rings as the bundle is rotated. The latching/lift and bundle rotation motions are driven from above by computer controlled motors. After a scan is performed, the bundle dimensions are calculated and displayed in a control and analysis window.



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