Supporting Information

for

Slit Tubes for Semi-Soft Pneumatic Actuators

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Supporting Information

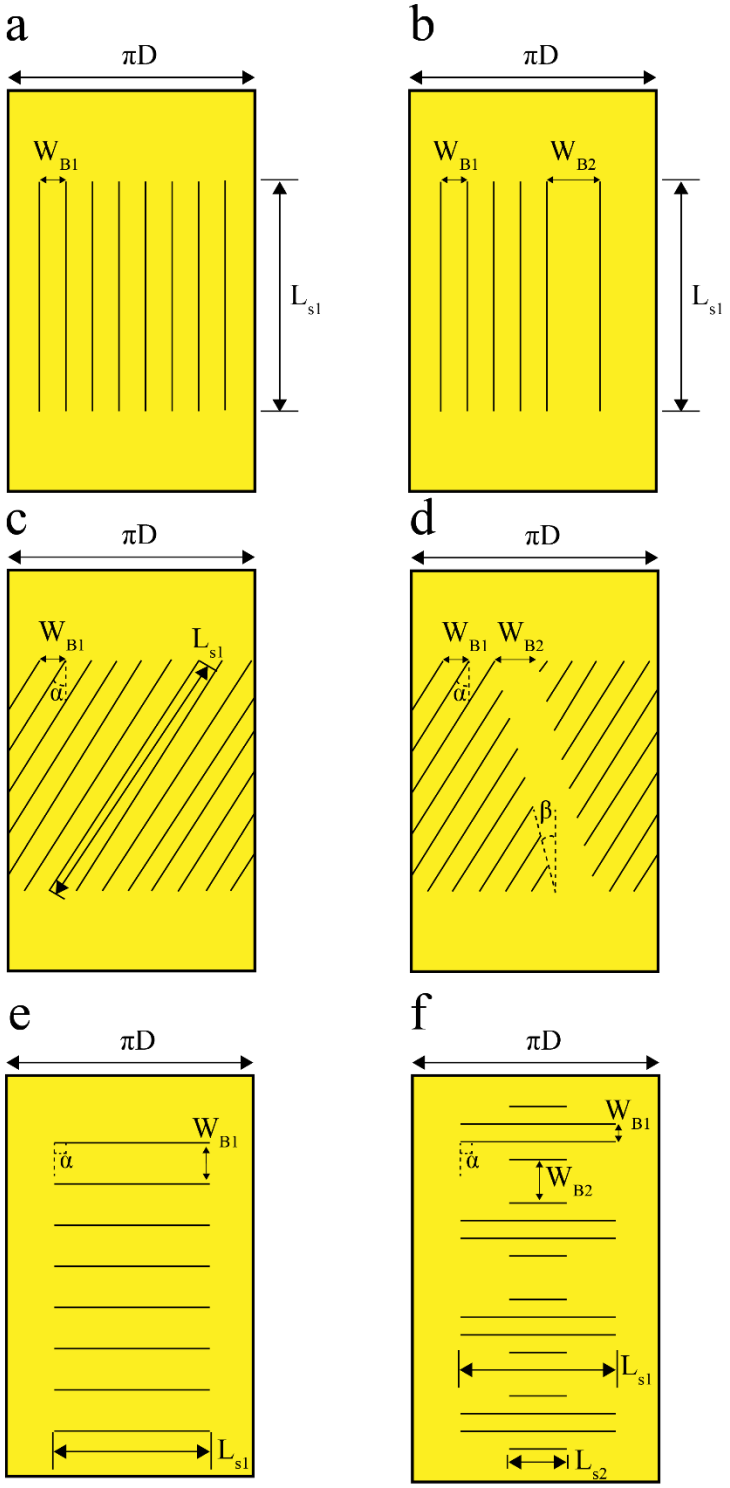

Figure S 1: Schematics of various slit designs. Black lines indicate slits and the yellow rectangle indicates the plastic of the tube, when the tube is cut open axially. D is the diameter of the tube.

a-b) Vertical slits of length L_{S1} with different distances between the slits (W_{B1} and W_{B2}); c-d) Slits cut at an angle, α, with different spacing between slits (W_{B1} and W_{B2}). The spacing defined as W_{B2} can be created with an angle, β; e-f) horizontal slits with various lengths (L_{S1} and L_{S2}) and spacings (W_{B1} and W_{B2}).

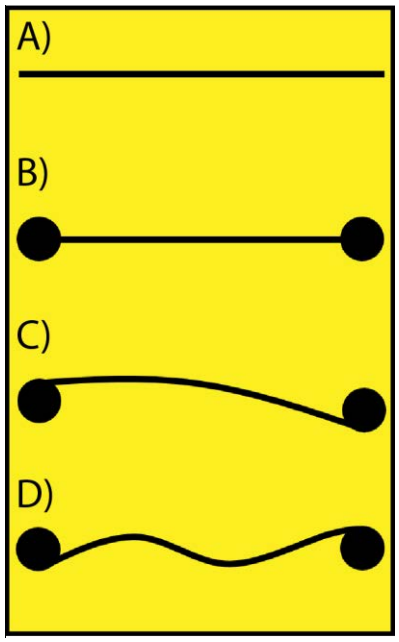

Figure S2: Alternative designs for slits (**B**, **C**, **D**) that minimize concentration of stress and irreversible stretching and/or tearing of the tips (as in **A**).

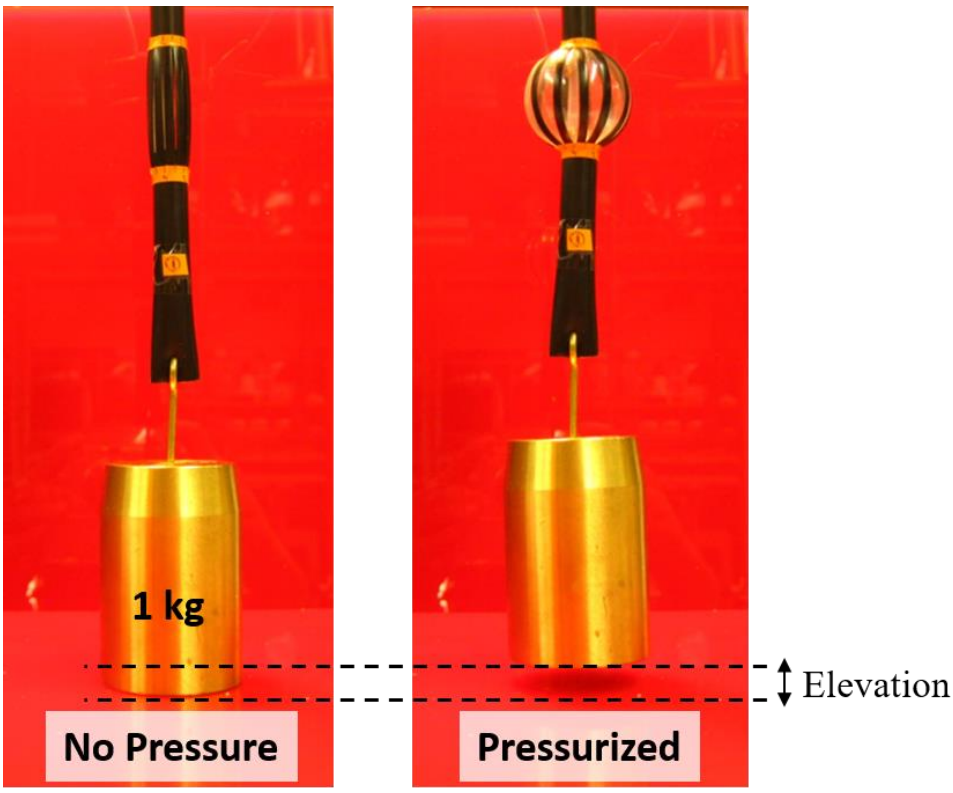

Figure S3: The contracting actuator lifting a 1 Kg weight upon pneumatic actuation.

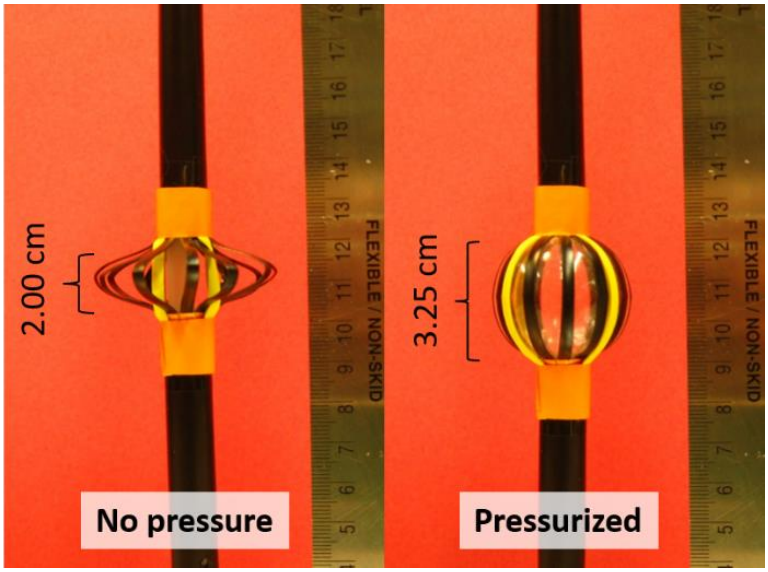

Figure S4: The expanding actuator upon pneumatic actuation.

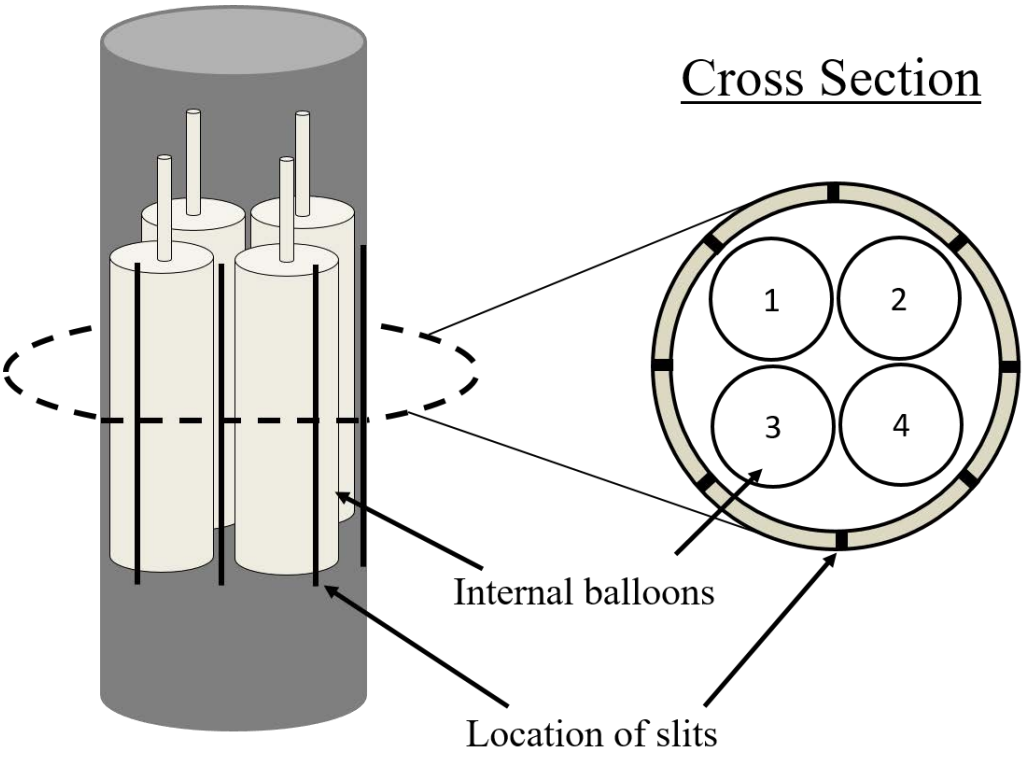

Figure S5: A diagram depicting a detailed view of the 4-directional actuator.

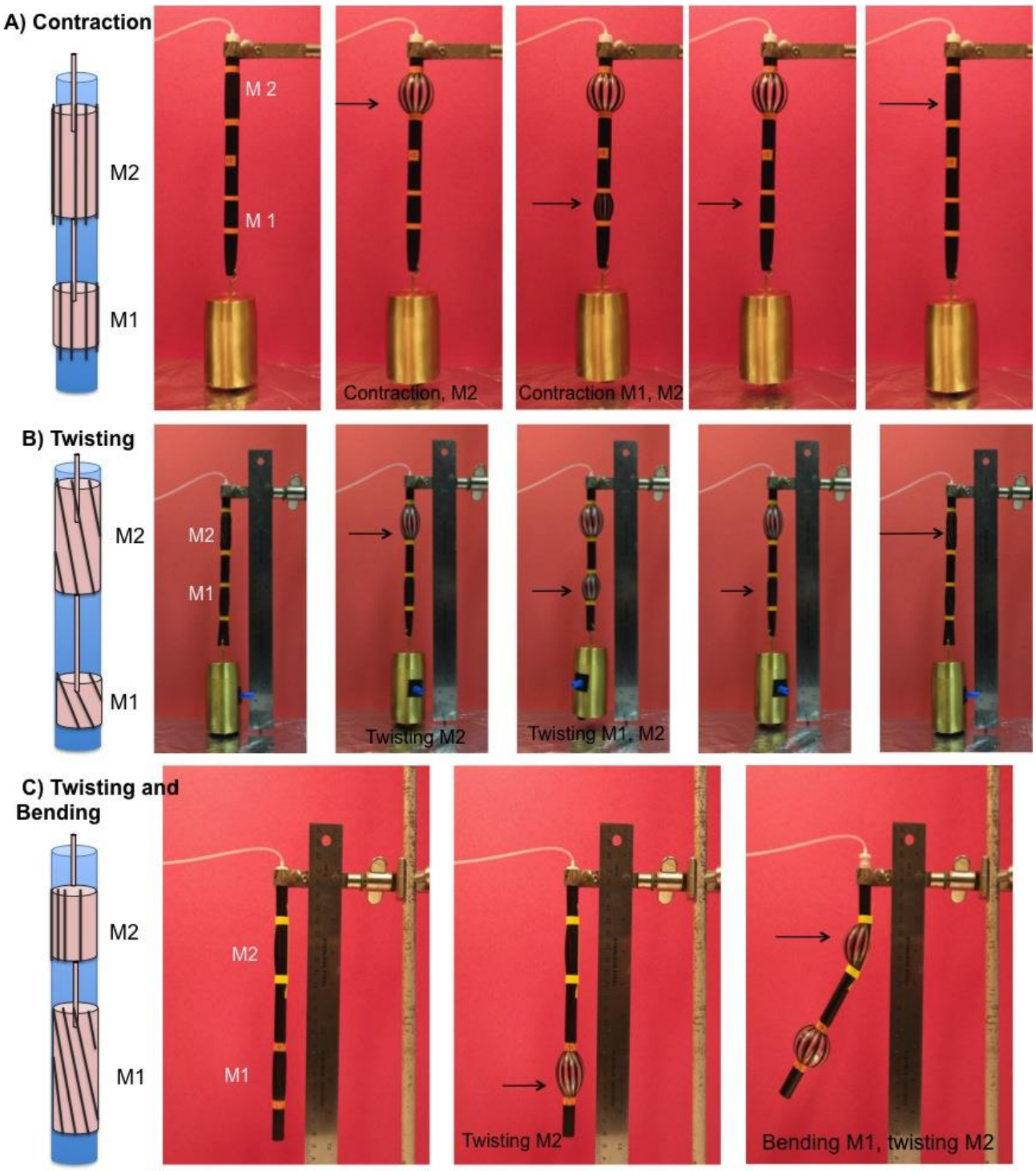

Figure S6: Sequential actuation of pneumatic actuators. A) Sequential contraction lifting a weight of 1 kg. B) Sequential rotation, while carrying a weight of 1 kg. C) Sequential rotation and bending.

Supplementary Videos

Video S1: Video of the robotic arm

Video S2: Video of the walker