Rolling Diaphragm Actuator

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Process of fabricating a diaphragm

• Silicone mixture is placed into a vacuum chamber and vacuumed as silicon is prone to air bubbles.

*Skipping this step may result in air bubbles that corrupt the seal of the diaphragm resulting in fluid leakage.
Process of fabricating a diaphragm

- The mixture is extracted from the chamber with a syringe and injected into a closed mold which is coated with a release agent prior to injecting.
- The mold is either left alone to cure or heated with a heat gun to speed up cure time.
Present

- Currently made of silicon rubber

Plans

- Latex rubber
- Reinforced with nylon/spandex or cheesecloth