

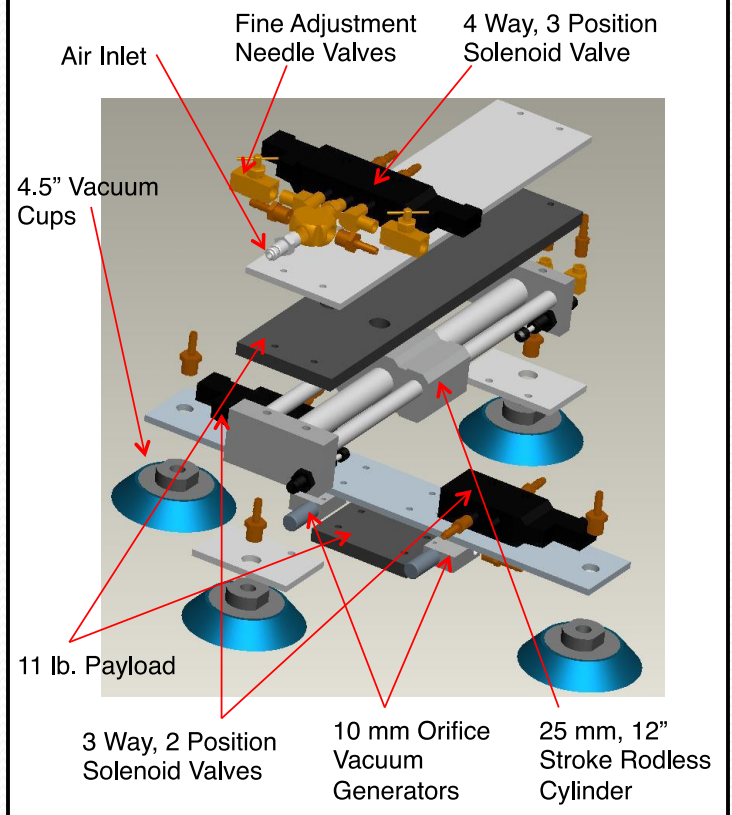
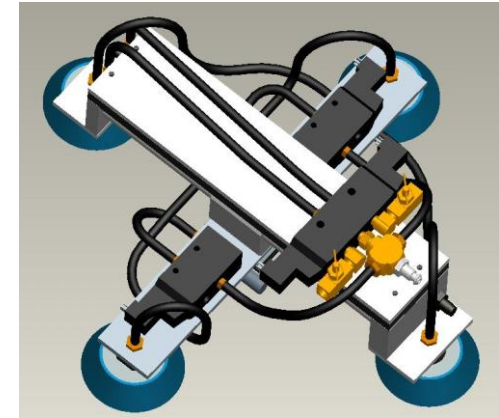
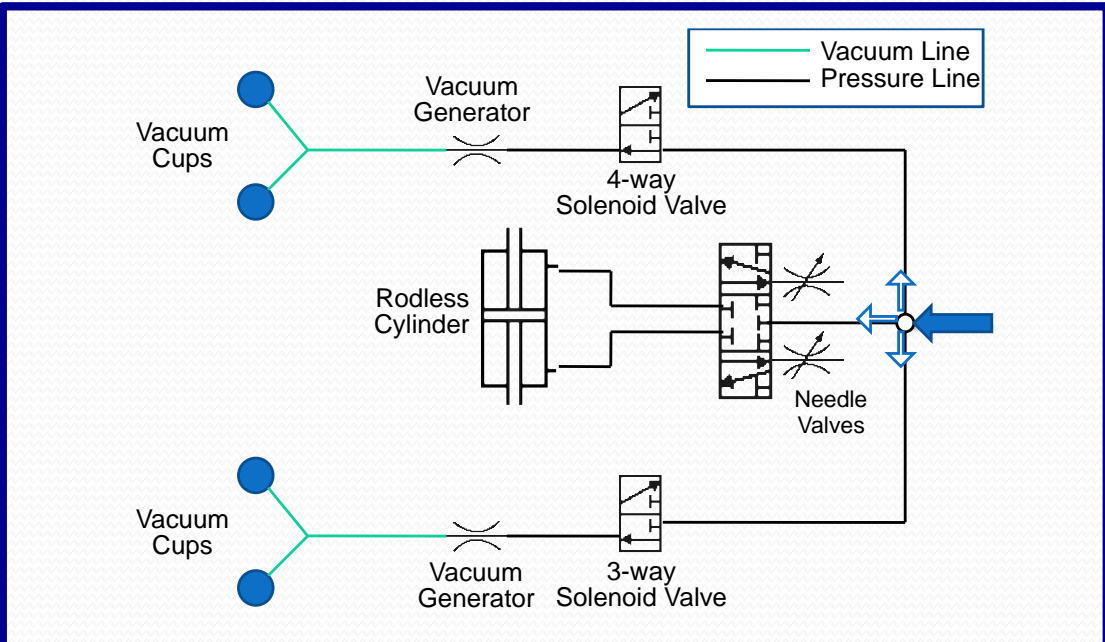


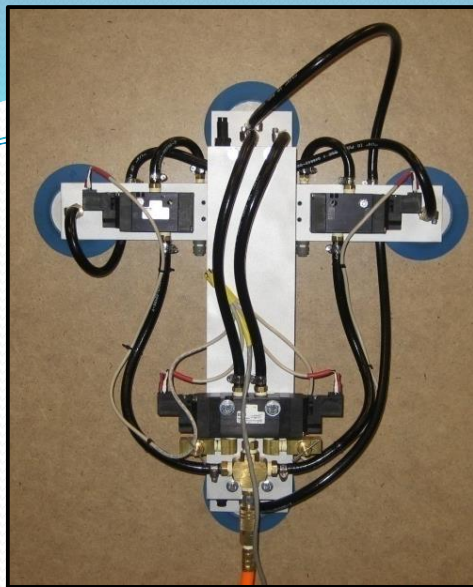
# Sliding-Piston Wall-Climbing Robot

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**Goal:** To design and prototype remote controlled device that can crawl up a vertical wall operating on electrical and pneumatic power while carrying a ten pound load.

- Requirements**
- Minimum climb rate of 4ft/min
  - Maintain linear trajectory
  - Operate at 120 volts
  - Operate below 100 psi





## How it Works

- Vacuum North and South Cups
  - Move arms up
- Vacuum East and West Cups
  - Release North and South Cups
  - Move body up
- Repeat steps until required height is achieved

## Performance Assessment

Design Parameter	Result
Speed	6.5 ft/min
Straight Trajectory	0.5 in. variance in 4.0 ft.
Load Capacity	40 lbs at 80 psi
Optimum Operating Pressure	80 psi
Minimum Operating Pressure	62 psi
Minimum Pressure before Failure	25 psi

