

# Virtual Engineering, Inc.

Engineering Your Competitive Edge...

## Dynamic Adjustable Monitor Arm Development

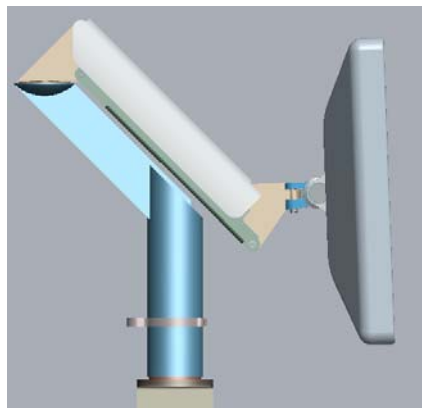
- **Objective:**
  - Define the counter-balance energy source and provide development engineering for a family of Monitor Arms
- **Constraints:**
  - Faithfully follow and replicate the Designer's styling cues
  - The consumer shall be able to grasp the monitor and vertically reposition it; then, the monitor should stay suspended in-place when released
  - Meet or exceed performance specifications for efforts and cycle life
  - Integrate an adjustment feature to provide for variable weight monitors

### Stages of Development

1. Designer's Concept



2. CAD Model



3. Initial Prototype



4. Tooled Test Sample



5. Initial Production Sample



6. Salable Product



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- **Process:**

- Collaborative development with customer
- Benchmarked several monitor arms
- Brainstormed options for the energy device and adjustment feature
- Selected a gas strut as the energy device, then derived performance specifications
- Integrated a screw, nut, and clevis as the monitor weight adjustment feature
- Refined component parts and pivot construction
- Assessed several material/process options for the dual monitor arm crossbar
- Defined travel stops and completed swing and finger pinch avoidance studies
- Evaluated initial prototypes for function and ease of use
- Assisted in resolving prototype test issues
- Optimized design based on FEA and test results
- Refined CAD models using Creo Parametric
- Reviewed customer drawings, created tolerance stack-ups, and specified GD&T

- **Results:**

- Robust product that is available in multiple desk mounting configurations
- First product success spawned a family of single and multiple monitor arm configurations
- Recommended Crossbar construction as extruded aluminum allowing the Designer more styling freedom

