

Choose Lowest Motor Torque  
From Appendix

Motor Geometry  
Hinge Geometry  
Friction Wheel Radius  
Coefficient of Friction

Airship Acceleration  
Gondola Mass  
Gondola Geometry  
Worst Case Specs  
Battery

Slip Analysis

Drive Force

Spring Torque

Spring Force

Solve Gondola Free Body  
Diagrams

Choose Motor  
With Next  
Highest Torque

Is Gondola  
Acceleration  $> 0$  in  
Worst Case

Yes

**OUTPUTS:**  
Required Motor Torque  
Achievable Gondola Acceleration

No