

Gravity compensation (GC) - Options

A constant but adjustable force 200-700N can be supplied by different means:

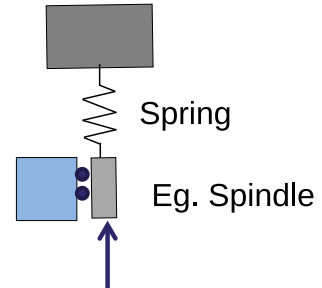
1) Pressurized bellow

- Stiffness $< 1e4$ N/m
- 70kg , 5 bar \rightarrow $d= 36$ mm
- Pressure to be adjusted ($\Delta P = 5$ mBar \rightarrow 0.7 N)
- RY CoG shift requires low frequent pressure control



2) Weak pretensioned spring on motorized carriage

- Stiffness $< 1e4$ N/m
- Pretension > 50 mm, $L_{spring} \sim 150$ mm
- If the adjustment accuracy is $50 \mu\text{m}$, the force error is 0.7N
- RY CoG shift requires low frequent position control



2 system options:

- A) 1 central GC to LS or Spindle
- B) 6 parallel to Lorentz actuator