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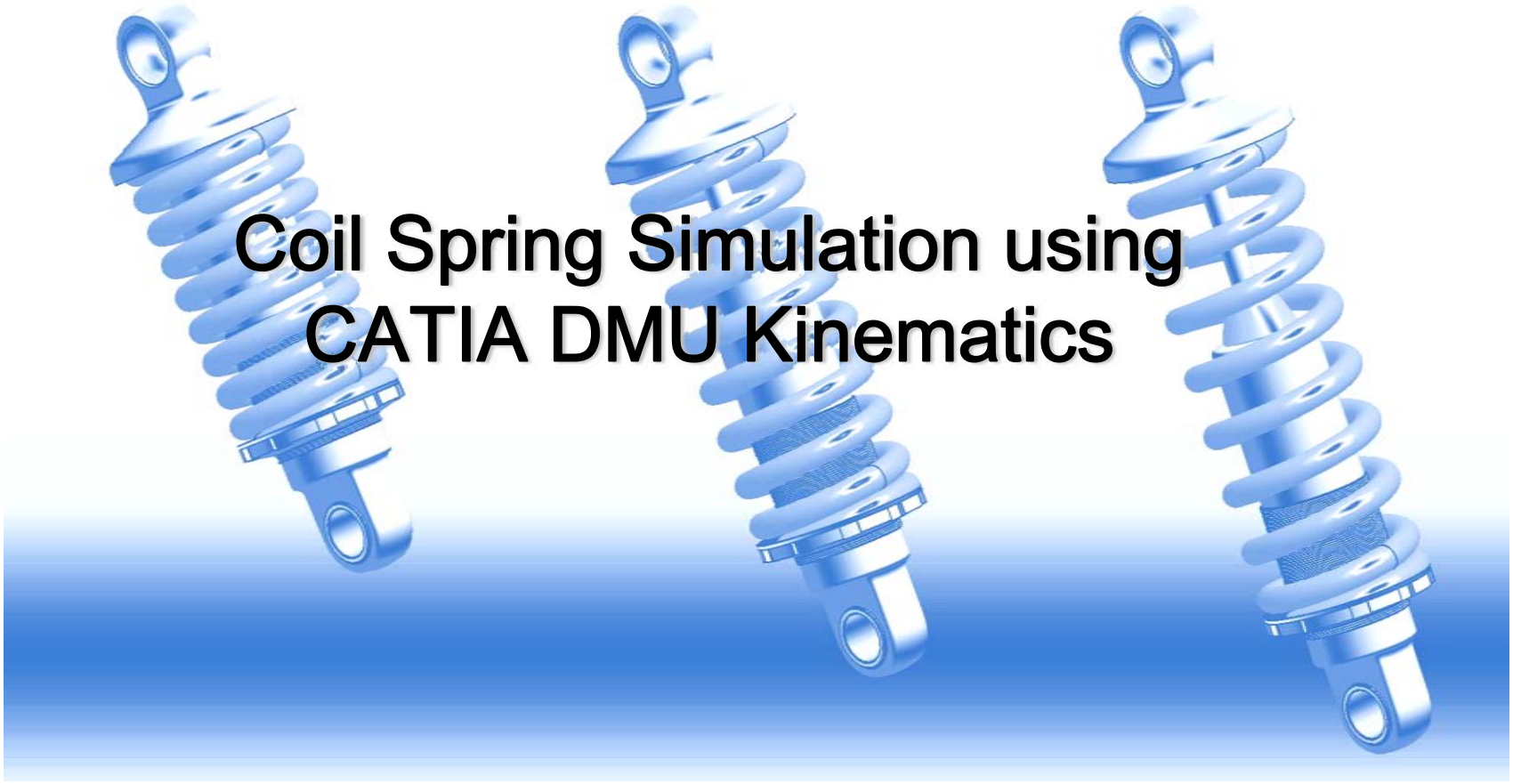

Coil Spring Simulation using CATIA DMU Kinematics

Prepared by: Bill Harbin –Technical Director 26-Aug-09

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- The following licenses are required to create the Spring Simulation:
  - Generative Shape Design
  - Mechanical Part Design
  - Digital Mockup Kinematics

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- Before we begin, please understand that this is a “work-around”.
- Many times CATIA doesn't work the way we would like it to.
- Therefore, we must accept “work-arounds” to get the job done without using additional software.
- As always, if anyone has a different, more expedient process, please share your views on our website forum.

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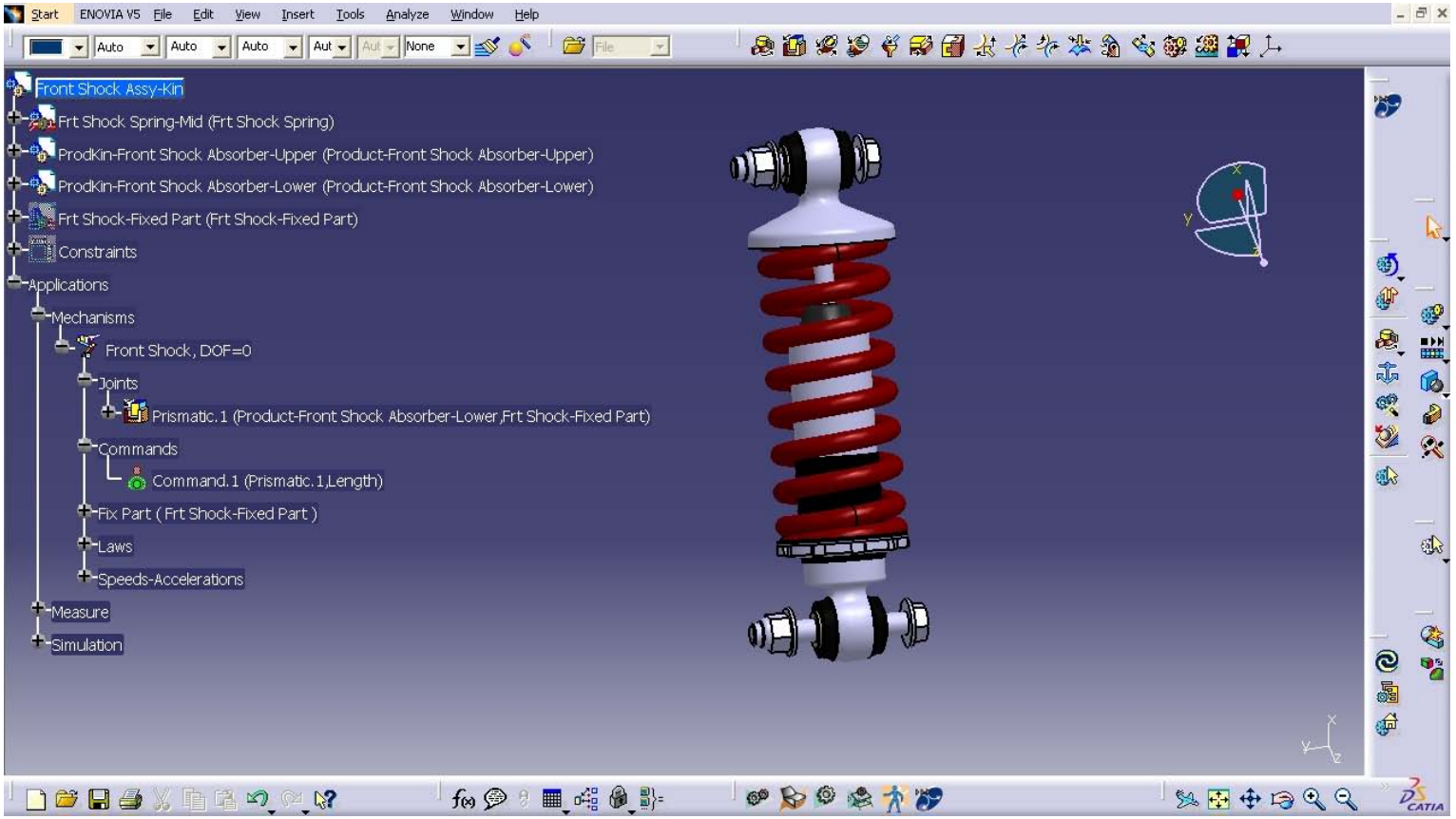
- Step 1: Create the Parts, Assembly, and Kinematic.



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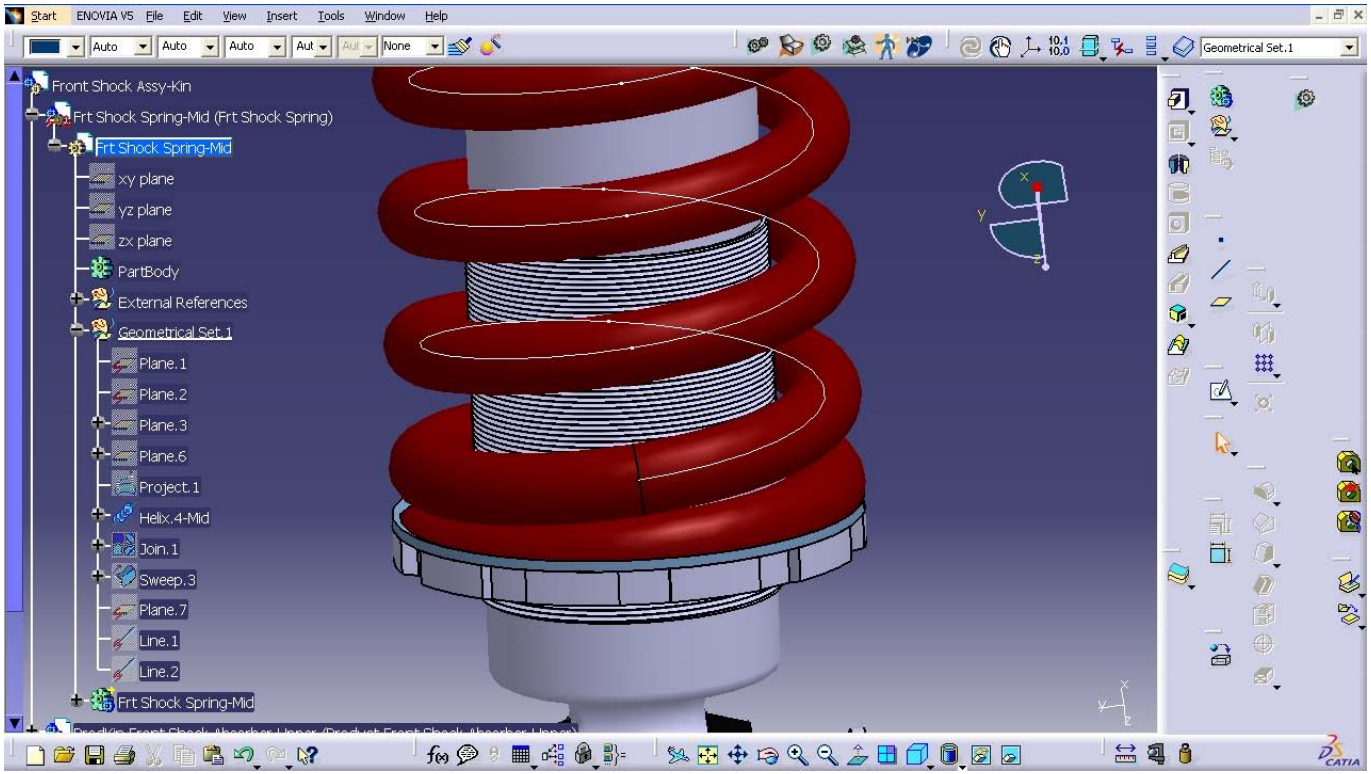
- Since we used a closed, ground end coil spring, we broke the spring to compress/extend the middle helix only.



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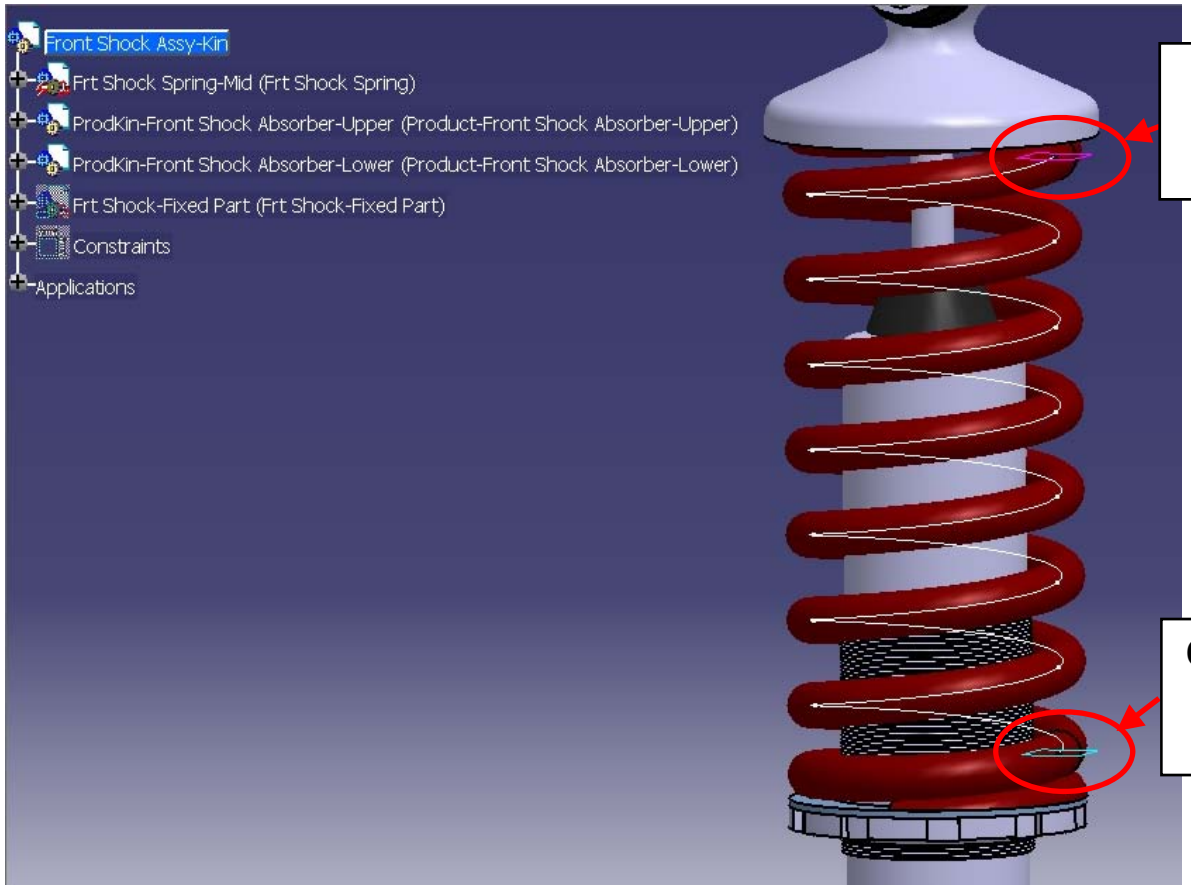
- Step 2: Create planes through upper & lower points of the spring helix.



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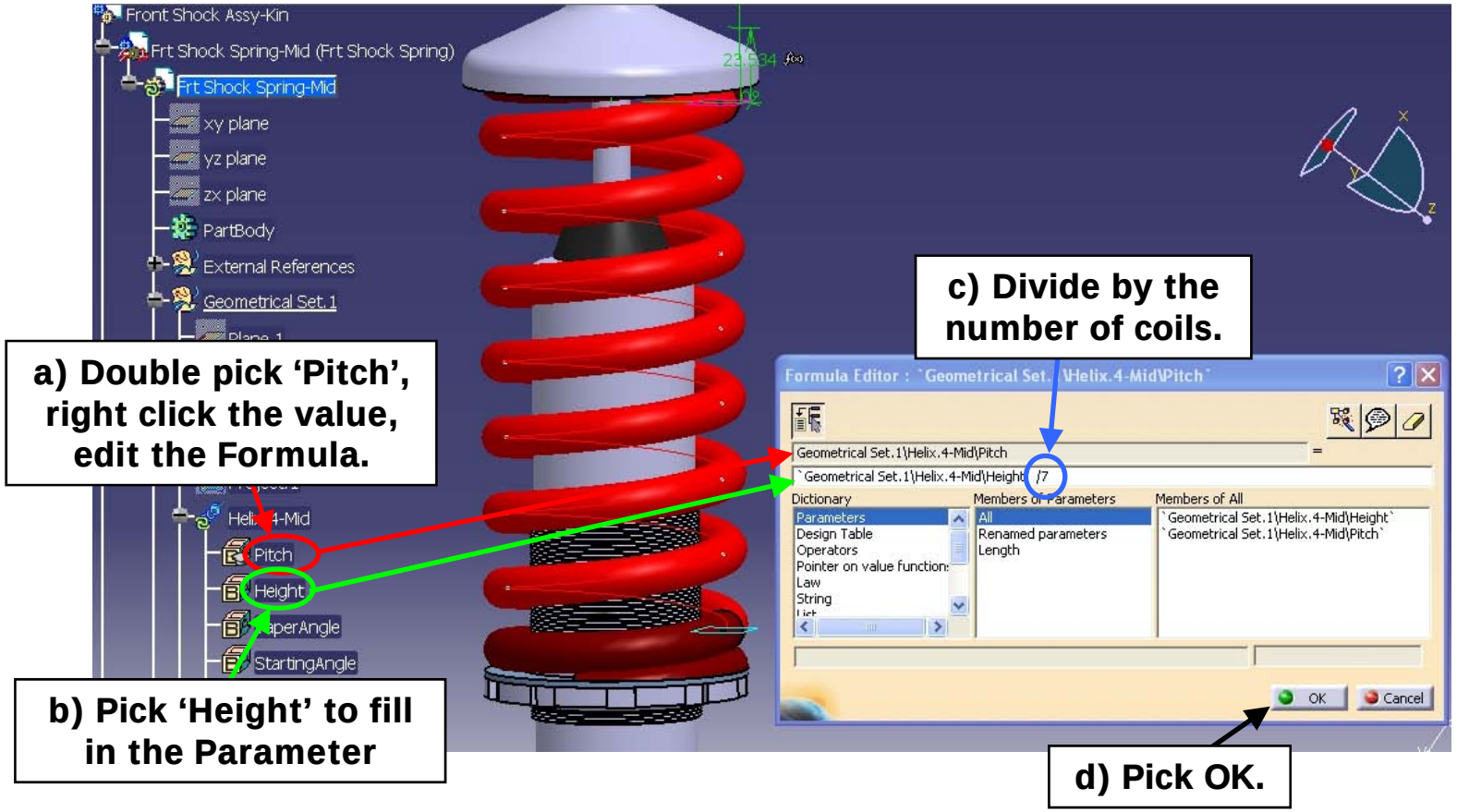
- Step 3: Apply Pitch formula to the helix.



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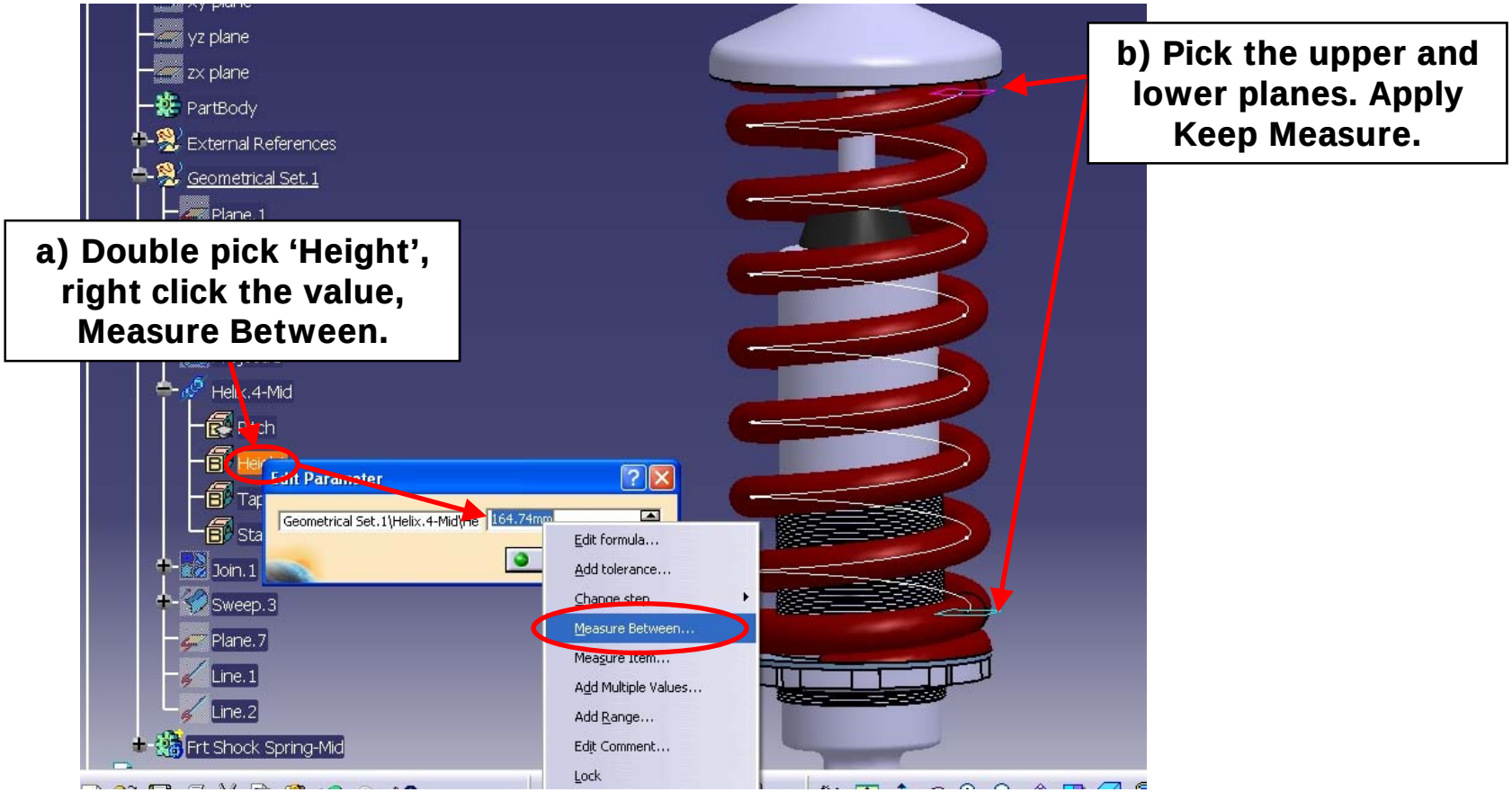
- Step 4: Apply Height formula to the helix.



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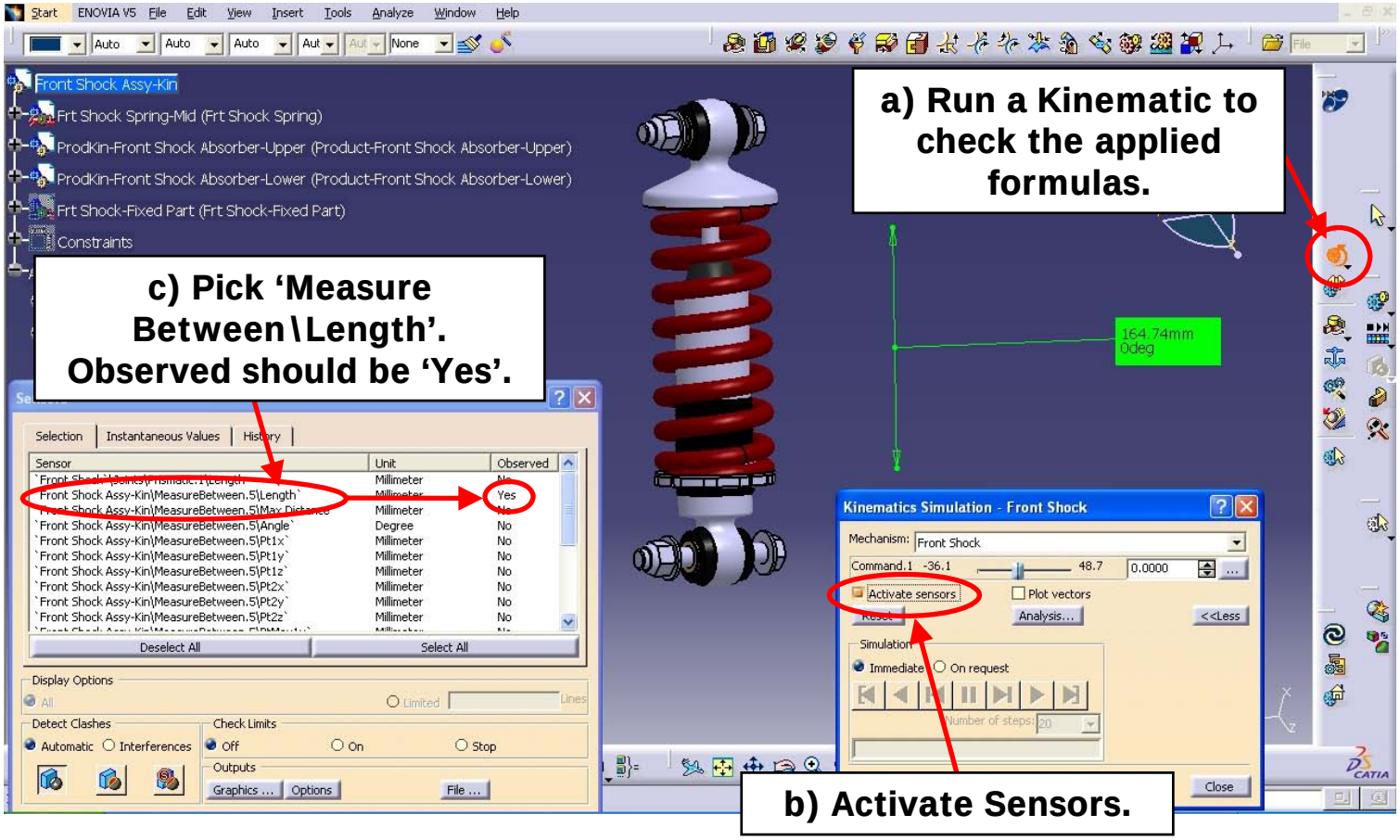
- Step 5: Run a Kinematic test.



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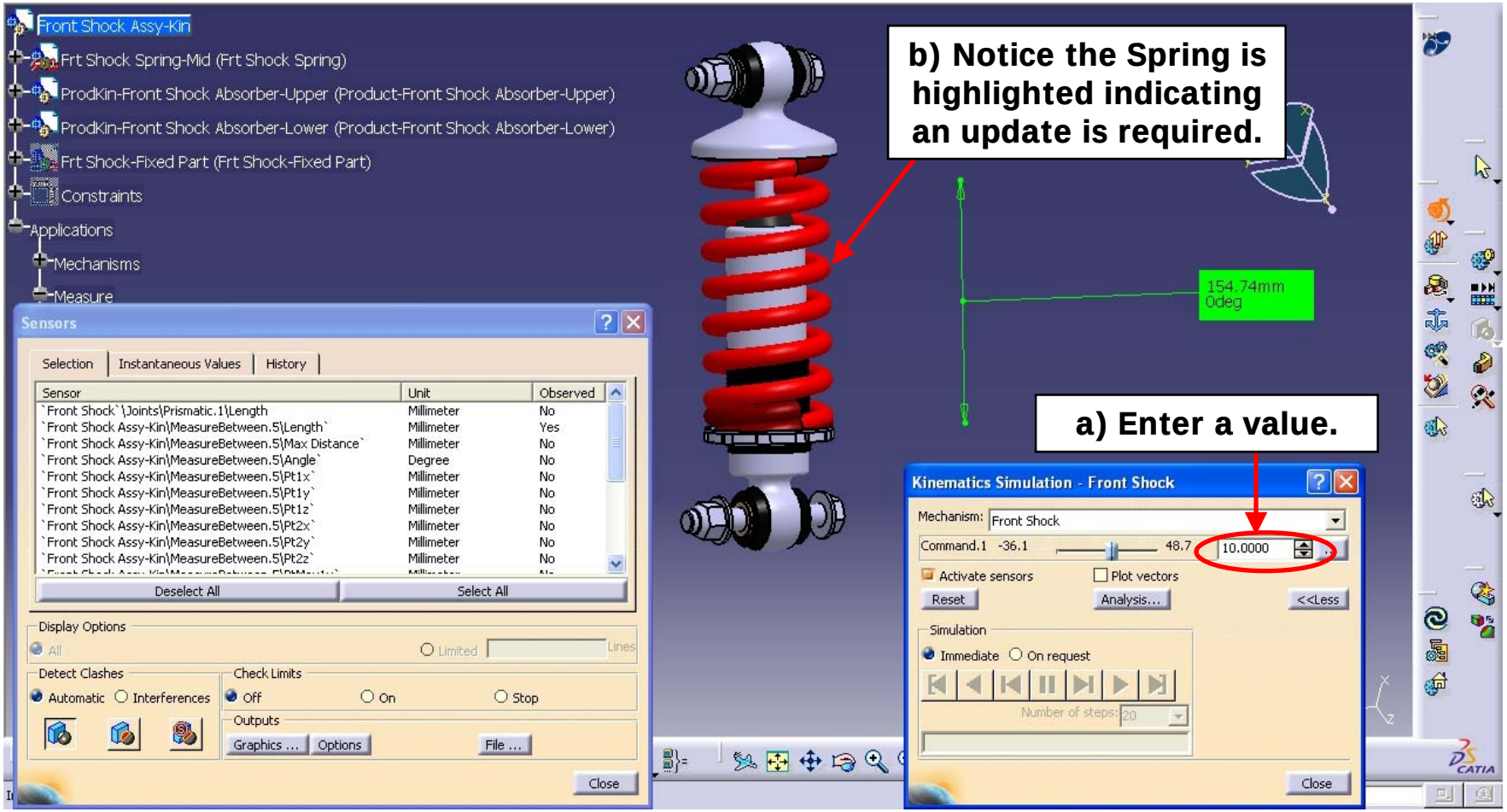
- Step 5 (cont'd): Run a Kinematic test.



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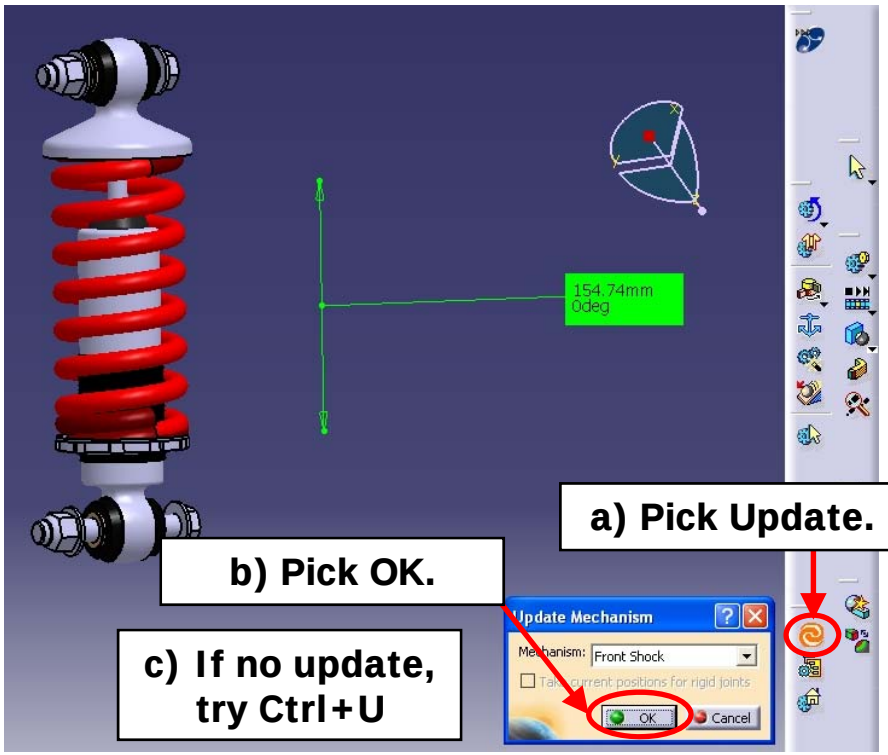
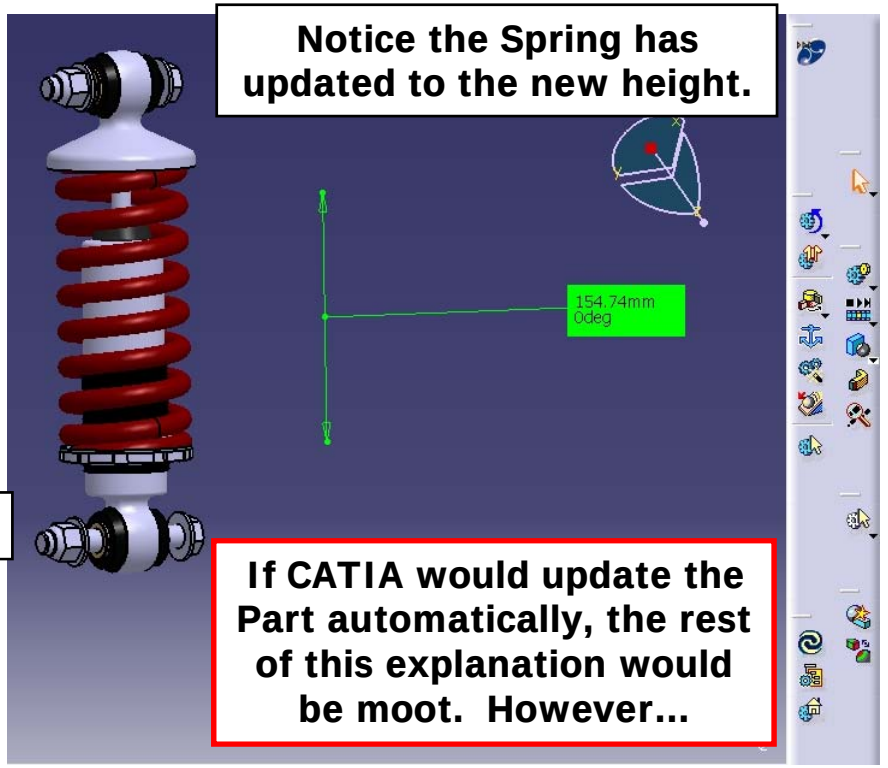
- Step 5 (cont'd): Run a Kinematic test.





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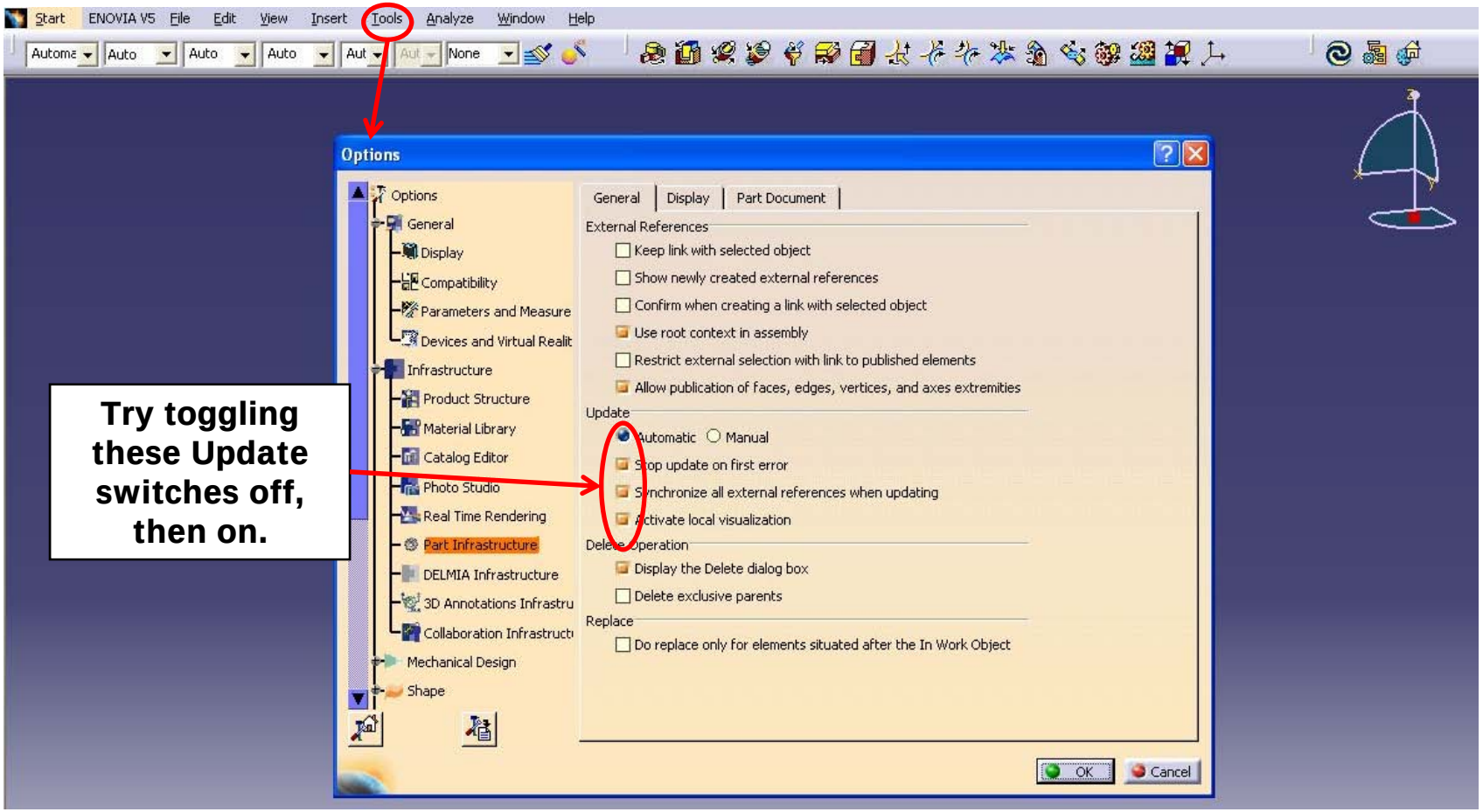
- Step 5 (cont'd): If Ctrl+U doesn't work…



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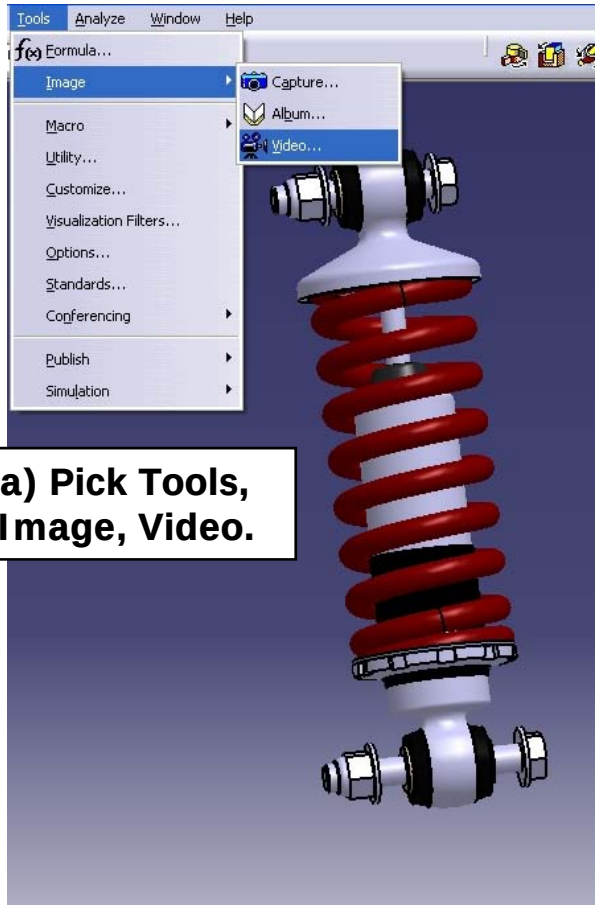
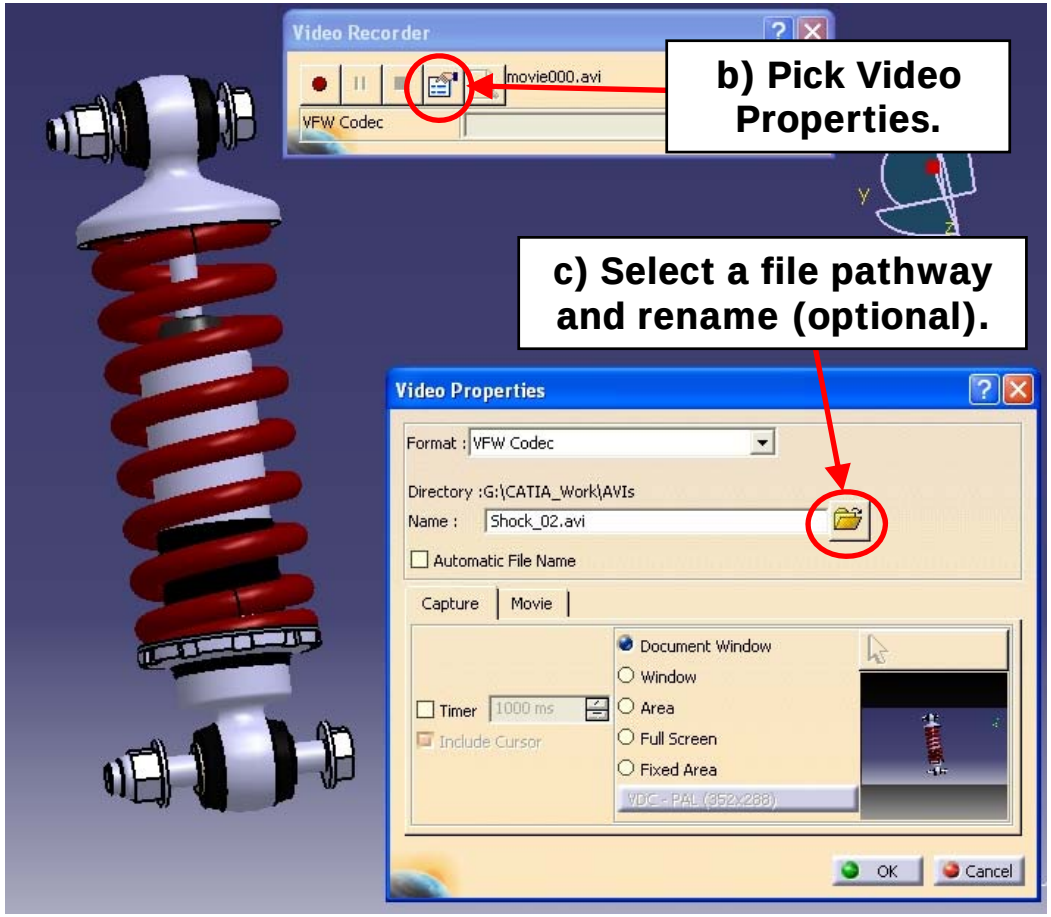
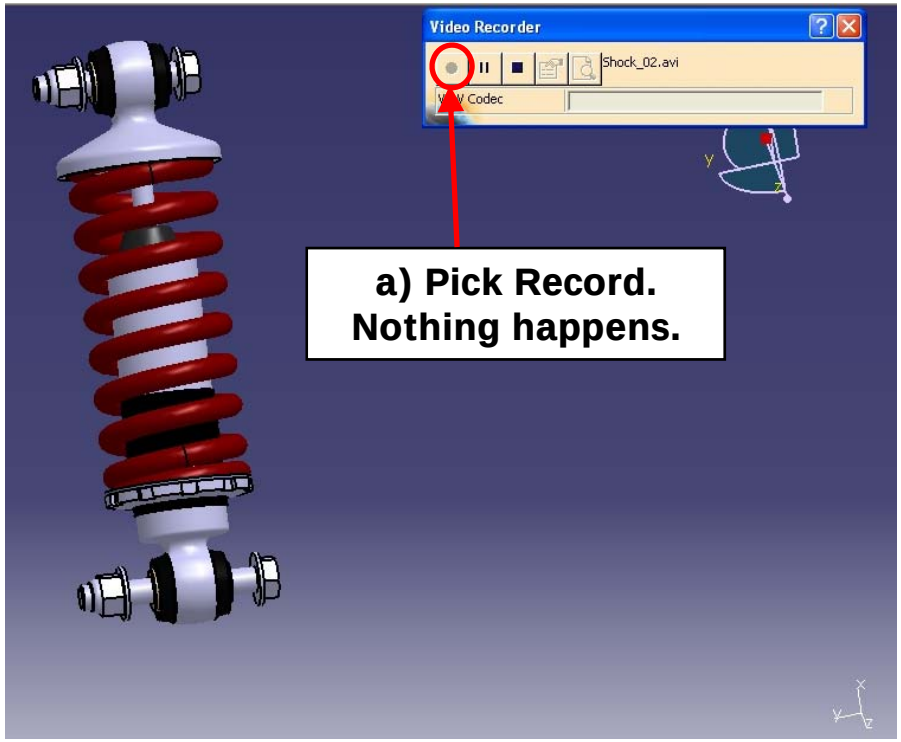
- Step 6: Record a ‘Video Simulation’.

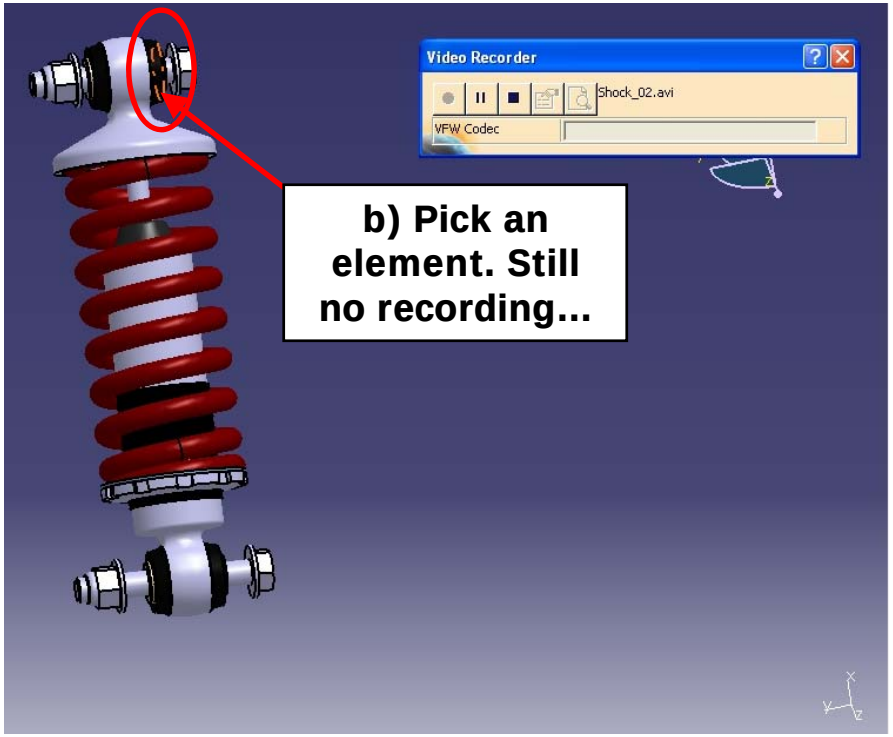




BND TechSource

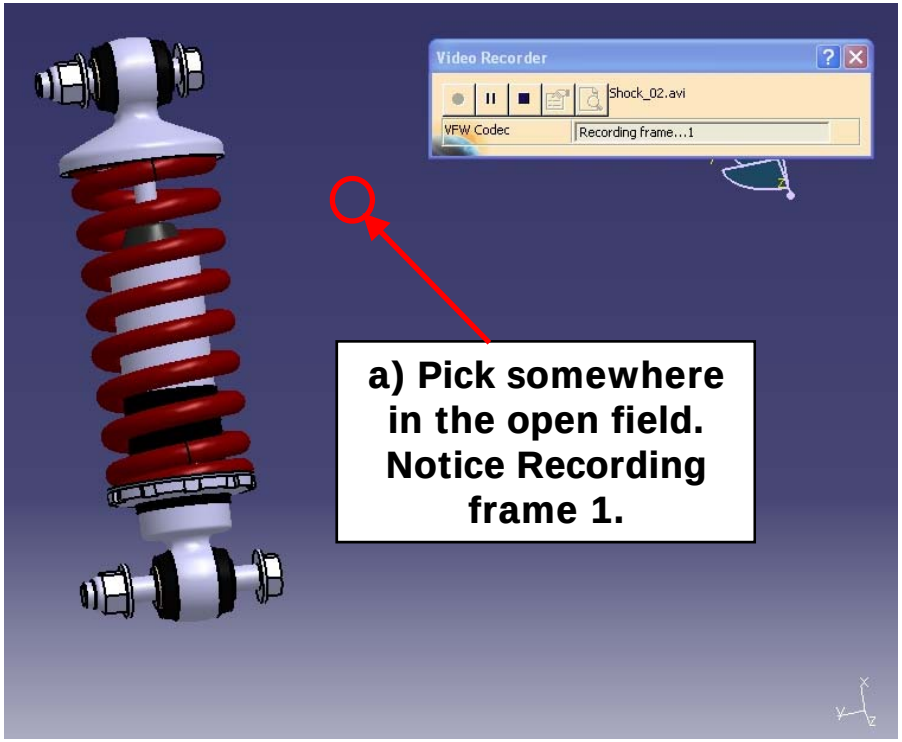
- Step 6 (cont'd): Record a 'Video Simulation'.

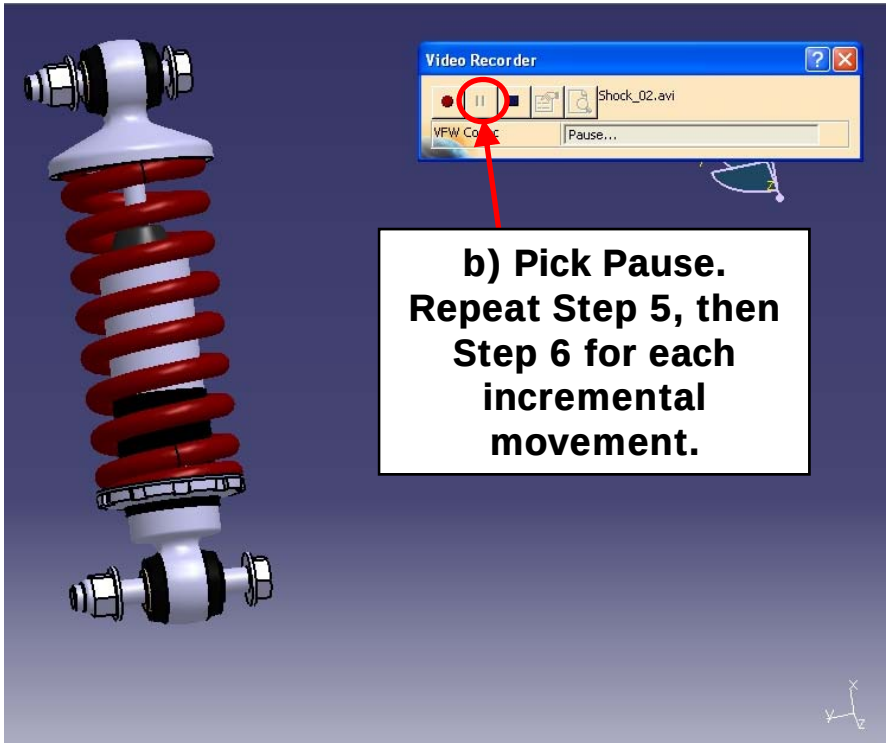




BND TechSource

- Step 6 (cont'd): Record a 'Video Simulation'.





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- Conclusion: We hope this “work-around” proves useful for those who need to show a Spring Simulation.
- This Simulation was performed on CATIA V5 R17 SP8.
- Maybe in a subsequent release Dassault will make it possible for updates on Parts to occur automatically.
- As always, if anyone has a different, more expedient process, please share your views on our website forum.