

# SolidWorks® 2009 Performance Comparison:

## Comparison of SolidWorks 2009 versus SolidWorks 2008, Pro/ENGINEER® Wildfire® 4.0, and Autodesk® Inventor® 2009

### Executive Summary

SolidWorks 2009 has established a new level of performance when working with large assemblies and drawings by significantly decreasing the time required to perform common design and detailing functions. In the 4 test cases detailed below, SolidWorks 2009 was, on average, 4 times faster than SolidWorks 2008 in completing a typical design and detailing CAD session. In a separate head-to-head comparison test with Pro/ENGINEER Wildfire 4.0 and Autodesk Inventor 2009, SolidWorks was 2 times faster at completing a typical design and detailing session.

These gains in large assembly and drawing performance are directly attributable to the performance focus in developing SolidWorks 2009. SolidWorks made designing and detailing large assemblies faster, without the need for users to employ any specialized techniques, or to prepare the models and drawings specifically for the purpose. Simply stated, SolidWorks 2009 is faster.

### Performance Comparison: SolidWorks 2009 vs. SolidWorks 2008

Following is the summary of 4 case studies comparing the performance of SolidWorks 2009 vs. SolidWorks 2008. More details of these tests, including test preparation, hardware, design workflow, and detailed performance charts are included in the Appendix.

#### Case 1:

- Assembly Description: Factory floor of machines
- Total Number of Components: 134,144
- Unique Parts: 1,536
- Unique Sub Assemblies: 468
- **Results: SolidWorks 2009 5 times faster than SolidWorks 2008**

#### Case 2:

- Assembly Description: Assembly line
- Total Number of Components: 11,723
- Unique Parts: 1,920
- Unique Sub Assemblies: 320
- **Results: SolidWorks 2009 3.5 times faster than SolidWorks 2008**

#### Case 3:

- Assembly Description: Packaging Machine
- Total Number of Components: 66,742
- Unique Parts: 730
- Unique Sub Assemblies: 164
- **Results: SolidWorks 2009 5.5 times faster than SolidWorks 2008**

#### Case 4:

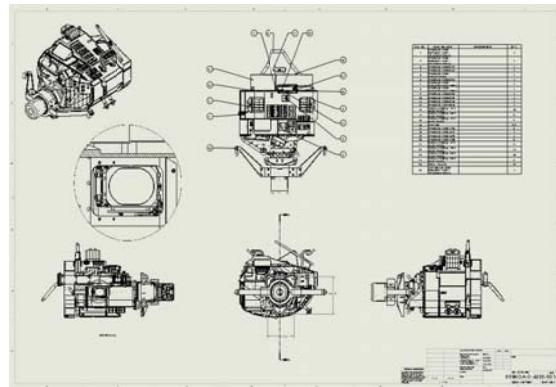
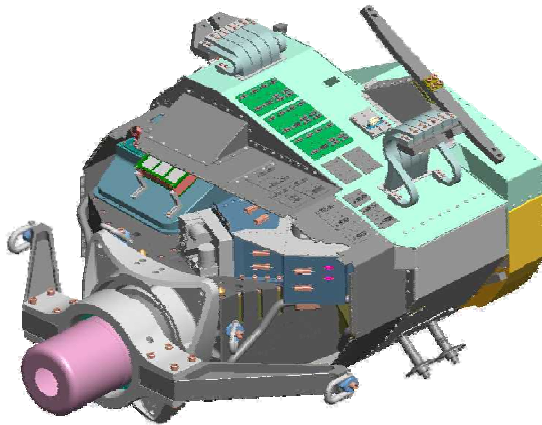
- Assembly Description: Combination printer/copier/fax machine
- Total Number of Components: 5,488
- Unique Parts: 2,076
- Unique Sub Assemblies: 542
- **Results: SolidWorks 2009 2 times faster than SolidWorks 2008**

## Performance Comparison:

### SolidWorks 2009 vs. Pro/ENGINEER Wildfire 4.0 and Autodesk Inventor 2009

Following is the summary comparing the performance of SolidWorks 2009 vs. Pro/ENGINEER Wildfire 4.0 and Autodesk Inventor 2009. More details of these tests, including test preparation, hardware, design workflow, and detailed performance charts are included in the Appendix.

- Assembly Description: Satellite
- Total Number of Components: 4,815
- Unique Parts: 675
- Unique Sub Assemblies: 163
- **Results:**
  - **SolidWorks 2009 is 2 times faster than Pro/ENGINEER Wildfire 4.0**
  - **SolidWorks 2009 is 2 times faster than Autodesk Inventor 2009**



**Satellite assembly used in comparison test vs. Pro/ENGINEER and Autodesk Inventor**

## Summary

As proven in these tests, SolidWorks 2009 large assembly and drawing performance far exceeds that in SolidWorks 2008 and cannot be matched by industry competitors Pro/ENGINEER or Autodesk Inventor. By accelerating the overall design process versus only speeding up specific design functions, SolidWorks 2009 has set a new standard in CAD performance. In addition, users gain this performance without having to learn any special performance enhancing techniques and without using any performance enhancing functionality.

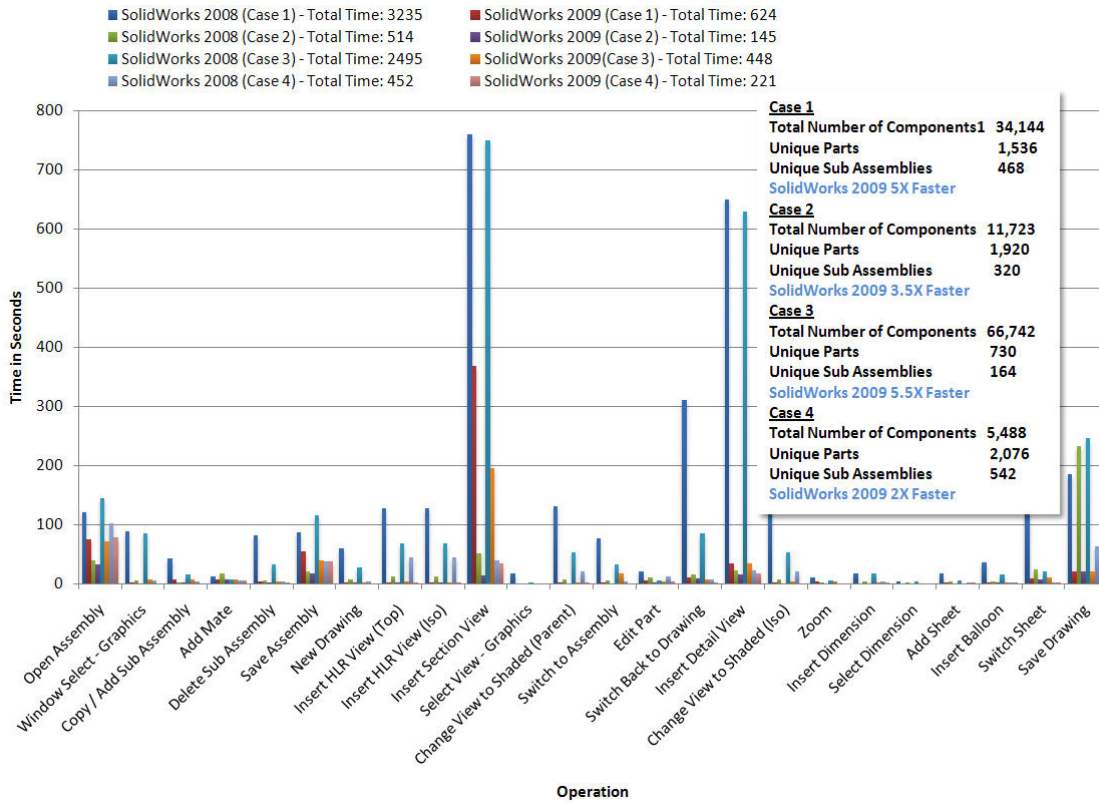
In addition to the performance gains witnessed in these tests, SolidWorks 2009 also introduces new functionality to help speed up the design and detailing of large assemblies. Although not used in this testing, SolidWorks' new SpeedPak functionality allows users to drastically reduce the memory requirements for commonly used assemblies without sacrificing graphic details. By combining raw speed with SpeedPak and other performance enhancing capabilities such as Lightweight Assemblies and Drawings, Quick View, and Selective Open of Assemblies, SolidWorks now provides all the tools needed to handle customers' largest assemblies.

## Appendix – Additional information on test procedures and results

### Comaprison Test: SolidWorks 2009 vs. SolidWorks 2008

- Test Preparation:
  - Actual customer supplied data was used in these 4 comparison tests. For the SolidWorks 2008 and 2009 tests, assemblies were opened and then saved in their respective releases. No other special performance enhancing techniques were employed in the tests. For example, testers did not make use of performance enhancing functionality such as Lightweight Assemblies and Drawings, SpeedPak, Selective Open, or Configurations. An “out-of-the-box”, heads-up comparison was chosen as the test method since it closely simulates the way most CAD systems are used by non-experts.
- Machine: Dell 690
  - CPU: Intel Xeon 5160 @ 3.00GHz
  - RAM: 3.00GB RAM
  - Graphics Card: NVIDIA Quadro FX 4500
  - Hard Drive Size: 271 GB
  - OS: Windows XP Professional SP2
- Design Workflow Tested:
  1. Open Assembly
  2. Window Select graphics
  3. Copy/Add Sub Assy.
  4. Delete Subassembly
  5. Save Assembly
  6. New Drawing
  7. Insert HLR View (Top)
  8. Insert HLR View (ISO)
  9. Insert Section View
  10. Select View
  11. Change View Shaded
  12. Switch to Assembly
  13. Edit Part
  14. Switch Back to Drawing
  15. Insert Detail View
  16. Select View
  17. Change View to Shaded
  18. Zoom
  19. Insert Dimension
  20. Select Dimension
  21. Add Sheet
  22. Insert balloon
  23. Switch Sheet
  24. Save Drawing

- Test Results (Chart):



### SolidWorks 2009 vs. Pro/ENGINEER Wildfire 4.0 and Autodesk Inventor 2009:

- Test Preparation:
  - To ensure that all the CAD systems tested started with an equivalent baseline, all test assemblies started as Parasolid assemblies. The Parasolid assemblies were imported into each system and saved. This method ensured that no special performance enhancing functionality was built into the baseline assemblies. For example, SolidWorks testers did not make use of performance enhancing functionality such as Lightweight Assemblies and Drawings, SpeedPak, Selective Open, or Configurations. An “out-of-the-box”, heads-up comparison was chosen as the test method since it closely simulates the way most CAD systems are used by non-experts.
- Hardware Configuration:
  - Machine: Dell 690
  - CPU: Intel Xeon 5160 @ 3.00GHz
  - RAM: 3.00GB RAM
  - Graphics Card: NVIDIA Quadro FX 4500
  - Hard Drive Size: 271 GB
  - OS: Windows XP Professional SP2
- Design Workflow Tested:
  1. Open Assembly
  2. Create a New Drawing
  3. Change Sheet Size
  4. Create 4 Standard Views

5. Create Section View
6. Create Detail View
7. Change Drawing Scale
8. Change Detail View Scale
9. Insert Bill of Material
10. Auto Balloon
11. Save Drawing
12. Open Sub Assembly
13. Insert Component
14. Create Mates
15. Assemble Cover
16. Save Sub Assembly
17. Drag and Drop Sub Assembly
18. Create Mates
19. Switch to Main Assembly
20. Assemble Sub Assembly
21. Save Assembly
22. Switch to Drawing
23. Add Dimensions
24. Switch to Sub Assembly
25. Switch to Edit Part Mode
26. Insert Sketch
27. Create Circle
28. Place and Set Dimension
29. Edit Cover and Add Hole
30. Exit Edit part Mode
31. Save Sub Assembly
32. Switch to Main Assembly
33. Switch to Drawing
34. Save Drawing

• Test Results (Chart):

