AUTODESK FUSION 360

2026

BLOG

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Learning Tutorials

A Note to Our Readers

2026

This blog has been created using a combination of artificial intelligence tools and human review to help deliver clear, structured, and up-to-date learning content.

All technical topics, examples, and workflows are curated to support learning and skill development. While every effort is made to ensure accuracy and clarity, readers are encouraged to validate concepts through hands-on practice and documentation. Our goal is to make learning more accessible, efficient, and practical for everyone.

Disclaimer:

— CADIN360 Team

HOW TO KEEP SOLIDS CLEAN IN FUSION 360

• LEARN • • APPLY • • GROW •

Introduction

When working with Solid bodies in Fusion 360, keeping your models clean and well-organized is essential for efficient design workflows. A tidy model not only improves performance but also makes modifications and troubleshooting much easier. Whether you're creating complex assemblies or simple parts, understanding how to keep solids clean in Fusion 360 can save countless hours. This guide provides a comprehensive, step-by-step approach to manage, clean, and maintain your solids effectively, ensuring your Fusion 360 projects remain precise and professional.

Understanding the Importance of Keeping Solids Clean in Fusion 360

Before diving into the steps, it's crucial to grasp why maintaining clean solids is vital. Dirty or poorly managed models can lead to:

- Difficulties in editing or modifying parts
- Errors during simulation or manufacturing
- Increased file size and slower performance
- Challenges in collaboration and version control

Keeping solids clean involves organizing geometry, removing unnecessary features, and ensuring your models are optimized for downstream processes. Now, let's explore the best practices and practical tips to achieve this.

How to Keep Solids Clean in Fusion 360: Step-by-Step Guide

1. Organize Your Browser and Components

A well-structured browser lays the foundation for a clean solid model.

- **Rename components and bodies promptly:** Use descriptive names like “Main Body,” “Support Plate,” or “Cover.”
- **Group related bodies:** Use components and folders to categorize parts logically.
- **Suppress or hide unnecessary components:** Focus on working with relevant parts to reduce clutter.

2. Use Standardized Naming Conventions and Layers

Implement consistent naming conventions for sketches, bodies, and features to streamline navigation and editing.

- Use prefixes or suffixes to denote feature types, e.g., “SKETCH*,” “BODY*,” “CUT_.”
- Create custom layers or groups if working with complex assemblies, making it easy to toggle visibility.

3. Remove Unnecessary or Redundant Geometry

Unwanted geometry can impact performance and clarity.

- **Identify and delete orphaned or unused bodies:** Right-click in the browser and delete bodies not needed.
- **Eliminate duplicate or overlapping features:** Use inspection tools like “Intersect” or “Combine” to resolve overlaps.
- **Clean up sketches:** Delete redundant sketch entities to prevent confusion.

4. Use the ‘Modify’ and ‘Cleanup’ Tools Effectively

Fusion 360 offers specific tools to tidy up models.

- **Combine Bodies:** Use the “Combine” feature with “Cut” or “Join” operations to merge or subtract bodies cleanly.
- **Stitch surfaces:** For imported or complex models, use “Stitch” to create unified solids.

- **Clean-up tool:** Use “Update Derivatives” and other cleanup options to fix broken or faulty geometry.

5. Fix and Repair Geometry Issues

Geometry issues are common sources of unclean models.

- **Inspect for cracks, gaps, or overlaps:** Use the “Section Analysis” tool.
- **Utilize the ‘Repair’ tools:**
- Use “Rebuild” or “Check Geometry” to identify problems.
- Use “Patch” or “Stitch” to close gaps or repair surfaces.

6. Control the Use of Features and History

Design features can sometimes clutter the model.

- **Suppress unnecessary features:** Right-click and select “Suppress” to deactivate features temporarily.
- **Convert complex features to static bodies:** Use “Merge” to simplify the history tree.
- **Simplify feature chains:** Combine multiple features when possible for cleaner history.

7. Simplify and Optimize Solid Models

Complex models may contain excess data.

- **Reduce complexity:** Use “Reduce Mesh” or decimate imported geometry.
- **Remove small or unnecessary details:** Use “Fillet” or “Chamfer” selectively.
- **Decouple linked components:** Ensure that external references are minimized to prevent unintended dependencies.

8. Use the ‘Select Similar’ and ‘Filter’ Features for Bulk Management

Efficiently manage multiple bodies or features.

- **Select similar:** Quickly highlight and edit multiple bodies of similar nature.
- **Filter selection:** Use selection filters for precision editing.

9. Managing Imported Files and External Geometry

Imported models can introduce chaos.

- **Import carefully:** Convert imported models into new bodies rather than overbuilding.
- **Clean imported geometry:** Use the “Mesh to BRep” process to convert meshes into clean BRep bodies.
- **Optimize imported data:** Remove unnecessary faces or simplify complex meshes prior to import.

10. Regularly Save and Version Your Work

Maintaining clean models is a continuous process.

- Save incremental versions to revert if needed.
- Use comments and labels to track modifications.
- Archive non-needed data or delete obsolete versions.

Practical Examples of Keeping Solids Clean in Real-World Projects

- **Example 1:** A mechanical bracket assembly where you remove redundant fillets and unused sketches before moving to manufacturing.

- **Example 2:** An electronics enclosure where you stitch imported STL files into solid bodies and eliminate unnecessary surface patches.
- **Example 3:** An iterative prototype where suppressing previous features reduces load times and simplifies view navigation.

Common Mistakes When Keeping Solids Clean

- Ignoring small geometry errors, leading to failures later.
- Over-modeling features and adding unnecessary complexity.
- Forgetting to delete or hide unused bodies and sketches.
- Not regularly saving versions, resulting in data loss or difficulty reverting changes.
- Failing to repair imported or scanned models before further editing.

Pro Tips and Best Practices for Maintaining Clean Solids

- Develop a consistent workflow for naming and organizing parts.
- Regularly run the “Inspect” tool to identify geometry issues.
- Use “Silent” or “Batch” operations for cleaning multiple bodies at once.
- Keep your Fusion 360 software updated to benefit from the latest cleanup tools.
- Practice modular design — build parts that are easy to isolate and manage.

Comparison: Manual Cleaning vs. Automated Cleanup Tools

Aspect	Manual Cleaning	Automated Tools
Control	High — tailor every step	Moderate — depends on tool capabilities
Speed	Slower for complex models	Faster, especially with batch processing
Precision	Very high, especially with user judgment	Can sometimes miss specific issues

Use case	Custom, detailed models	Large, complex assemblies needing quick cleanup

Conclusion

Keeping solids clean in Fusion 360 is a crucial aspect of professional CAD modeling. By organizing your models, cleaning up geometries, and utilizing Fusion 360’s powerful tools, you can enhance your workflow, reduce errors, and produce high-quality designs efficiently. Remember, maintaining a clean model isn’t a one-time task but an ongoing process as your projects evolve. Implement these best practices consistently to maximize your productivity and ensure your designs are always ready for manufacturing, simulation, or collaboration.

FAQ

1. How do I delete unnecessary bodies in Fusion 360?

Ans : Select the bodies in the browser or canvas, right-click, and choose "Delete" to remove them.

2. What is the best way to repair geometry issues in Fusion 360?

Ans : Use the "Repair" tools like "Stitch" or "Check Geometry" to identify and fix cracks, gaps, or overlaps.

3. How can I simplify complex imported models?

Ans : Convert 3D meshes to BRep bodies using "Mesh to BRep" and then remove small or unnecessary details.

4. How do I organize my parts efficiently in Fusion 360?

Ans : Rename components, use folders and groups, and suppress or hide irrelevant components.

5. What are common mistakes that lead to unclean solids in Fusion 360?

Ans : Over-modeling, neglecting to delete redundant features, ignoring geometry errors, and failing to organize components properly.

6. Is there a way to bulk select similar bodies for cleanup?

Ans : Yes, use the "Select Similar" feature to highlight and manage multiple bodies of the same type or style.

7. How often should I clean up my models in Fusion 360?

Ans : Regularly, especially after multiple edits or imports, to maintain optimal performance and accuracy.

About CADIN360

2026

CADIN360 Learning Tutorials is an educational platform focused on practical CAD, CAM, and CAE learning.

The platform provides clear, industry-oriented tutorials, design workflows, and real-world insights using tools such as Autodesk Fusion 360.

CADIN360 is created to help learners, students, and professionals build strong fundamentals and practical design skills in modern CAD workflows.

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Learning Tutorials

Practice What You've Learned

2026

You've just completed this blog and learned important concepts in Autodesk Fusion 360.

To help you practice and apply what you've learned, the next pages include a sample from our Fusion 360 book .This sample contains practice exercises and real-world practice tasks designed to strengthen your skills.

What you'll find next:

- ✓ Practice exercises from the book
- ✓ A brief overview of the complete book
- ✓ Options to explore or request the full sample

Your hands-on Fusion 360 practice starts next.

AUTODESK

FUSION 360 ALL IN ONE WORKBOOK

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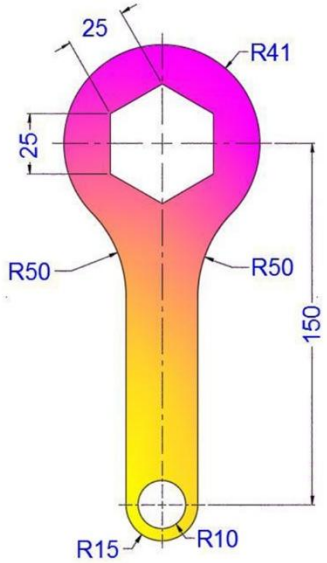
- Sketching
- 3D Modeling
- Assembly



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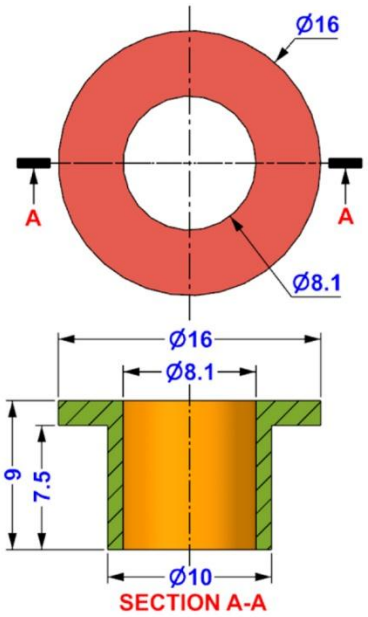
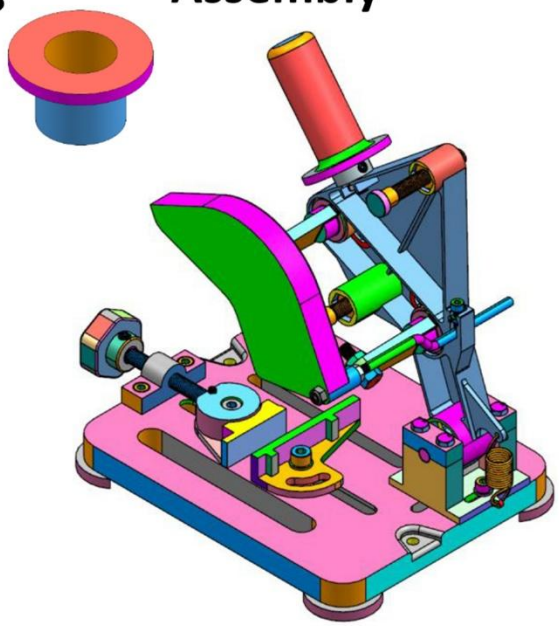


3D Modeling



Assembly

SACHIDANAND JHA

AUTODESK

FUSION 360 ALL IN ONE WORKBOOK

500+ PRACTICE EXERCISES

2D Sketching • 3D Modeling • Assembly Drawings

SACHIDANAND JHA

Dear Reader,

Thank you for choosing the AUTODESK FUSION 360 ALL IN ONE WORKBOOK. This book is part of the CADIN360° learning series, created to help engineers, students, and professionals master Fusion 360 through structured and practical exercises.

This book contains over 500 carefully crafted practice drawings, including:

- 200 2D Sketching Exercises
- 200 3D Modeling Exercises
- Comprehensive Assembly Models with 150+ Individual Part Drawings

We founded CADIN360 in 2016 with the goal of delivering practical, high-quality learning material for CAD software. More than 9 years later, we're still committed to producing consistently exceptional books. With each of our titles, we're working hard to set a new standard for the industry. From the paper we print on, to the authors we work with, our goal is to bring you the best books available.

I hope you see all that reflected in these pages. I'd be very interested to hear your comments and get your feedback on how we're doing. Feel free to let me know what you think about this or any other CADIN360 book by sending me an email at cadin360@gmail.com

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Customer feedback is critical to our efforts at CADIN360.

Best regards,

Sachidanand Jha
Founder & CEO, CADIN360

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AUTODESK FUSION 360 ALL IN ONE WORKBOOK

- This book contains over 500 CAD practice exercises, organized as:

  1. 200 2D Sketching Exercises
  2. 200 3D Modeling Exercises
  3. Assembly Projects with 150+ Part Drawings

- This book is a practice workbook. It does not include step-by-step tutorials for creating 2D drawing, 3D models and Assembly.

- SI units (millimeters) are used for all dimensions.

- Third Angle Projection is used throughout this book.

- This book is for **AUTODESK FUSION 360** and also suitable for Other Feature-Based Modeling Software such as Inventor, Catia, SolidWorks, NX, Solid Edge, AutoCAD, PTC Creo etc.

- Designed for students, engineers, drafters, and designers looking for extensive CAD practice using Autodesk Fusion 360.

- The exercises cover a wide range of real-world modeling challenges—from simple sketches to complex assemblies—offering clear, concise, and structured drawing practice.

- Exercises are organized to gradually develop beginner to advanced-level design skills.

- Each exercise is self-contained, and can be completed independently.

- Assembly drawings follow industry standards to help improve visualization and multi-part modeling skills.

- All dimensions are in mm. Assume missing dimensions logically.

HOW TO USE THIS BOOK

This book contains over 500 CAD practice exercises, designed for self-paced learning using Autodesk Fusion 360 or any feature-based modeling software.

- 2D Sketching Exercises: Start here if you're a beginner or learning how to use the sketch environment.

- 3D Modeling Exercises: Follow after mastering sketching. Practice creating solid models using the provided dimensions.

- Assembly Drawings: Use after completing part models to understand multi-part assemblies, relationships, and constraints.

Tips for Best Use:

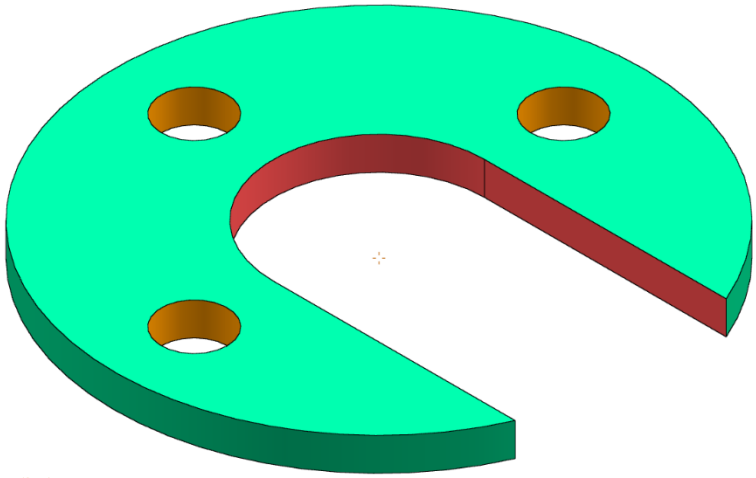
- Complete the exercises in order, or jump to any skill level you prefer.
- All dimensions are in millimeters.
- Where dimensions are missing, apply logic or practice estimation.
- This book is ideal for both students and professionals preparing for industry design work.

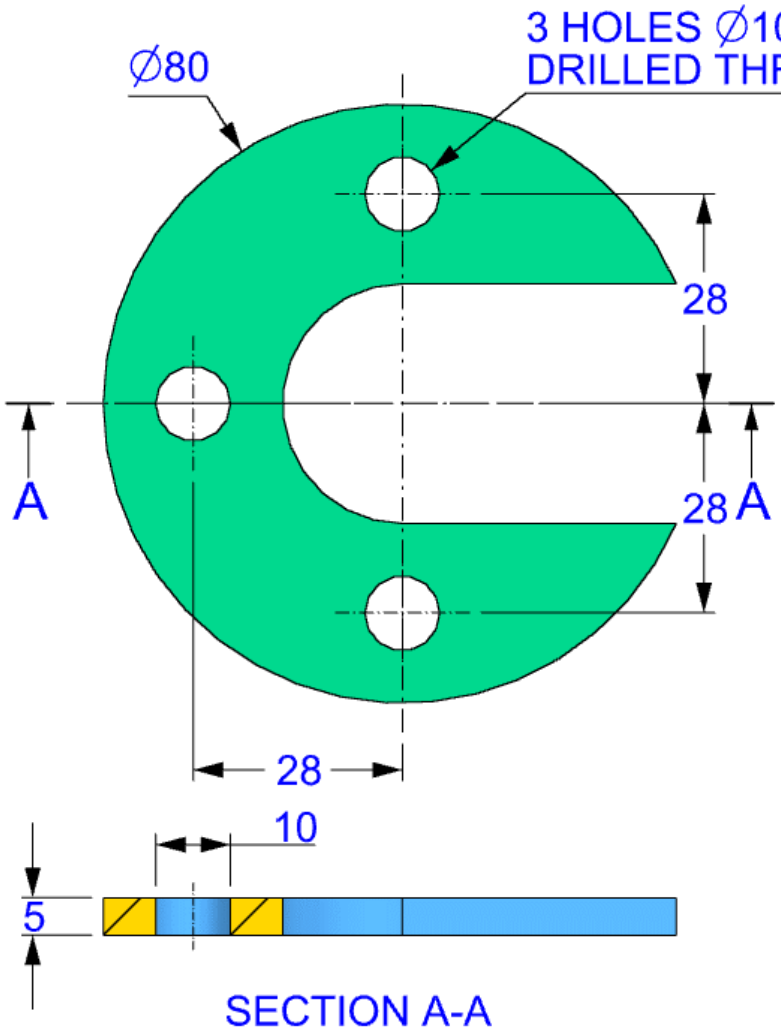
Note:

This book is available in multiple formats – **Black & White**, **Standard Color**, and **Premium Color** editions.

Happy learning!
– Team CADIN360

EXERCISE-01





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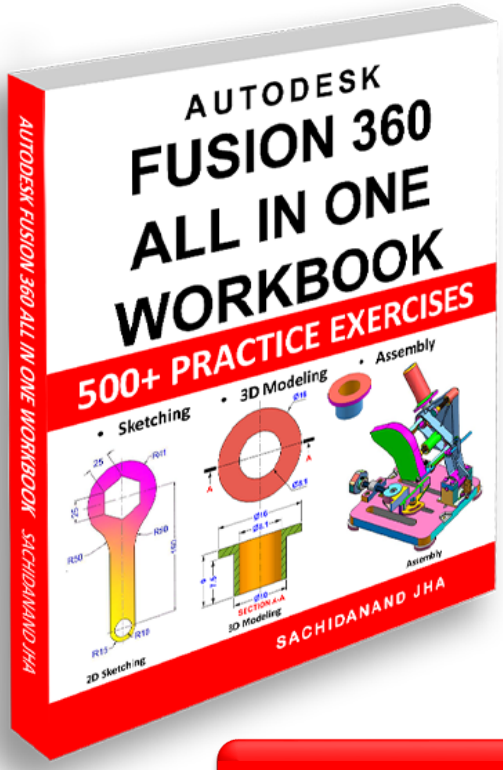

What's Included in the FUSION 360 ALL IN ONE WORKBOOK?

- ✓ Books contains exercises of Sketching, 3D Modeling & Assembly.
- ✓ 500+ Practice Exercises with Dimensions
- ✓ Full Assembly STEP Files (.stp format) – Compatible with all major CAD software
- ✓ Get 200 3D Exercises in .f3d file format
- ✓ Get All Assembly Exercises in .STP file
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We're honored to be a part of your journey.
Happy Designing!
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Master Fusion 360 with Real-World Practice Exercises

This book contains over 500 Fusion 360 practice exercises including sketching, 3D modeling, and assembly drawings. Designed for students, engineers, and professionals to build practical CAD modeling skills.

AUTODESK FUSION 360 ALL IN ONE WORKBOOK

This book contains:-

- 200 2D Sketching Exercises
- 200 3D Modeling Exercises
- Multi-part Assembly Exercises & Detailed Drawings
- All drawings in 3rd Angle projection
- All dimensions are in mm(metric system)