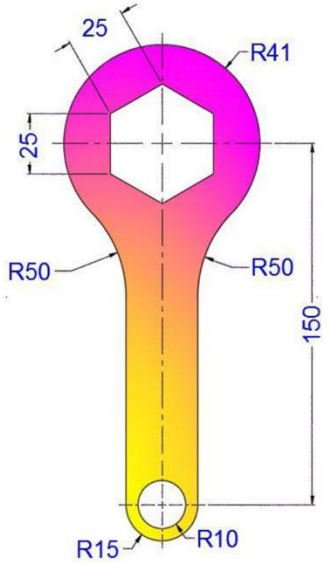
AUTODESK

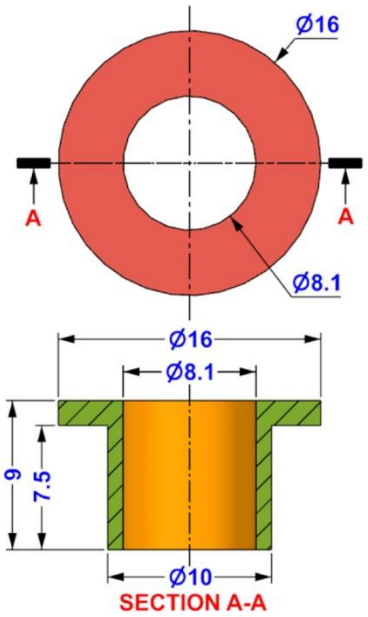
# FUSION 360 ALL IN ONE WORKBOOK

## 500+ PRACTICE EXERCISES

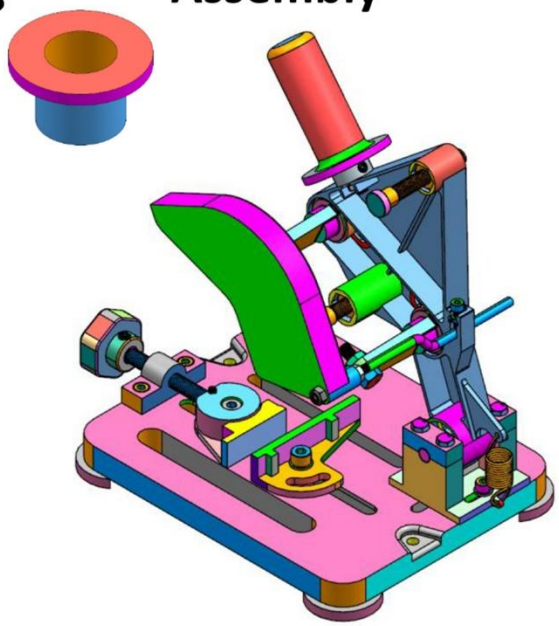
- Sketching
- 3D Modeling
- Assembly




2D Sketching




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

If you think you've found a technical error in this book, please visit https://cadin360.com/contact-us/.
Customer feedback is critical to our efforts at CADIN360.

Best regards,

Sachidanand Jha
Founder & CEO, CADIN360

# AUTODESK FUSION 360 ALL IN ONE WORKBOOK

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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**

# UNLOCK PERFECT DESIGNS: CHOOSING THE RIGHT PLANE IN FUSION 360

• LEARN • • APPLY • • GROW •

# Introduction

When it comes to sketching in Fusion 360, choosing the right plane is a crucial step that can make a significant difference in the quality and accuracy of your design. Fusion 360 offers a variety of planes to choose from, each with its own unique characteristics and use cases. In this blog post, we will explore the different types of planes available in Fusion 360, their advantages and disadvantages, and provide practical examples to help you choose the right plane for your sketching needs.

## Understanding Planes in Fusion 360

Before we dive into the different types of planes, it's essential to understand the basics of planes in Fusion 360. A plane in Fusion 360 is a 2D surface that can be used as a reference for sketching, extrusions, and other operations. Planes can be created from existing faces, other planes, or from scratch using the plane tool.

### Creating a New Plane

To create a new plane in Fusion 360, follow these steps:

1. Open a new or existing part file in Fusion 360.
2. Go to the "Create" tab in the top menu bar.
3. Click on the "Plane" button in the "Surface" group.
4. Select the type of plane you want to create (more on this below).
5. Specify the plane's properties, such as its origin, orientation, and units.

## Types of Planes in Fusion 360

Fusion 360 offers several types of planes, each with its own strengths and weaknesses. The main types of planes are:

### 1. Body Planes

Body planes are created from the body of a part and are used to sketch and extrude features that are aligned with the part's geometry. Body planes are excellent for creating features that are symmetrical or have a specific orientation.

### 2. Face Planes

Face planes are created from existing faces and are used to sketch and extrude features that are perpendicular to the face. Face planes are useful for creating features that are parallel to a specific face or have a specific orientation.

### 3. Plane Planes

Plane planes are created from scratch using the plane tool and are used to sketch and extrude features that are not aligned with the part's geometry. Plane planes are excellent for creating features that are offset from the part's geometry or have a specific orientation.

### 4. XY Plane

The XY plane is a special type of plane that is aligned with the origin of the part and is used as a reference for sketching and extrusions. The XY plane is excellent for creating features that are symmetrical or have a specific orientation.

### 5. Z Plane

The Z plane is a special type of plane that is perpendicular to the XY plane and is used as a reference for sketching and extrusions. The Z plane is excellent for creating features that are aligned with the part's geometry.

## Choosing the Right Plane

Choosing the right plane for your sketching needs depends on several factors, including the part's geometry, the feature's orientation, and the desired outcome. Here are some practical examples to help you choose the right plane:

### Example 1: Sketching a Symmetrical Feature

If you want to sketch a symmetrical feature, use a body plane or the XY plane as a reference. Body planes are excellent for creating features that are symmetrical or have a specific orientation.

### Example 2: Sketching a Feature Perpendicular to a Face

If you want to sketch a feature that is perpendicular to a face, use a face plane as a reference. Face planes are useful for creating features that are parallel to a specific face or have a specific orientation.

### Example 3: Sketching a Feature Offset from the Part's Geometry

If you want to sketch a feature that is offset from the part's geometry, use a plane plane as a reference. Plane planes are excellent for creating features that are not aligned with the part's geometry or have a specific orientation.

# Best Practices for Working with Planes

Here are some best practices to keep in mind when working with planes in Fusion 360:

## 1. Use the Right Plane for the Job

Make sure to use the right plane for the job, based on the part's geometry, the feature's orientation, and the desired outcome.

## 2. Use the XY Plane as a Reference

Use the XY plane as a reference for sketching and extrusions, especially when creating symmetrical features.

## 3. Use Face Planes to Perpendicular Features

Use face planes to create features that are perpendicular to a specific face or have a specific orientation.

## 4. Use Plane Planes for Offset Features

Use plane planes to create features that are not aligned with the part's geometry or have a specific orientation.

# Conclusion

Choosing the right plane for sketching in Fusion 360 is a crucial step that can make a significant difference in the quality and accuracy of your design. By understanding the different types of planes available in Fusion 360, their advantages and disadvantages, and following best practices, you can ensure that your designs are accurate, efficient, and effective.

# FAQ

## What is the difference between a body plane and a face plane?

A body plane is created from the body of a part and is used to sketch and extrude features that are aligned with the part's geometry. A face plane is created from an existing face and is used to

sketch and extrude features that are perpendicular to the face.

## How do I create a new plane in Fusion 360?

To create a new plane in Fusion 360, go to the "Create" tab, click on the "Plane" button, select the type of plane you want to create, and specify its properties.

## What is the XY plane used for?

The XY plane is used as a reference for sketching and extrusions, especially when creating symmetrical features. It is aligned with the origin of the part and is an excellent reference for features that require a specific orientation.

## Can I use a plane plane to create a feature that is aligned with the part's geometry?

Yes, you can use a plane plane to create a feature that is aligned with the part's geometry. However, it's generally more efficient and accurate to use a body plane or the XY plane as a reference.

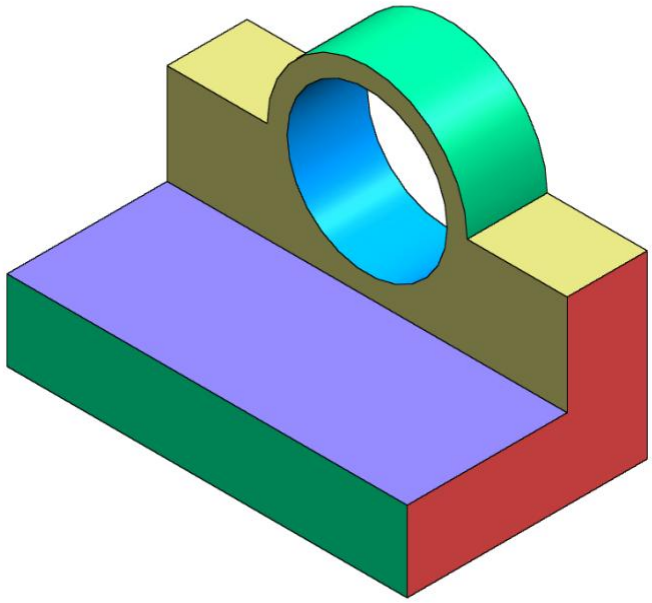
## How do I know which plane to use for a specific feature?

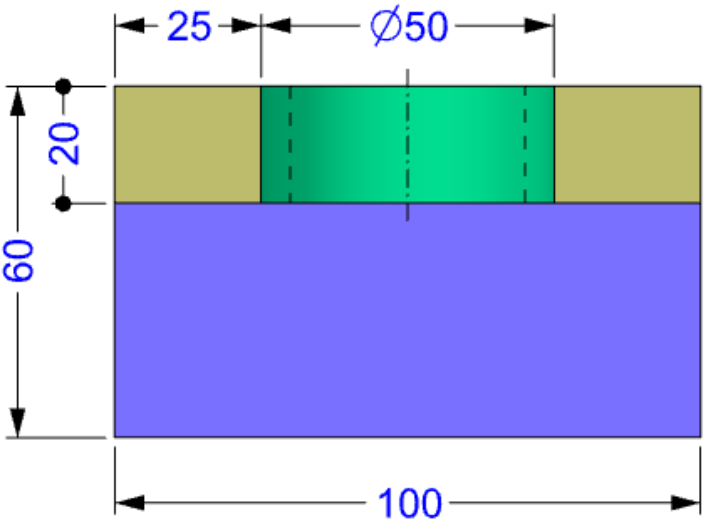
The choice of plane depends on the part's geometry, the feature's orientation, and the desired outcome. Use the examples and best practices provided above to help you choose the right plane for your sketching needs.

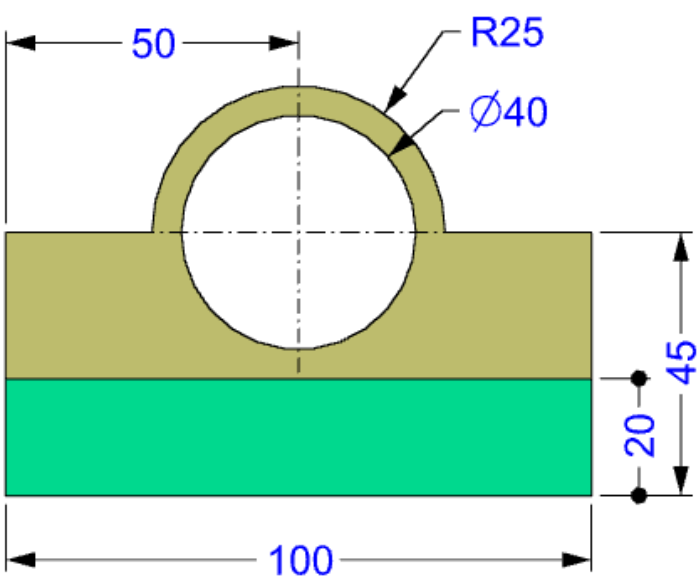
## Can I delete a plane in Fusion 360?

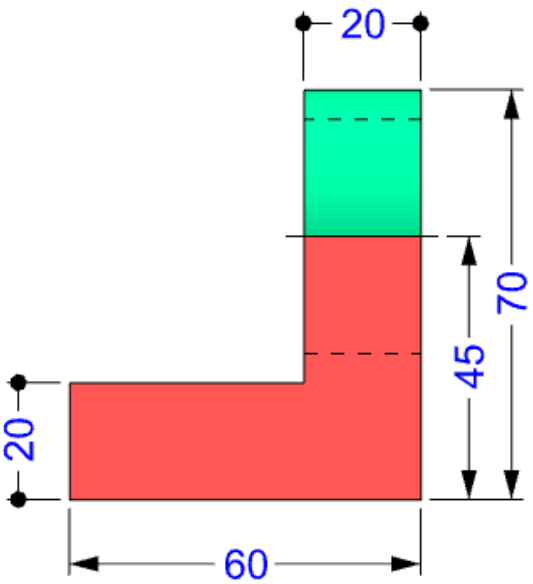
Yes, you can delete a plane in Fusion 360 by selecting it and pressing the Delete key. However, be aware that deleting a plane may affect the accuracy and integrity of your design.

# EXERCISE-03





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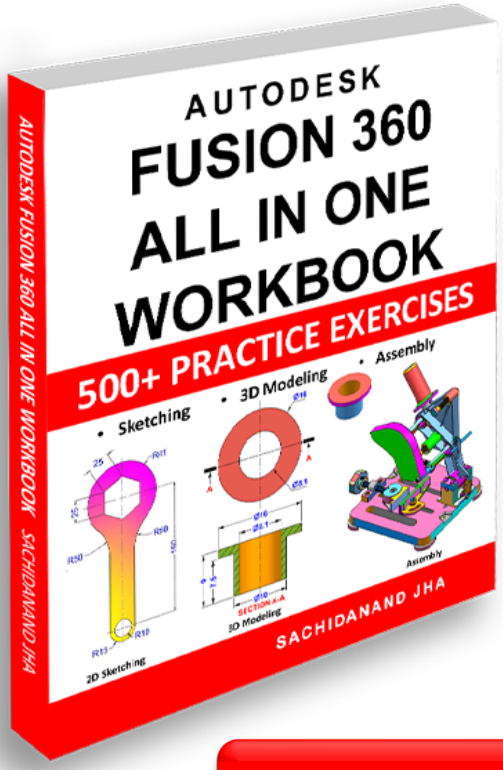


## What's Included in the FUSION 360 ALL IN ONE WORKBOOK?

- ✓ 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
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# 🙏 Thank You for Learning with Us!

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Whether you're a beginner or a pro, **practice is the key** to mastering any CAD software.
We're honored to be a part of your journey.
**Happy Designing!**
– Team **Cadin360**

# 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)