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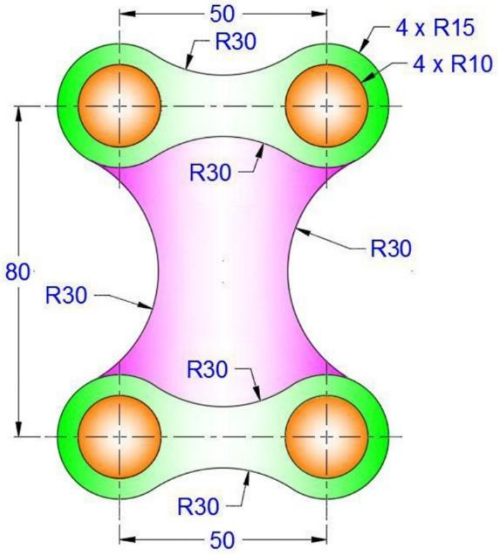
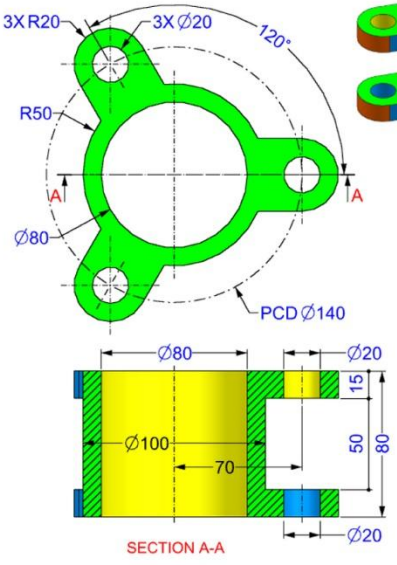
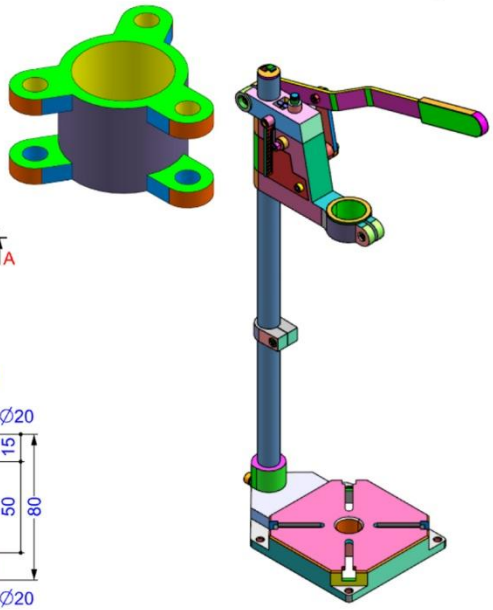
FREECAD ALL IN ONE WORKBOOK

500+ PRACTICE EXERCISES

- Sketching
- 3D Modeling
- Assembly







SACHIDANAND JHA

FREECAD ALL IN ONE WORKBOOK

500+ PRACTICE EXERCISES

• 2D Sketching • 3D Modeling • Assembly Drawings

SACHIDANAND JHA

COLOR EDITION

Dear Reader,

Thank you for choosing the **FREECAD ALL IN ONE WORKBOOK**. This book is part of the CADIN360° learning series, created to help engineers, students, and professionals master **FREECAD** 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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Best regards,

Sachidanand Jha
Founder & CEO, CADIN360

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FREECAD ALL IN ONE WORKBOOK

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FREECAD 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 **FREECAD** and also suitable for Other Feature-Based Modeling Software such as SolidWorks, Catia, Fusion 360, NX, Solid Edge, AutoCAD, PTC Creo etc.

- Designed for students, engineers, drafters, and designers looking for extensive CAD practice using **FREECAD**.

- 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 **FREECAD** 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

MASTER 2D DRAFTING IN FREECAD: A STEP-BY-STEP GUIDE

• LEARN • • APPLY • • GROW •

Introduction

FreeCAD is an open-source 3D CAD modeling software that offers a wide range of features and tools for creating complex designs. One of the key features of FreeCAD is its 2D drafting capabilities, which allow users to create precise and accurate 2D drawings. In this step-by-step guide, we will walk you through the process of 2D drafting in FreeCAD, covering the basics and advanced techniques.

Getting Started with 2D Drafting in FreeCAD

Before we begin, ensure that you have FreeCAD installed on your computer. You can download the software from the official FreeCAD website. Once installed, launch FreeCAD and create a new document by selecting "File" > "New" > "General" from the menu.

Creating a New 2D Drafting Document

To start a new 2D drafting document, follow these steps:

1. Select "File" > "New" > "General" from the menu.
2. In the "Document Type" dialog box, select "Draft" as the document type.
3. Choose a name for your document and click "Create."

Setting Up the Workbench

The workbench in FreeCAD is the primary interface for creating and editing 2D drawings. To set up the workbench for 2D drafting, follow these steps:

1. Select "Workbench" > "Draft Workbench" from the menu.
2. Click on the "Draft" tab in the workbench toolbar.
3. In the "Draft" toolbar, click on the "Grid" icon to display the grid.
4. Click on the "Snap" icon to enable snapping.

Creating a New 2D Drafting Object

To create a new 2D drafting object, follow these steps:

1. Click on the "Rectangle" icon in the "Draft" toolbar.
2. In the "Rectangle" dialog box, enter the dimensions of your rectangle.

3. Click "OK" to create the rectangle.

Creating a Line

To create a line, follow these steps:

1. Click on the "Line" icon in the "Draft" toolbar.
2. Click and drag the mouse to draw the line.
3. Release the mouse button to finish drawing the line.

Modifying 2D Drafting Objects

Once you have created a 2D drafting object, you can modify it using various tools and techniques. Here are a few examples:

Resizing an Object

To resize an object, follow these steps:

1. Select the object you want to resize.
2. Click on the "Scale" icon in the "Draft" toolbar.
3. In the "Scale" dialog box, enter the scaling factor.
4. Click "OK" to apply the scaling factor.

Moving an Object

To move an object, follow these steps:

1. Select the object you want to move.
2. Click and drag the object to the desired location.
3. Release the mouse button to finish moving the object.

Using Constraints to Create Complex Geometries

Constraints in FreeCAD allow you to create complex geometries by defining relationships between objects. Here's how to use constraints to create a complex geometry:

Creating a Constraint

To create a constraint, follow these steps:

1. Select the objects you want to create a constraint between.
2. Click on the "Constraint" icon in the "Draft" toolbar.
3. In the "Constraint" dialog box, select the type of constraint you want to create.
4. Click "OK" to apply the constraint.

Creating a Coincidence Constraint

To create a coincidence constraint, follow these steps:

1. Select two objects that you want to coincide.
2. Click on the "Coincidence" icon in the "Constraint" toolbar.
3. In the "Coincidence" dialog box, select the point of coincidence.
4. Click "OK" to apply the coincidence constraint.

Using Dimensions to Create a Bill of Materials

Dimensions in FreeCAD allow you to create a bill of materials by defining the dimensions of your objects. Here's how to use dimensions to create a bill of materials:

Creating a Dimension

To create a dimension, follow these steps:

1. Select the object you want to create a dimension for.
2. Click on the "Dimension" icon in the "Draft" toolbar.
3. In the "Dimension" dialog box, enter the dimension value.
4. Click "OK" to apply the dimension.

Creating a Bill of Materials

To create a bill of materials, follow these steps:

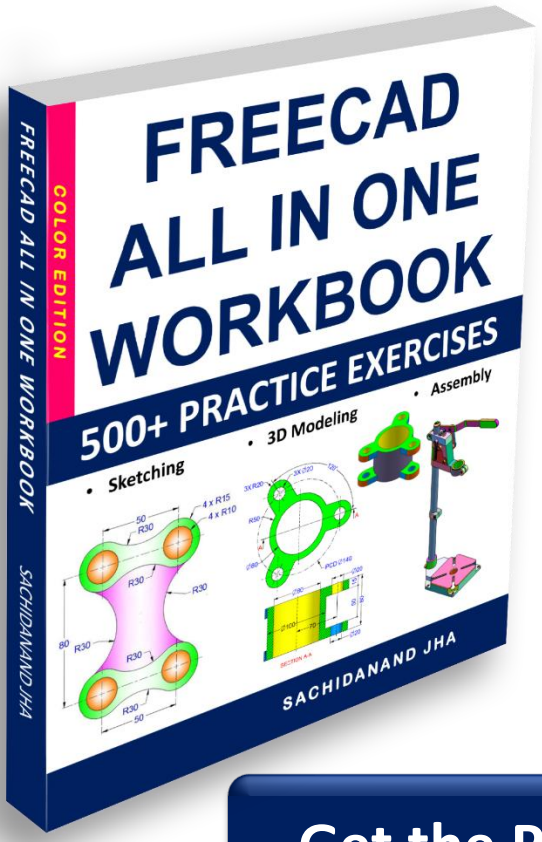
1. Select all the objects you want to include in the bill of materials.
2. Click on the "Bill of Materials" icon in the "Tools" toolbar.
3. In the "Bill of Materials" dialog box, select the objects to include in the bill of materials.

4. Click "OK" to generate the bill of materials.

Conclusion

In this step-by-step guide, we have covered the basics and advanced techniques of 2D drafting in FreeCAD. From creating new 2D drafting objects to modifying and constraining existing objects, we have explored the various tools and techniques available in FreeCAD. By following these steps and practicing regularly, you can become proficient in creating precise and accurate 2D drawings using FreeCAD. Whether you are a beginner or an experienced user, FreeCAD's 2D drafting capabilities offer a wide range of features and tools to help you achieve your design goals.

END OF SAMPLE



What's Included in the FREECAD 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
- ✓ Instant Download Link - Sent to Your Email After Payment
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Thank you for choosing the **FREECAD ALL IN ONE WORKBOOK**. We hope this book helped you strengthen your CAD skills through hands-on practice and real-world design challenges. Your feedback means the world to us!
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🚀 **Keep Practicing. Keep Designing.**
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 FreeCAD with Real-World Practice Exercises

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

FreeCAD 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)