

AUTODESK FUSION 360

2026

# BLOG

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**cadin360°**  
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.

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— CADIN360 Team

# HOW TO PULL A FACE INWARD IN FUSION 360

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# Introduction

Pulling a face inward in Fusion 360 is a common modeling technique used to create intricate surface details, add depth, or modify existing geometry for various design purposes. Whether you're working on a complex mechanical part or a decorative object, mastering how to pull a face inward provides greater control over your 3D models. This technique is especially valuable for creating hollowed elements, inset details, or preparing surfaces for further operations like molding or assembly. In this guide, we'll walk through the detailed steps to pull a face inward effectively, share practical examples, and cover common pitfalls along the way.

## Understanding the Basics of Face Manipulation in Fusion 360

Before diving into step-by-step instructions, it's crucial to understand the core concepts of face manipulation in Fusion 360.

- **Face Pulling** refers to moving or offsetting a surface inward or outward from its original position.
- It's different from pushing or pulling with the Push/Pull tool because it involves precise control and often more subtle adjustments.
- Face pulling is particularly useful for creating inset details, forming hollows, or preparing surfaces for further features.

Fusion 360 provides various tools for this purpose, such as the **Move/Copy** command and **Press Pull**. Knowing when and how to use each offers better control over your design.

## How to Pull a Face Inward in Fusion 360: Step-by-Step

Here's a comprehensive, step-by-step method to pull a face inward:

### 1. Select the Face to Be Pulled Inward

- Open your Fusion 360 project.
- Identify the surface or face you wish to pull inward.
- Click directly on the face to select it. The face should highlight, confirming selection.

## 2. Use the Move/Copy Tool

- With the face selected, go to the toolbar and click on the **Modify** menu.
- Select **Move/Copy** from the dropdown options.
- Alternatively, right-click the selected face and choose **Move/Copy**.

## 3. Choose the Proper Move Type

- In the Move dialog box, set the **Move** type to **Free**, **Translate**, or **Along Vector** based on your needs.
- For pulling a face inward, setting the move type to **Along Vector** is most effective.

## 4. Define the Direction of Inward Movement

- To pull inward, you need to move the face along its normal vector.
- Click on the **Direction** arrow or enter a value manually in the **Distance** box.

## 5. Specify the Distance

- Enter a negative value to pull inward (e.g., -2 mm).
- Use precise measurements to control the depth of the pull.
- Preview the movement before confirming.

## 6. Confirm and Finish

- Click **OK** to apply the move.

- Review the result to ensure the face has moved inward as intended.

## 7. Use Additional Offset or Constraints (Optional)

- For more controlled pulls, consider creating an **Offset Plane** or sketch to define specific distances.
- You can also combine face pulling with other features like **Fillets** or **Chamfers** for refined details.

## Practical Examples of Pulling a Face Inward

Pulling a face inward can serve several practical design goals:

- **Hollowing a Part:** Create a shell or hollow feature within a solid.
- **Insetting Surface Details:** Add inset patterns for aesthetic or functional purposes.
- **Preparing for Molding:** Define mold cavities by pulling in faces to create negative spaces.

### Example: Hollowing a Cube

Suppose you want to create a hollowed-out cube:

- Select the top face.
- Use **Move/Copy**, set the move along the face normal.
- Enter a negative distance to move the face inward.
- Use the **Create > Shell** tool to remove the interior space.

### Example: Adding Inset Details

To inset a circle on a face:

- Draw a circle sketch on the face.

- Use the **Pull** or **Press Pull** tool to drag it inward.
- Specify the inset distance, ensuring to pull inward rather than outward.

## Common Mistakes and How to Avoid Them

Making precise inward pulls can introduce errors if you're not careful. Here's what to watch out for:

- **Incorrect Direction:** Ensure you are moving along the face normal for accurate inward pulling.
- **Over-Pulling:** Excessive pull distances may distort the geometry or cause unwanted overlaps.
- **Selecting the Wrong Face:** Double-check your selection to avoid affecting unintended features.
- **Ignoring Constraints:** If pulling inward affects adjacent geometry unpredictably, use constraints or construction planes to limit movement.

## Pro Tips and Best Practices

- **Use the Aliasing Tool:** When pulling faces along complex angles, consider creating a construction plane aligned to the face normal for more precise control.
- **Combine with Offset Planes:** For complex shapes, create offset planes to guide your moves.
- **Work with Component Copies:** Always work on duplicates or copies when testing impactful features to preserve the original geometry.
- **Utilize the Timeline:** Use Fusion 360's timeline to edit previous move features and refine your inward pulls seamlessly.

## Comparing Face Pulling Techniques in Fusion 360

<b>Technique</b>	<b>Use Case</b>	<b>Precision</b>	<b>Control</b>	<b>Pros</b>	<b>Cons</b>
Move/Copy	General face movement	High	Good	Versatile, precise	Slightly complex for beginners
Press Pull	Inset or offset features	Very high	Excellent	Good for detailed surface modifications	Limited to specific faces

Offset Face	Creating consistent offsets	High	Very good	Easy for planar adjustments	Not suitable for complex geometries
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This comparison helps decide the best approach for pulling faces inward depending on your project needs.

## Conclusion

Pulling a face inward in Fusion 360 is a fundamental modeling technique that enhances your design flexibility, especially when adding internal features, preparing surfaces for manufacturing, or creating detailed insets. By mastering the Move/Copy tool along with careful control of direction and distance, you can achieve precise, professional results. Practice these steps on simple geometries to build confidence, and apply them creatively in complex projects to unlock the full potential of Fusion 360's powerful surface manipulation capabilities.

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## FAQ

### 1. How do I pull multiple faces inward at once in Fusion 360?

**Ans :** Select all the faces beforehand, then use the Move/Copy tool to move them collectively along their normals.

### 2. Can I pull a face inward using the Press Pull tool?

**Ans :** Yes, the Press Pull tool can be used to inset or extrude surfaces, including pulling a face inward by specifying a negative distance.

### 3. How do I ensure the face pulls exactly along the face normal?

**Ans :** Use the **Along Vector** move option and select the face normal as the direction, or manually align your move axis to the face normal.

### 4. What is the best method for creating hollowed features?

**Ans :** Use face pulling to offset the interior face inward and then apply the **Shell** tool for hollowing.

### 5. How do I fix errors caused by pulling faces inward too far?

**Ans :** Use the **Undo** function immediately or edit the move feature in the timeline to reduce the distance.

### 6. Is it possible to pull a face inward without affecting other geometry?

**Ans :** Yes, by isolating the face with construction planes or sketches and controlling the move along the face normal, you limit the impact on surrounding geometry.

### 7. Can I automate inward pulling for multiple faces in Fusion 360?

**Ans :** While manual selection is common, you can use scripts or API add-ins for automation, but it requires advanced knowledge of Fusion 360 API.

# About CADIN360

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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.

2026

# Practice What You've Learned

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.**

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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.

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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

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## EXERCISE-01



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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.

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