

# Three Finger Centric Gripper

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# Introduction

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In this presentation, we will explore the **Three Finger Centric Gripper** and its role in optimizing robotic manipulation. We will delve into its design, applications, and potential impact on industrial automation.

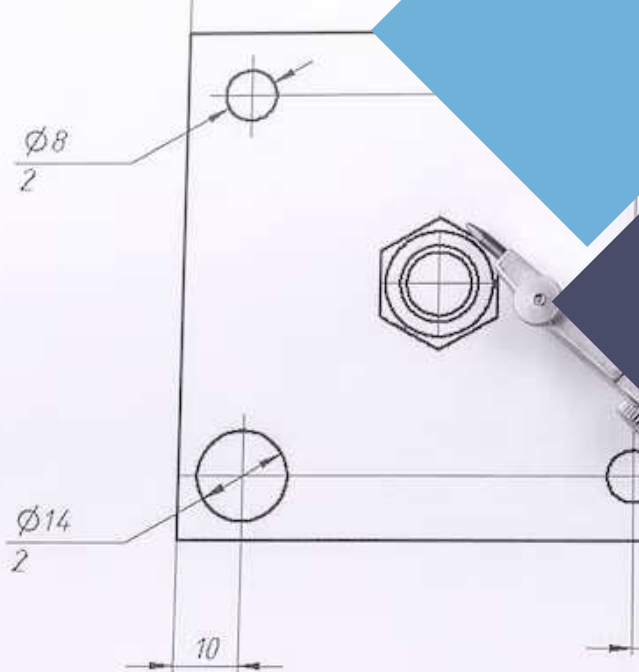


# OVERVIEW

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The 3 Finger Centric Gripper is a cutting-edge robotic end effector designed to provide reliable and efficient gripping capabilities for a wide range of applications. Its unique design allows for precise control and manipulation of objects, making it ideal for use in manufacturing, logistics, and other industries where automation is key to success.





## Three Finger Centric Gripper Design

The **Three Finger Centric Gripper** features a modular design with **flexible joints** and **sensitive tactile sensors**. Its adaptive nature allows for precise **grasping** and **manipulation** of various objects, making it ideal for diverse tasks.

# Applications in Manufacturing

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The Three Finger Centric Gripper has revolutionized **manufacturing processes** by enabling robots to handle complex objects with **precision** and **dexterity**. Its ability to adapt to different shapes and sizes has streamlined **assembly** and **packaging** tasks.





## Challenges and Innovations

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Despite its advancements, the Three Finger Centric Gripper faces challenges in handling **fragile** or **irregularly shaped** items. Ongoing innovations in **material science** and **machine learning** aim to address these limitations and enhance its **grasping capabilities**.

# Future Prospects and Industry Impact

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The Three Finger Centric Gripper is poised to revolutionize **logistics**, **e-commerce**, and **healthcare** sectors by enabling robots to handle a wider range of products. Its potential to enhance **efficiency** and **safety** underscores its significant impact on various industries.



# My Approach

- I First Created a Base on which all the 3 Fingers should be attached
- Then I created 3 Hands of the Gripper and connected them individually to the Base using Revolute Joint
- I had to use Rigid transform in Order that the Hands move In a particular Orientation
- Then I created 3 Finger and connected them to the Hands indivually using Revolute joint



- Then I used Solid Sphere as a Ball and connected 3 fingers to it in such a way that the fingers only touch the ball
- Then I Did Some rectifying in the Objects by defining the Geometry of the blocks

# Dimension

1. Body- $\{\text{Side}-3\}$
2. Hands- $\{0.5 \quad 1 \quad 0.5\}$
3. Fingers- $\{0.1 \quad 0.5 \quad 0.1\}$
4. Sphere- $\{\text{Radius}-0.5\}$

# Conclusion

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In conclusion, the Three Finger Centric Gripper represents a pivotal advancement in robotic manipulation, offering **versatility, precision, and adaptability**. Its continued evolution and integration with cutting-edge technologies are set to redefine the future of **automation and manufacturing**.

Thanks!

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