



Chonburi Technical College

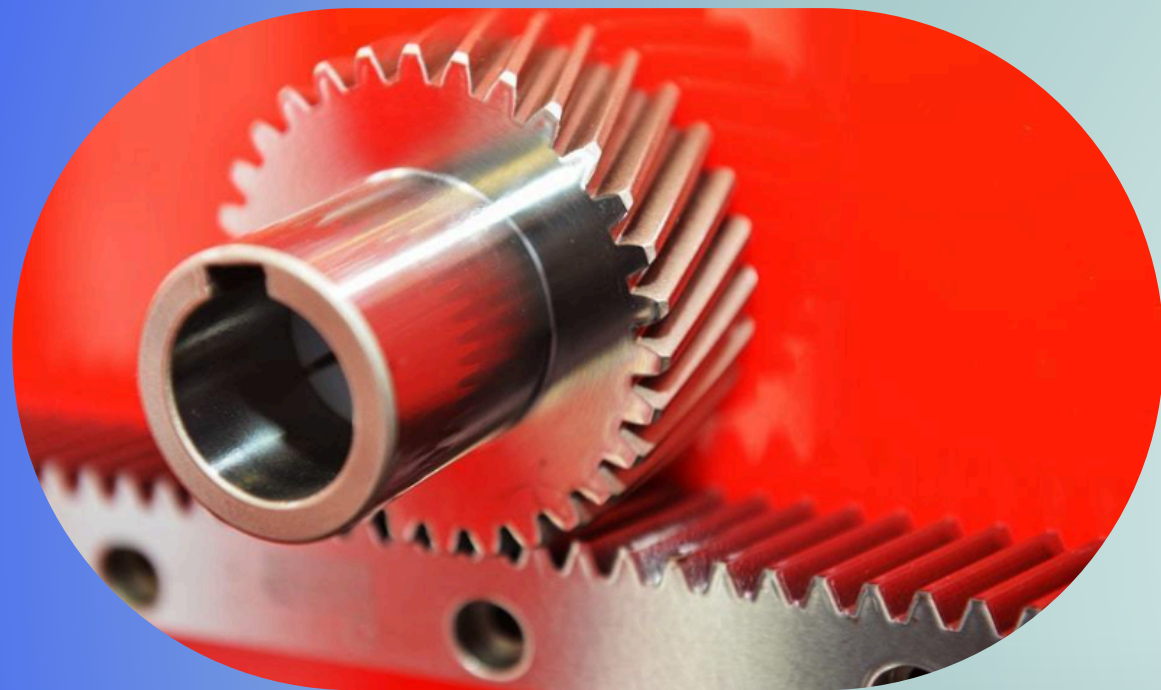
# UNIT 5

# Rack Gear



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# Gear



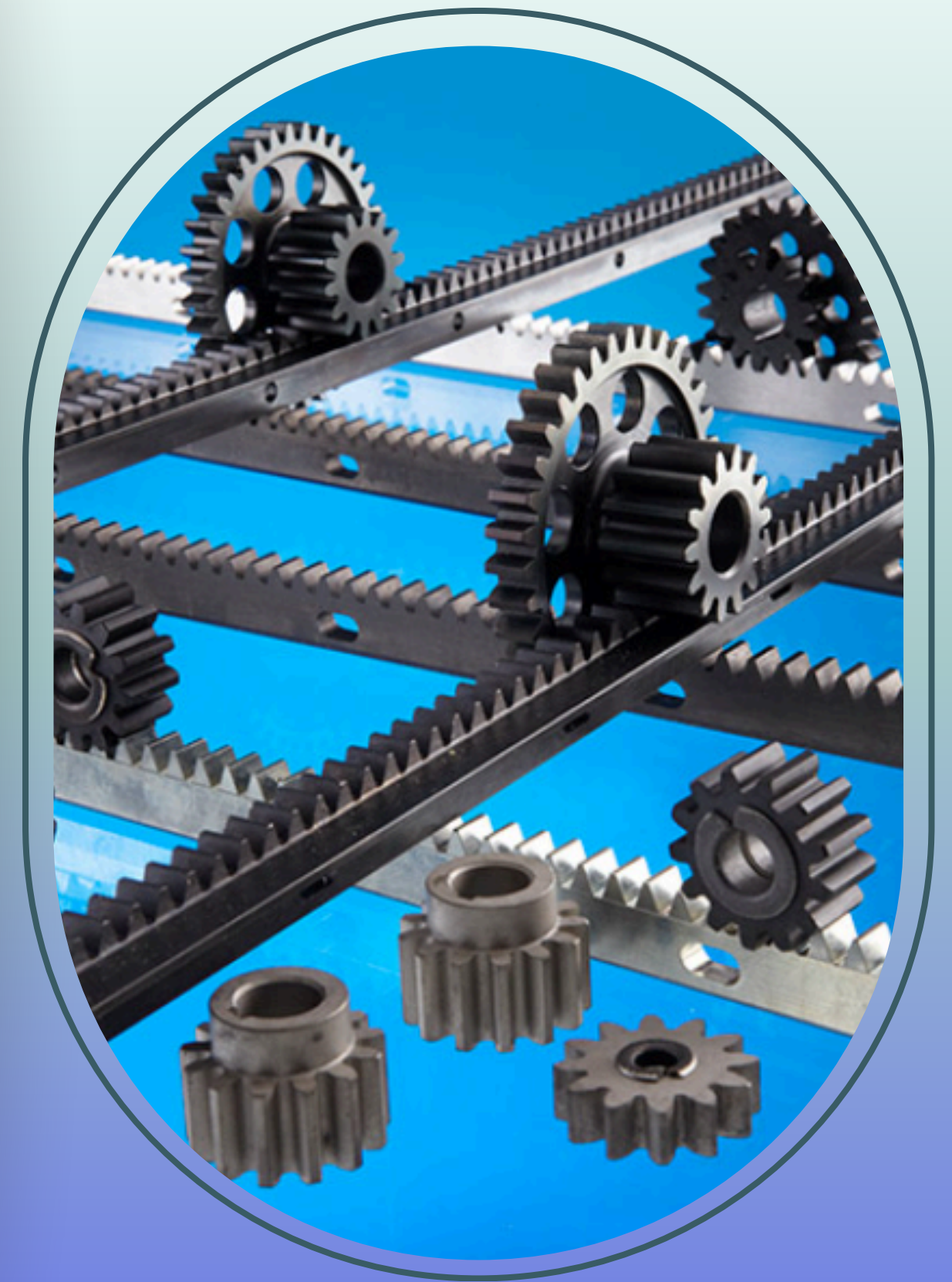
A gear is a component within a transmission device that transmits rotational force to another gear or device. A gear is different from a pulley in that a gear is a round wheel that has linkages “teeth” or “cogs” that mesh with other gear teeth. allowing force to be fully transferred without slippage



# Rack Gear

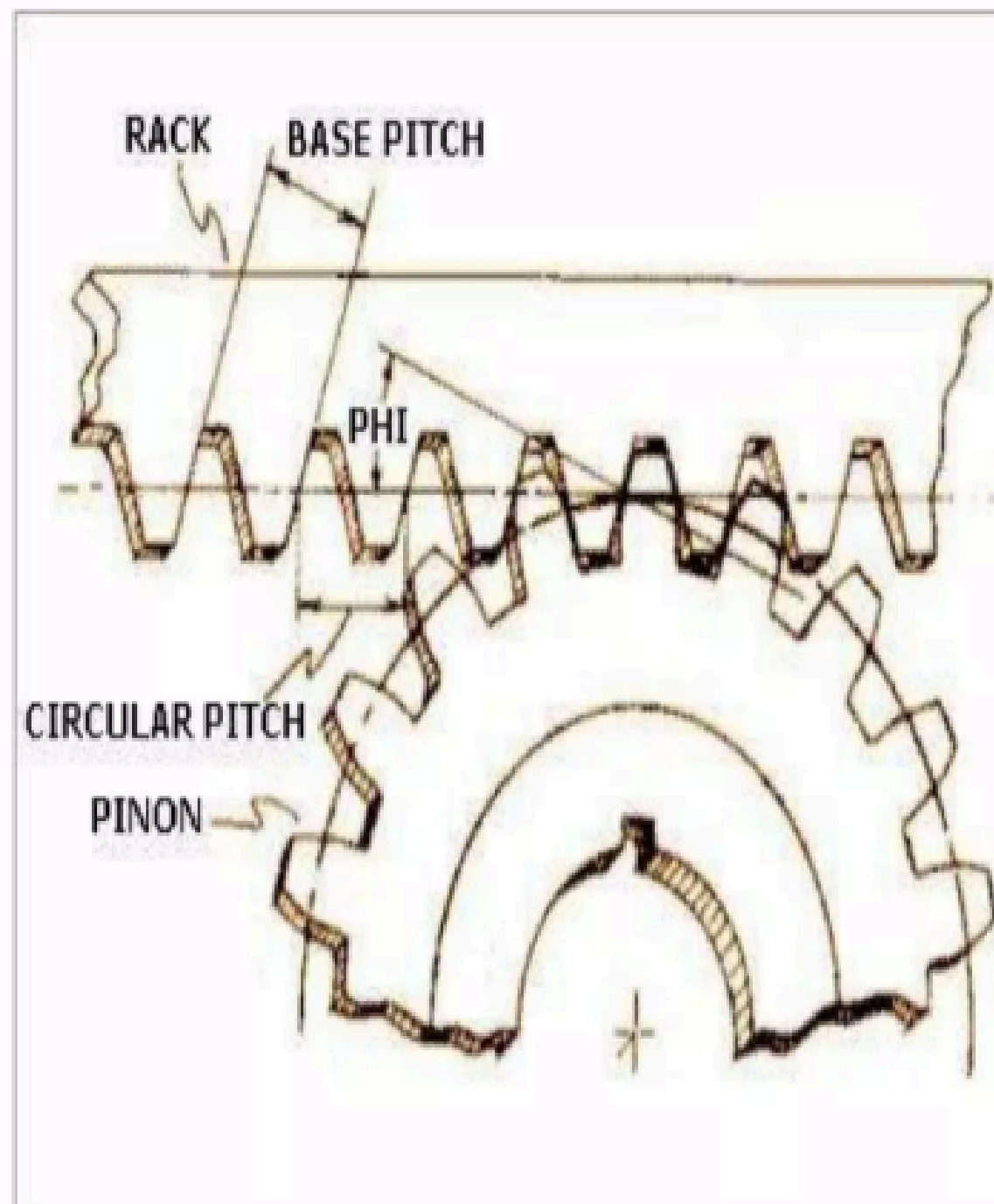
## mean

A bridge gear or Rack gear is a type of gear with gear teeth arranged in a straight line that converts movement along the axis of rotation into linear movement. The bridge gear is used in conjunction with the drive gear or Pinion Gear by transmitting power in the form of rotation from the motor or power unit through the drive gear to the bridge gear to allow the equipment to move in a straight line. The operation of this gear set is called **Rack and Pinion**.



# Rack and Pinion

- A rack and pinion is a type of linear actuator that comprises a pair of gears which convert rotational motion into linear motion. The circular pinion engages teeth on a linear "gear" bar which is called the "rack".





# TYPES OF RACK GEARS

## 1. Straight Teeth

แบบฟันตรง

### Upside

Equipment can be easily found on the market, easy to install, suitable for applications that do not require high precision

### downside

The efficiency in transmitting power is lower than other types of bridge gears. It is easy to cause gear teeth to wear out





# TYPES OF RACK GEARS

## 2. Helical Teeth

แบบฟันเฉียง

### Upside

The power transmission efficiency and movement accuracy are higher than that of straight tooth bridge gears.

### downside

Rack gears with different angles of tooth tilt cannot be used together. It also requires lubrication while in use





# TYPES OF RACK GEARS

## 3. Roller Pinion Teeth แบบฟันใช้กับโรลเลอร์

### Upside

The Backlash value is very low. The movement is continuous, accurate, and has a long service life

### downside

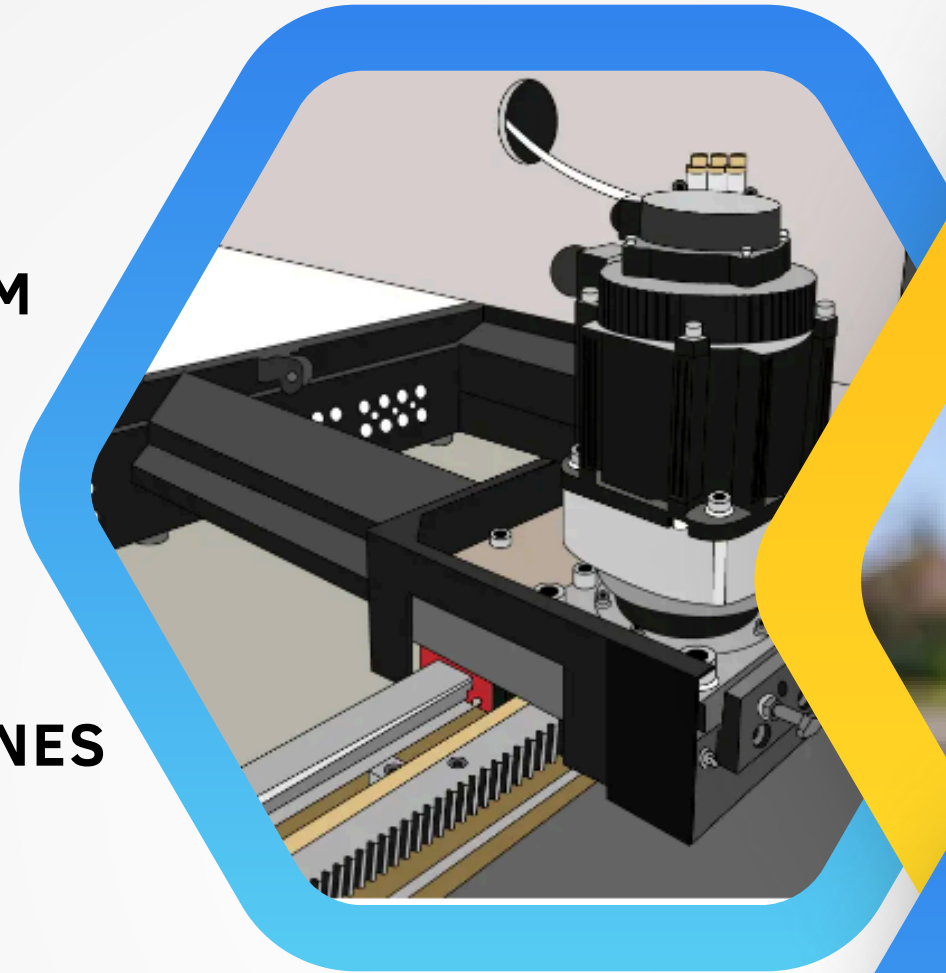
The price of the equipment is higher than other types of rack gears.





# USE OF RACK GRAR

**USED IN THE OPENING-CLOSING SYSTEM  
OF GATES IN HOUSES OR FACTORIES**



**USED TO TRANSMIT POWER IN MACHINES**



**USED IN THE TURNING SYSTEM OF  
AUTOMOBILES**



**USED IN THE DRIVE SYSTEM OF CNC MACHINES**





**Thank You**  
For your Attention

