TA202A Project Report

Vending Machine

Group - 44 (Thursday)

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Project Overview

A vending machine is a self-contained, automated retail machine that dispenses a wide range of products, such as snacks, beverages, and personal hygiene items, among others. The machine operates by allowing customers to select the desired product through a user interface, typically using buttons or a touchscreen. Once the selection is made, the machine uses a mechanical or electronic system to dispense the product to the customer.

Vending machines are often found in public places such as schools, airports, and office buildings, among other locations. They are convenient for people who are on the go, as they provide quick access to a variety of products without the need to interact with a salesperson.

In addition to providing convenience, vending machines also offer a cost-effective way for businesses to sell products, as they require minimal human interaction and can operate 24/7. However, to maintain their efficiency, vending machines require regular maintenance, restocking, and repair. Some vending machines also incorporate advanced features such as cashless payment options, real-time inventory tracking, and digital signage.

Overall, vending machines are a ubiquitous and convenient feature of modern life, providing customers with quick and easy access to a wide range of products in a variety of settings.

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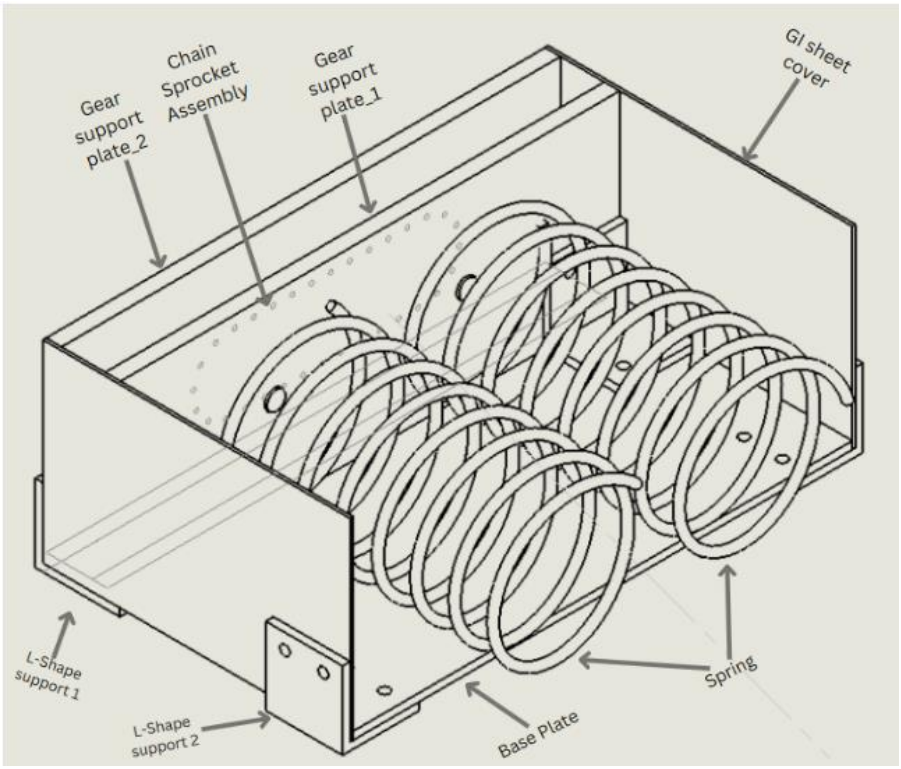
Isometric View

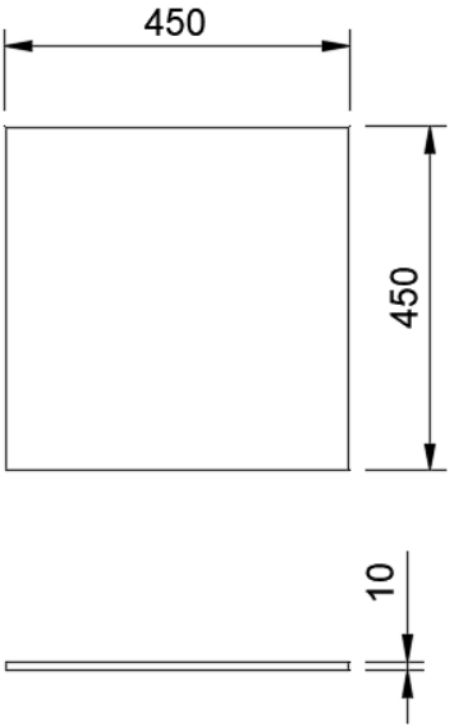


Part List

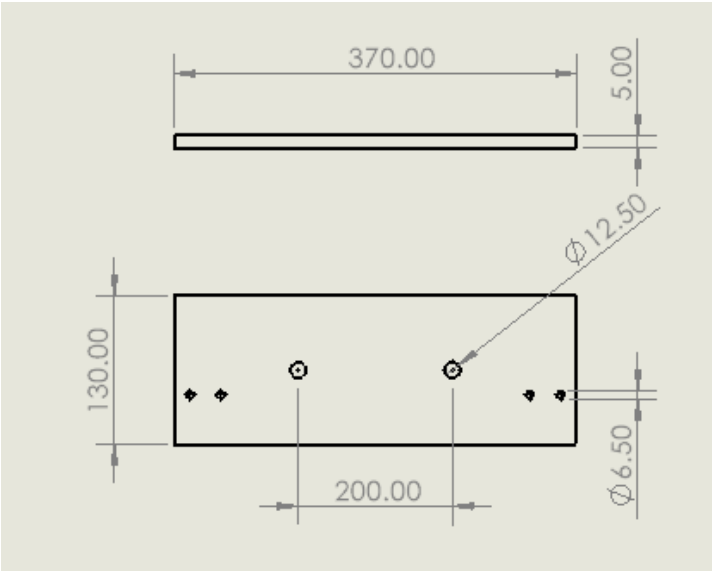
Part Name	Quantity	Material	Manufactured/Bought	Machining Operations
Base Plate	1	Mild Steel	M	Drilling
Gear Support Wall	2	Mild Steel	M	Drilling
Side Cover	2	Mild Steel	M	Drilling
Base Plate_2	1	Mild Steel	M	Drilling
Sprocket(type_1)	2	Mild Steel	M	Milling
Sprocket (Type_2)	2	Mild Steel	B	Milling
Chain	2		B	-
Shaft_1	1	Mild Steel	M	Lathe
Shaft_2	1	Mild Steel	M	Lathe
Roller_1	1	Mild Steel	M	Lathe
Roller_2	1	Mild Steel	M	Lathe
Spring	2	Mild Steel	M	Bending
Sensor Holder	1	PLA	M	3D-Printing
L-support	10	Mild Steel	M	Drilling
L-support_type_2	2	Mild Steel	M	Drilling
Conveyer belt	1	Rubber	M	-
Heights	4	Mild Steel	M	Drilling

Part Drawings

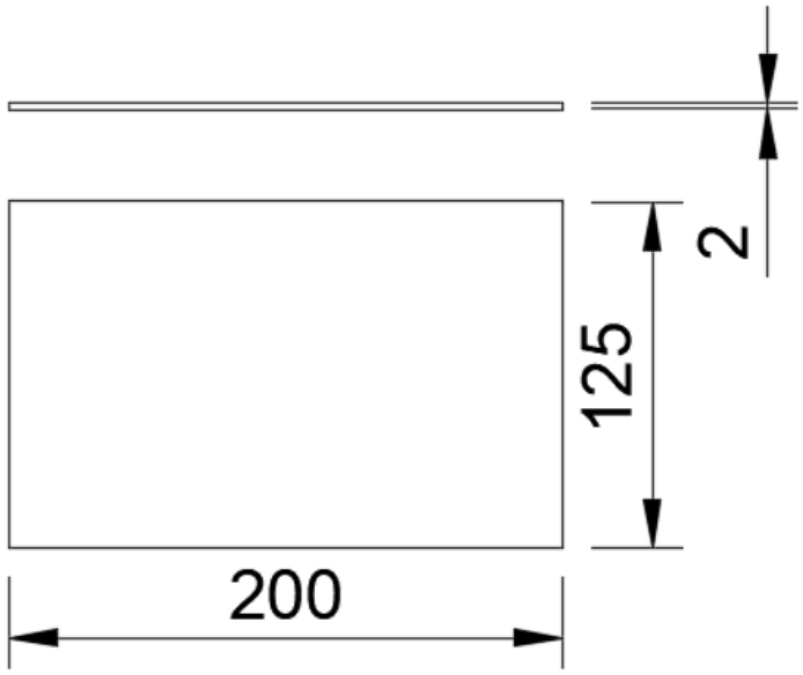
1. Base Plate (All dimensions in mm)



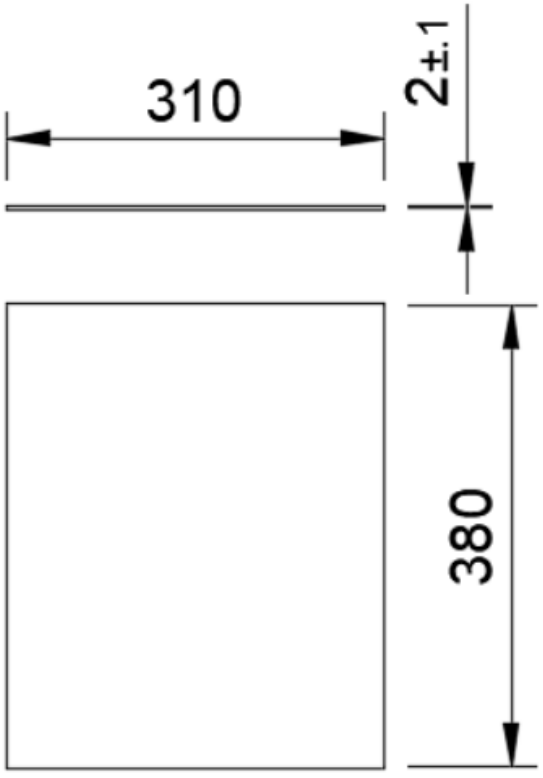
2. Gear Support Wall (All dimensions in mm)



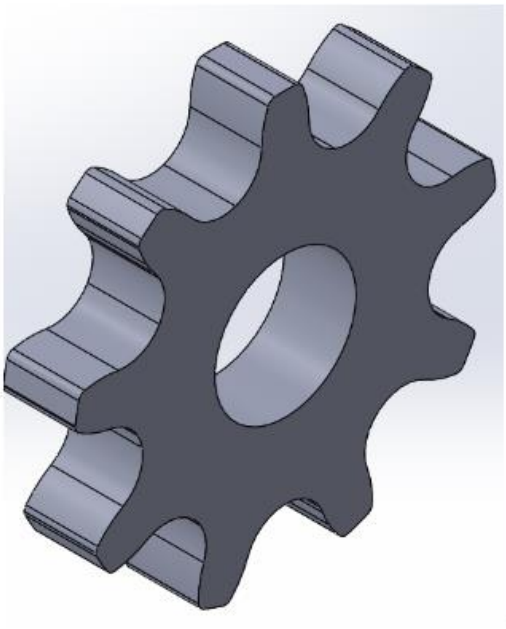
3. Side Cover (All dimensions in mm)

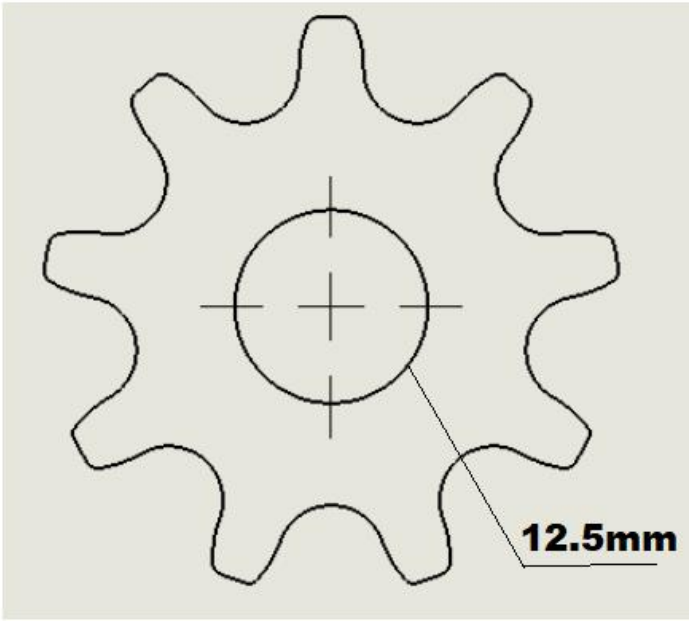


4. Base Plate_2 (All dimensions in mm)

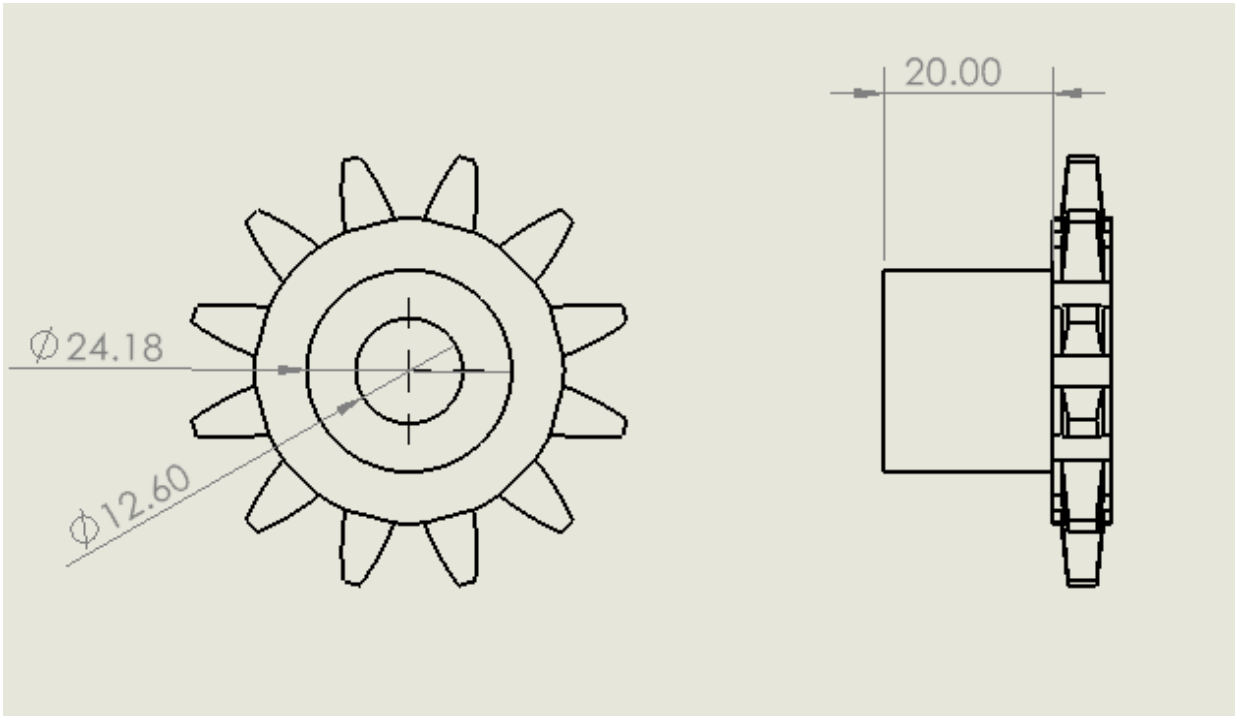


5. Sprocket_Type1 (All dimensions in mm)

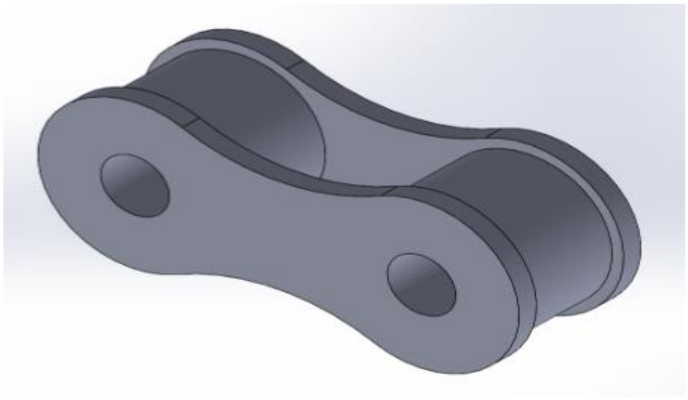


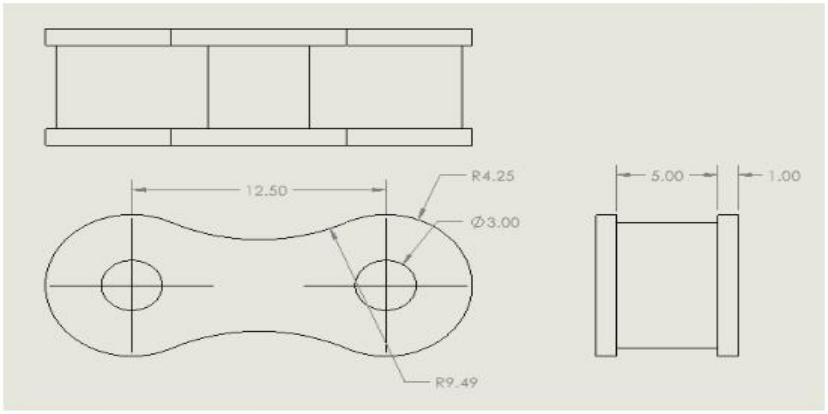


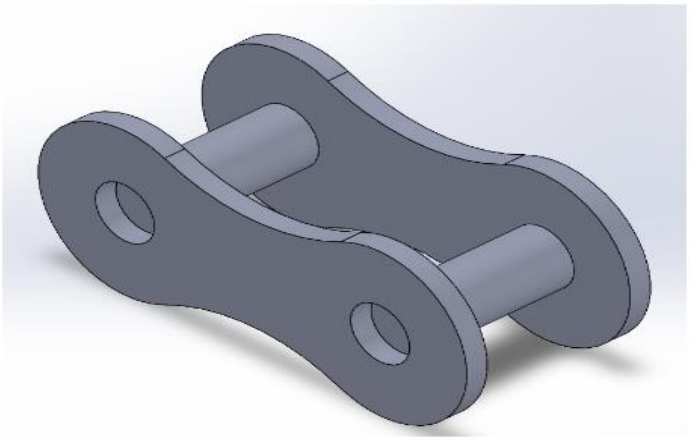
6. Sprocket type_2 (All dimensions in mm)

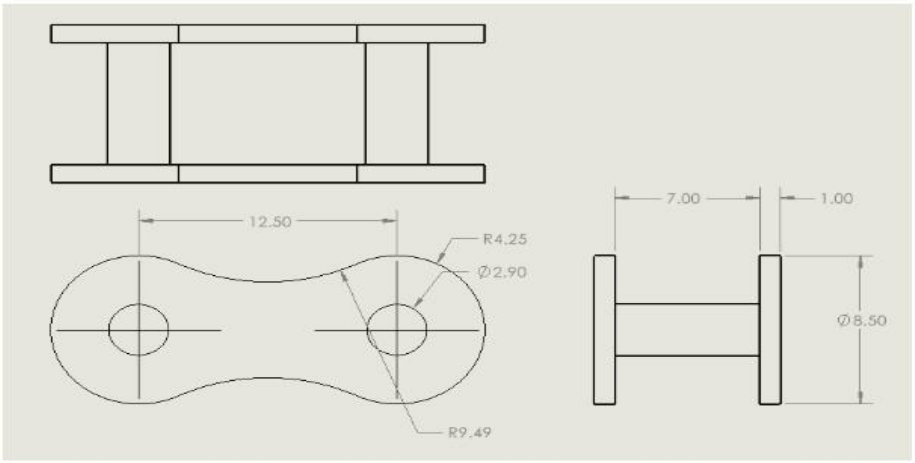


7. Chain (All dimensions in mm)

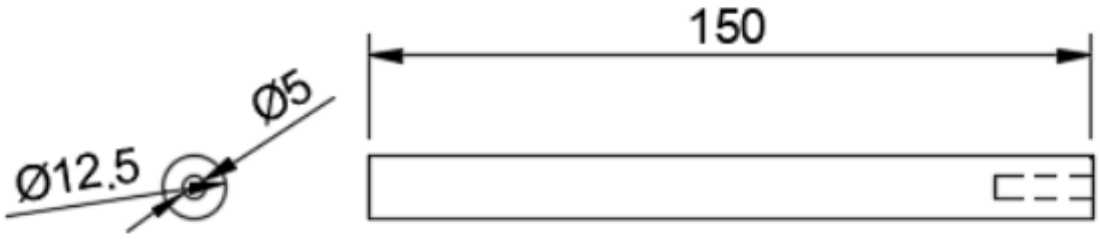




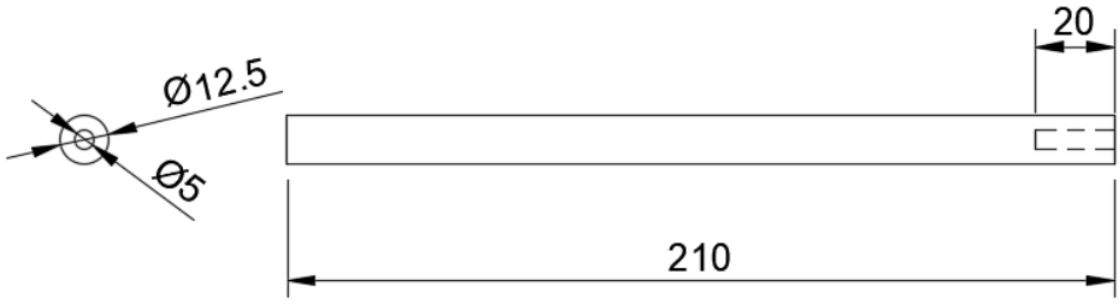




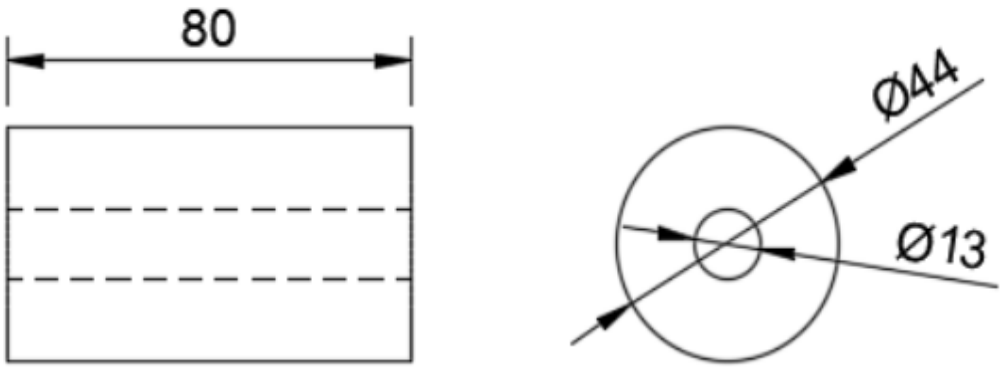
8. Shaft_1 (All dimensions in mm)



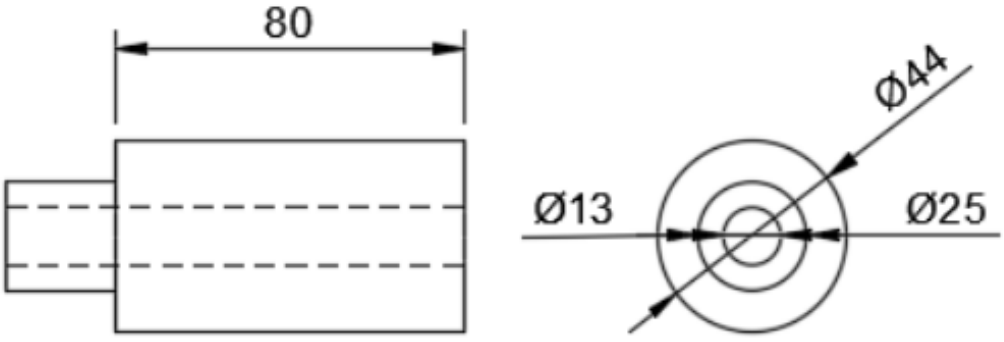
9. Shaft_2 (All dimensions in mm)



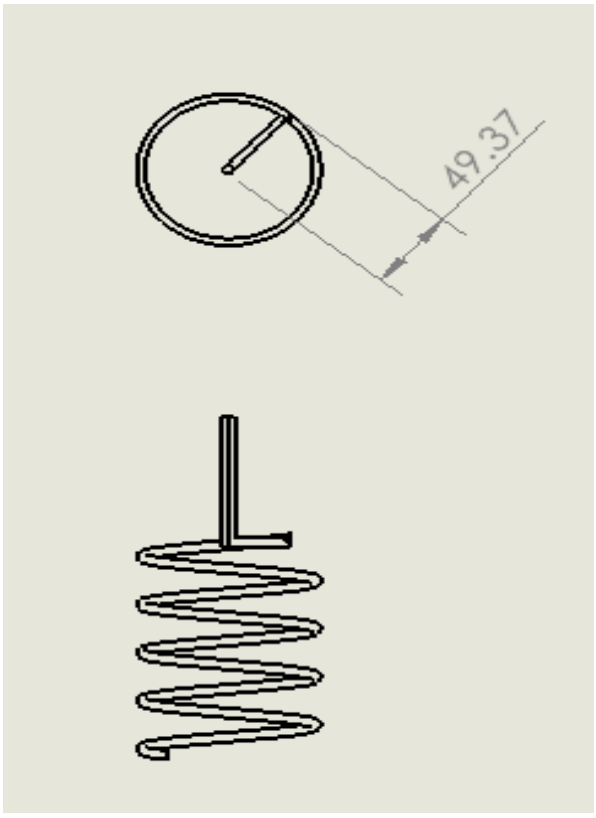
10. Roller_1 (All dimensions in mm)



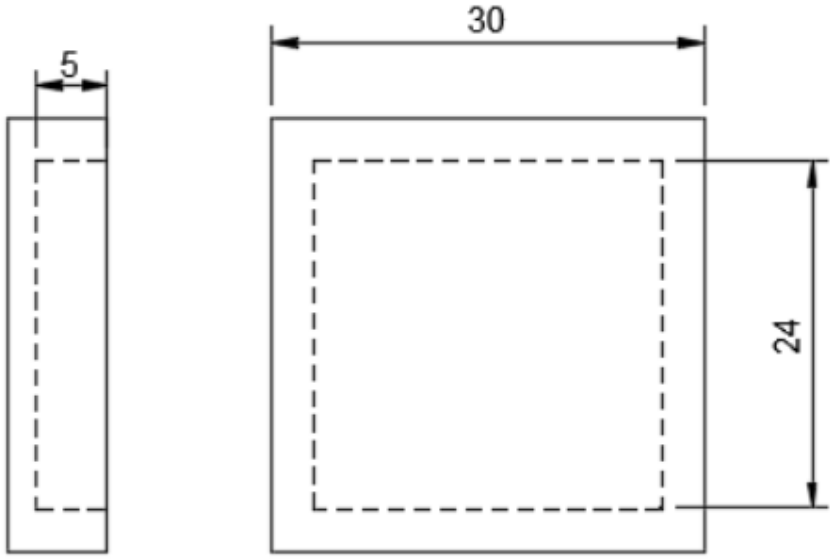
11. Roller_2 (All dimensions in mm)



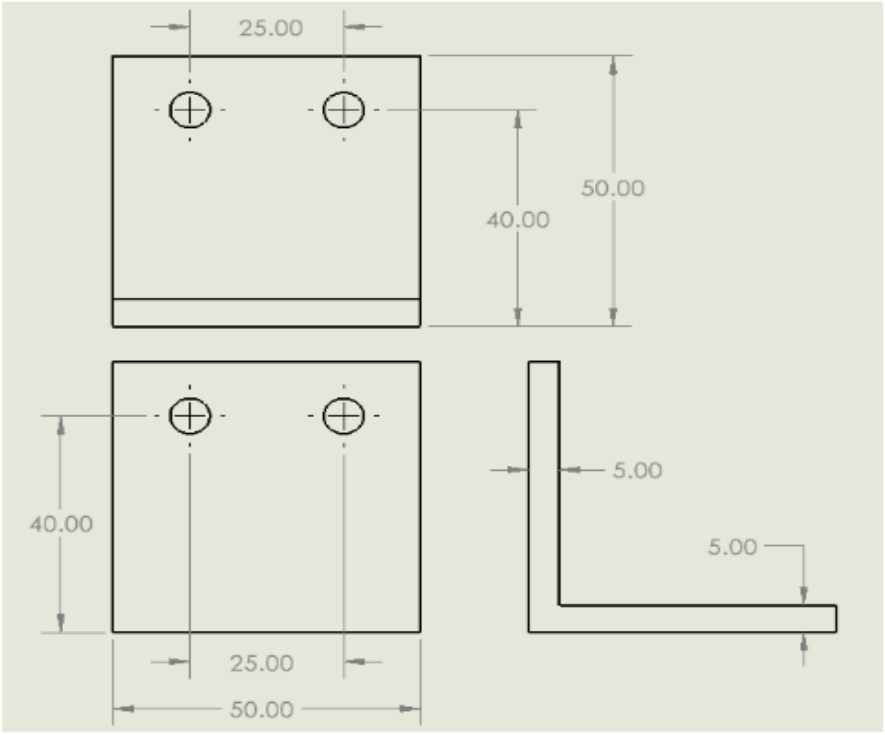
12. Springs
    pitch 30mm (All dimensions in mm)

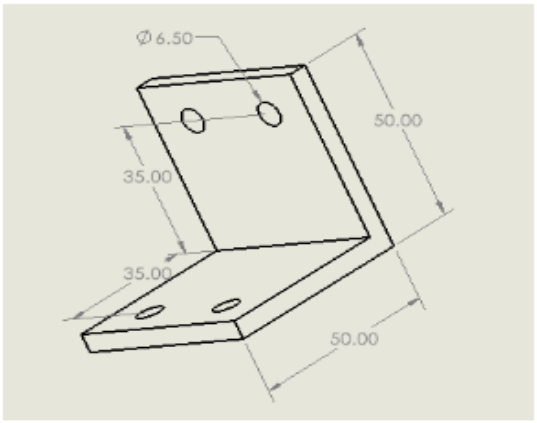


13. Sensor Holder (All dimensions in mm)

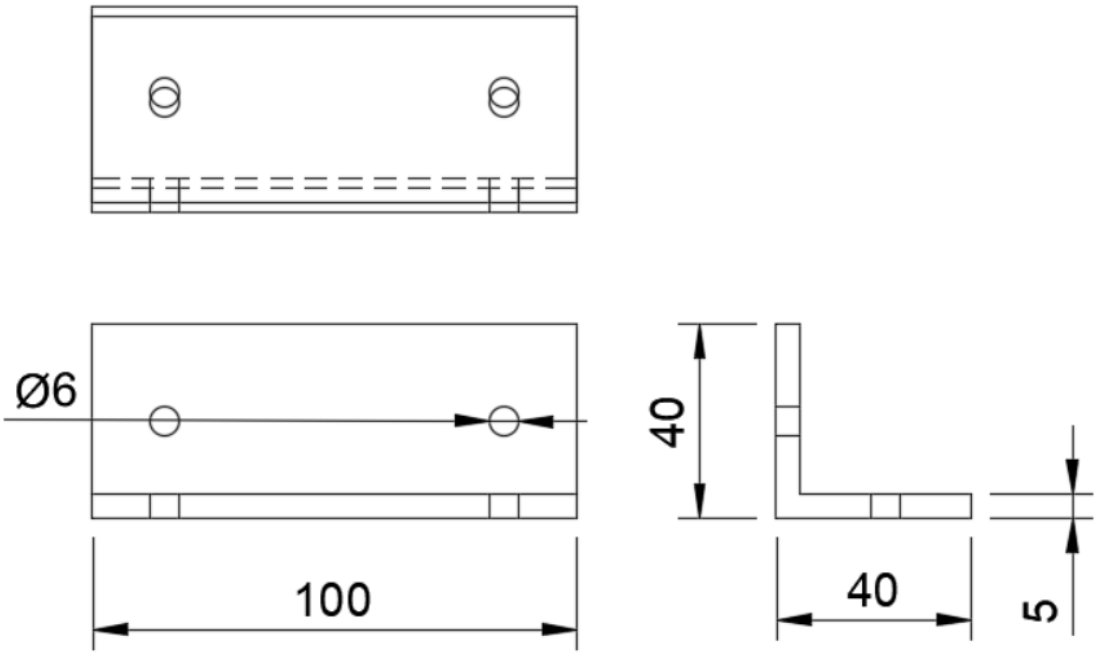


14. L-support (All dimensions in mm)

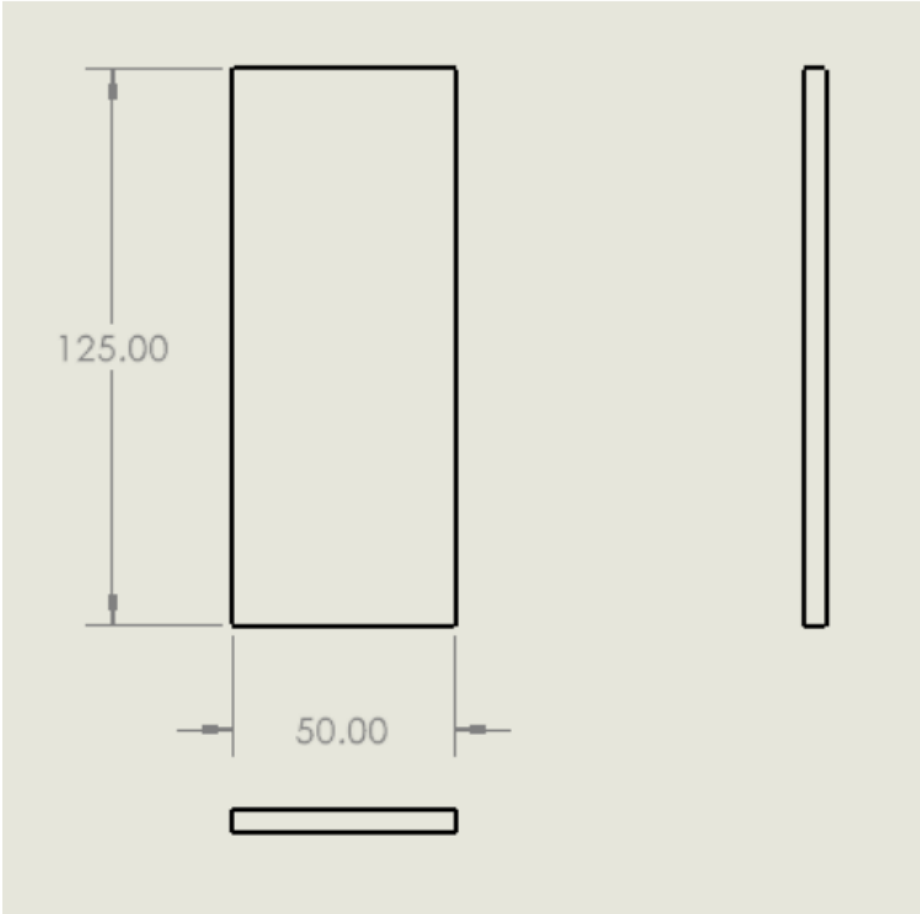




15. L-supports_type_2 (All dimensions in mm)



16. Heights (All dimensions in mm)



```
int ENA= 5;
int IN1= 7;
int IN2= 9;


// constants won't change. They're used here to set pin numbers:
const int SENSOR_PIN = 2; // the Arduino's input pin that connects to the
sensor's SIGNAL pin

// Variables will change:
int lastState = LOW;      // the previous state from the input pin
int currentState;         // the current reading from the input pin
int dir =  LOW ;



void setup() {
  // Serial.begin(9600);
  pinMode(ENA, OUTPUT);
  pinMode(IN1, OUTPUT);
  pinMode(IN2, OUTPUT);

   Serial.begin(9600);
  // initialize the Arduino's pin as aninput
  pinMode(SENSOR_PIN, INPUT);
}
void loop() {
  // read the state of the the input pin:
  currentState = digitalRead(SENSOR_PIN);


  if(lastState == LOW && currentState == HIGH)
    Serial.println("The sensor is touched");
    digitalWrite(IN1, LOW);
    digitalWrite(IN2, HIGH);
    analogWrite(ENA, 255); // Set the speed of the motor by varying the PWM
value between 0 to 255
   if(lastState == HIGH && currentState == HIGH)
    Serial.println("The sensor is touched");
    digitalWrite(IN1, HIGH);
    digitalWrite(IN2, HIGH);
    analogWrite(ENA, 255); // Set the speed of the motor by varying the PWM
value between 0 to 255


  // save the the last state
  lastState = currentState;
}
```