

SMART PORTABLE VENDING MACHINE

Objective

Design and prototype a smart, portable vending machine that dispenses items after receiving the required coins, demonstrating clear mechanism design, technical drawings, and working functionality.

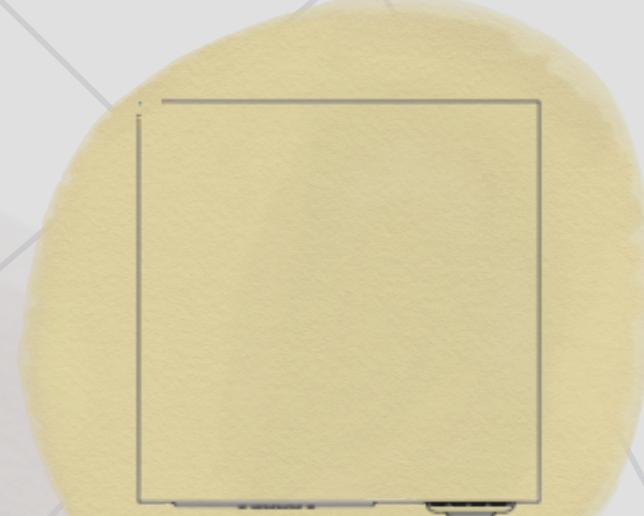


Figure: 2D top view of the vending machine layout

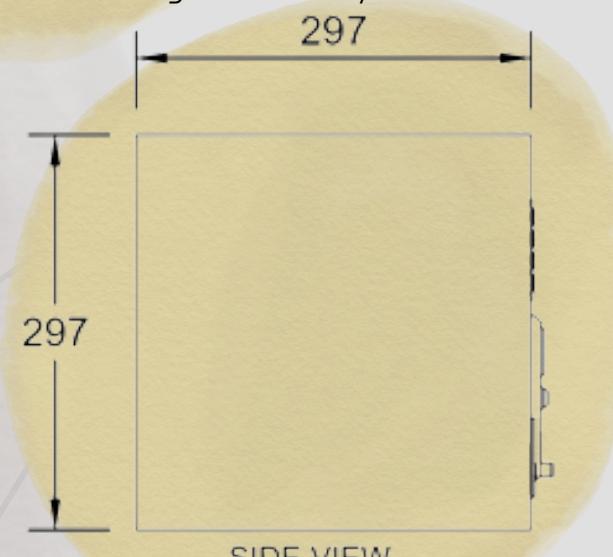


Figure: 2D side view of the vending machine

2D VIEW

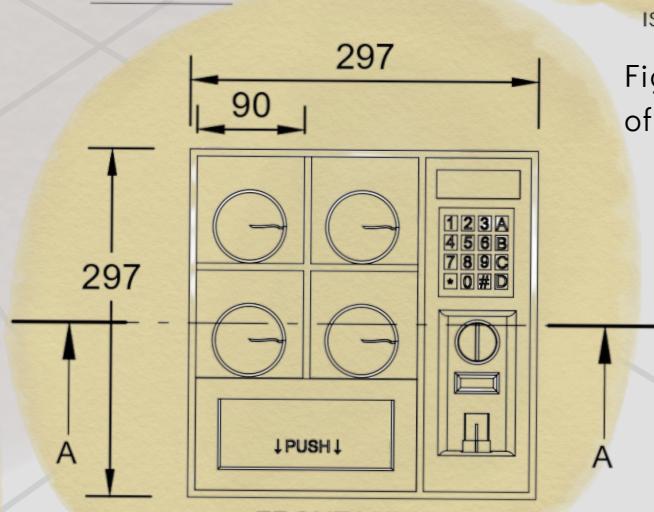
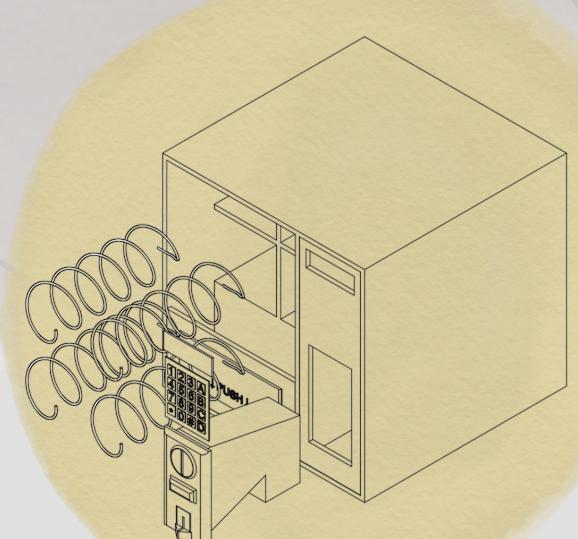


Figure: 2D Orthographic Front View highlighting product compartments, keypad interface, coin insertion, and push-to-dispense mechanism.

ISOMETRIC VIEW

Figure: Isometric view of the vending machine



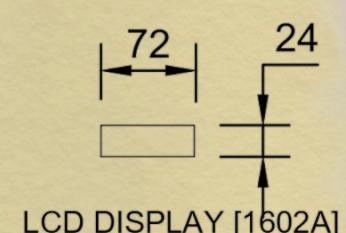
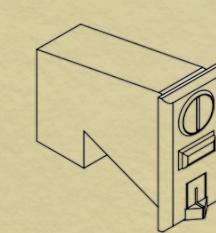
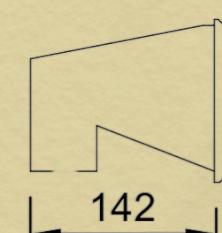
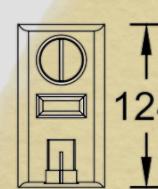
ISOMETRIC COMPONENT VIEW

Figure: 3D isometric component view showing coin acceptor, keypad, springs, and housing structure.

Conclusion

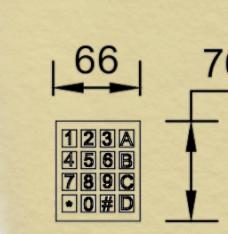
The vending machine prototype successfully fulfills its essential requirements, including compact size, portability, coin acceptance, and reliable single-item dispensing. By incorporating recycled materials, the design achieves cost reduction while promoting sustainability. Its simple, ergonomic structure ensures user-friendly operation, and future enhancements such as improved display features, and anti-jam mechanisms can further increase efficiency.

MAIN COMPONENTS

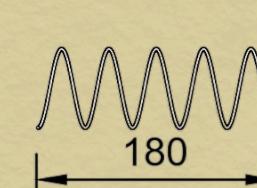


COIN ACCEPTOR [SW616]

LCD DISPLAY [1602A]



KEYPAD



SPRING

Figure: Main components of the vending machine – coin acceptor, LCD display, keypad, and spring mechanism.

Specifications

• Compact & Portable

A lightweight vending machine (>2 kg) with the dimensions (297×297 mm), ideal for classrooms, offices, or exhibitions.

• Reliable Dispensing

Uses a motor-driven spring mechanism for consistent single-item vending, preventing jams or double drops.

• Dual Product & Coin Support

Vends four product types one at a time and accepts two coin types, with single-coin insertion for secure recognition.

• Efficient Storage

Holds up to four item types, with space-saving compartment design for maximum versatility.

• Cost-Effective Build

Around 50% cheaper than market alternatives, using recycled materials without sacrificing durability.

Group-14

Aloraini Abdulhakim
Muhannadhu Musthafa
Salma Yasser
Abdelmohsine Smili
Aiham Samooh Nizaru
Mohammed Salman Jalil