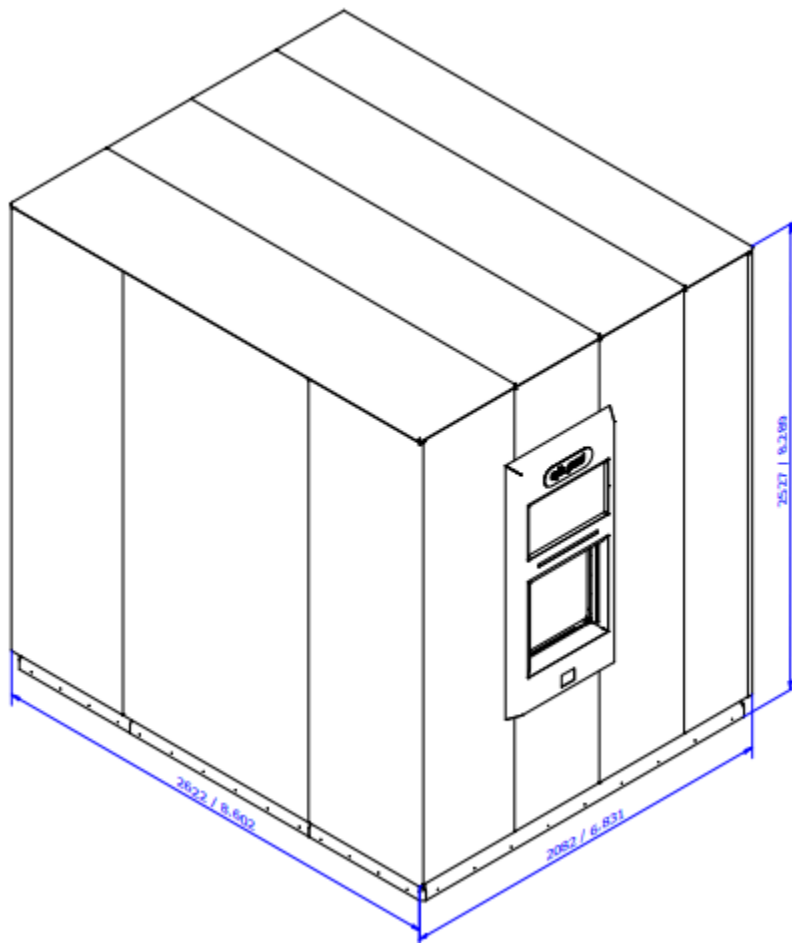


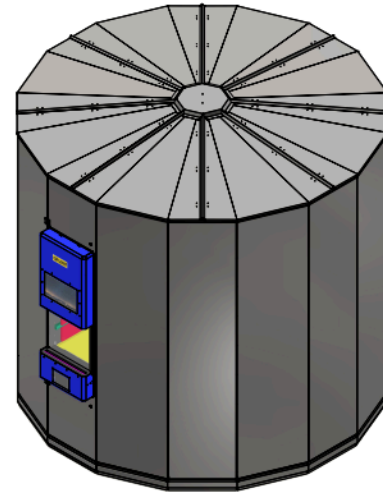
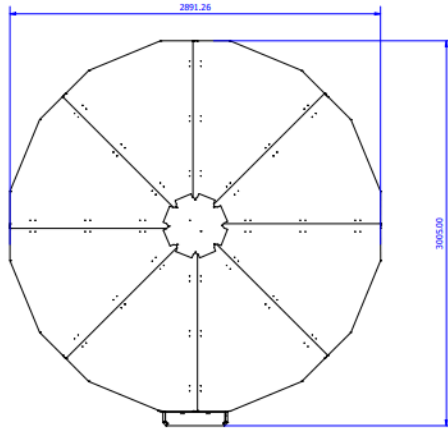
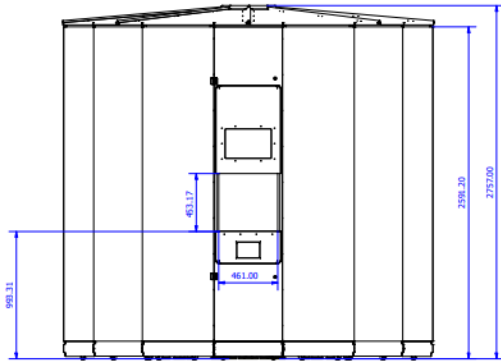
Engineering & Design

Product Drawings & layout

Cube Robot



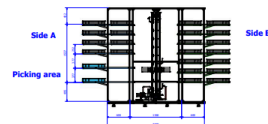
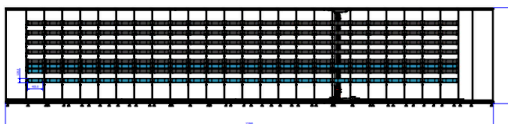
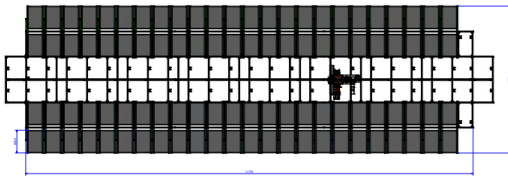
Tower Robot



- *General Notes, Unless specified:**
1. General tolerance refers to ISO-2768.
 2. Consider H12 Roughness Grade for machined parts.
 3. Bending Tolerance +/- 0.5mm.
 4. Retap threads after finishing operation. Parts should be clean.
- *Welding Note:**
5. Cut-off all sharp corners, edges, and threads. Finishing Operation after welding.
 6. Welding Tolerance +/- 1mm.
 7. Dimensional Note.
 7. Critical dimensions need to be inspected.

THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED BY THE QUALITY MANAGEMENT SYSTEMS (QMS) UNIT OF LEAPFILE LOGISTICS PRIVATE LIMITED (QALPD) ON 08/05/2024. IT IS TO BE KEPT UNDER THE QUALITY MANAGEMENT SYSTEMS (QMS) UNIT OF LEAPFILE LOGISTICS PRIVATE LIMITED (QALPD).									
REV	DATE	DESCRIPTION	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE
1	01/05/2024	Initial Design	Design - A	01/05/2024	01/05/2024	01/05/2024	01/05/2024	01/05/2024	01/05/2024
LeapFile Logistics Private Limited (QALPD)									
No. 1, 2nd Floor, Regent Road, Singapore - 102505									
QALPD Rev - 1									

Nano warehouse

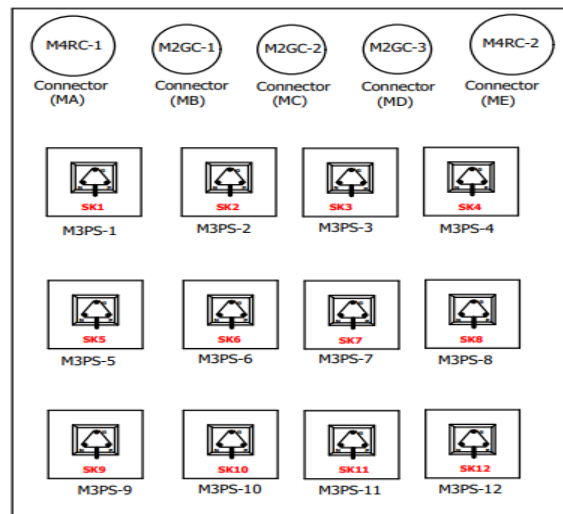


Controls System Architecture

Product & System Electrical Schematics

Panels & Devices Layout

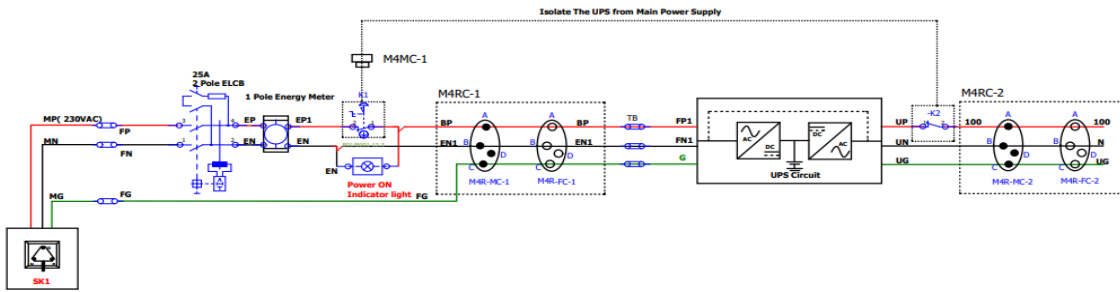
Panel Wiring Schematics-



Note:

- 1) M4RC-1 -> Main Panel 4 Pin Rtex(Male & Female) Connector -MA
- 2) M2GC-1 -> Main Panel 2 GX-16(Male & Female) Connector -MB
- 3) M2GC-2 -> Main Panel 2 GX-16(Male & Female) Connector -MC
- 4) M2GC-3 -> Main Panel 2 GX-16(Male & Female) Connector -MD
- 5) M4RC-2 -> Main Panel 4 Pin Rtex(Male & Female) Connector -ME
- 6) M3PS-1 -> Main Panel 3 Pin (Plug & Socket) -SK1
- 7) M3PS-2 -> Main Panel 3 Pin (Plug & Socket) -SK2
- 8) M3PS-3 -> Main Panel 3 Pin (Plug & Socket) -SK3
- 9) M3PS-4 -> Main Panel 3 Pin (Plug & Socket) -SK4
- 10) M3PS-5 -> Main Panel 3 Pin (Plug & Socket) -SK5
- 11) M3PS-6 -> Main Panel 3 Pin (Plug & Socket) -SK6
- 12) M3PS-7 -> Main Panel 3 Pin (Plug & Socket) -SK7
- 13) M3PS-8 -> Main Panel 3 Pin (Plug & Socket) -SK8
- 14) M3PS-9 -> Main Panel 3 Pin (Plug & Socket) -SK9
- 15) M3PS-10 -> Main Panel 3 Pin (Plug & Socket) -SK10
- 16) M3PS-11 -> Main Panel 3 Pin (Plug & Socket) -SK11
- 17) M3PS-12 -> Main Panel 3 Pin (Plug & Socket) -SK12

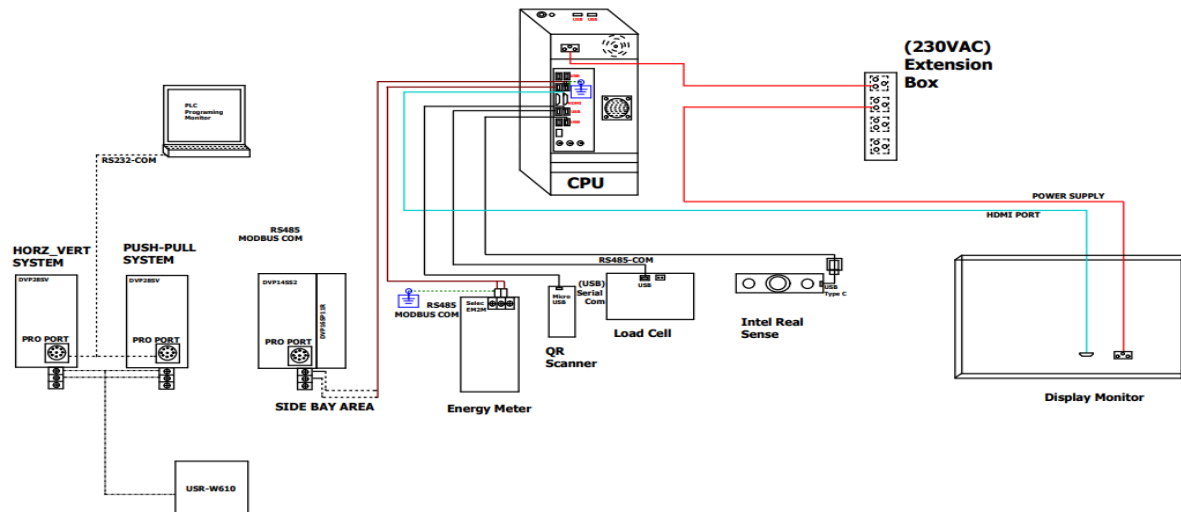
Field Wiring Schematics



Notes:

- * MP-> PHASE Supply From Main
- * FP-> PHASE Supply From Fuse Terminal Block
- * EP-> Phase Supply From ELCB
- * EP1-> Phase Supply From Energy Meter
- * BP-> PHASE Supply From Emergency Switch
- * UP-> UPS Phase Supply
- * 100-> PHASE Supply From Key Switch
- * SK1-> 3 Pin, 25A Socket For Input AC supply
- * K1 & K2 -> NC Element
- * MN-> NEUTRAL Supply From Main
- * FN-> NEUTRAL Supply From Fuse Terminal Block
- * EN-> Neutral Supply From ELCB
- * EN1-> Neutral Supply From Energy Meter
- * UN-> UPS Neutral Supply
- * N-> NEUTRAL Supply From Key Switch
- * M4RC-1-> 4 Pin, Rtex Connector- UPS Input
- * M4RC-2-> 4 Pin Rtex Connector- UPS Output
- * M4MC-1-> 4 Pin, Molex Connector- E-Stop

Power & Data Supply Layout



Bill of Material

- Insert Config Slides

Cube DC Challan Data

ROBOT STRUCTURE			
Frames-Bottom			6
Frame -Top			6
Vertical Member			108
Center-Top			25
Center-Bottom			25
Leveling Foot and Stud			265 Pair
LM Guides			4
Rack and Pinion			12
Fasteners set (Rack assembly)			
Shuttle System			
Horizontal System			1
Vertical System			1
Vertical Control Panel			1
Top guide and guide roller Assy			1
Horizontal Motors			1
Vertical motor			1
Fasteners (Shuttle assembly)			
Main Control Panel			
PC , Monitor , Keyboard & Mouse, Camera, Router, Ethernet Switch			1 set
Control Panel Unit			1

Assembly Plan

1. Base Assembly
 - a. Aluminium Extrusion / Frame Assembly
 - b. Levelling Foot
 - c. Levelling the base Structure
2. Horizontal Slide Assembly
 - a. Guide Assembly
 - b. Gear System Assembly

- c. Motor & Bracket Assembly
- 3. Vertical System Assembly
 - a. Control Panel Assembly
- 4. Push-Pull System Assembly
- 5. Structure Assembly
 - a. Bay Area assembly
 - b. Panel Assembly
 - c. Bay Control Panel
 - d. Main Control Panel
- 6. Slot Assembly
- 7. Anti-Friction Coating on Slots
- 8. Electrical Wiring
- 9. Camera System and Lighting assembly
- 10. Testing

Recommended Spare Parts List

- 1. Anti-Friction Coating Spray - Rs 800
- 2. Anti-Friction Tape - Rs
- 3. Holding Magnet - Rs 750
- 4. Current Collector - Rs 6500
- 5. Top Guide Roller - Rs
- 6. Relay Modules
- 7. Brass Guide Blocks
- 7. Tool Kit

Equipment Sizing Calculation / Configuration Tools

Screenshot of diagnostic tools

Preventative Maintenance and Service Manual Niranjana TN

- Checklist for FE Maintenance Visit

- Parts Manual