

# **SPECIFICATION OF ROBOT**

**CP180LEE03C02**



Please don't export this robot to Japan.

1st Edition : Dec.10.2014

KAWASAKI HEAVY INDUSTRIES LTD.  
ROBOT DIV.

Doc, No: 90101-2295DEA

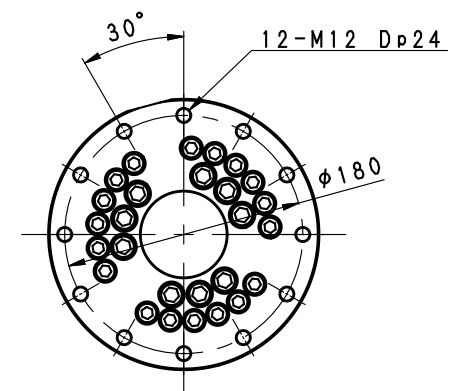
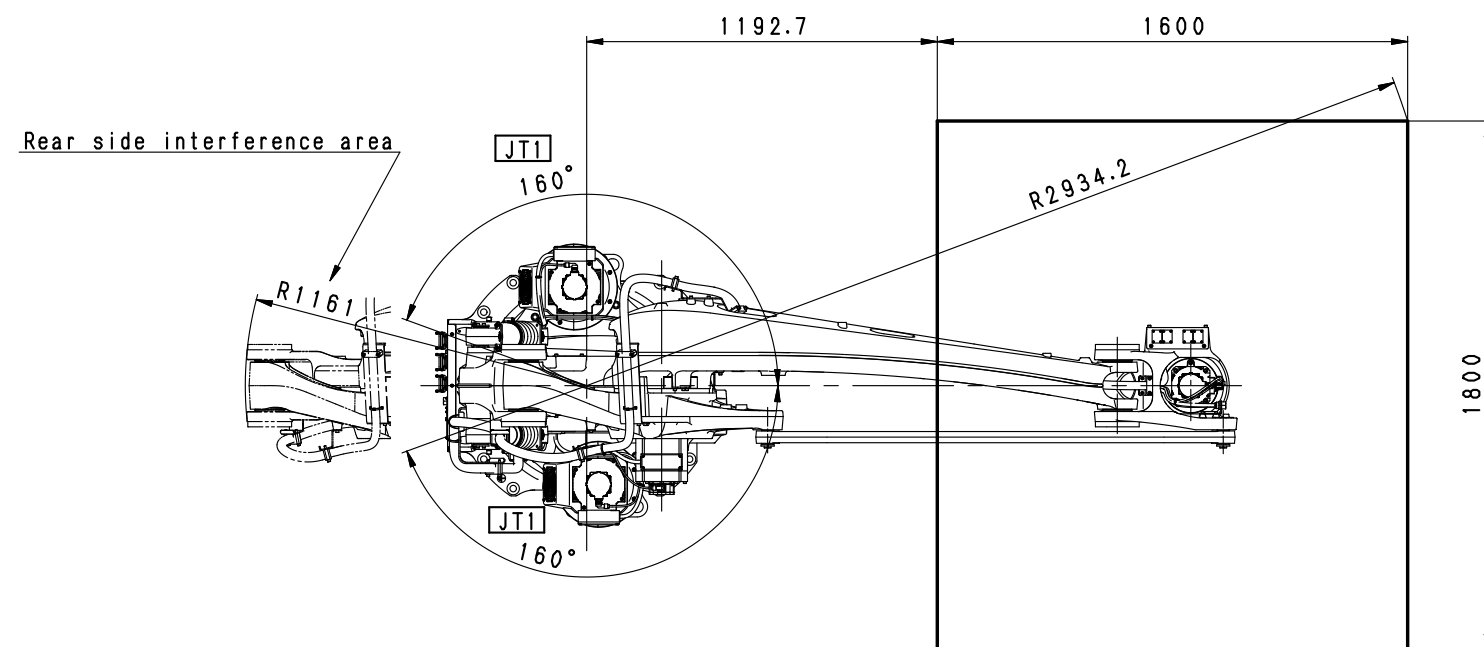
# 1. Specification of Robot

## [1] Robot Arm

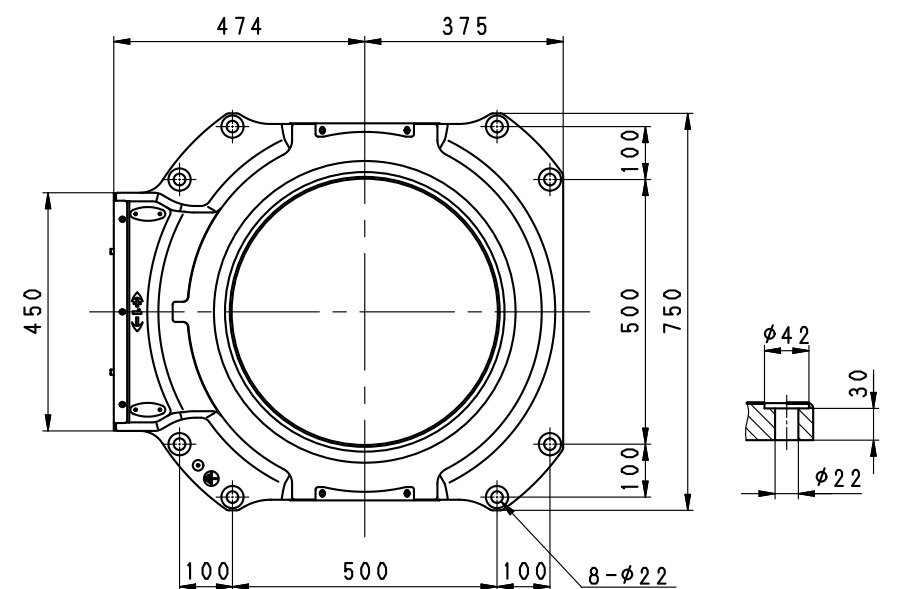
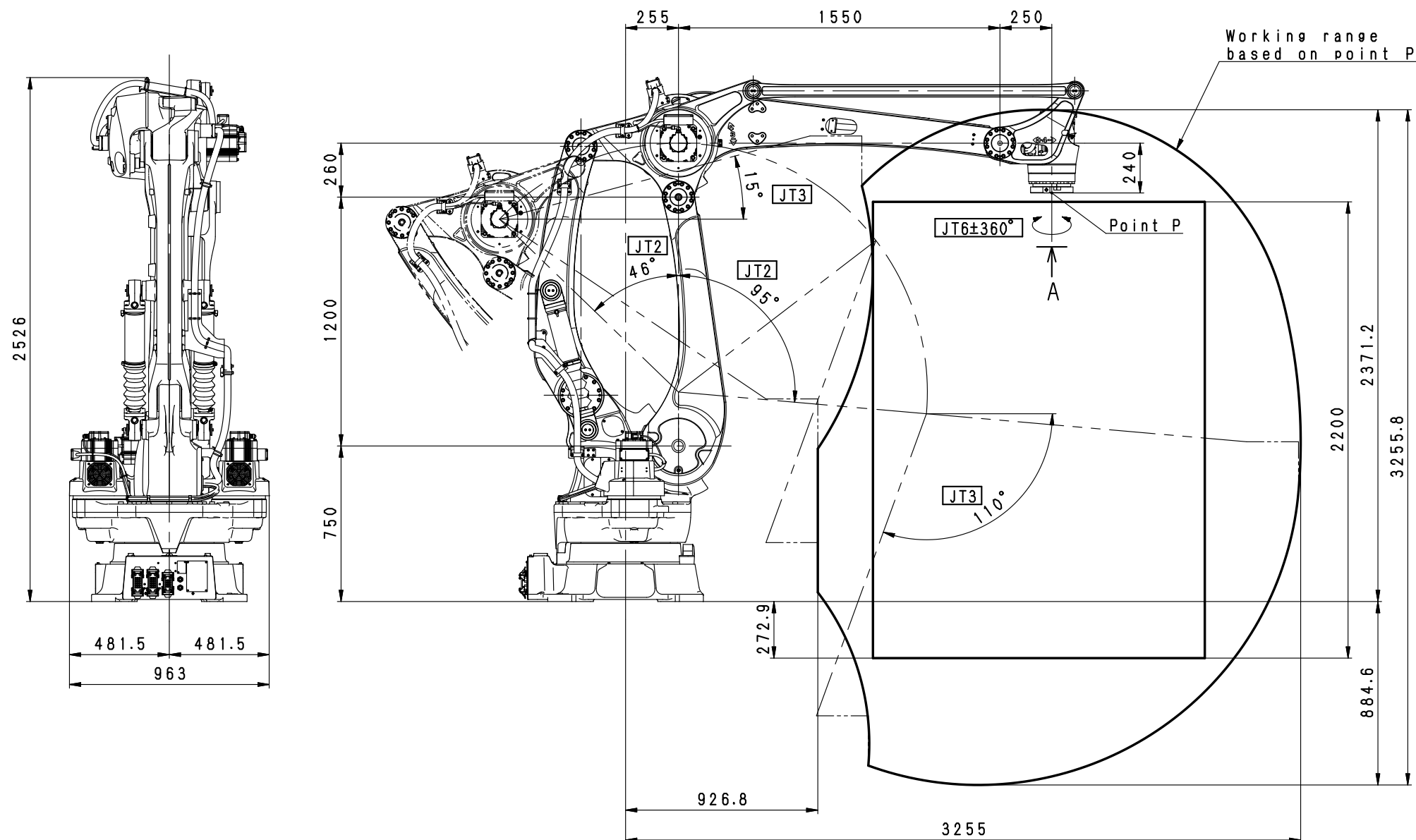
|                                 |   |                       |
|---------------------------------|---|-----------------------|
| 1. Model                        | CP180L-AC02   |                       |
| 2. Type                         | Articulated robot   |                       |
| 3. Degree of freedom            | 4 axes  |                       |
| 4. Max. payload                 | High-Speed  | Standard              |
|                                 | 130 kg  | 180 kg                |
| 5. Palletizing Capacity         | Approx. 2050 cycles/h   | Approx. 1800 cycles/h |
|                                 | On the condition that robot moves 400 mm stroke upward-downward and 2000 mm stroke in right-left direction.   |                       |
| 6. Axis specification           |   |                       |
| Max. speed* <sup>1</sup>        | High-Speed  | Standard              |
| Arm rotation (JT1)              | 140 °/s   | 130 °/s               |
| Arm out-in (JT2)                | 125 °/s   | 120 °/s               |
| Arm up-down (JT3)               | 130 °/s   | 125 °/s               |
| Wrist twist (JT4)               | 400 °/s   | 330 °/s               |
|                                 | Note* <sup>1</sup> The max speed changes by weight setting between 130kg to 180kg.  |                       |
| Max. operating range            | High-Speed  | Standard              |
| Arm rotation (JT1)              | +160 ° ~ -160 °   |                       |
| Arm out-in (JT2)                | + 95 ° ~ - 46 °   |                       |
| Arm up-down (JT3)               | + 15 ° ~ -110 °   |                       |
| Wrist twist (JT4)               | +360 ° ~ -360 °   |                       |
| 7. Load capacity of             |   |                       |
| Max. torque                     | High-Speed  | Standard              |
| Wrist twist (JT4)               | —   | —                     |
|                                 |   |                       |
| Moment of inertia* <sup>2</sup> | High-Speed  | Standard              |
| Wrist twist (JT4)               | 50 kg·m <sup>2</sup>  | 85 kg·m <sup>2</sup>  |
|                                 | Note* <sup>2</sup> Value in this table shows allowable moment of inertia of JT4 when max. allowed torque is applied to the axis. If more detailed data is required for your application, please contact Kawasaki. |                       |
| 8. Repeatability                | ±0.5 mm (at the tool mounting surface)  |                       |
| 9. Driving motor                | Brushless AC Servomotor   |                       |
| 10. Position detector           | Absolute encoder  |                       |
| 11. Working range               | See attached drawing  |                       |
| 12. Mass                        | 1600 kg (without options)   |                       |
| 13. Color                       | Munsell 10GY9/1 equivalent  |                       |
| 14. Installation                | Floor mounting  |                       |
| 15. Environment cond.           | (Temperature) 0 ~ 45 °C, (Humidity) 35 ~ 85 %, no dew, nor frost allowed  |                       |
| 16. Built-in utilities          | Air tube to operate the hand ( φ 12 × 2 line )  |                       |
|                                 | Wirings for valves to operate the hand (DC24 V × 8 circuits)  |                       |
|                                 | Sensor harness to operate the hand (12 circuits)  |                       |
| 17. Options                     | Mechanical Stopper for JT1  |                       |
|                                 | Valve harness (8 point)   |                       |
|                                 | Sensor harness (12 point)   |                       |
|                                 | Fork Pocket   |                       |
|                                 | Cooling fan unit for JT2  |                       |
|                                 | Air cleaning equipment  |                       |
| 18. Others                      | Consult Kawasaki about maintenance parts and spare parts.   |                       |

| [2] Controller                    |   |   |
|-----------------------------------|---|---|
| 1. Model                          | E03   |   |
| 2. Enclosure                      | Enclosed structure / Indirect cooling system  |   |
| 3. Dimensions                     | See attached drawing  |   |
| 4. Number of controlled axes      | Max.6 axes (standard 5 axes including dual axes, option 1 axis)                                     |   |
| 5. Servo control and drive system | Full Digital Servo System   |   |
| 6. Type of control                | Teach mode  | Joint, Base, Tool, Fixed Tool (option) operation mode                     |
|                                   | Repeat mode   | Joint, Linear, Circular (option) interpolation                            |
| 7. Teaching method                | Teaching or AS language programming   |   |
| 8. Memory capacity                | 8 MB  |   |
| 9. External operation signals     | External Emergency stop, External Hold, etc.  |   |
| 10. Number of IO slots            | 3 slots   |   |
| 11. Operation panel               | Teach/Repeat SW, Emergency Stop SW, Control power lamp  |   |
| 12. Communication I/F             | Ethernet(100BASE-TX) , USB, RS-232C<br>each 2port (1port on panel, 1port inside controller)         |   |
| 13. Mass                          | See attached drawing  |   |
| 14. Power requirement             | AC200 V - AC220 V $\pm$ 10%, 50/60 Hz, 3 phases,<br>Max. 12 kVA                                     |   |
| 15. Ground                        | Less than 100 $\Omega$ (robot dedicated ground)<br>Leakage current: max. 100 mA                     |   |
| 16. Ambient temperature           | 0 - 45°C  |   |
| 17. Relative humidity             | 35 - 85 % (non-condensation)  |   |
| 18. Color                         | Munsell: 10GY9/1 equivalent   |   |
| 19. Teach Pendant                 | TFT color display (5.7 inch LCD) with touch panel<br>Emergency Stop SW, Teach Lock SW and Enable SW |   |
| 20. Safety Circuit                | Category: 4, Performance Level: e (EN ISO13849-1) ★   |   |
| 21. Standard Options              |   |   |
|                                   | General purpose IO board  | IN:32 OUT:32 NPN(sink) type or PNP(source) type                           |
|                                   | TP sheet language   | English or Japanese or Chinese  |
|                                   | I/O connector   | D-SUB 37pin(male,female) with cover                                       |
|                                   | Power/Signal cable  | 5m, 10m, 15m  |
|                                   | Teach Pendant cable   | 5m, 10m, 15m  |
|                                   | Transformer unit  | AC380V-415V / AC440V-480V by tap selection                                |
| 22. Other Options                 |   |   |
|                                   | Additional IO board   | IN:64/96 OUT:64/96 NPN(sink) type or PNP(source) type                     |
|                                   | Motor brake release   | Manual brake release switch BOX   |
|                                   | PC cable (RS-232C)  | 1.5 m, 3 m  |
|                                   | External axes control   | Additional amplifier for external axis                                    |
|                                   | Extended safety functions   | Cubic-S(Motion area monitoring, Joint monitoring, Speed monitoring etc)   |
|                                   | Teach Pendant option  | Connector for TP less   |
|                                   | Fast check mode   | Fast check mode Switch  |
|                                   | Others  | Field BUS, Software PLC, Analog input/output,<br>Conveyor Synchronization |
| 23. Others                        | Consult Kawasaki about maintenance parts and spare parts.   |   |

★ Category and Performance level (PL) are determined by the whole system and conditions.□  
The safety circuit of this controller is available in the system of category: up to 4, PL: up to e.



VIEW A

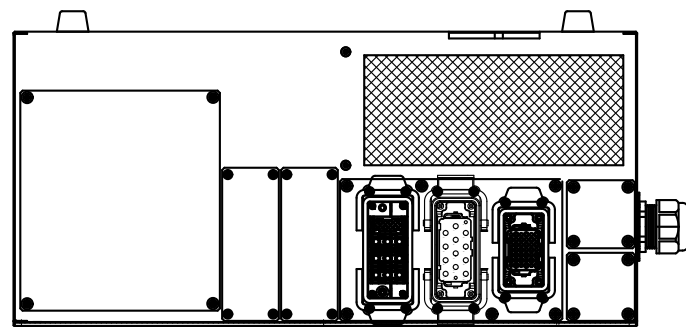


Installation Dimensions

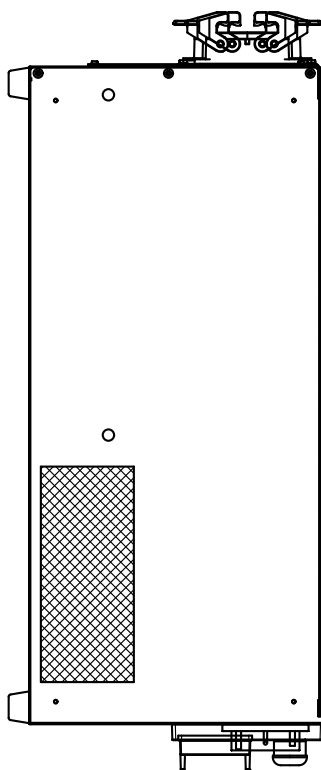
CP130L/180L/250L/300L-A  
WORKING RANGE

E 0 3   C O N T R O L L E R

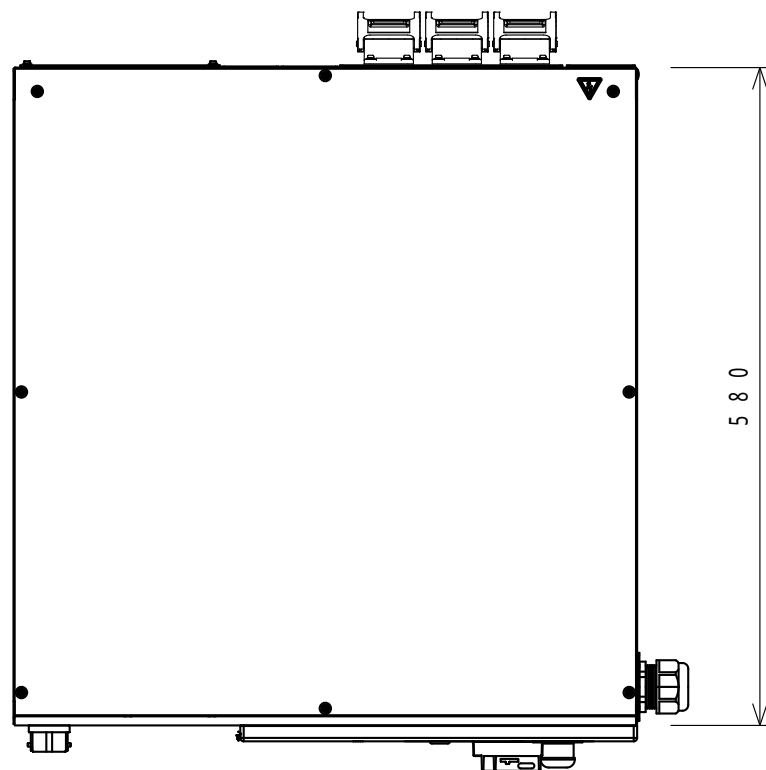
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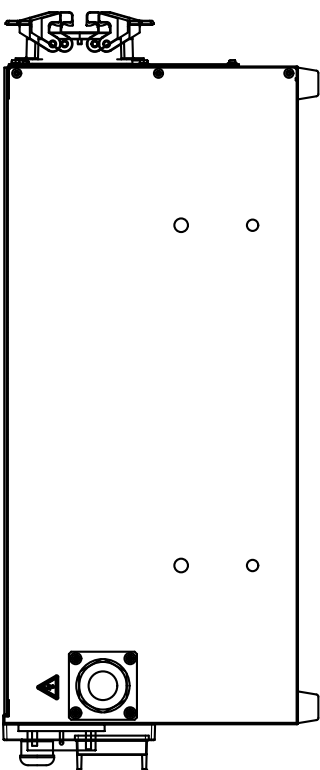
R E A R   V I E W



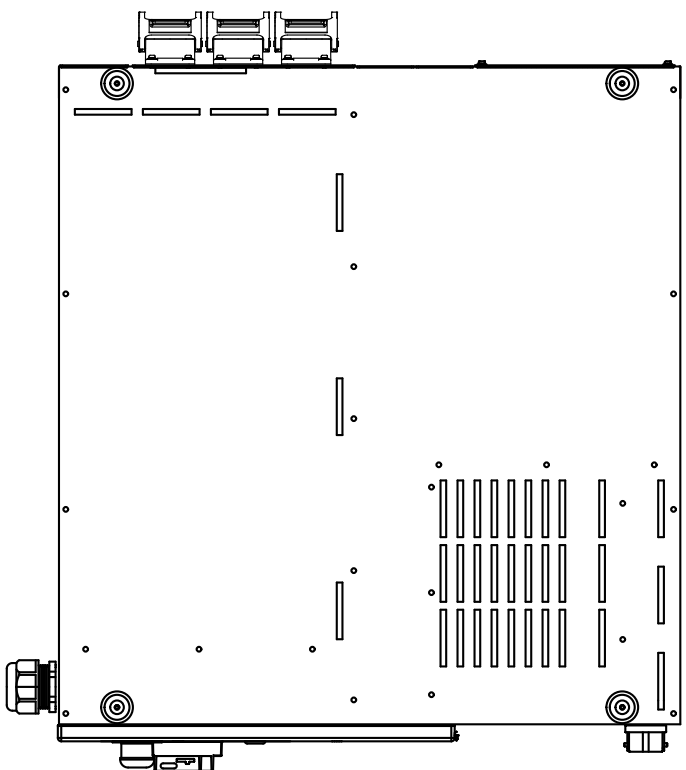
S I D E   V I E W



T O P   V I E W

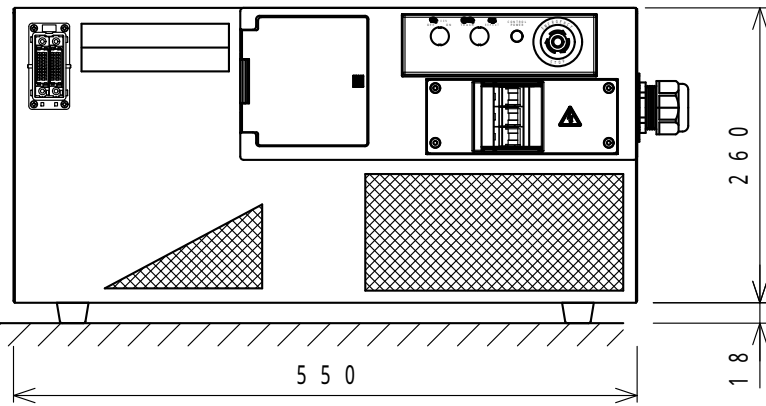
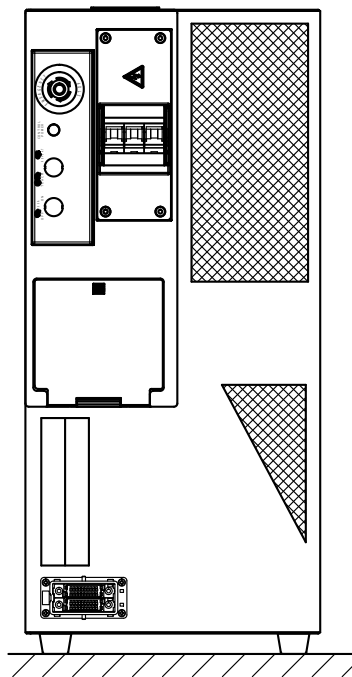


S I D E   V I E W



B O T T O M   V I E W

V e r t i c a l   M o u n t



F R O N T   V I E W

