

# New Zealand EF class locomotive

## Overview

The New Zealand EF class locomotive is a very notable train in KiwiRail's fleet, as it's currently the only mainline electric locomotive, and electric freight train in New Zealand. All other operating locomotives are diesel.

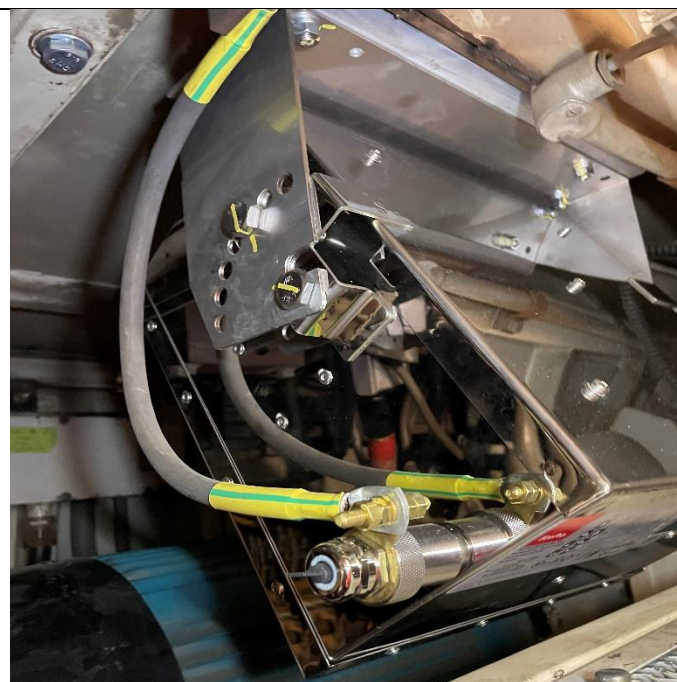
Once the 411-kilometre section of the North Island Main Trunk line (NIMT) between Palmerston North and Te Rapa (Hamilton) was electrified with 25 kV AC. The EF class was introduced in 1988 with the completion of the NIMT electrification. They are New Zealand's most powerful locomotives with a power output of 3,000 kW (4,000 hp). They use a semi-uncommon wheel arrangement of Bo-Bo-Bo, well suited for NZ's light and curvy tracks. They feature regenerative braking, thus allowing for massive power savings as energy generated from braking can be fed directly back into the grid.

A total of 22 EF class locomotives were built. In 2018 it was announced that 15 units will undergo life extension overhauls, to provide environmentally sustainable and zero emission modes transportation.

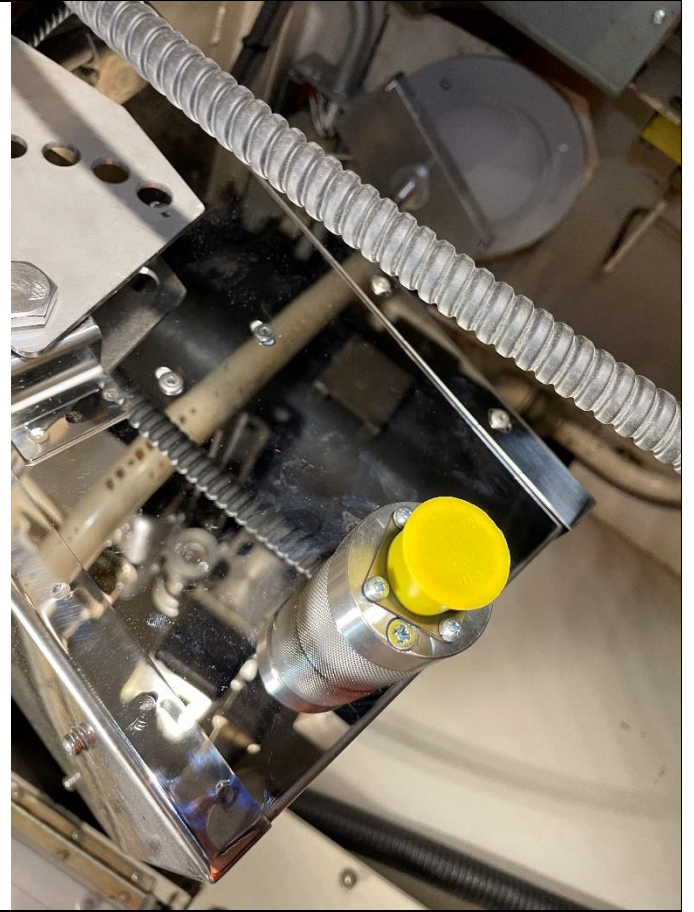
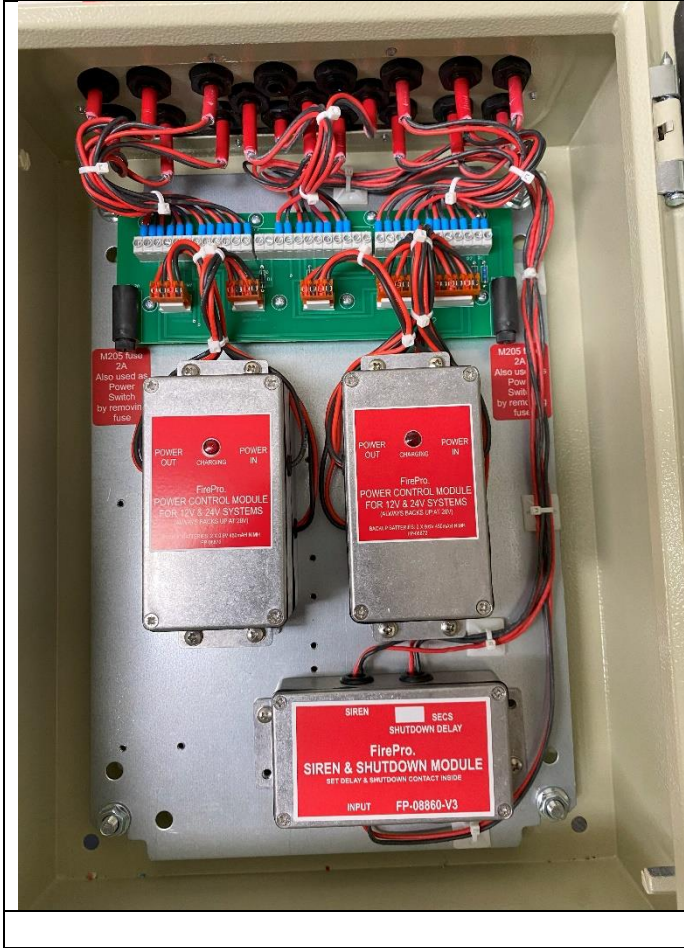




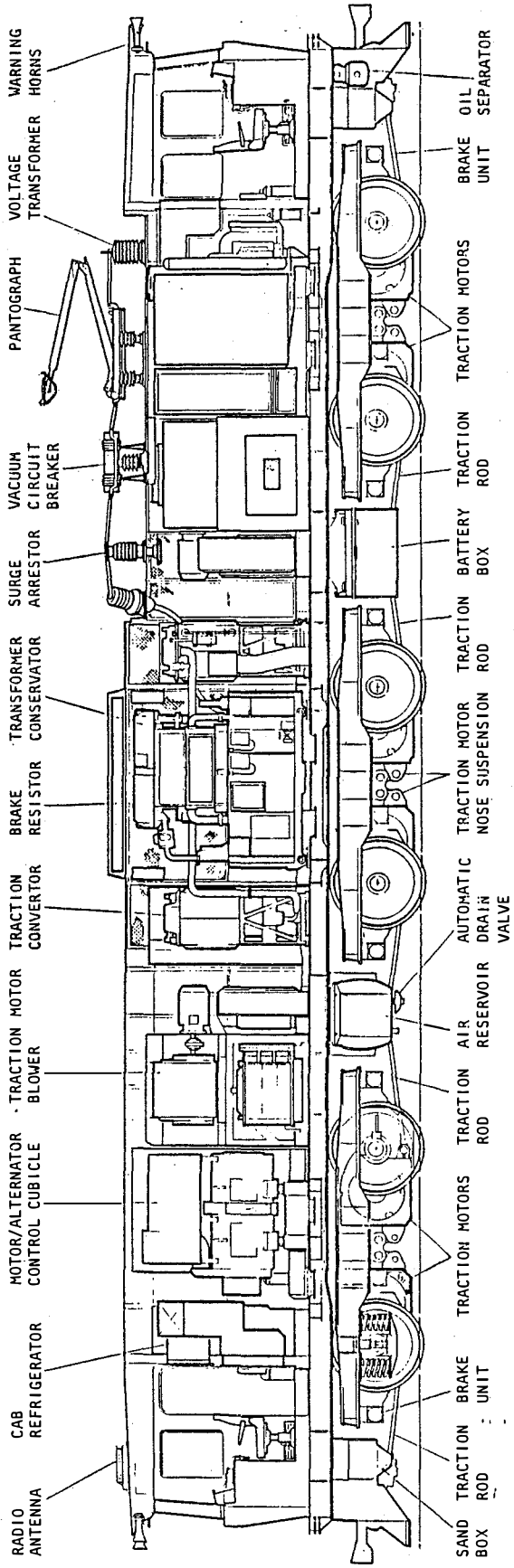
# Installation of FirePro Fire Suppression System







VIEW ON 'B' SIDE



NO. 1 END

NO. 2 END

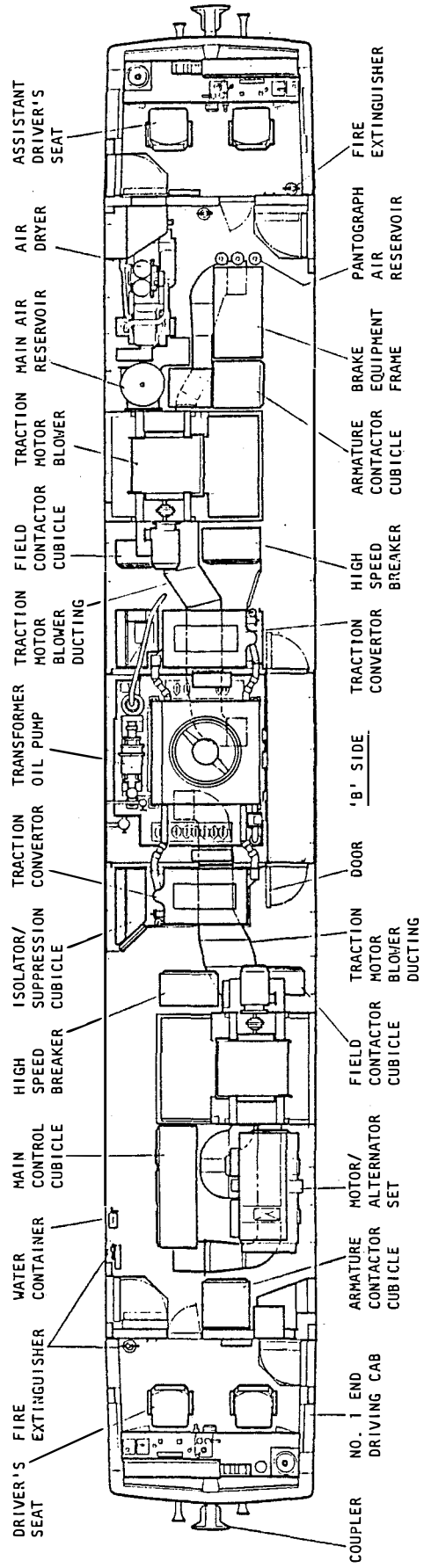


Fig. 2 ARRANGEMENT OF EQUIPMENT

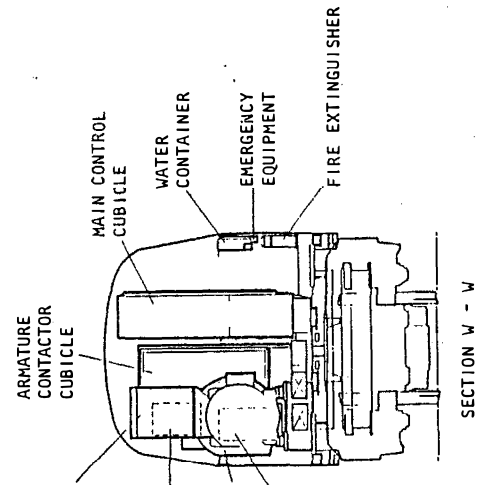
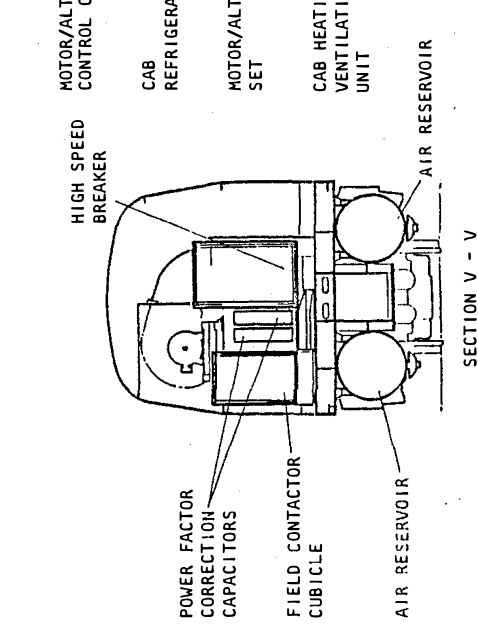
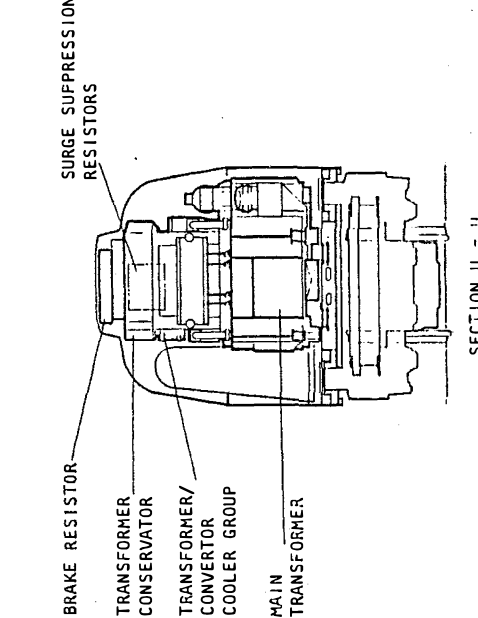
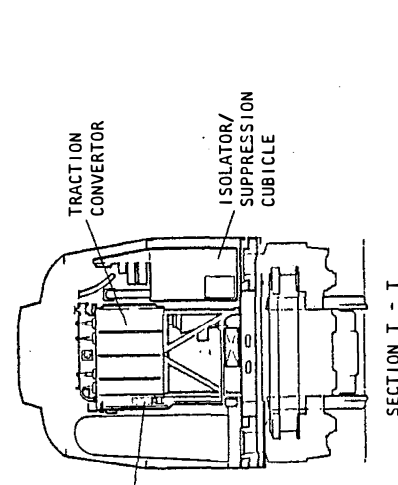
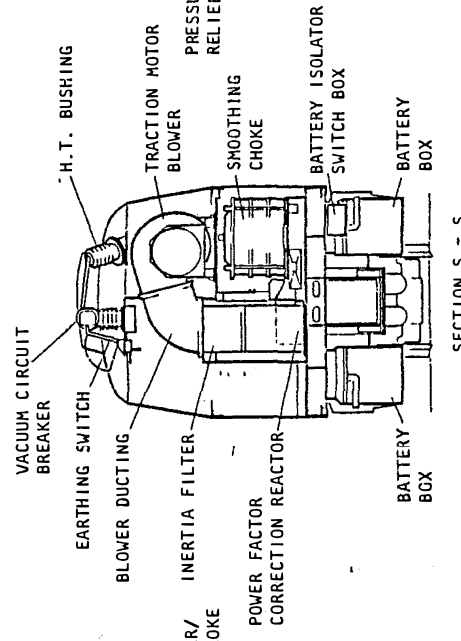
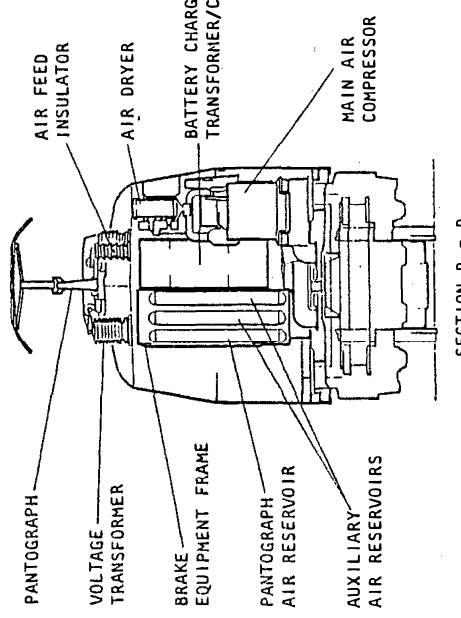
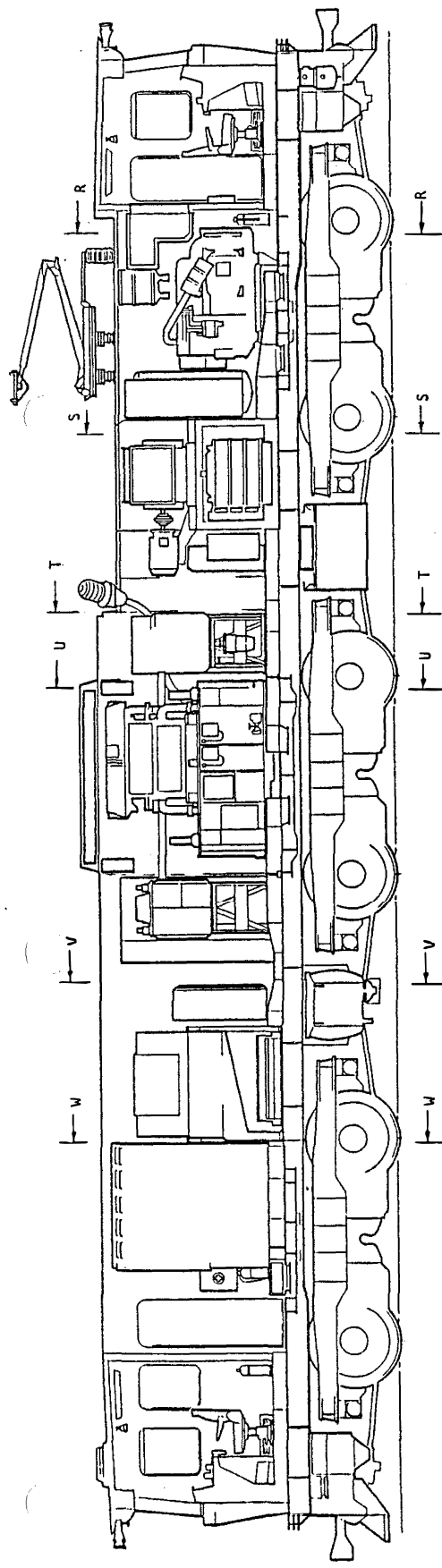
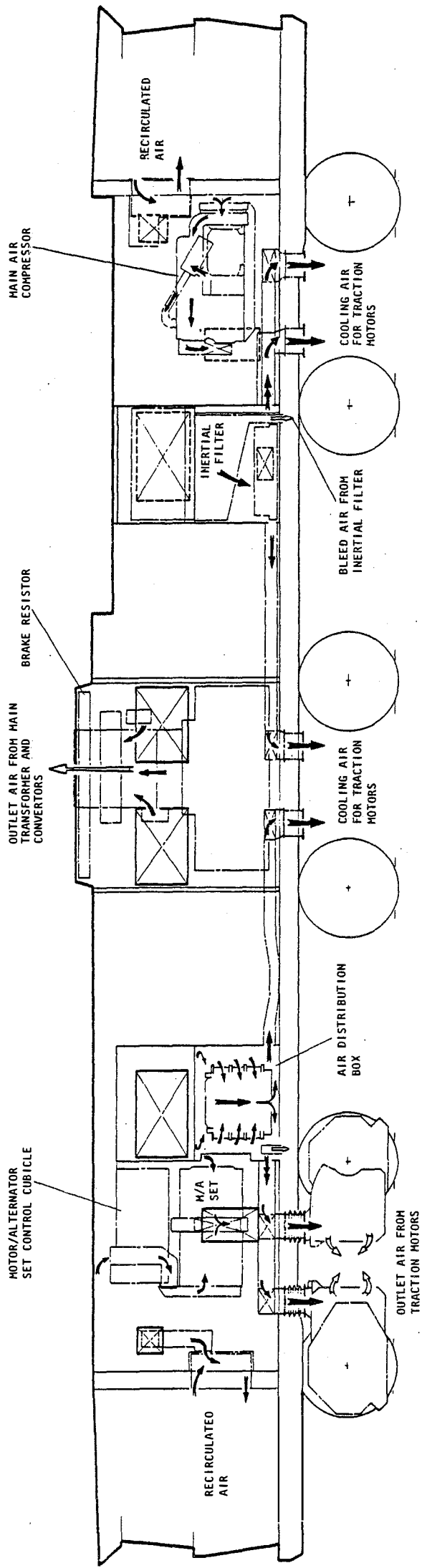


Fig.3 ARRANGEMENT OF EQUIPMENT-SECTIONAL VIEWS



NO. 1 END

NO. 2 END

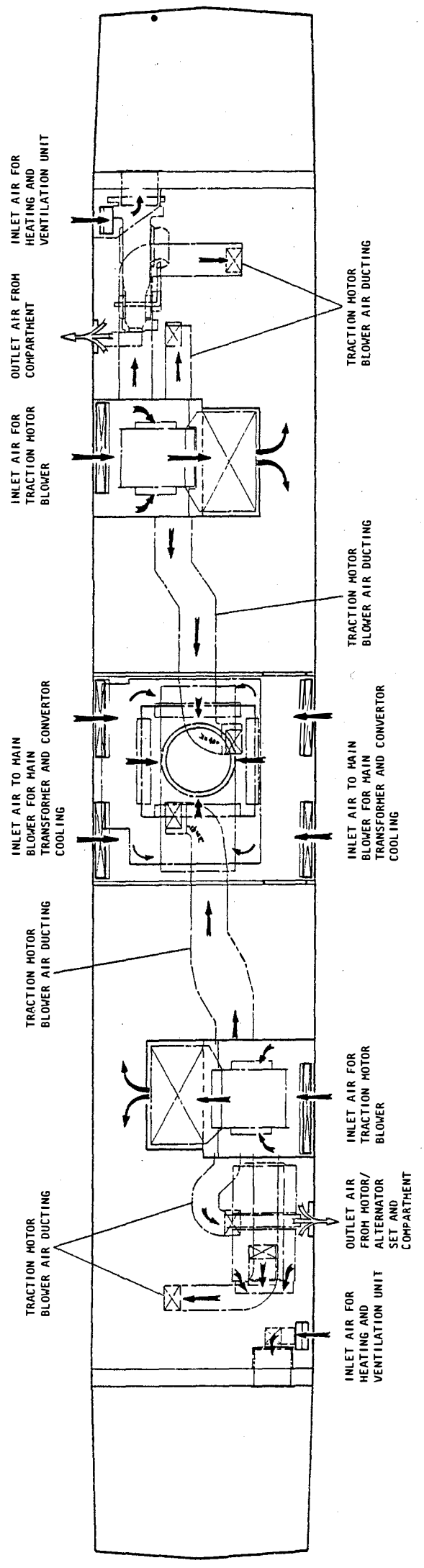
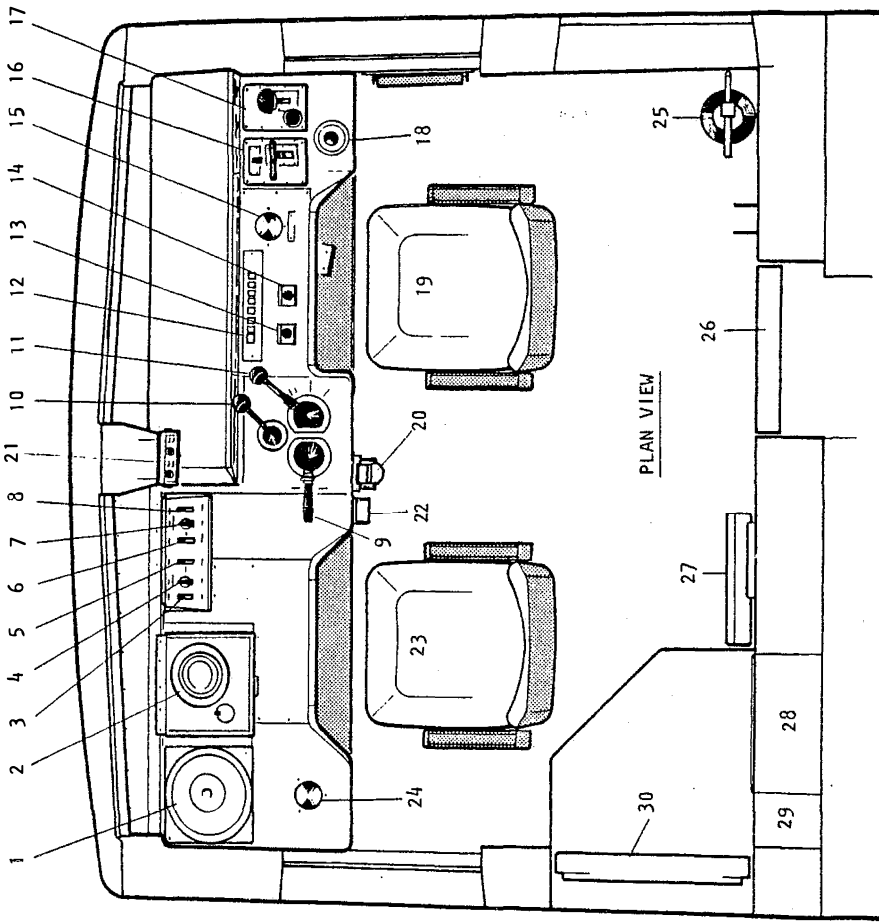
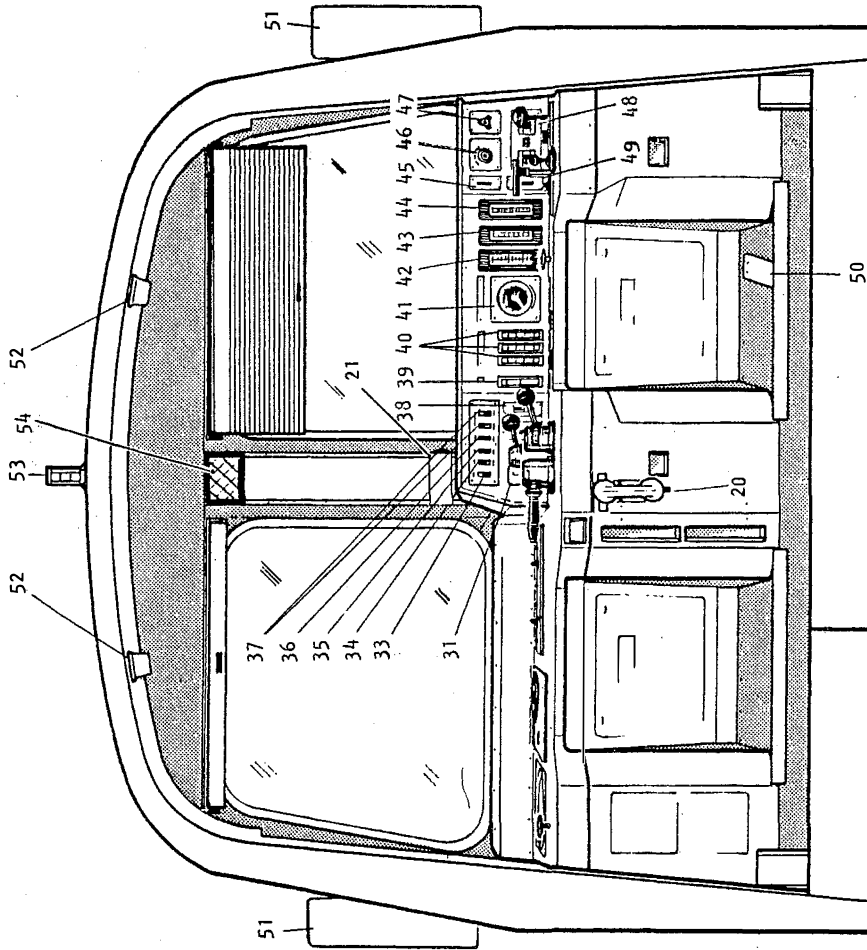


Fig.4 AIR FLOW DIAGRAM

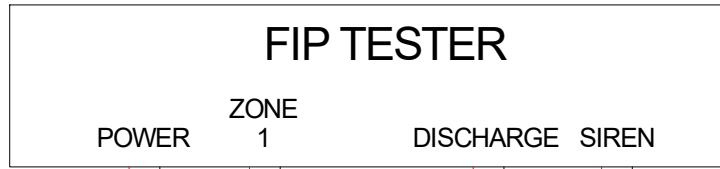


- 1. SINK
- 2. BOILING RING
- 3. SPOT LIGHT SWITCH
- 4. VENTILATION SWITCH
- 5. COMPARTMENT LIGHT SWITCH
- 6. FOOT WARMER SWITCH
- 7. HEATER SWITCH
- 8. HALF POWER SWITCH
- 9. SELECTOR HANDLE
- 10. ELECTRIC BRAKE HANDLE
- 11. POWER HANDLE
- 12. ANNUNCIATOR PANEL
- 13. RESET PUSHBUTTON
- 14. SANDING PUSHBUTTON
- 15. EMERGENCY PUSHBUTTON SWITCH
- 16. AUTO BRAKE CONTROLLER
- 17. INDEPENDENT BRAKE CONTROLLER
- 18. HORN LEVER
- 19. DRIVER'S SEAT
- 20. HANDSET
- 21. RADIO CONTROL UNIT
- 22. ASHTRAY
- 23. ASSISTANT DRIVER'S SEAT
- 24. EMERGENCY PUSHBUTTON
- 25. FIRE EXTINGUISHER
- 26. BULKHEAD DOOR
- 27. TIP-UP SEAT
- 28. REFRIGERATOR
- 29. HEATING & VENTILATING UNIT
- 30. CAB DOOR

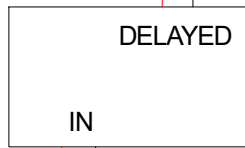


- 31. KETTLE SOCKET
- 33. CAB LIGHTS
- 34. INSTRUMENT LIGHTS
- 35. STEP/COUPLER LIGHTS
- 36. TAIL LIGHTS
- 37. HEADLIGHT SWITCHES
- 38. DEMISTER SWITCH
- 39. LINE VOLTAGE AMMETERS
- 41. SPEEDOMETER
- 42. DUPLEX GAUGE MRP/BCP
- 43. DUPLEX GAUGE BPP/ERP
- 44. FLOW INDICATOR
- 45. SPOT LIGHT
- 46. INSTRUMENTS DIMMER SWITCH
- 47. WASH/WIPE CONTROL SWITCH
- 48. PARKING BRAKE PANEL
- 49. FOOT WARMER SWITCH
- 50. VIGILANCE PEDAL
- 51. MIRROR
- 52. CAB LIGHT
- 53. RADIO ANTENNA
- 54. RADIO SPEAKER

Fig. 6 No. 1 CAB EN.



DEUTSCH CONNECTORS



DELAYED  
DISCHARGE  
MODULE

