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Title: Maintenance Manual of Driver Console – TRAIN 18				
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TYPE MAE675UV2



DRIVER CONSOLE

1. Introduction

This document deals with the maintenance of the Train 18 Driver Console , which is located in nose

cone of the Driving trailer coach of the train 18 (Figure 1). Within the document it is described in detail which and how the maintenance activities shall be carried out.

1.1 Overview

Figure 1 shows driver cab where the driver console and driver seat are located.

The driver console is located at the front side of the drive cab.

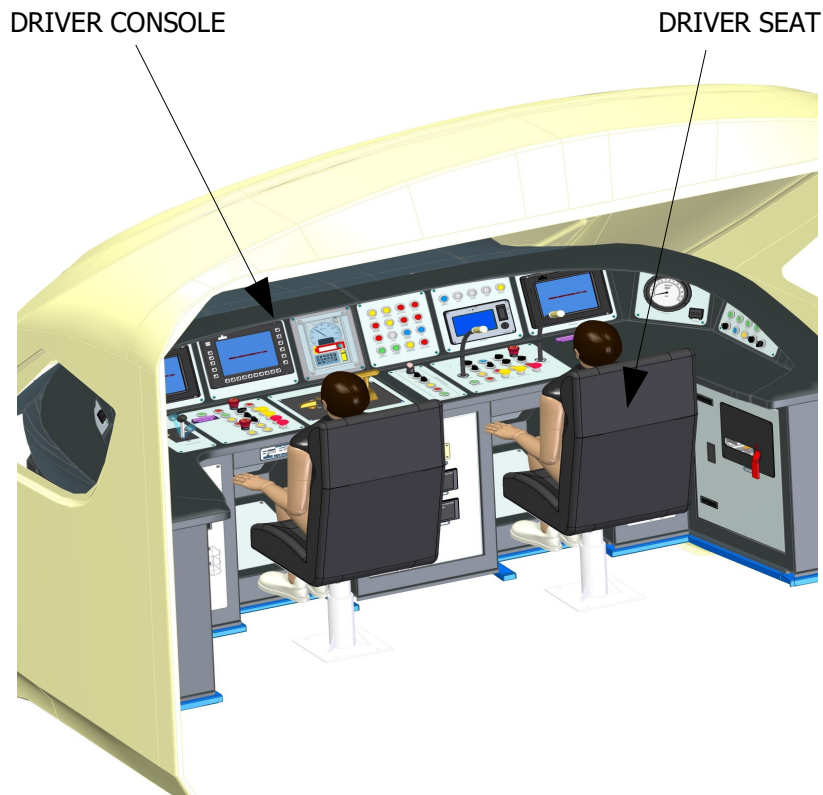


Figure 1: Overview of driver cab

Driver console is divided into two parts one is driver side and second is the guard side. Driver side contains the left operating panel, front operating & indication panel and right communication panel whereas guard side contains the front operating panel and side operating panel.

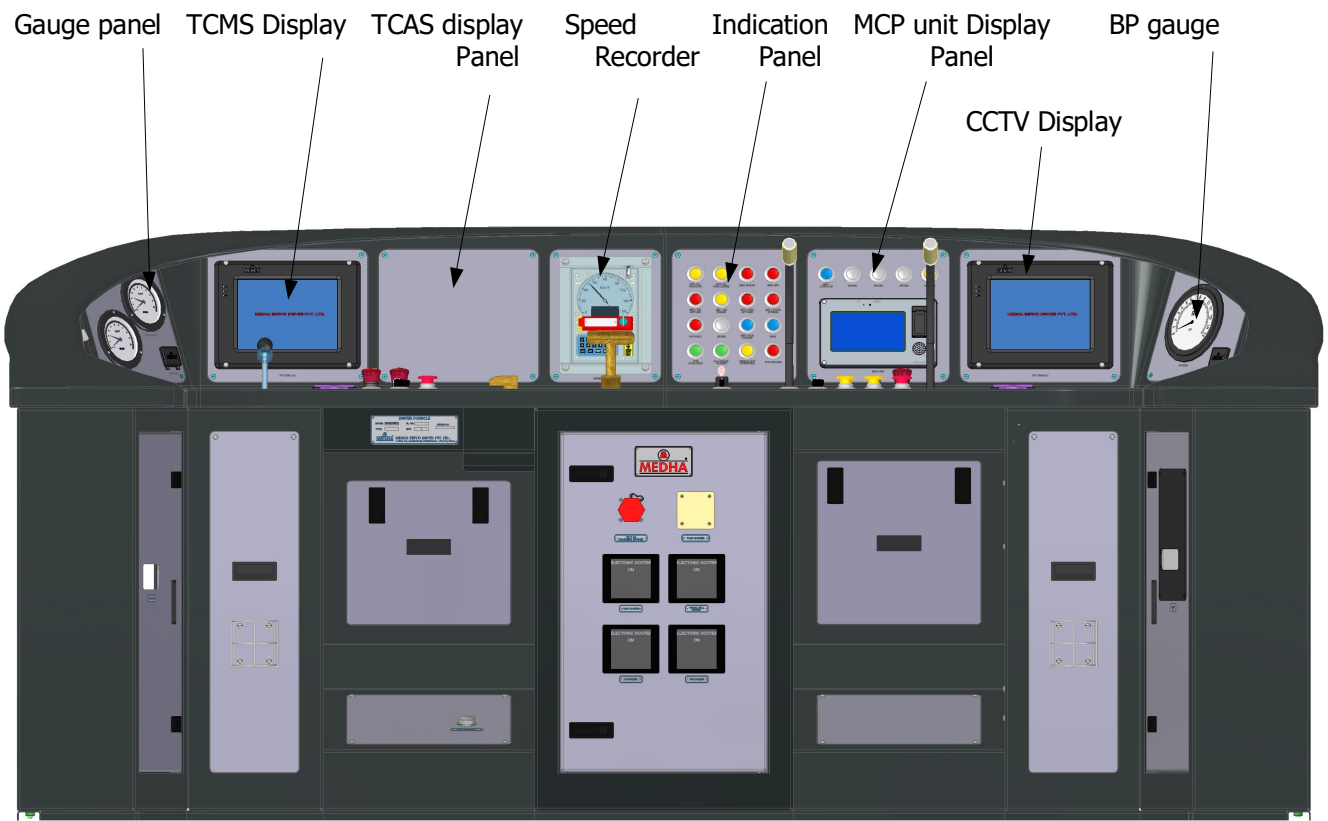


Figure 2 : Overview of components in Driver Console

1.2 Covers for maintenance

The different components of the driver console can be accessed through the covers tagged in figure 3 below.

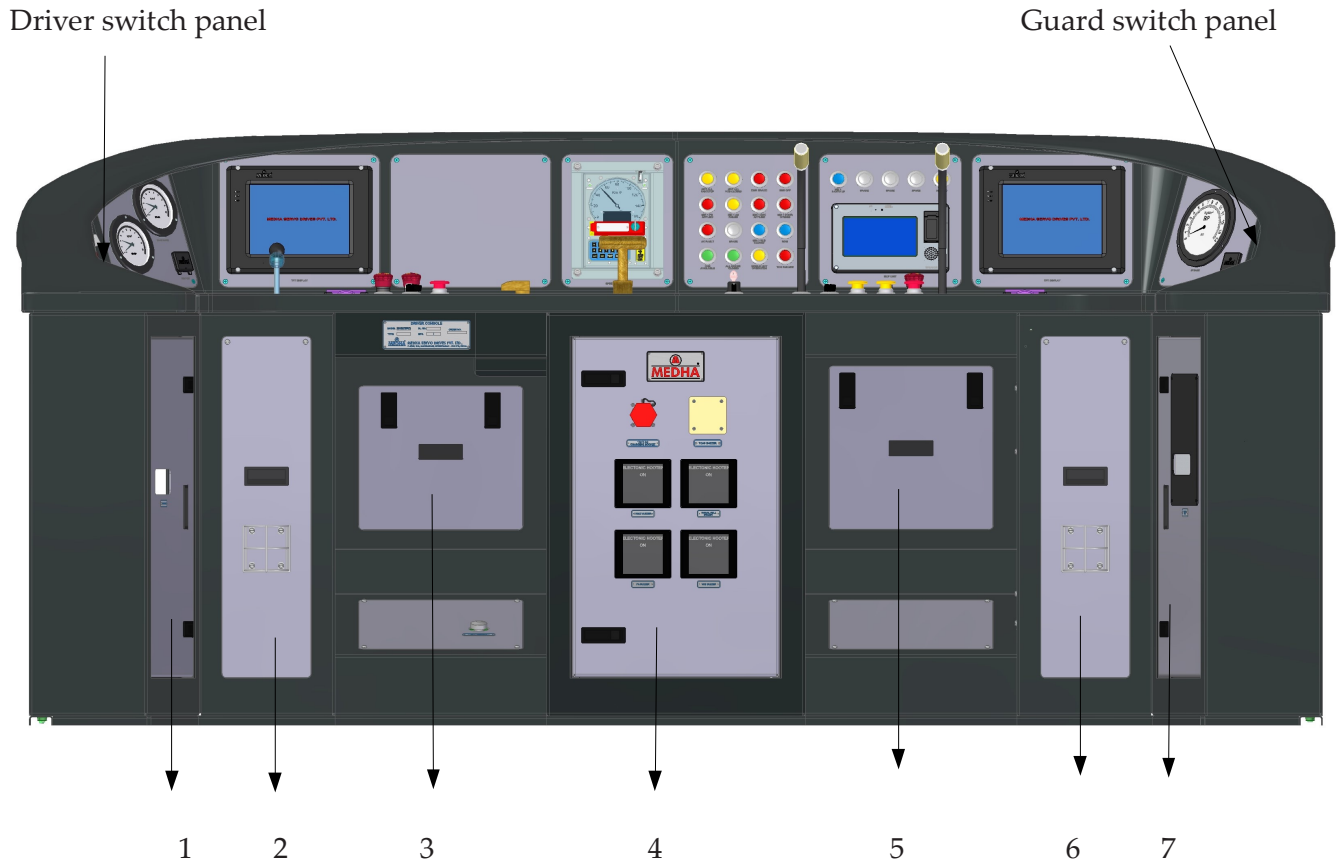


Figure 3: Covers for Maintenance

1.3 Covers 1, 2, 3, 4, 5, 6 and 7

Removing covers

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Open all Compression latches (Figure 4) by hand press

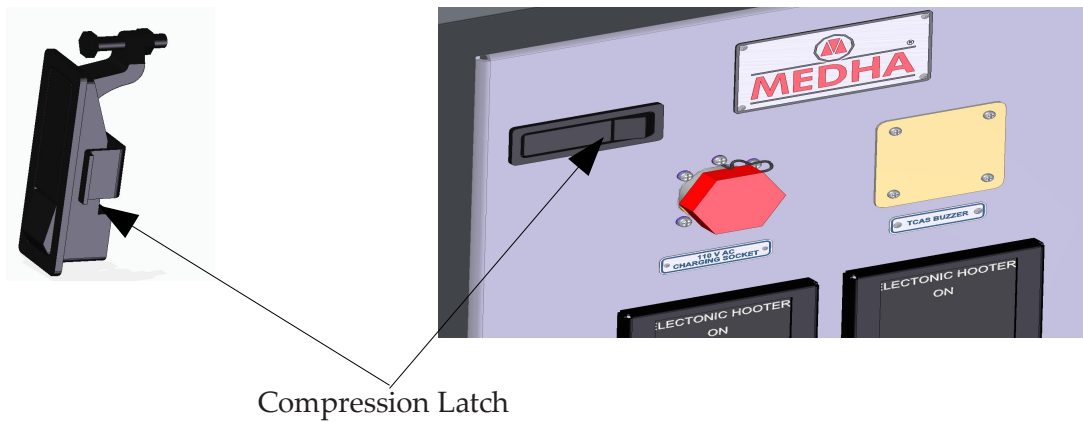


Figure 4: Example of Compression latches

1.4 Mounting of covers

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Close all Compression latches (Figure 4) by hand press.

1.5 Tools

Every special tool which is required for maintenance will be specified within the chapter describing the activity. If no tools are specified only standard tools are required.

1.6 List of Tools

1. M4 allen key _ for Harting connectors
2. M5 allen key _ for TFT Display units
3. M6 allen key _ for FGU, Flasher light unit
4. M8 allen key _ for wiper motor
5. M10 allen key _ for D0 panels assy.
6. Star screw driver_ for switch panels & Indication panels

1.7 References

The document references listed under each maintenance activity should be treated as guidance. These documents contain information that simplifies the maintenance, but they are not always required in order to be able to perform the activity.

1.8 Cable ties

All cable ties (straps) removed during the maintenance work shall be replaced by new ones of the same type and size.

2. Safety instructions

WARNING - High voltage 3000 V

WARNING - Burns - Risk of skin burns from hot components

WARNING - Particle contamination - Inhaling dust particles causes respiratory problems

To prevent accidents - do the following:

1. Put the train in duty position
2. Verify that there is no voltage remaining between DC+ & DC- by measuring with voltmeter.
3. Ensure the adequate cooling time has been allowed, if train has recently been running.
4. Use appropriate depot Personal Protective Equipment (PPE) when working with hot components and dusty environment.
5. Always wear a dust mask when working in dusty environments.

2.1 Personal safety

Before commencing any work on the vehicle the personnel shall always:

- Set the vehicle to the correct operating position for the task to be performed
- Study the necessary safety precautions within the documentation and on the Vehicle

2.2 Work on vehicle

When carrying out maintenance work on the vehicle, the instructions should be followed carefully.

1. Always use protective clothing and protective equipment.
2. Set the placard "Work in progress" or follow the employer instruction.
3. Before commencing work on the vehicle, ensure that all voltage is disconnected.
4. Lock switches, isolators, fuses etc. where work applicable.

Note!

Many systems can be operated from another location, which can lead to serious injury,

sometimes fatal, and cause damage to personnel and equipment.

2.3 Interlocking system

The propulsion equipment is secured by the key interlocking system. It ensures that the high voltage supply is always earthed before it is possible to get in contact with the equipment.

2.4 Stored charge checked

Attention!

Working with the high voltage equipment is potentially lethal!

Always ensure before starting to work that the stored charge in the equipment has been discharged.

3. Cleaning of Drivers Console

Tools Description Quantity

- Soft brush Local supply
- Dust mask Local supply
- Vacuum cleaner Local supply, ESD protected type

Consumption material Description Quantity

Lint-free cloth Local Supply Description

1. Attention! Examine the safety instructions within chapter 4 ahead of any activity
2. Clean Driver Console externally using cloth soaked with tap water. No additional detergents should be used.
3. Remove the covers 1-7 (see chapter 1.2).
4. Clean the entire internal housing and the equipment with the vacuum cleaner.
5. Visually inspect the entire box, enclosure walls, covers & welds for any damage or cracks.
6. Visually inspect all internal and external cable connections of the Driver console for damage.

7. Ensure that all glands and connectors are in good condition.
8. Visually inspect the screws securing the Driver console to the supporting beams. Ensure that all screws are present and tightened.
9. Refit the covers 1-7
10. Check the condition of hinges/brackets for the hinged assembly.
11. Note and report any defects found during the observations to the supervisor.

4. Maintenance of components

Within the following it is described how the maintenance activity of each component is carried out in detail.

4.1 Brake Controller

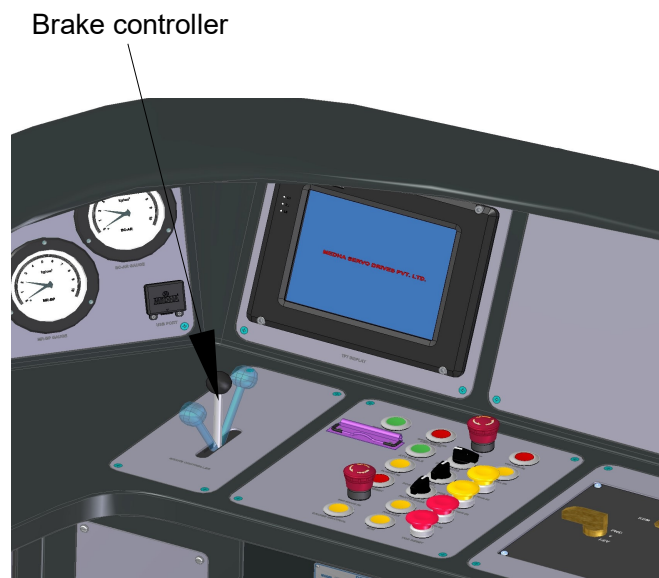


Figure 5: Brake controller

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unscrew and remove the mounting panel.
3. Unscrew the fixing screws of Brake Controller.
4. Remove and replace the Brake Controller

4.2 Master controller

Master controller



Figure 6: Master controller

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unscrew and remove master controller from the mounting panel.
3. Remove and replace the Master Controller

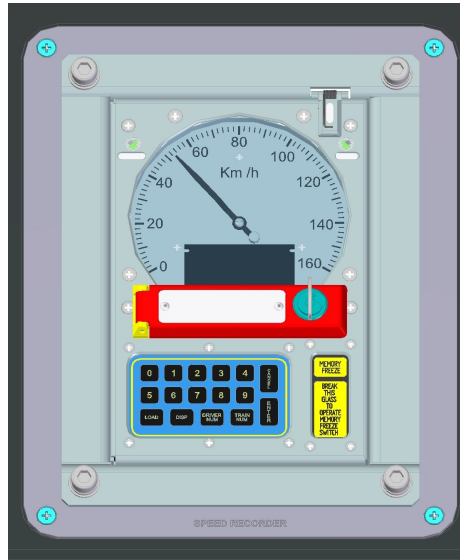
4.3 TFT Display



Figure 7: TFT Display

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unscrew and remove TFT Display from the mounting panel.
3. Remove and replace the TFT Display



4.4 Speed recorder

Figure 8: Speed recorder

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unscrew and remove Speed recorder from the mounting panel.
3. Remove and replace the Speed recorder

4.5 PIS Display

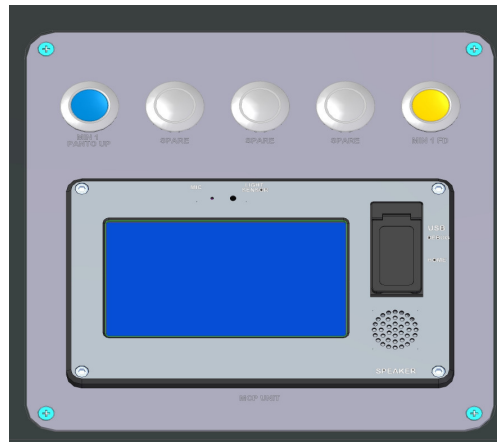


Figure 9: PIS Display

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unscrew and remove PIS Display from the mounting panel.
3. Remove and replace the PIS Display

4.6 Pressure gauges

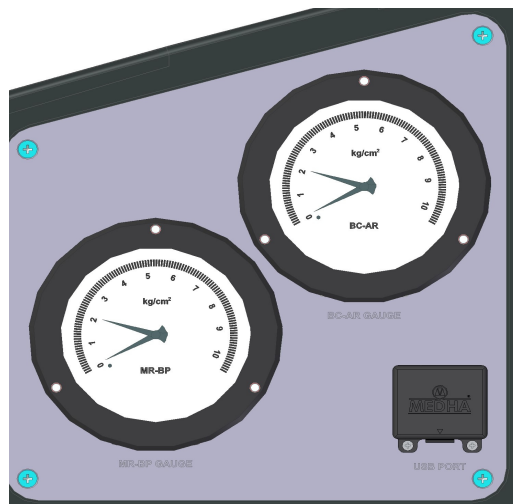
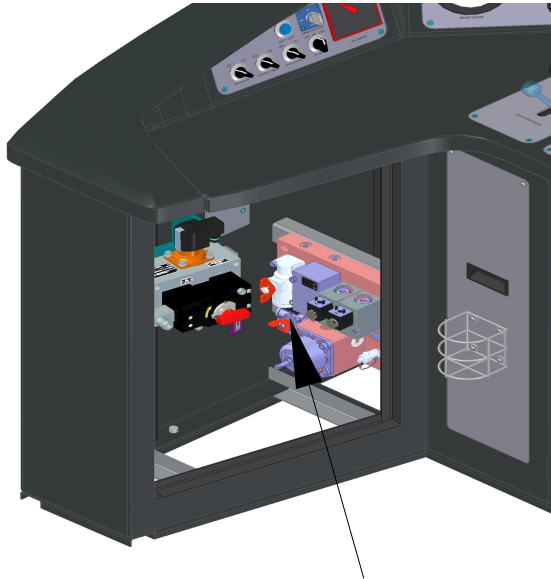


Figure 10: Pressure gauges

4. Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unscrew from the mounting panel and remove pneumatic pipe connection.
3. Remove and replace the pressure gauges, which is required to change

4.7 Replacement of D0 panel assy.



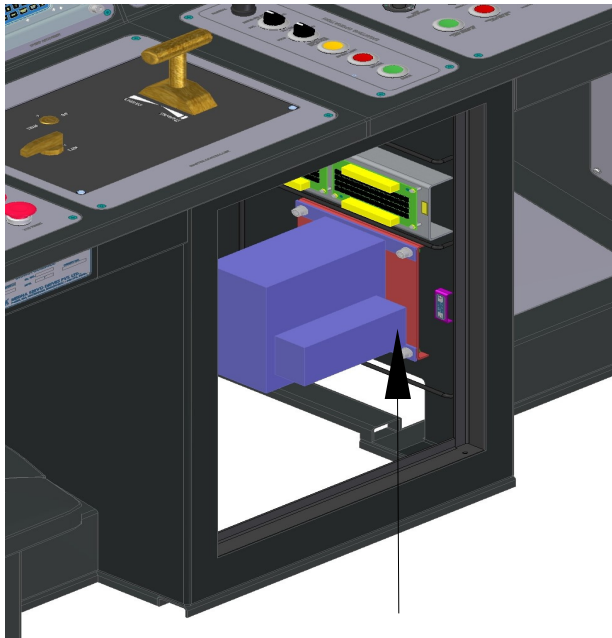
D0 panel

Figure 11: D0 Panel

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Remove the Cover 1 & 2
3. Unlock and remove the cover plate from the bottom structure.
4. Unscrew the fixing screws of structure channel and D0 panel.
5. Remove and replace the D0 panel

4.8 Replacement of Flasher light control unit



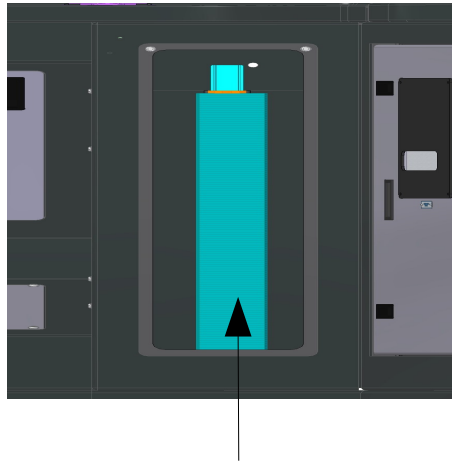
Flasher light unit

Figure 12: Flasher light unit

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unlock and Remove the Cover 4
3. Unscrew and remove the Flasher light unit.
4. Remove and replace the Unit.

4.09 Replecement of Terminal blocks



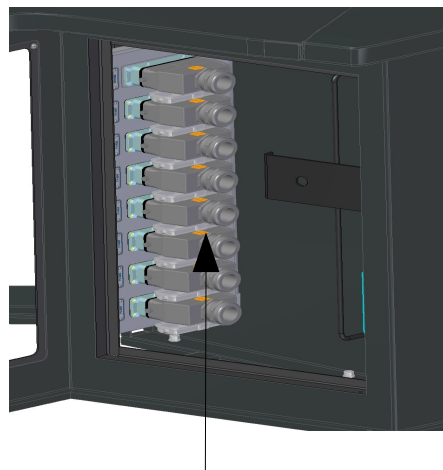
6.7. Terminal blocks

Figure 13: Terminal blocks

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Remove the Cover 6
3. Unclamp and remove the terminal blocks.
4. Remove and replace the same.

4.10 Replacement of Harting connectors



Harting connectors

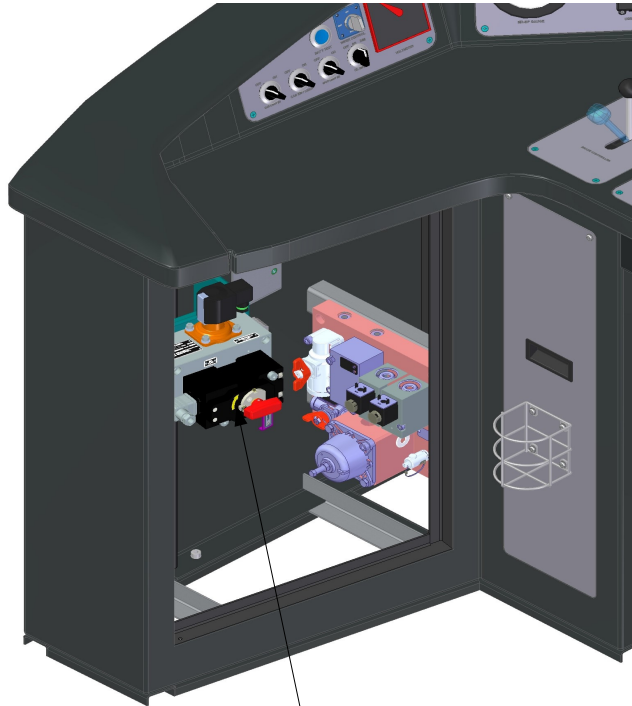
Figure 14: Harting connectors

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.

2. Remove the Cover 7
3. Unclamp and remove the Harting connectors.
4. Remove and replace the same.

4.11 Replacement of TCAS EMY. ISO COCK



TCAS EMY. ISO COCK

Figure 15: TCAS EMY. ISO COCK

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Remove the Cover 7
3. Unclamp and remove the Harting connectors.
4. Remove and replace the same

5. Replacement of operation & indication panels



Figure 16: Panels on Driver Side

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unscrew and remove the panels from FRP top console.
3. Check and remove the connections.
4. Remove and replace the switch or component.
5. Do the proper connection
6. Mount and screw the panels.

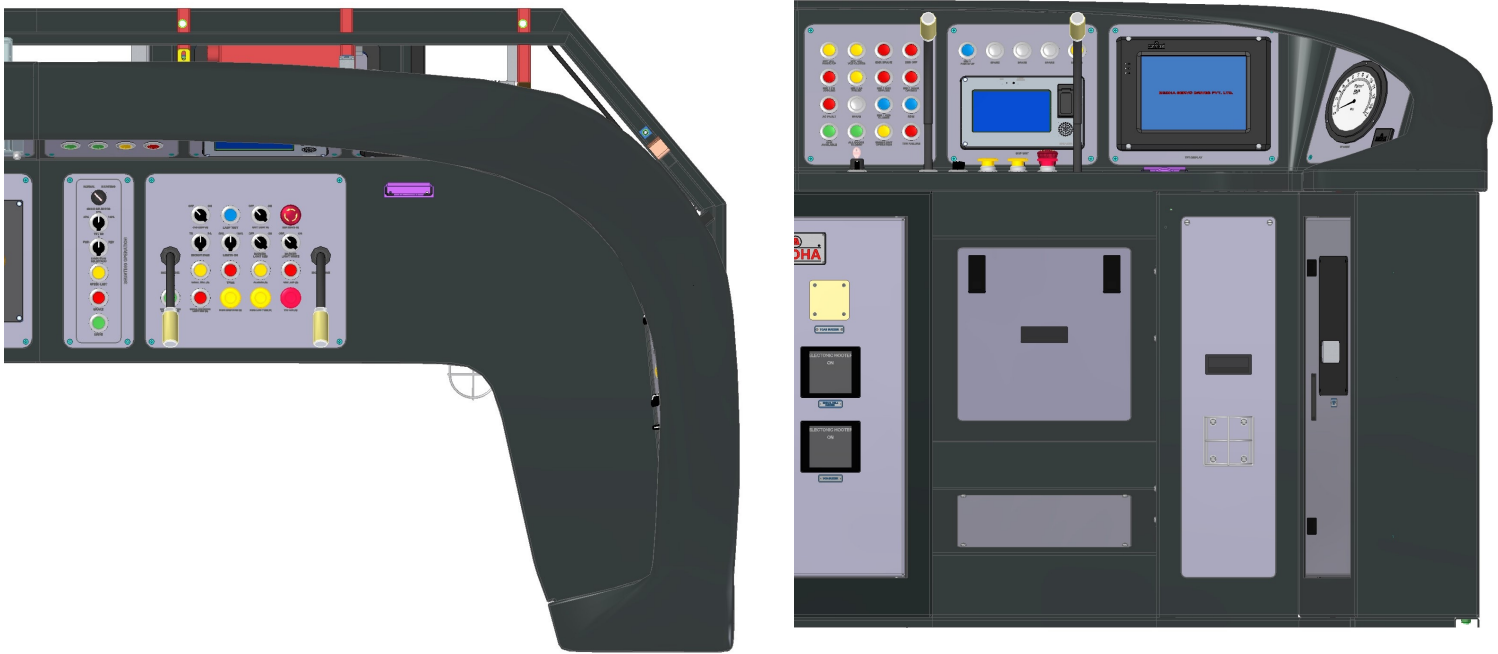


Figure 17: Panels on Guard side

Description

1. Attention! Examine the safety instructions within chapter 2 ahead of any activity.
2. Unscrew and remove the panels from FRP top console.
3. Check and remove the connections.
5. Remove and replace the switch or component.
6. Do the proper connection
7. Mount and screw the panels.

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