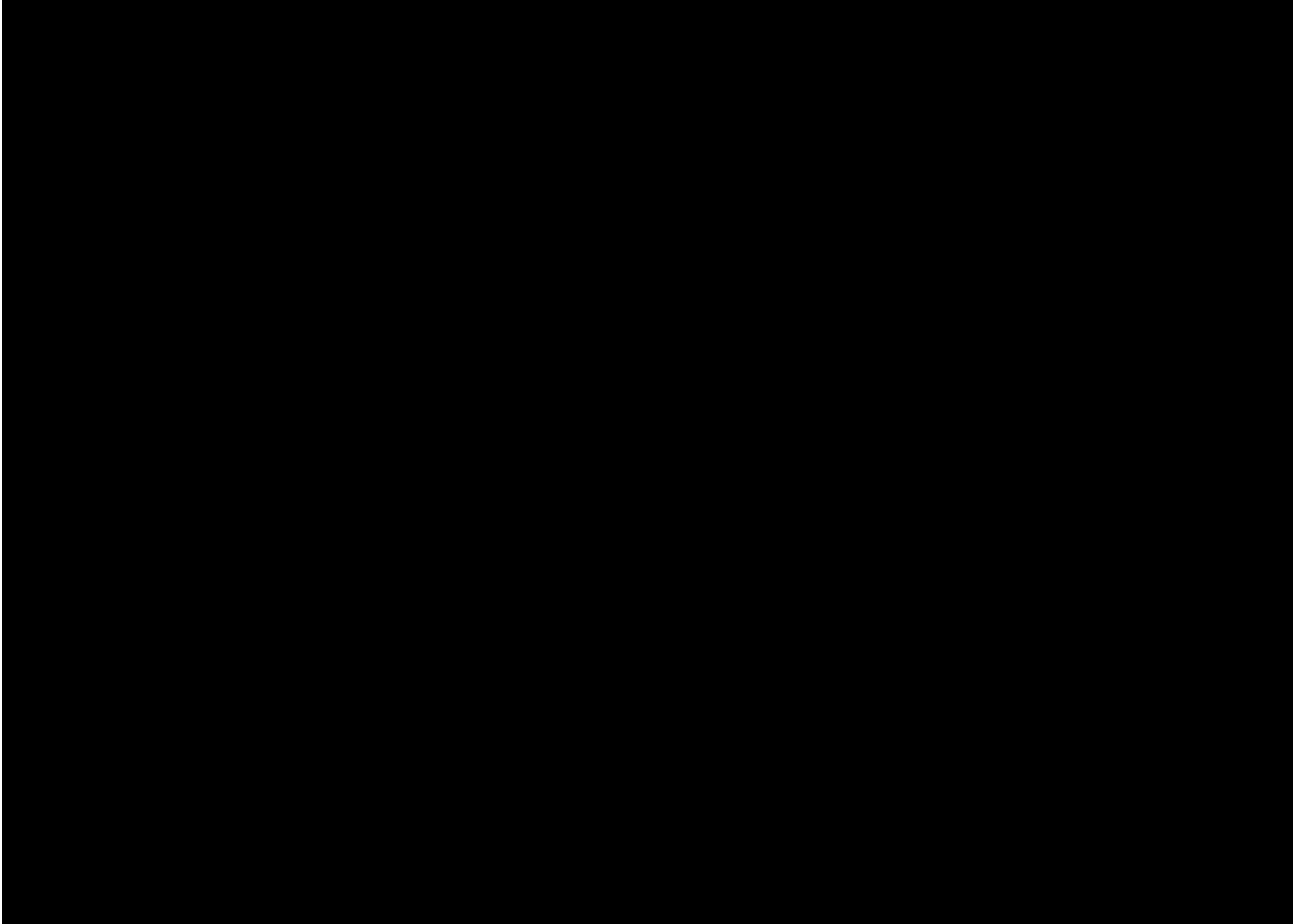


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LOS ANGELES COUNTY

METROPOLITAN TRANSPORTATION AUTHORITY

LIGHT RAIL VEHICLE

P2550



RUNNING MAINTENANCE
AND
SERVICE MANUAL

VOLUME M-01
PART II
TROUBLESHOOTING
SECTION 04 - DOORS



SECTION 04

DOORS

PART II

TROUBLESHOOTING

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SECTION 04

DOORS

04-II-01 INTRODUCTION

This Section of the Running Maintenance and Service Manual is divided into three Parts:

- Part I: Theory of Operation
- Part II: Troubleshooting
- Part III: Maintenance

Each Paragraph is numbered accordingly, to avoid that paragraphs of the same Section, pertaining to a different Part, have the same number.

Part I - Theory of Operation

Part I gives a thorough overview of the System structure and operation, by means of descriptions, figures, photos, schematics, block diagrams and flow charts, together with references to other documents or Sections when needed.

Part II - Troubleshooting

It gives the Maintenance Technicians a path to troubleshoot the System in every condition by means of the available tools:

- The PTU, equipped with the specific SW program
- The IDU
- The Fault Isolation Table.

Part III - Maintenance

The Maintenance Part is divided into two sections:

- Preventive Maintenance
- Corrective Maintenance

Each one of which is supplied with the relevant Maintenance Sheets and Job Cards.

04-II-01.a LIST OF ABBREVIATIONS, ACRONYMS AND SYMBOLS

The Abbreviations, Acronyms and Symbols commonly used throughout this manual are given below with their related meaning.

Abbreviation	Meaning
ADA.....	Americans with Disabilities Act (Lamp)
APS.....	Auxiliary Power Supply
ATP.....	Automatic Train Protection
CS.....	Crew Switch
DCS.....	Door Close Switch
DCU.....	Door Control Unit
DLS.....	Door Locked Switch
DOL.....	Door Open Light
DOS.....	Door Out of Service (indicator)
ED.....	Emergency Device
EDRS.....	Emergency Device Reset Switch
EED.....	Exterior Emergency Device
I/O.....	Input / Output
IED.....	Interior Emergency Device
L/R.....	Left / Right
LED.....	Light Emitting Diode
LH.....	Left Hand Side
LH/RH.....	Left Hand / Right Hand
LOD.....	Lock Out Device
LRU.....	Lowest Replaceable Unit
LRV.....	Light Rail Vehicle
LV.....	Low Voltage
LVPS.....	Low Voltage Power Supply
MBL.....	Metro Blue Line
MGL.....	Metro Green Line
N/A.....	Not Applicable
NC.....	Normally Closed (contact)
NO.....	Normally Open (contact)
O/C.....	Open/Close
PB.....	Push Button
PGL.....	Pasadena Gold Line
R/R.....	Removal and Replacement for Refurbishment

Abbreviation	Meaning
RH.....	Right Hand Side
TBS.....	To Be Supplied
TBD.....	To Be Defined
TL.....	Train or vehicle Line
TWC.....	Train-to-Wayside Communication

04-II-01.b LIST OF DEFINITIONS

The Definitions commonly used throughout this manual are given below with their related meaning.

Definition	Meaning
'A' body section.....	The section of an articulated vehicle containing the pantograph
'B' body section.....	The section of an articulated vehicle not containing the pantograph
AW0	Empty car operating weight
AW1	Full seated load plus AW0
AW2	Standees at 4 persons per square meter plus AW1
AW3	Standees at 6 persons per square meter plus AW1
AW4	Standees at 8 persons per square meter plus AW1
Center Door	Door close to the Articulation Section
Front Door.....	Door Close to the Operator's Cab
Max	Maximum
Min	Minimum

04-II-01.c LIST OF MEASUREMENT UNITS AND SYMBOLS

The Measurement Units commonly used throughout this manual are given below with their related meaning.

Definition	Meaning
ft	Foot (Length)
gal	Gallon (Volume)
in	Inch (Length)
kg	Kilogram - approx 2.205 pounds (Weight)
km	Kilometer - approx 0.621 miles (Length)
lb	Pound (Weight)
lb-ft	Pound force (Force)
m	Meter - approx 3.28 feet (Length)
mm	Millimeter - approx 0.0394 inches (Length)
mph	Miles per hour (Velocity)
Km/h	Kilometers per hour (Velocity)
s	Seconds (Time)
V	Volt (Tension)
Vdc	Direct Voltage (Tension)
Vac	Alternate Voltage (Tension)
kVA	Kilo-Volt-Ampere (Power)
kW	Kilo-Watt (Power)
W	Watt (Power)
F	Farad (Capacity)
H	Henry (Inductance)
W	Ohm (Resistance)
°F	Fahrenheit (Temperature)
°C	Celsius (Temperature)
A	Ampere (Current)
Hz	Hertz (Frequency)
rpm	Revolution per Minute (Frequency)
N	Newton (Force)
Nm	Newton-Meter (Torque)
mphps	Mile Per Hour Per Second (Acceleration)

04-II-02 TROUBLESHOOTING

04-II-02.01 General

The Door System has four troubleshooting ways:

1. Through the DCU LEDs (refer to paragraph 04-II-02.02): The DCU has four LEDs. Each LED can be ON, OFF, or Blinking
2. Through the PTU (refer to paragraph 04-II-02.03), by Connecting a Portable Test Unit to a DCU the maintenance personnel can acquire information on the relevant door status.

NOTE: The DCU is repairable only at the original manufacturer's facilities.

3. Through the IDU (refer to paragraph 04-II-02.04) the Operator and the Maintainer can visualize the status of the doors/panels and the exchange of information between the DCUs and the IDU. The IDU shows the Door System status, the Equipment Status and, through its Fault List, lists the Door System Faults.
4. Through the Fault Isolation / Repair Tables (refer to paragraph 04-II-02.5).

04-II-02.02 Troubleshooting with the DCU LEDs

The failures detected by the DCU are indicated locally by the LEDs fitted on the DCU. The same information is also sent to the train computer via the network and is available in the cab.

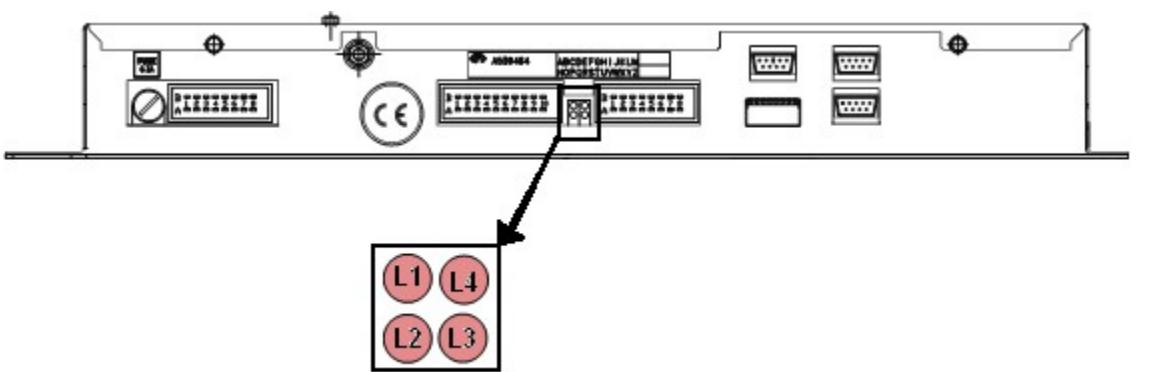


Figure 04-II-02-1 DCU LEDs

The four red LEDs that the DCU is fitted with give the following information:

- When the four LEDs are OFF this indicates that there is no power supply or a major DCU failure is present.

When LED 1 is ON steady, then this indicates that a Door Failure is present and it needs to be investigated further through the other three LEDs.

- When LED 1 is blinking, then the following configurations are possible:

	Light ON	ATP Doors Enable Signal is active
LED 2	Light OFF	ATP Doors Enable Signal is inactive
	Light ON	DCS1 & 2 activated
LED 3	Light OFF	DCS1 & 2 not activated
	Light ON	DLS activated
LED 4	Light OFF	DLS not activated

In many cases, it may be useful to make use of a spare DCU as a troubleshooting tool.

Table 04-II-02.1 LED Code, Possible Causes and Corrective Measures

Failure code & LED's display	RAMS link	Legend: ● LED ON, ○ LED OFF ✘ LED Blinking		
		Symptoms	Possible causes	Corrective measures
DCU failure ● ○ ○ ○	x	The door stays free in its position and the whole functioning is inhibited.	Major failure on DCU hardware (CPU, memories, relays, power circuit...): result of DCU switching on and cyclical self tests.	Switch ON & OFF the DCS power. If the failure is still present change the DCU
		No functional effect, the door goes on working.	Minor failure on DCU hardware (EEPROM...): result of DCU switching on and cyclical self tests.	Remove the power from the DCU to clear the failure
ADA static output failures. See NOTE 1 ○ ○ ● ○		The ADA lamp remains OFF.	The output is short-circuited while its command is set.	Check for a short circuit on ADA lamp. Change the ADA Lamp Change the DCU
		The ADA lamp remains ON.	The output is set high permanently while its command is not set.	Change the DCU

Table 04-II-02.1 LED Code, Possible Causes and Corrective Measures (cont'd)

Failure code & LED's display	RAMS link	Legend: ● LED ON, ○ LED OFF ✘ LED Blinking		
		Symptoms	Possible causes	Corrective measures
Door Out of Service static output failures See NOTE 1 		The Out of service Light remains OFF.	The output is short-circuited while its command is set.	Check for a short circuit on Out of Service light. Change the Out of Service Light Change the DCU
		The Out of service Light remains ON.	The output is set high permanently while its command is not set.	Change the DCU
Push Button drive static output failures See NOTE 1 		The Push button LEDs remain OFF.	The output is short-circuited while its command is set.	Check for a short circuit on Push button LEDs. Change the Push button Change the DCU
		The Push button LEDs remain OFF.	The output is set high permanently while its command is not set.	Change the DCU
Door Open Light static output failures See NOTE 1 		The Door Open Light remains OFF.	The output is short-circuited while its command is set.	Check for a short circuit on Door Open Light. Change the Door Open Light Change the DCU
		The Door Open Light remains OFF.	The output is set high permanently while its command is not set.	Change the DCU
Door motor circuit failure 		The door cannot be open or closed and the motor is not energized.	The motor wiring is cut or unplugged. The motor is damaged The DCU is damaged	Check the motor wiring. Change the Motor Change the DCU
DLS failure See NOTE 2 	X	The door remains open and free.	The door is open and the DLS is activated while the DCS1 and DCS2 are not activated	Close manually the door and operate the Cut Out to isolate the door and reset it. If the failure does not disappear Check the DLS wiring Change the DLS

Table 04-II-02.1 LED Code, Possible Causes and Corrective Measures (cont'd)

Failure code & LED's display	RAMS link	Legend:  LED ON,  LED OFF  LED Blinking		
		Symptoms	Possible causes	Corrective measures
Two DCS failure 	X	The door remains powered on closing or it remains open and free if an opening command appears or if ED is activated.	The door is closed and the DLS is activated while DCS1 and DCS2 are not activated	Switch On & OFF the DCU power, if the failure remains Check the DCS adjustment & wiring Change both DCS
DCS1 failure See NOTE 2 	X	If the door was initially open when the fault occurred then the door will remain open and free even upon a door CLOSE command.	DCS1 is not sensed as being in the same state as both DCS2 and the DLS by the DCU	Close manually the door and operate the Cut Out to isolate the door and reset it. If the failure remains Change the DCS1
DCS2 failure See NOTE 2 	X	If the door was initially open when the fault occurred then the door will remain open and free even upon a door CLOSE command	DCS2 is not sensed as being in the same state as both DCS1 and the DLS by the DCU..	Close manually the door and operate the Cut Out to isolate the door and reset it. If the failure remains Change the DCS2
Unexpected unlocking See NOTE 2 	X	The door remains powered on closing or remains opened and free if an opening command appears or ED is activated.	The Torsion spring is broken. DLS failure	Check the Torsion spring Close manually the door and operate the Cut Out to isolate the door and reset it. If the failure remains Check the DLS wiring, Check the DLS fixing Change the DLS
Sensitive edge cut 		The door works normally but the obstacle detection by sensitive edge is working (without obstacle)	Sensitive edge is cut or unplugged The sensitive edge is damaged.	Check the sensitive edge wiring. Change the sensitive edge

Table 04-II-02.1 LED Code, Possible Causes and Corrective Measures (cont'd)

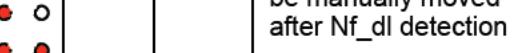
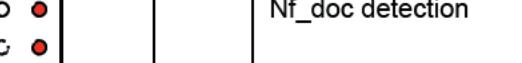
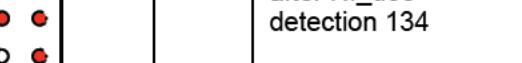
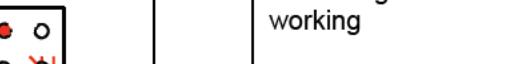
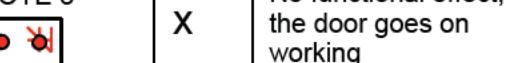
Failure code & LED's display	RAMS link	Legend:  LED ON,  LED OFF  LED Blinking		
		Symptoms	Possible causes	Corrective measures
Door failed to lock 		The door remains free in its position to be manually moved after Nf_dl detection	The door has been obstructed Nf_dl times between door close switch and door locked switch during one closing cycle.	Remove the power from the DCU or automatically if the failure has disappeared
Door failed to close because obstruction 		The door will remain open and free after Nf_doc detection	The door has been obstructed Nf_doc times during one closing cycle.	After removing the obstacle, close manually the door or send a close or an open command.
Door failed to open because obstruction 		The door remains powered on closing after Nf_doo detection 134	The door has been obstructed Nf_doo times during one opening cycle.	Send a close command or operate the Cut Out to isolate the door and reset it.
Front Door / Crew Switch failure See NOTE 3 		No functional effect, the door goes on working	To detect invalid input signals from Front door / Crew switch	Automatically if the failure has disappeared
Train lines discrepancy See NOTE 3 	X	No functional effect, the door goes on working	To detect invalid input signals from Train lines	Automatically if the failure has disappeared

Table 04-II-02.1 LED Code, Possible Causes and Corrective Measures (cont'd)

Failure code & LED's display	RAMS link	Legend:  LED ON,  LED OFF  LED Blinking		
		Symptoms	Possible causes	Corrective measures
High door motor current level on opening 		No functional effect, the door goes on working	The average motor current on ten consecutive open strokes is higher than normal	Automatically when the current is back to normal level
High door motor current level on closing 		No functional effect, the door goes on working	The average motor current on ten consecutive close strokes is higher than normal	Automatically when the current is back to normal level

NOTE 1: The disappearance of static output failure is filtered for 5 seconds

NOTE 2: The appearance of the failure is filtered for 1 second

NOTE 3: The appearance of the failure is filtered for 10 seconds

04-II-02.03 Troubleshooting with the PTU

The failures are stored in a RAM. Therefore, in order to determine the type of fault and the different parameters, a laptop computer must be used. The "Monitoring for maintenance" software must be uploaded in the computer, and this must be connected to the RS232 serial link of the DCU. If the power is lost, the information relevant to the fault is erased from the RAM: therefore the door has to be operated again for the fault to be detected again.

Refer to Special Tools & Test equipment Manual for how to connect the PTU

After connected the PTU, follow the instructions provided by the Faiveley software in order to verify data and status of each door.

04-II-02.04 Troubleshooting with the IDU

The IDU interface is made up of a display located in both cabs of a vehicle. The IDU can be accessed in two Modes:

- Operating Mode, for the operators (no password needed)
- Maintenance Mode, for maintenance personnel, accessible by means of a numeric password

The Operating Mode provides the basic information needed to help the operator start the troubleshooting process or to pass the information on to the ROC (Railway Operation Center).

In Maintenance Mode the IDU can display more detailed information, thus giving the Maintenance personnel the possibility to troubleshoot more in depth and more accurately.

The Door System is connected to all other systems on the vehicle through the LONWorks bus (refer to Section 18 of this manual).

As soon as the vehicle is keyed up, the IDU switches on in Operating Mode.

Through the IDU, the Maintenance personnel can check if all systems are exchanging data through the MVB or LONWorks buses. In particular, with respect to the Door System, the IDU Screen shows the status of the Doors on the LONWorks bus.

The IDU screen also shows the real time status of all train systems. Using this system the operator/maintainer is capable of detecting a fault (from the IDU fault list) as soon as it occurs.

04-II-02.04.01 Screen Header

The Screen Header is always visible as a top header of all screens. In Operating Mode (default) it shows the MTA logo on the upper left, the screen identification title string in the middle, the actual outside air temperature and an actual-time calendar / clock on the upper right. In Maintenance Mode the "Maintenance Mode" tag replaces the MTA logo.

The lower part of the Header shows the actual composition of the train consist, with the actual orientation of the vehicles, their ID number, the status of the door panels, IDUs accessed, the "Faults", the enabled cab and the direction of the train, the HSCB status and the status of the Intercoms.

The Doors status signals consist of sixteen squares, two for each door (one for each panel). These two squares can be:

- Green, if the door is closed
- Amber, if the door is open
- Ruby red, if the door is cut-out
- Blinking amber, if there is a failure in progress

If the square is grey, it means that its status is unknown.

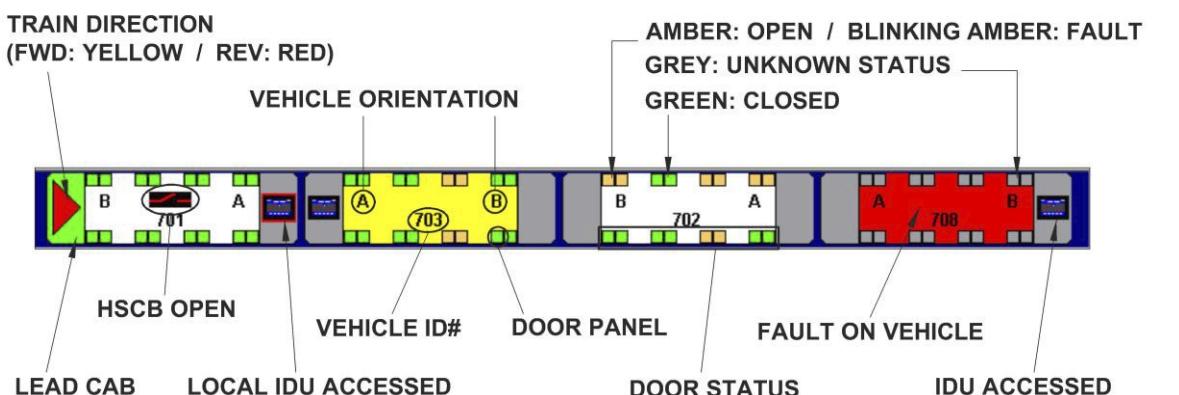


Figure 04-II-02-2 Screen Header

04-II-02.04.02 LONWorks Bus Control

While in Maintenance Mode (accessible by means of a numerical code), by touching the MONITOR button, the IDU monitor shows information related to the local vehicle and the train. The LON Works Bus, MVB bus, Digital I/O and train lines can be monitored.

With regard to the Door System, it is possible to check if the eight DCUs are working correctly by monitoring the LONworks bus (selected by touching the LON BUS button on the MONITOR screen). The IDU screen shows how much each bus is used by the relevant system (refer to Figure 04-II-02-3). If, for example, the DCU12A status bar does not show any signal exchanged (status = 0), probably the DCU12A is not working properly or is not supplied.

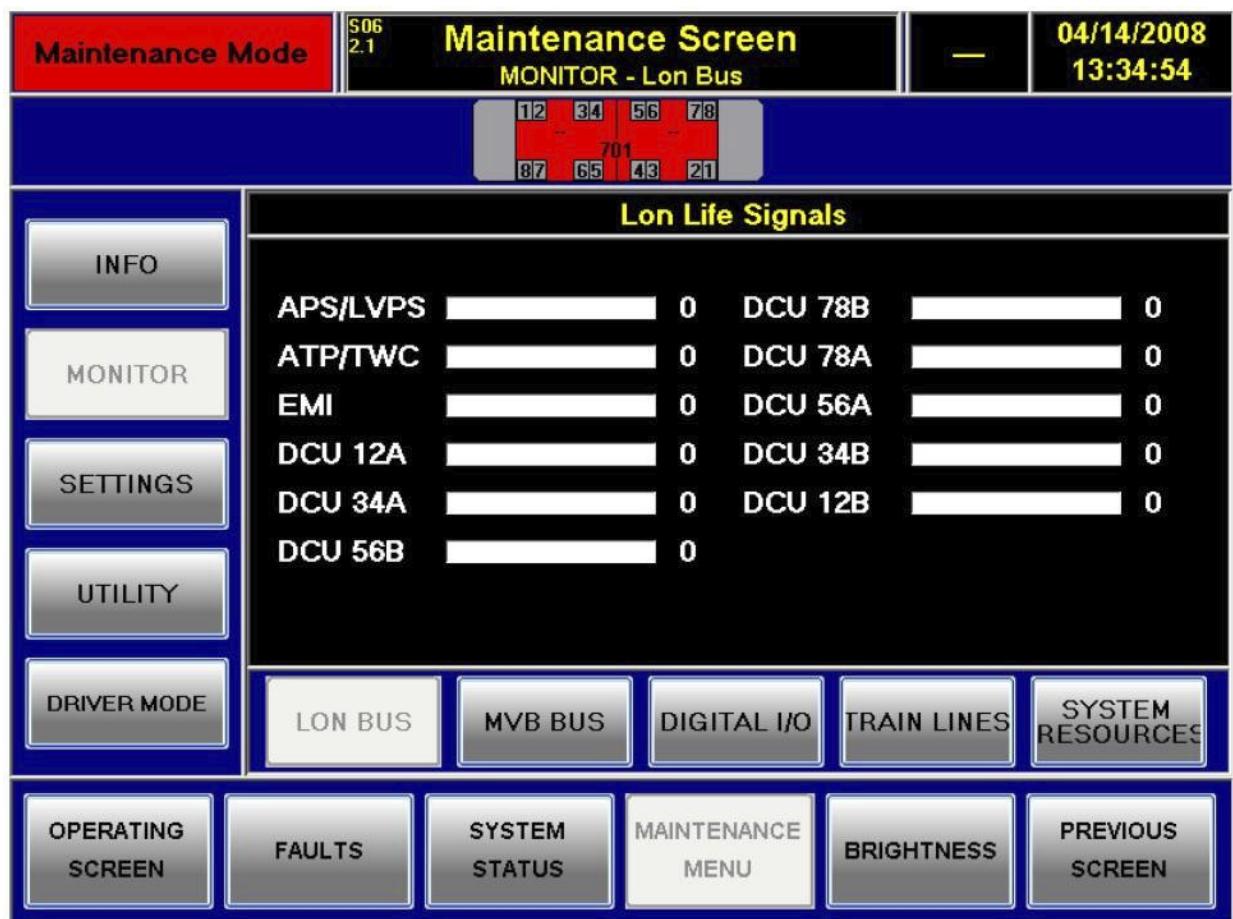


Figure 04-II-02-3 LONWorks Bus Life Signals

04-II-02.04.03 Door System Status Screen

The "Door System Status Screen" can be visualized by pushing the "System Status" button on the "IDU Navigation Bar" located at the bottom of the display zone and by selecting the Door PB on the left of the screen.

In Operating Mode (refer to Figure 04-II-02-4) the operator can check, for each door of the train-consist, if the door is:

- Open (amber when active)
- Closed (green when active)
- Cut-out (ruby red when active)
- Undefined (black)

When a door fault occurs the Operator, using this screen, can also visualize the vehicle with the faulty door. Only the maintainer (in maintenance mode) can visualize the faulty door of the vehicle. (Refer to Figure 04-II-02-5).

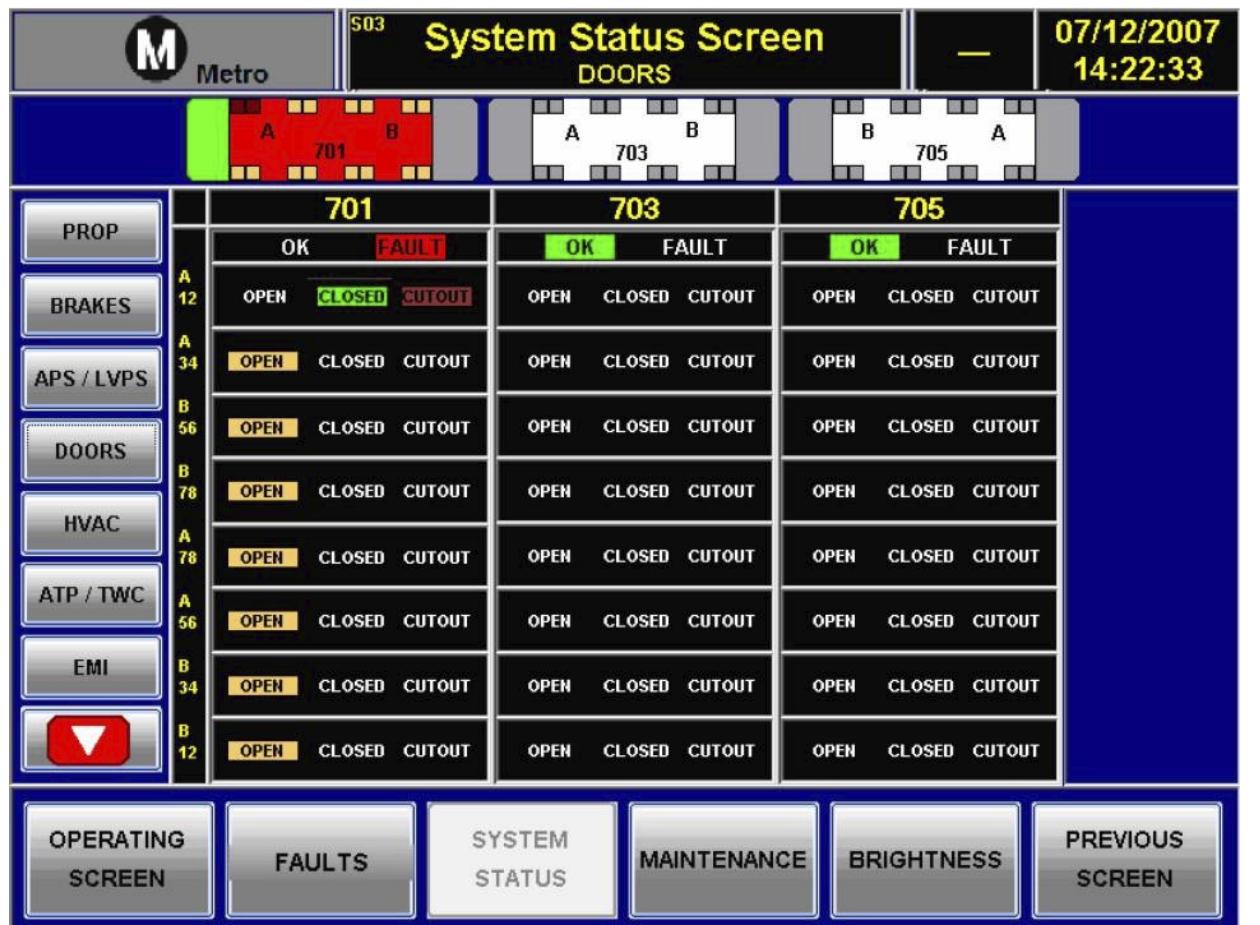


Figure 04-II-02-4 Operating Mode Door Status Screen

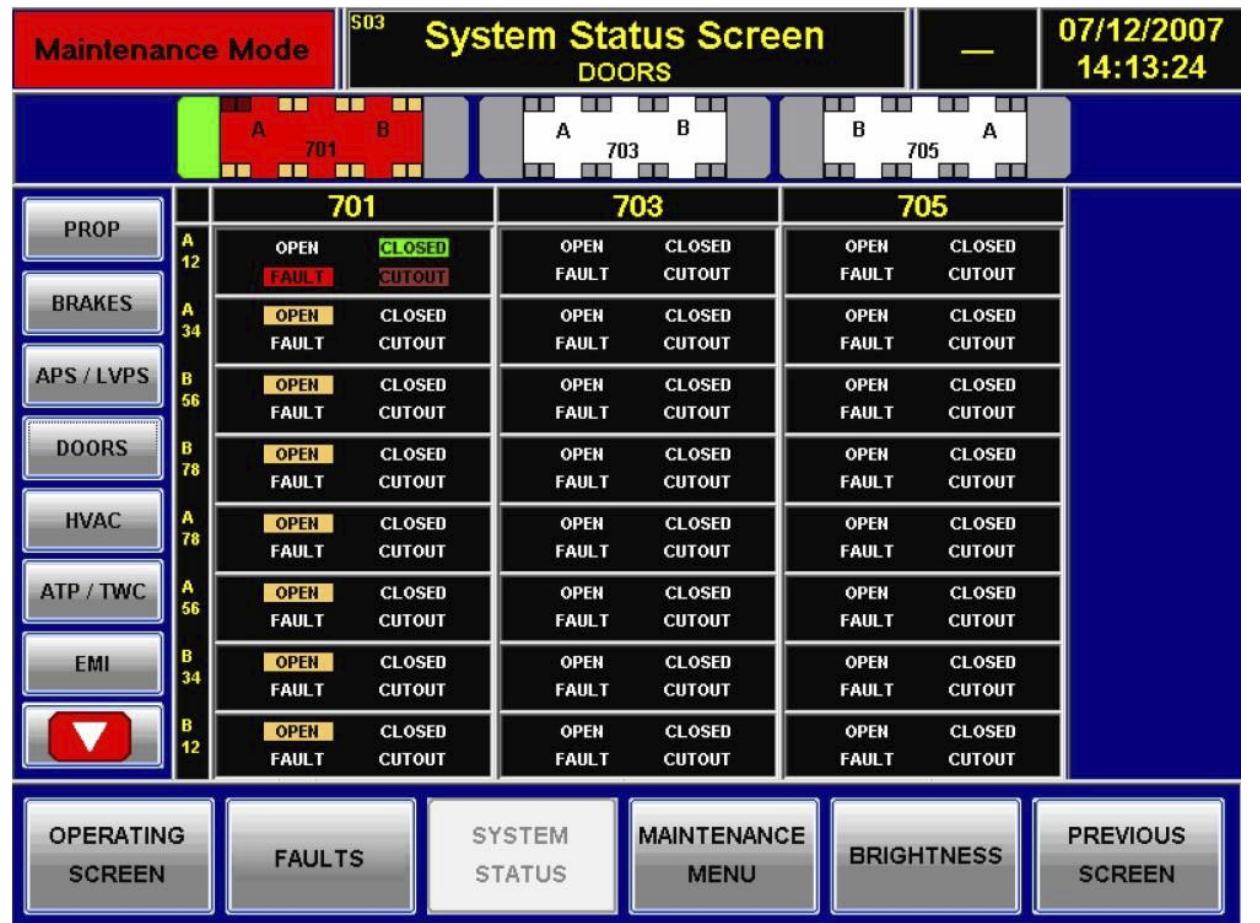


Figure 04-II-02-5 Maintenance Mode Door Status Screen

04-II-02.04.04 IDU Fault List

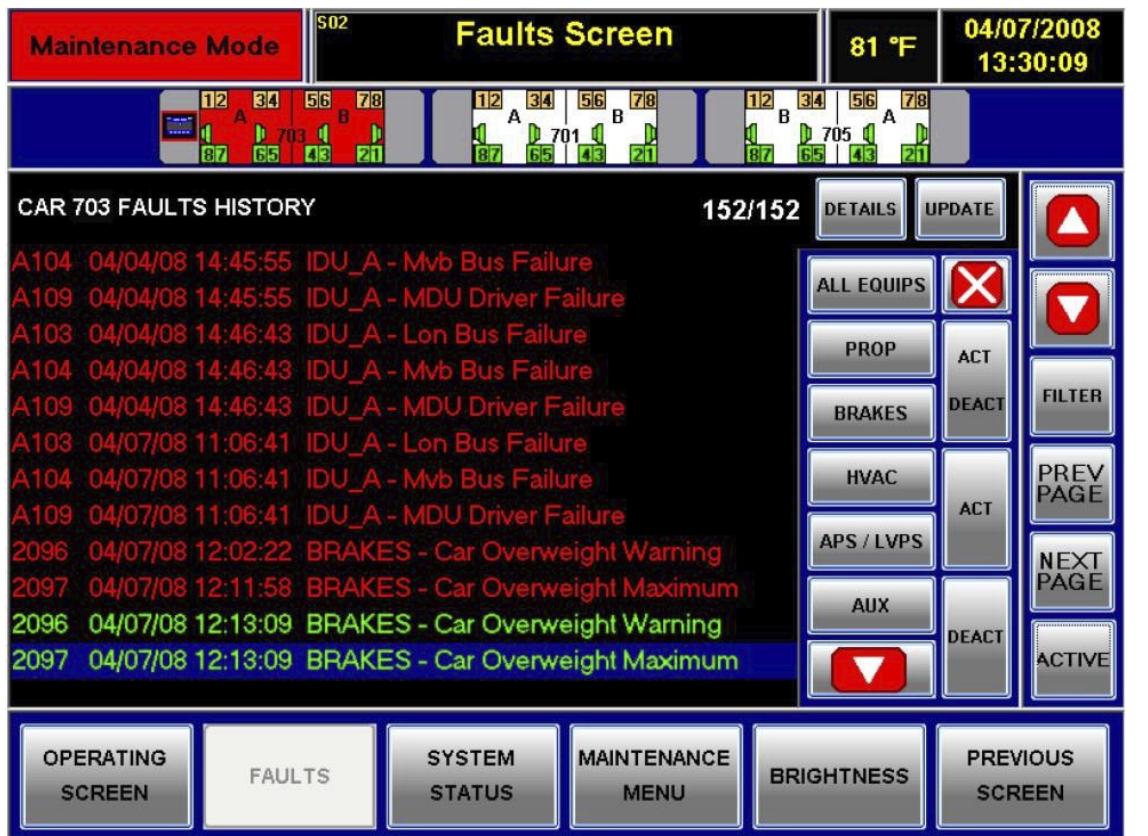


Figure 04-II-02-6 IDU Fault Screen

Through the IDU, the Operator can see any indication of a fault and other information, which allows the Operator to immediately starting the troubleshooting process.

In Maintenance Mode the fault information is more detailed and the troubleshooting can be more accurate.

The Tables in Appendix 04-II-03.01 list the Door System faults monitored by the IDU, both in Operating and in Maintenance mode.

As soon as a fault occurs (fault "activated"), the Monitoring and Diagnostic System (MDS - refer to Section 18) saves the "image" of the fault in a file of the IDU_A memory (the IDU_B has no used memory) named "LogFile.dat". The system saves an image of the activated fault every 100ms for a period from 1s before and 5s after the activation. The system saves a sample of the deactivated faults once and with the information present at the time of the memorization.

04-II-02.05 Fault Isolation / Repair Tables
Table 04-II-02.2 Obstacle Detection Fault

Fault	Possible Causes	Corrective Measures
1. Handle (EED or EAD) activated, but the door fails to unlock.	1. One cable end nipple lost (at device or motor level), or cable cut in its sheath.	1. Replace the corresponding Bowden Cable
	2. Emergency device damaged	1. Replace EAD or EED depending on failure
	3. Door jammed	1. Refer to Table 04-II-02.2
2. Handle (EED or EAD) does not rotate	1. Seizing of the cable in its sheath	1. Replace the corresponding Bowden Cable
	2. Motor body does not rotate: · Motor jammed about its bearings · Locking roller squeezed by the locking cam	1. Replace Motor Assembly 2. Re-adjust the locking cam
	3. Emergency device damaged	1. Replace EAD or EED depending on failure

Table 04-II-02.3 Emergency Opening Failure

Fault	Possible Causes	Corrective Measures
1. Handle (EED or EAD) activated, but the door fails to unlock	1. One cable end nipple lost (at device or motor level), or cable cut in its sheath	1. Replace the corresponding Bowden Cable
	2. Emergency device damaged	1. Replace EAD or EED depending on failure
	3. Door jammed	1. Refer to Table 04-II-02.2
2. Handle (EED or EAD) does not rotate	1. Seizing of the cable in its sheath	1. Replace the corresponding Bowden Cable
	2. Motor body does not rotate: · Motor jammed about its bearings · Locking roller squeezed by the locking cam	1. Replace Motor Assembly 2. Re-adjust the locking cam
	3. Emergency device damaged	1. Replace EAD or EED depending on failure

Table 04-II-02.4 Door Fails to Move

Fault	Possible Causes	Corrective Measures
1. Electrical failure	1. Case of an opening request: · DCU not working (LED1 Off) · No "Enable" signal (LED 2 Off) · Push-button damaged or not connected	1. Check that power supply is OK, otherwise replace DCU 2. Check Train lines. 3. Make a continuity test using a multimeter; and replace/repair as necessary
	2. Case of a closing request: · No "Closing" signal	1. Check Train lines.
2. Mechanical failure	1. Coupling rubber sleeve damaged	1. Change the coupling rubber sleeve
	2. Driving fork detached	1. Remount and adjust the driving fork.
	3. Jamming of the leaf	1. Scan through the possible causes listed in the fault case "Obstacle detection failure".

Table 04-II-02.5 Abnormal Motion of the Door

Fault	Possible Causes	Corrective Measures
1. Door bangs when reaching full opened/closed position.	1. Loss of end-stops or door shift	1. Adjust the end stops Change the end stops
	2. DCU internal fault	1. Plug in the PC and scan through the software the parameter inputs, and low speed value in particular. If parameters are nominal, replace DCU.
2. Abnormal noise during sliding motion	1. Beginning of seizing of Driving screw	1. Clean and grease the Driving screw 2. Replace Driving screw assembly
	2. Beginning of seizing of the suspension rail	1. Clean and grease the suspension rail. 2. Replace the suspension rail.

Table 04-II-02.6 Door Fails to Lock

Fault	Possible Causes	Corrective Measures
1. Door cannot lock mechanically	1. Loss of mechanical adjustment of the lock position.	1. Re-adjust the locking cam
	2. Locking spring (motor side) damaged (no locking effort)	1. Replace locking spring
2. Locking status not recorded	1. Should result in a "DOOR FAILURE" listed in Table 04-II-02.1	1. Refer to Table 04-II-02.1
3. Door cannot lock mechanically	1. Loss of mechanical adjustment of the lock position.	1. Re-adjust the locking cam
	2. Locking spring (motor side) damaged (no locking effort)	1. Replace locking spring
4. Locking status not recorded	1. Should result in a "DOOR FAILURE" listed in Table 04-II-02.1	1. Refer to Table 04-II-02.1

Table 04-II-02.7 Buzzer Failure

Fault	Possible Causes	Corrective Measures
1. Buzzer or ADA lamp failure (no sound)	1. DCU buzzer or ADA lamp failure	1. Check the Buzzer or the ADA lamp cabling on output from DCU. 2. Repair the wiring 3. Change the Buzzer 4. Change the ADA lamp 5. Change the DCU

04-II-03 APPENDIX

04-II-03.01 IDU Fault List

04-II-03.01.01 Operating Mode

All faults related to the Door System and monitored by the IDU, are listed in the IDU screen and described in the relevant Fault Charts.

The Operating Mode Fault Charts, listed below, include, for each fault, the relevant Operator Guide, which gives the Operator suggestions on how to overcome the fault.

The Operator Guide can be shown by touching the "Detail" button on the screen and is referred to the fault highlighted on the list.

Refer to Table 04-II-03. 1 for Operating Mode Fault List

Refer to Table 04-II-03. 2 for Operating Mode Fault Details

Refer to Table 04-II-03. 4 for Operating Mode and Maintenance Mode Fault Relationship

Table 04-II-03.1 Operating Mode Fault List

Code	Affected Subsystem	Description
9019	DCU	Car A Circuit Breaker Open
9020	DCU	Car B Circuit Breaker Open
9021	DCU	Car A Power Supply Circuit Breaker Open
9022	DCU	Car B Power Supply Circuit Breaker Open
9116	DCU_12A	Internal or external emergency handle
9216	DCU_34A	Internal or external emergency handle
9316	DCU_56B	Internal or external emergency handle
9416	DCU_78B	Internal or external emergency handle
9516	DCU_78A	Internal or external emergency handle
9616	DCU_56A	Internal or external emergency handle
9716	DCU_34B	Internal or external emergency handle
9816	DCU_12B	Internal or external emergency handle
9117	DCU_12A	An obstruction has been detected
9217	DCU_34A	An obstruction has been detected
9317	DCU_56B	An obstruction has been detected
9417	DCU_78B	An obstruction has been detected
9517	DCU_78A	An obstruction has been detected
9617	DCU_56A	An obstruction has been detected
9717	DCU_34B	An obstruction has been detected
9817	DCU_12B	An obstruction has been detected

Table 04-II-03.1 Operating Mode Fault List (cont'd)

Code	Affected Subsystem	Description
9118	DCU_12A	Cut Out
9218	DCU_34A	Cut Out
9318	DCU_56B	Cut Out
9418	DCU_78B	Cut Out
9518	DCU_78A	Cut Out
9618	DCU_56A	Cut Out
9718	DCU_34B	Cut Out
9818	DCU_12B	Cut Out
9123	DCU_12A	Switch Failure
9223	DCU_34A	Switch Failure
9323	DCU_56B	Switch Failure
9423	DCU_78B	Switch Failure
9523	DCU_78A	Switch Failure
9623	DCU_56A	Switch Failure
9723	DCU_34B	Switch Failure
9823	DCU_12B	Switch Failure
9124	DCU_12A	Fault
9224	DCU_34A	Fault
9324	DCU_56B	Fault
9424	DCU_78B	Fault
9524	DCU_78A	Fault
9624	DCU_56A	Fault
9724	DCU_34B	Fault
9824	DCU_12B	Fault
9125	DCU_12A	Static Output Failure
9225	DCU_34A	Static Output Failure
9325	DCU_56B	Static Output Failure
9425	DCU_78B	Static Output Failure
9525	DCU_78A	Static Output Failure
9625	DCU_56A	Static Output Failure
9725	DCU_34B	Static Output Failure
9825	DCU_12B	Static Output Failure

Table 04-II-03.2 Operating Mode Fault Details

Fault#	Date	Time	Vehicle#	System	Description
9019	mm/dd/yy	hh:mm:ss	xxx	DCU	Car A Circuit Breaker Open

Operator Guide

Check the Door Control circuit breaker (9F02 - Cab Panel Car A); and/or the Emergency Loop Relay circuit breaker (9F08 - Cab Panel Car A); and/or the A-End Left Side Doors Closed & Locked Relay circuit breaker (9F09 - Cab Panel Car A); and/or the End of Train Relays circuit breaker (9F10 - LV Cabinet Car A); and/or the Doors Closed & Locked Summary Relays circuit breaker (9F11 - LV Cabinet Car A)

Fault#	Date	Time	Vehicle#	System	Description
9020	mm/dd/yy	hh:mm:ss	xxx	DCU	Car B Circuit Breaker Open

Operator Guide

Check the Door Control circuit breaker (9F02 - Cab Panel Car B); and/or the B-End Left Side Doors Closed & Locked Relay circuit breaker (9F09 - Cab Panel Car B); and/or the End of Train Relays circuit breaker (9F10 - LV Cabinet Car B); and/or the Doors Closed & Locked Summary Relays circuit breaker (9F11 - LV Cabinet Car B)

Fault#	Date	Time	Vehicle#	System	Description
9021	mm/dd/yy	hh:mm:ss	xxx	DCU	Car A Power Supply Circuit Breaker Open

Operator Guide

Check DCU #78A power supply circuit breaker (9F04 - LV cabinet Car A) and/or DCU #12A power supply circuit breaker (9F05 - LV Cabinet Car A) and/or DCU #56A power supply circuit breaker (9F06 - LV Cabinet Car A) and/or DCU #34A power supply circuit breaker (9F07 - LV Cabinet A)

Fault#	Date	Time	Vehicle#	System	Description
9022	mm/dd/yy	hh:mm:ss	xxx	DCU	Car B Power Supply Circuit Breaker Open

Operator Guide

Check DCU #78B power supply circuit breaker (9F04 - LV cabinet Car B) and/or DCU #12B power supply circuit breaker (9F05 - LV Cabinet Car B) and/or DCU #56B power supply circuit breaker (9F06 - LV Cabinet Car B) and/or DCU #34B power supply circuit breaker (9F07 - LV Cabinet B)

Table 04-II-03.2 Operating Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9116	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Internal or external emergency device has been pulled	
9216	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9316	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9416	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9516	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9616	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9716	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9816	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
None						

Fault#	Date	Time	Vehicle#	System	Description	
9117	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	An Obstruction has been detected	
9217	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9317	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9417	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9517	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9617	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9717	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9817	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
If the vehicle needs to continue operating then verify that there are no obstructions in the path of the door then manually close and lock the door and cut the door out locally with the COS. When the situation permits then Check the thresh hold track and verify that it is clean and free of any debris. Manually open and close the Door and verify that it's not binding or hanging up at any point during the entire opening or closing stroke. Check the door for proper adjustments.						

Table 04-II-03.2 Operating Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9118	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Cut Out Switch has been activated. Door is cut out locally	
9218	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9318	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9418	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9518	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9618	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9718	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9818	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
None						

Fault#	Date	Time	Vehicle#	System	Description	
9123	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Switch Failure	
9223	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9323	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9423	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9523	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9623	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9723	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9823	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
Close manually the door and operate the Cut Out to isolate the door and reset it.						

Table 04-II-03.2 Operating Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9124	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Fault	
9224	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9324	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9424	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9524	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9624	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9724	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9824	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
Contact Maintenance						

Fault#	Date	Time	Vehicle#	System	Description	
9125	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Static Output Failure	
9225	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9325	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9425	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9525	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9625	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9725	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9825	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
Close manually the door and operate the Cut Out to isolate the door and reset it.						

04-II-03.01.02 Maintenance Mode

All faults related to the Door System and monitored by the IDU in Maintenance Mode are listed in the following Fault Charts.

The Operator Guide pops up by touching the “Detail” button on the screen and is referred to the fault highlighted on the list.

Refer to Table 04-II-03.3 for Maintenance Mode Fault List

Refer to Table 04-II-03.4 for Operating Mode and Maintenance Mode Fault Relationship

Refer to Table 04-II-03.5 for Maintenance Mode Fault Details

Table 04-II-03.3 Maintenance Mode Fault List

Code	Affected Subsystem	Description
9019	DCU	Car A Circuit Breaker Open
9020	DCU	Car B Circuit Breaker Open
9021	DCU	Car A Power Supply Circuit Breaker Open
9022	DCU	Car B Power Supply Circuit Breaker Open
9101	DCU_12A	Door Control Unit Major Failure
9201	DCU_34A	Door Control Unit Major Failure
9301	DCU_56B	Door Control Unit Major Failure
9401	DCU_78B	Door Control Unit Major Failure
9501	DCU_78A	Door Control Unit Major Failure
9601	DCU_56A	Door Control Unit Major Failure
9701	DCU_34B	Door Control Unit Major Failure
9801	DCU_12B	Door Control Unit Major Failure
9102	DCU_12A	Door Control Unit Minor Failure
9202	DCU_34A	Door Control Unit Minor Failure
9302	DCU_56B	Door Control Unit Minor Failure
9402	DCU_78B	Door Control Unit Minor Failure
9502	DCU_78A	Door Control Unit Minor Failure
9602	DCU_56A	Door Control Unit Minor Failure
9702	DCU_34B	Door Control Unit Minor Failure
9802	DCU_12B	Door Control Unit Minor Failure
9103	DCU_12A	ADA static output failures
9203	DCU_34A	ADA static output failures
9303	DCU_56B	ADA static output failures
9403	DCU_78B	ADA static output failures
9503	DCU_78A	ADA static output failures
9603	DCU_56A	ADA static output failures

Table 04-II-03.3 Maintenance Mode Fault List (cont'd)

Code	Affected Subsystem	Description
9703	DCU_34B	ADA static output failures
9803	DCU_12B	ADA static output failures
9104	DCU_12A	Door out of service static output failures
9204	DCU_34A	Door out of service static output failures
9304	DCU_56B	Door out of service static output failures
9404	DCU_78B	Door out of service static output failures
9504	DCU_78A	Door out of service static output failures
9604	DCU_56A	Door out of service static output failures
9704	DCU_34B	Door out of service static output failures
9804	DCU_12B	Door out of service static output failures
9105	DCU_12A	Push button drive static output failures
9205	DCU_34A	Push button drive static output failures
9305	DCU_56B	Push button drive static output failures
9405	DCU_78B	Push button drive static output failures
9505	DCU_78A	Push button drive static output failures
9605	DCU_56A	Push button drive static output failures
9705	DCU_34B	Push button drive static output failures
9805	DCU_12B	Push button drive static output failures
9106	DCU_12A	Door open light static output failures
9206	DCU_34A	Door open light static output failures
9306	DCU_56B	Door open light static output failures
9406	DCU_78B	Door open light static output failures
9506	DCU_78A	Door open light static output failures
9606	DCU_56A	Door open light static output failures
9706	DCU_34B	Door open light static output failures
9806	DCU_12B	Door open light static output failures
9107	DCU_12A	Motorization function is out of service
9207	DCU_34A	Motorization function is out of service
9307	DCU_56B	Motorization function is out of service
9407	DCU_78B	Motorization function is out of service
9507	DCU_78A	Motorization function is out of service
9607	DCU_56A	Motorization function is out of service
9707	DCU_34B	Motorization function is out of service
9807	DCU_12B	Motorization function is out of service

Table 04-II-03.3 Maintenance Mode Fault List (cont'd)

Code	Affected Subsystem	Description
9108	DCU_12A	Door locked switch failure
9208	DCU_34A	Door locked switch failure
9308	DCU_56B	Door locked switch failure
9408	DCU_78B	Door locked switch failure
9508	DCU_78A	Door locked switch failure
9608	DCU_56A	Door locked switch failure
9708	DCU_34B	Door locked switch failure
9808	DCU_12B	Door locked switch failure
9109	DCU_12A	Door closed switch 1 failure
9209	DCU_34A	Door closed switch 1 failure
9309	DCU_56B	Door closed switch 1 failure
9409	DCU_78B	Door closed switch 1 failure
9509	DCU_78A	Door closed switch 1 failure
9609	DCU_56A	Door closed switch 1 failure
9709	DCU_34B	Door closed switch 1 failure
9809	DCU_12B	Door closed switch 1 failure
9110	DCU_12A	Door closed switch 2 failure
9210	DCU_34A	Door closed switch 2 failure
9310	DCU_56B	Door closed switch 2 failure
9410	DCU_78B	Door closed switch 2 failure
9510	DCU_78A	Door closed switch 2 failure
9610	DCU_56A	Door closed switch 2 failure
9710	DCU_34B	Door closed switch 2 failure
9810	DCU_12B	Door closed switch 2 failure
9111	DCU_12A	Unexpected unlocking
9211	DCU_34A	Unexpected unlocking
9311	DCU_56B	Unexpected unlocking
9411	DCU_78B	Unexpected unlocking
9511	DCU_78A	Unexpected unlocking
9611	DCU_56A	Unexpected unlocking
9711	DCU_34B	Unexpected unlocking
9811	DCU_12B	Unexpected unlocking
9112	DCU_12A	Door failed to lock
9212	DCU_34A	Door failed to lock

Table 04-II-03.3 Maintenance Mode Fault List (cont'd)

Code	Affected Subsystem	Description
9312	DCU_56B	Door failed to lock
9412	DCU_78B	Door failed to lock
9512	DCU_78A	Door failed to lock
9612	DCU_56A	Door failed to lock
9712	DCU_34B	Door failed to lock
9812	DCU_12B	Door failed to lock
9113	DCU_12A	Sensitive edge cut
9213	DCU_34A	Sensitive edge cut
9313	DCU_56B	Sensitive edge cut
9413	DCU_78B	Sensitive edge cut
9513	DCU_78A	Sensitive edge cut
9613	DCU_56A	Sensitive edge cut
9713	DCU_34B	Sensitive edge cut
9813	DCU_12B	Sensitive edge cut
9114	DCU_12A	The maximum current opening is reached
9214	DCU_34A	The maximum current opening is reached
9314	DCU_56B	The maximum current opening is reached
9414	DCU_78B	The maximum current opening is reached
9514	DCU_78A	The maximum current opening is reached
9614	DCU_56A	The maximum current opening is reached
9714	DCU_34B	The maximum current opening is reached
9814	DCU_12B	The maximum current opening is reached
9115	DCU_12A	The maximum current closing is reached
9215	DCU_34A	The maximum current closing is reached
9315	DCU_56B	The maximum current closing is reached
9415	DCU_78B	The maximum current closing is reached
9515	DCU_78A	The maximum current closing is reached
9615	DCU_56A	The maximum current closing is reached
9715	DCU_34B	The maximum current closing is reached
9815	DCU_12B	The maximum current closing is reached
9116	DCU_12A	Internal or external emergency handle
9216	DCU_34A	Internal or external emergency handle
9316	DCU_56B	Internal or external emergency handle
9416	DCU_78B	Internal or external emergency handle

Table 04-II-03.3 Maintenance Mode Fault List (cont'd)

Code	Affected Subsystem	Description
9516	DCU_78A	Internal or external emergency handle
9616	DCU_56A	Internal or external emergency handle
9716	DCU_34B	Internal or external emergency handle
9816	DCU_12B	Internal or external emergency handle
9117	DCU_12A	An obstruction has been detected
9217	DCU_34A	An obstruction has been detected
9317	DCU_56B	An obstruction has been detected
9417	DCU_78B	An obstruction has been detected
9517	DCU_78A	An obstruction has been detected
9617	DCU_56A	An obstruction has been detected
9717	DCU_34B	An obstruction has been detected
9817	DCU_12B	An obstruction has been detected
9118	DCU_12A	Cut Out
9218	DCU_34A	Cut Out
9318	DCU_56B	Cut Out
9418	DCU_78B	Cut Out
9518	DCU_78A	Cut Out
9618	DCU_56A	Cut Out
9718	DCU_34B	Cut Out
9818	DCU_12B	Cut Out

Table 04-II-03.4 Operating Mode and Maintenance Mode Fault Relationship

Operating Mode Fault Codes	Maintenance Mode Fault Codes							
9019	9019							
9020	9020							
9021	9021							
9022	9022							
9116	9116							
9117	9117							
9118	9118							
9123	9108	9109	9110					
9124	9101	9102	9107	9111	9112	9113	9114	9115
9125	9103	9104	9105	9106				
9216	9216							
9217	9217							
9218	9218							
9223	9208	9209	9210					
9224	9201	9202	9207	9211	9212	9213	9214	9215
9225	9203	9204	9205	9206				
9316	9316							
9317	9317							
9318	9318							
9323	9308	9309	9310					
9324	9301	9302	9307	9311	9312	9313	9314	9315
9325	9303	9304	9305	9306				
9416	9416							
9417	9417							
9418	9418							
9423	9408	9409	9410					

**Table 04-II-03.4 Operating Mode and Maintenance Mode Fault Relationship
(cont'd)**

Operating Mode Fault Codes	Maintenance Mode Fault Codes								
9424	9401	9402	9407	9411	9412	9413	9414	9415	
9425	9403	9404	9405	9406					
9516	9516								
9517	9517								
9518	9518								
9523	9508	9509	9510						
9524	9501	9502	9507	9511	9512	9513	9514	9515	
9525	9503	9504	9505	9506					
9616	9616								
9617	9617								
9618	9618								
9623	9608	9609	9610						
9624	9601	9602	9607	9611	9612	9613	9614	9615	
9625	9603	9604	9605	9606					
9716	9716								
9717	9717								
9718	9718								
9723	9708	9709	9710						
9724	9701	9702	9707	9711	9712	9713	9714	9715	
9725	9703	9704	9705	9706					
9816	9816								
9817	9817								
9818	9818								
9823	9808	9809	9810						
9824	9801	9802	9807	9811	9812	9813	9814	9815	
9825	9803	9804	9805	9806					

Table 04-II-03.5 Maintenance Mode Fault Details

Fault#	Date	Time	Vehicle#	System	Description
9019	mm/dd/yy	hh:mm:ss	xxx	DCU	Car A Circuit Breaker Open
Operator Guide					
Check the Door Control circuit breaker (9F02 - Cab Panel Car A); and/or the Emergency Loop Relay circuit breaker (9F08 - Cab Panel Car A); and/or the A-End Left Side Doors Closed & Locked Relay circuit breaker (9F09 - Cab Panel Car A); and/or the End of Train Relays circuit breaker (9F10 - LV Cabinet Car A); and/or the Doors Closed & Locked Summary Relays circuit breaker (9F11 - LV Cabinet Car A)					

Fault#	Date	Time	Vehicle#	System	Description
9020	mm/dd/yy	hh:mm:ss	xxx	DCU	Car B Circuit Breaker Open
Operator Guide					
Check the Door Control circuit breaker (9F02 - Cab Panel Car B); and/or the B-End Left Side Doors Closed & Locked Relay circuit breaker (9F09 - Cab Panel Car B); and/or the End of Train Relays circuit breaker (9F10 - LV Cabinet Car B); and/or the Doors Closed & Locked Summary Relays circuit breaker (9F11 - LV Cabinet Car B)					

Fault#	Date	Time	Vehicle#	System	Description
9021	mm/dd/yy	hh:mm:ss	xxx	DCU	Car A Power Supply Circuit Breaker Open
Operator Guide					
Check DCU #78A power supply circuit breaker (9F04 - LV cabinet Car A) and/or DCU #12A power supply circuit breaker (9F05 - LV Cabinet Car A) and/or DCU #56A power supply circuit breaker (9F06 - LV Cabinet Car A) and/or DCU #34A power supply circuit breaker (9F07 - LV Cabinet A).					

Fault#	Date	Time	Vehicle#	System	Description
9022	mm/dd/yy	hh:mm:ss	xxx	DCU	Car B Power Supply Circuit Breaker Open
Operator Guide					
Check DCU #78B power supply circuit breaker (9F04 - LV cabinet Car B) and/or DCU #12B power supply circuit breaker (9F05 - LV Cabinet Car B) and/or DCU #56B power supply circuit breaker (9F06 - LV Cabinet Car B) and/or DCU #34B power supply circuit breaker (9F07 - LV Cabinet B).					

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9101	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door Control Unit Major Failure	
9201	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9301	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9401	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9501	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9601	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9701	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9801	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
DCU functioning is inhibited. Replace the DCU with a new one.						

Fault#	Date	Time	Vehicle#	System	Description	
9102	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door Control Unit Minor Failure	
9202	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9302	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9402	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9502	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9602	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9702	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9802	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
Reboot the DCU. If the failure is still present replace it.						

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9103	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	ADA Static Output Failure	
9203	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9303	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9403	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9503	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9603	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9703	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9803	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
The output is no more driven but periodically self-tested.						
Action: Check the ADA LED Lamp, replace if necessary; Check the wiring and all terminal lugs between the ADA LED lamp and the DCU, repair/replace as necessary; Check the DCU output to the ADA LED lamp, replace DCU as necessary.						

Fault#	Date	Time	Vehicle#	System	Description	
9104	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door Out of service Static Output Failure	
9204	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9304	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9404	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9504	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9604	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9704	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9804	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
The output is no more driven but periodically self-tested.						
Action: Check the DOS LED Lamp, replace if necessary; Check the wiring and all terminal lugs between the DOS LED lamp and the DCU, repair/replace as necessary; Check the DCU output to the DOS LED lamp, replace DCU as necessary						

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9105	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Push Button drive Static Output Failure	
9205	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9305	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9405	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9505	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9605	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9705	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9805	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
The output is no more driven but periodically self-tested.						
Action: Check the Local Push Button, replace if necessary; Check the wiring and all terminal lugs between the Local Push Button and the DCU, repair/replace as necessary; Check the DCU output to the Local Push Button, replace DCU as necessary.						

Fault#	Date	Time	Vehicle#	System	Description	
9106	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door open light Static Output Failure	
9206	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9306	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9406	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9506	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9606	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9706	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9806	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
The output is no more driven but periodically self-tested.						
Action: Check the DOL LED Lamp, replace if necessary; Check the wiring and all terminal lugs between the DOL LED lamp and the DCU, repair/replace as necessary; Check the DCU output to the DOL LED lamp, replace DCU as necessary.						

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9107	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door Motor is out of service	
9207	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9307	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9407	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9507	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9607	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9707	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9807	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
The door cannot be open or closed as long as the failure is present. Check the wires 52 and 5. Check the motor. Check the DCU motor output P9-A1 and P9-B1.						

Fault#	Date	Time	Vehicle#	System	Description	
9108	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door locked switch failure	
9208	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9308	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9408	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9508	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9608	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9708	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9808	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
The door remains open and is kept free. Manually close the door and operate the Cut Out to isolate the door and reset it.						
Check the DLS, replace if necessary; Check the wiring and all terminal lugs between the DLS and the DCU, repair/replace as necessary; Check the DCU output to the DLS, replace DCU as necessary						

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9109	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door closed switch 1 failure	
9209	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9309	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9409	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9509	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9609	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9709	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9809	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
Manually close the door and operate the Cut Out to isolate the door and reset it. Check the DCS1, replace if necessary; Check the wiring and all terminal lugs between the DCS1 and the DCU, repair/replace as necessary; Check the DCU output to the DCS1, replace DCU as necessary						

Fault#	Date	Time	Vehicle#	System	Description	
9110	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door closed switch 2 failure	
9210	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9310	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9410	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9510	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9610	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9710	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9810	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
Manually close the door and operate the Cut Out to isolate the door and reset it. Check the DCS2, replace if necessary; Check the wiring and all terminal lugs between the DCS2 and the DCU, repair/replace as necessary; Check the DCU output to the DCS2, replace DCU as necessary						

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9111	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Unexpected unlocking	
9211	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9311	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9411	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9511	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9611	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9711	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9811	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
<p>The door remains powered on closing. It will remain open and free if an opening command appears or ED is activated. If the door is open then manually close and lock the door and cut the door out locally with the COS to continue vehicle operations. Check the DLS switch to see if it has failed or not. Check the Torsion Spring for good tension and motor rotation into the locked position. Check the emergency Bowden cable adjustment. Check the emergency device adjustment and check for door adjustments.</p>						

Fault#	Date	Time	Vehicle#	System	Description	
9112	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Door failed to lock	
9212	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9312	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9412	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9512	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9612	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9712	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9812	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
<p>If the door is physically closed and locked then cut out the door locally with the COS to continue vehicle operations. Check the DLS for proper operation and that it is not stuck. Check that the DLS cam for proper position. Check the door adjustments.</p>						

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9113	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Sensitive edge cut	
9213	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9313	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9413	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9513	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9613	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9713	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9813	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
Inspect both sensitive edges for any signs of cuts/vandalism. Replace as needed. Check both sensitive edges, remove connector P6, and P8, check the sensitive edge with a millimeter, you have to found 2.2 kOhms +/- 10% per sensitive edge, if not replace the SE. Check the wires between P8-13 and P6-13 and DCU P3-B10. Check the wires between P8-10 and P6-10 and DCU P3-A4. Check when the DCU is power on if you have 37.5 V DCU P3-A4, if not replace the DCU.						

Fault#	Date	Time	Vehicle#	System	Description	
9114	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	The maximum door current has been reached during the door opening sequence	
9214	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9314	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9414	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9514	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9614	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9714	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9814	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
If the vehicle needs to continue operating then cut out the door locally with the COS. When the situation permits then manually open the doors after pulling the IED. Check for smooth movement and that the doors are not binding while opening and closing the doors. Check the thresh hold track that it's clean and free of any debris. Check the operator screw for any defects. Check the door adjustments are all within specs. If the doors seem to be alright mechanically then check the door motor.						

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9115	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	The maximum door current has been reached during the door closing sequence	
9215	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9315	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9415	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9515	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9615	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9715	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9815	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
If the vehicle needs to continue operating then pull the IED handle and manually close and lock the doors. Cut out the door locally with the COS. When the situation permits then manually open the doors after pulling the IED. Check for smooth movement and that the doors are not binding while opening and closing the doors. Check the thresh hold track that it's clean and free of any debris. Check the operator screw for any defects. Check the door adjustments are all within specs. If the doors seem to be al right mechanically then check the door motor.						

Fault#	Date	Time	Vehicle#	System	Description	
9116	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Internal or external emergency device has been pulled	
9216	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9316	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9416	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9516	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9616	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9716	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9816	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
Reset cut out switch when required. Make sure the Switch is working properly and the lock out handle.						

Table 04-II-03.5 Maintenance Mode Fault Details (cont'd)

Fault#	Date	Time	Vehicle#	System	Description	
9117	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	An obstruction has been detected	
9217	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9317	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9417	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9517	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9617	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9717	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9817	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
<p>If the vehicle needs to continue operating then verify that there are no obstructions in the path of the door then manually close and lock the door and cut the door out locally with the COS. When the situation permits then check the thresh hold track and verify that it is clean and free of any debris. Manually open and close the Door and verify that it's not binding or hanging up at any point during the entire opening or closing stroke. Check the door for proper adjustments.</p>						

Fault#	Date	Time	Vehicle#	System	Description	
9118	mm/dd/yy	hh:mm:ss	xxx	DCU_12A	Cut Out Switch has been activated. Door is cut out locally	
9218	mm/dd/yy	hh:mm:ss	xxx	DCU_34A		
9318	mm/dd/yy	hh:mm:ss	xxx	DCU_56B		
9418	mm/dd/yy	hh:mm:ss	xxx	DCU_78B		
9518	mm/dd/yy	hh:mm:ss	xxx	DCU_78A		
9618	mm/dd/yy	hh:mm:ss	xxx	DCU_56A		
9718	mm/dd/yy	hh:mm:ss	xxx	DCU_34B		
9818	mm/dd/yy	hh:mm:ss	xxx	DCU_12B		
Operator Guide						
None.						

LOS ANGELES COUNTY

METROPOLITAN TRANSPORTATION AUTHORITY

LIGHT RAIL VEHICLE

P2550



RUNNING MAINTENANCE
AND
SERVICE MANUAL

VOLUME M-01-A
PART III
MAINTENANCE
SECT 02 CAR BODY



SECTION 04

DOORS

PART III

MAINTENANCE

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SECTION 04

DOORS

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SECTION 04

DOORS

04-III-01 INTRODUCTION

The Doors Part III - Maintenance consists of :

- Preventive Maintenance
- Corrective Maintenance
- Consumable Materials
- Test Equipment & Special Tools

04-III-01.a List of Abbreviations, Acronyms & Symbols

The Abbreviations, Acronyms and Symbols commonly used throughout this Section are given below with their relevant meaning.

Abbreviation	Meaning
AB	AnsaldoBreda
ADA	Americans with Disabilities Act
APS	Auxiliary Power Supply
ASSY	Assembly
ATP	Automatic Train Protection
CS	Crew Switch
DCS	Door Close Switch
DCU	Door Control Unit
DLS	Door Locked Switch
DOL	Door Open Light
DOS	Door Out of Service
ED	Emergency Device
EDRS	Emergency Device Reset Switch
EED	Exterior Emergency Device
ELE	Electronic
H-CML	Heavy Consumable Material List
H-CMS	Heavy Corrective Maintenance Sheet
I/O	Input / Output
IED	Interior Emergency Device
IPC	Illustrated Parts Catalog
L/R	Left / Right
LED	Light Emitting Diode
LH	Left Hand Side
LH(RH)	Left Hand / Right Hand
LOD	Lock Out Device
LRU	Lowest Replaceable Unit
LRV	Light Railway Vehicle
LV	Low Voltage
LVPS.	Low Voltage Power Supply
N/A	Not Applicable
NC	Normally Closed (contact)
NO	Normally Open (contact)
O/C	Open/Close
PB	Push Button

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Abbreviation	Meaning
R/R	Removal and Replacement for Refurbishment
RH	Right Hand Side
R-CML	Running Consumable Material List
R-CMS	Running Corrective Maintenance Sheet
RMSM	Running Maintenance & Service Manual
R-PMM	Running Preventive Maintenance Matrix
R-PMR	Running Preventive Maintenance Report
R-PMS	Running Preventive Maintenance Sheet
R-TESTL	Running Test Equipment & Special Tools List
SCPM	Safety Critical Preventive Maintenance
SYS	System
TBD	To Be Defined
TBS	To Be Supplied
TL	Trainline
TOC	Table Of Content
TTEM	Tools & Test Equipment Manual
TWC	Train-to-Wayside Communication
VAC	Voltage Alternate Current
VDC	Voltage Direct Current
W/	With
W/O	Without

04-III-01.b List of Definitions

The Definitions commonly used throughout this Section are given below with their relevant meaning.

Definition	Meaning
'A' body section	The section of an articulated vehicle containing the pantograph
'B' body section	The section of an articulated vehicle not containing the pantograph
AW0	Empty car operating weight
AW1	Full seated load plus AW0
AW2	Standees at 4 persons per square meter plus AW1
AW3	Standees at 6 persons per square meter plus AW1
AW4	Standees at 8 persons per square meter plus AW1
Front door	The door close to the Operator's Cab
Rear door	The door close to the Articulation Section
MC Handle	Master Controller Handle
"A" Cab (or Cab A)	Operator Cab in the A body section
"B" Cab (or Cab B)	Operator Cab in the B body section

04-III-01.c List of Measurement Units

The Measurement Units commonly used throughout this Section are given below with their relevant meaning.

Definition	Meaning
ft	Foot (Length)
gal	Gallon (Volume)
in	Inch (Length)
kg	Kilogram - approx 2.205 pounds (Weight)
km	Kilometer - approx 0.621 miles (Length)
lb	Pound (Weight)
lb-ft	Pound force (Force)
m	Meter - approx 3.28 feet (Length)
mm	Millimeter - approx 0.0394 inches (Length)
mph	Miles per hour (Velocity)
Km/h	Kilometers per hour (Velocity)
s	Seconds (Time)
V	Volt (Tension)
Vdc	Direct Voltage (Tension)
Vac	Alternate Voltage (Tension)
kVA	Kilo-Volt-Ampere (Power)
kW	Kilo-Watt (Power)
W	Watt (Power)
F	Farad (Capacity)
H	Henry (Inductance)
Ω	Ohm (Resistance)
$^{\circ}\text{F}$	Fahrenheit (Temperature)
$^{\circ}\text{C}$	Celsius (Temperature)
A	Ampere (Current)
Hz	Hertz (Frequency)
rpm	Revolution per Minute (Frequency)
N	Newton (Force)
Nm	Newton-Meter (Torque)
mphs	Mile Per Hour Per Second (Acceleration)

04-III-01.d References

Refer to Section 00 of this RMSM for details relevant to the following Topics :

Topic	Paragraph
<i>MANUAL PURPOSE</i>	00-02
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04-III-02 P2550 ANSALDOBREDA MAINTENANCE PLAN

The AB Preventive Maintenance Plan (PMP) has been designed in order to permit a 30-year Structural and Service Vehicle Life with the following basic assumptions:

- Yearly mileage: 120,000 Miles
- Motor and Trailer Truck removal: every 5 years. (600,000 Miles)

The AB Preventive Maintenance Plan (PMP) provides the Preventive Maintenance Tasks to be performed according the following Mileage Intervals:

Running Maintenance		Heavy Maintenance	
Daily			
10,000	Miles		
30,000	Miles	600,000	Miles
60,000	Miles	1,200,000	Miles
120,000	Miles	1,800,000	Miles

In accordance with the Preliminary Version of the AB Preventive Maintenance Plan, the Scheduled Maintenance Tasks for the entire Vehicle Life have been grouped into:

- Running Preventive Maintenance
- Heavy Preventive Maintenance

In accordance with the AB Corrective Maintenance Analysis, the Corrective Maintenance Tasks for the entire Vehicle Life have been grouped into:

- Running Corrective Maintenance
- Heavy Corrective Maintenance

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04-III-03 RUNNING -PREVENTIVE MAINTENANCE

04-III-03.01 Running -Preventive Maintenance Matrixes (R-PMM)

The Doors Running -Preventive Maintenance Matrix (R-PMM) provides the Preventive Maintenance Plan of the Doors up to 120,000 Miles.

The Doors (R-PMM) is provided in two different arrangements as follows:

- **R-PMM Component Based**

It lists the Doors Running - Preventive Maintenance Tasks ordered by Subsystem /Assemblies / Component break down, followed by the PM Task Description and Scheduled Task Interval and linked to the relevant R-PM Sheet Code.

The R-PMM Component Based provides the Maintainer with the following data:

- SUBSYSTEM /ASSEMBLY/UNIT/COMPONENT
- TASK
- SCPM
- INSPECTION INTERVAL
- SHEET CODE

- **R-PMM Mileage Based**

It lists the Doors Running - Preventive Maintenance Tasks ordered by Scheduled Maintenance Interval and broken down into the related Subsystem /Assemblies/Component followed by the PM Task Description and Person Hours and linked to the relevant R-PM Sheet Code.

The R-PMM Mileage Based provides the Maintainer with the following data:

- INSPECTION INTERVAL
- SYSTEM/SUBSYSTEM /ASSEMBLY/UNIT/COMPONENT
- TASK
- SCPM
- PERSON HOURS
- SHEET CODE

The data listed in this Matrix are the same of those listed in the R-PMM Component Based with the exception of the PERSON HOURS.

04-III-03.01.01 Definitions

The following definitions are applicable to both types of R-PMM

Tasks

Cleaning: Methods and processes required (Step-By-Step Procedural Instructions) for cleaning specific parts or areas of the Vehicle.

Inspection: Preventive Maintenance procedures such as those required to ascertain the serviceability of a Part, Assembly, System or the specific interrelationship of Parts that perform a functional operation.

Lubrication: Provides component lubrication Instructions.

Replacement Provides the Components / Assemblies and Subassemblies removal & installation in a logical sequential order.

Maintenance procedures identified in this topic include Components that are replaced within a 4 hours window.

Service: Operation performed to replenish Sand, Windshield Wiper Washer Fluid, HVAC Coolant, Gear and Compressor Oil, and Vehicle Lubrication.

Test: Procedures and Parameters to evaluate the operational efficiency and integrity of a System /Subsystem/Component and the interrelationship of Parts performing functional operations.

04-III-03.01.02 Inspection Intervals

The Running - Preventive Maintenance Intervals for the P2550 LRV Fleet are scheduled as follows:

Daily	10,000 Miles	30,000 Miles	60,000 Miles	120,000 Miles
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The marker "●" in the INSPECTIONS INTERVAL column, indicates the periodicity of the corresponding Task.

04-III-03.01.03 Safety Critical Preventive Maintenance (SCPM) Tasks

The marker "✓" in the SCPM column, indicates that the corresponding Task is a Safety Critical Preventive Maintenance (SCPM) Task, as per the results of the Safety Analyses performed, on Vehicle Subsystems, according to Vehicle Specification.

04-III-03.01.04 Sheet Code

The Sheet Code column, indicates the reference to Running -Preventive Maintenance Sheet where the Procedure to be performed is described and illustrated.

**THE SHEET CODE IS THE EXPLICIT LINK BETWEEN
R-PM MATRIXES, R-PMR /JOB CARDS AND R-PM SHEETS**

Refer to Paragraph 04-III-03.03.01 for Running- Preventive Maintenance Sheet (R-PMS) Form for detailed explanation.

04-III-03.01.05 Person Hours

It indicates the time required to perform the corresponding Task with the basic assumption that the Vehicle is on an Inspection Pit or Stand Up Rail and the Consumables, Tools and Spare Parts needed to accomplish the Task are available at the Location of the Equipment to be maintained.

Refer to :

- Table 04-III-03.1 for Running - Preventive Maintenance Matrix (R-PMM) (Component Based)
- Table 04-III-03.2 for Running - Preventive Maintenance Matrix (R-PMM) (Mileage Based)

04-III-03.01.06 Running Preventive Maintenance Matrix (Component Based)

Table 04-III-03.1 Running Preventive Maintenance Matrix (Component Based)

SYSTEM 04		DOORS					SHEET CODE	
SUBSYSTEM ASSY/UNIT/COMPONENT	TASK	S	C	P	M	INSPECTION INTERVAL MILES		
		Daily	10K	30K	60K	120K		
DOORS								
-DOORS	TEST	<input checked="" type="checkbox"/>		●			R-P-04-00-00-00/T-00	
-DOOR OPERATOR ASSY	INSPECTION	<input checked="" type="checkbox"/>			●		R-P-04-01-00-00/I-00	
--RAIL ASSEMBLY	LUBRICATION					●	R-P-04-01-02-00/L-00	
DRIVE ASSY								
--DRIVE ASSY	LUBRICATION				●		R-P-04-01-03-01/L-00	
MOTORIZATION (COMPLETE)								
--TORSION SPRING	LUBRICATION					●	R-P-04-01-05-05/L-00	
-DOOR LEAF ASSEMBLY (COMPLETE)	INSPECTION	<input checked="" type="checkbox"/>			●		R-P-04-05-00-00/I-00	
-DOOR LEAF ASSEMBLY (COMPLETE)	CLEANING					●	R-P-04-05-00-00/C-00	

04-III-03.01.07 **Running Preventive Maintenance Matrix (Mileage Based)**
Table 04-III-03.2 Running Preventive Maintenance Matrix (Mileage Based)

SYSTEM 04		DOORS		
SUBSYSTEM	TASK	S C P M	PERSON HOURS	SHEET CODE
10,000 MILES				
-DOORS	TEST	<input checked="" type="checkbox"/>	0.89	R-P-04-00-00-00/T-00
60,000 MILES				
-DOOR OPERATOR ASSY	INSPECTION	<input checked="" type="checkbox"/>	0.5	R-P-04-01-00-00/I-00
-DOOR LEAF ASSEMBLY (COMPLETE)	INSPECTION	<input checked="" type="checkbox"/>	0.5	R-P-04-05-00-00/I-00
120,000 MILES				
DOOR OPERATOR ASSY				
--RAIL ASSEMBLY	LUBRICATION		0.25	R-P-04-01-02-00/L-00
-DRIVE ASSY				
---DRIVE ASSY	LUBRICATION		0.17	R-P-04-01-03-01/L-00
MOTORIZATION (COMPLETE)				
---TORSION SPRING	LUBRICATION		0.25	R-P-04-01-05-05/L-00
-DOOR LEAF ASSEMBLY (COMPLETE)	CLEANING		0.25	R-P-04-05-00-00/C-00

04-III-03.02 Running -Preventive Maintenance Reports (R-PMR/Job Cards)

This paragraph describes the contents of the Doors Running -Preventive Maintenance Reports (R-PMR/Job Cards) for the Running - Preventive Maintenance Tasks.

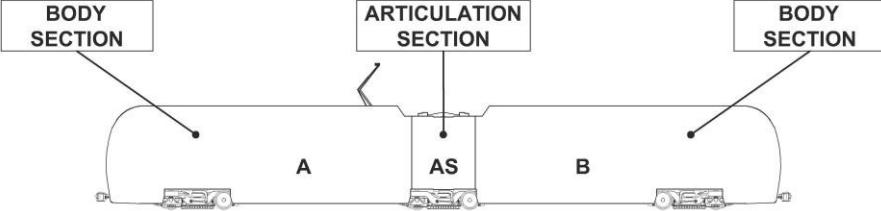
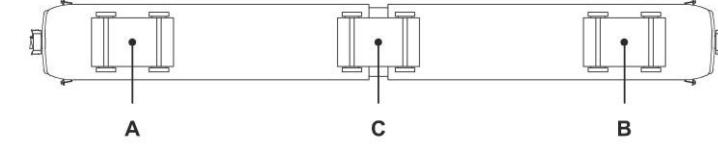
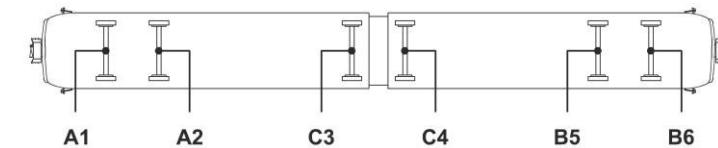
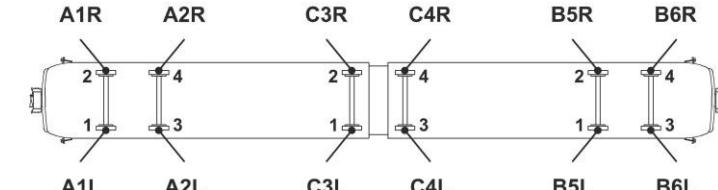
04-III-03.02.01 R-PMR/Job Card Form Content

The R-PMR/JOB CARDS are broken down into two main topics:

Specific Data and R-PM Data

Refer to Figure 04-III-03.1 for R-PMR/JOB CARD Form example

RUNNING PREVENTIVE MAINTENANCE REPORTS (R-PMR/JOB CARDS) FORM		
SPECIFIC DATA TO BE FILLED IN BY THE MAINTAINER		
ITEM #	TITLE	EXPLANATORY NOTE
1	VEHICLE #	This field indicates the Vehicle Identification Number
2	DATE	This field indicates the Date on which the Vehicle entered the Maintenance Shop
3	RUNNING HOURS	This field indicates the Vehicle Running Hours at the above Date
4	MILES	This field indicates the Vehicle Running Miles at the above Date.
5	EMPLOYEE # & SIGNATURE	This Field indicates the Employee # & Signature of the Maintainer(s) that perform the referred Task(s)
6	STARTING DATE	This field indicates the Starting Date of the referred Task(s).
7	WORK HOURS	This field indicates the Work duration to perform the referred Task(s).
8	COMPLETION DATE	This field indicates the Completion Date of the referred Task(s).
9	DEFECT FOUND/COMMENTS	This field indicates the result of the Task(s) execution and/ or note related to any items of the maintained Equipment requiring Corrective Maintenance
A	P2550 RUNNING PREVENTIVE MAINTENANCE REPORT SYSTEM (Maintenance Interval) JOB CARD	<p>This field provides R-PMR Title.</p> <p>The R-PM Maintenance Intervals are the following:</p> <p>Daily; 10,000 Miles; 30,000 Miles; 60,000 Miles; 120,000 Miles</p>
B	WORK AREA	<p>This column lists the On Vehicle Areas where the Equipment to be maintained is located</p> <p>The Work Areas are provided to optimize the jobs organization of the Preventive Maintenance tasks in order to:</p> <ul style="list-style-type: none"> 1- respect the Safety Precautions to be followed 2- complete the preparation and the availability of the Consumables, Tools and Spare Parts, needed to perform the referred Task. 3- respect the time (PERSON HOURS) established to perform the referred Task (with the basic assumption that the Vehicle is on an Inspection Pit or Stand Up Rail and the Consumables, Tools and Spare Parts are available at the location of the Equipment to be maintained.) <p>The On Vehicle Work Areas are the following:</p> <p>Exterior - Interior - Roof - Truck - Undercar - Vehicle (Vehicle as a whole)</p>

RUNNING PREVENTIVE MAINTENANCE REPORTS (R-PMR/JOB CARDS) FORM		
SPECIFIC DATA TO BE FILLED IN BY THE MAINTAINER		
ITEM #	TITLE	EXPLANATORY NOTE
C	ITEM	This column lists the Subsystem/Assembly, Unit, Component to be maintained
D	TASK	<p>This column lists the R-PM tasks to be performed for each Assembly/Unit/Component (i.e., Cleaning, Inspection, Test)</p> <p>The R-PM Tasks are the following:</p> <ul style="list-style-type: none"> - Cleaning - Inspection -Lubrication - - Replacement - Service- Test
E	LOCATION	<p>This column lists the On Board Vehicle Location of all Equipment to be maintained according to the following Location identification Codes</p>    

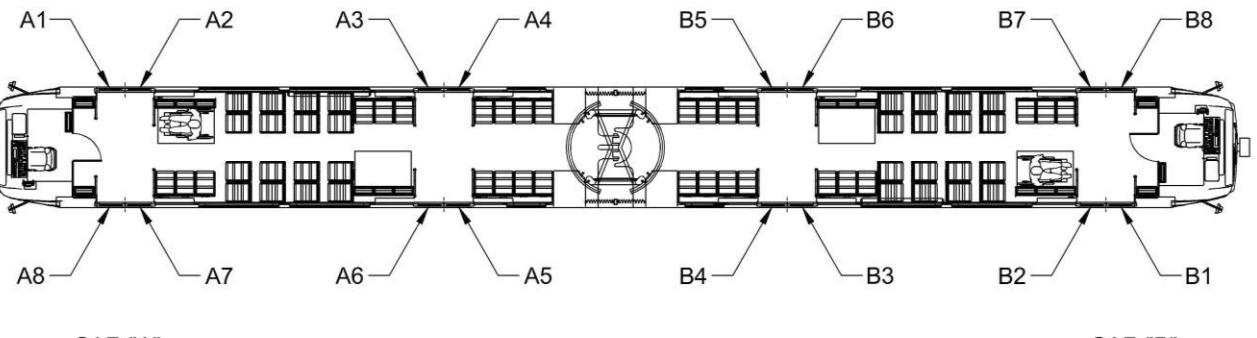
RUNNING PREVENTIVE MAINTENANCE REPORTS (R-PMR/JOB CARDS) FORM		
SPECIFIC DATA TO BE FILLED IN BY THE MAINTAINER		
ITEM #	TITLE	
E (cont'd)	LOCATION (cont'd)	
EXPLANATORY NOTE		
 <p>CAR "A"</p> <p>CAR "B"</p>		
Door Numbering		
ITEM #	TITLE	EXPLANATORY NOTE
F	PM SHEET CODE	<p>This column lists the reference to Running-Preventive Maintenance Sheet where the Procedure to be performed is described and illustrated.</p> <p>Refer to Running-Preventive Maintenance Sheet (R-PMS) Form for detailed explanation.</p>
G	SHEETOF.....	This field indicates the progressive sheet page number of each R-PMR/JOB CARD

Figure 04-III-03.1 R-PMR/Job Card Form -Example

04-III-03.02.02 R-PMR/Job Card Sequence

The R-PMR/JOB CARDS provided in this Section are grouped according to the following sequence:

Daily 10,000 Miles 30,000 Miles 60,000 Miles 120,000 Miles

04-III-03.02.03 Running -Preventive Maintenance Cycle & R-PMR/Job Card Content

The Running -Preventive Maintenance Cycle and the relevant R-PMR/JOB CARD content are as follows:

MAINTENANCE INTERVAL	PMR /JOB CARD TITLE	PMR /Job Card CONTENT
DAILY	DAILY JOB CARD	<ul style="list-style-type: none"> • List of Assemblies/Components and related Tasks to be performed DAILY
10,000 Miles	10,000 MILES JOB CARD	<ul style="list-style-type: none"> • DAILY Job Card content + List of Assemblies/Components and related Tasks to be performed at 10,000 Miles
30,000 Miles	30,000 MILES JOB CARD	<ul style="list-style-type: none"> • DAILY Job Card content + 10,000 Job Card content + List of Assemblies/Components and related Tasks to be performed at 30,000 Miles
60,000 Miles	60,000 MILES JOB CARD	<ul style="list-style-type: none"> • DAILY Job Card content + 10,000 Job Card content + 30,000 Job Card content + List of Assemblies/Components and related Tasks to be performed at 60,000 Miles
120,000 MILES	120,000 MILES JOB CARD	<ul style="list-style-type: none"> • DAILY Job Card content + 10,000 Job Card content + 30,000 Job Card content + 60,000 Job Card content + List of Assemblies/Components and related Tasks to be performed at 120,000 Miles

04-III-03.02.04 R-PMR/Job Card Data Presentation Sequence

The Subsystems / Assemblies / Units / Components listed in the ITEMS column of each R-PMR/JOB CARD are grouped by Work Area and Vehicle Systems' and sequenced, in alphabetical order, in conjunction with their On Vehicle Locations and Tasks to be performed.

04-III-03.02.05 Running Preventive Maintenance Reports R-PMR/Job Cards

DOORS

Running - Preventive Maintenance Reports

R-PMR/JOB CARDS

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DOORS
RUNNING PREVENTIVE MAINTENANCE REPORT
10,000 MILES JOB CARD

VEHICLE #		DATE		RUNNING HOURS		MILES		SHEET 1 OF 1
-----------	--	------	--	---------------	--	-------	--	--------------

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	AXLE	SIDE	
INTERIOR	DOORS	DOOR (A1/A2)	TEST	A			RH	R-P-04-00-00-00/T-00
		DOOR (A3/A4)	TEST	A			RH	R-P-04-00-00-00/T-00
		DOOR (A5/A6)	TEST	A			LH	R-P-04-00-00-00/T-00
		DOOR (A7/A8)	TEST	A			LH	R-P-04-00-00-00/T-00
		DOOR (B1/B2)	TEST	B			LH	R-P-04-00-00-00/T-00
		DOOR (B3/B4)	TEST	B			LH	R-P-04-00-00-00/T-00
		DOOR (B5/B6)	TEST	B			RH	R-P-04-00-00-00/T-00
		DOOR (B7/B8)	TEST	B			RH	R-P-04-00-00-00/T-00

DEFECT FOUND / COMMENTS

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DOORS							
RUNNING PREVENTIVE MAINTENANCE REPORT							
60,000 MILES JOB CARD							
VEHICLE #		DATE		RUNNING HOURS		MILES	
SHEET 1 OF 3							

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	AXLE	SIDE	
INTERIOR	DOORS	DOOR (A1/A2)	TEST	A			RH	R-P-04-00-00-00/T-00
		DOOR (A3/A4)	TEST	A			RH	R-P-04-00-00-00/T-00
		DOOR (A5/A6)	TEST	A			LH	R-P-04-00-00-00/T-00
		DOOR (A7/A8)	TEST	A			LH	R-P-04-00-00-00/T-00
		DOOR LEAF ASSY A1	INSPECTION	A			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A2	INSPECTION	A			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A3	INSPECTION	A			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A4	INSPECTION	A			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A5	INSPECTION	A			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A6	INSPECTION	A			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A7	INSPECTION	A			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A8	INSPECTION	A			LH	R-P-04-05-00-00/I-00
		DOOR OPERATOR ASSY (A1/A2)	INSPECTION	A			RH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (A3/A4)	INSPECTION	A			RH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (A5/A6)	INSPECTION	A			LH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (A7/A8)	INSPECTION	A			LH	R-P-04-01-00-00/I-00
		DOOR (B1/B2)	TEST	B			LH	R-P-04-00-00-00/T-00
		DOOR (B3/B4)	TEST	B			LH	R-P-04-00-00-00/T-00
		DOOR (B5/B6)	TEST	B			RH	R-P-04-00-00-00/T-00
		DOOR (B7/B8)	TEST	B			RH	R-P-04-00-00-00/T-00
		DOOR LEAF ASSY B1	INSPECTION	B			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B2	INSPECTION	B			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B3	INSPECTION	B			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B4	INSPECTION	B			LH	R-P-04-05-00-00/I-00

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DOORS - RUNNING PREVENTIVE MAINTENANCE REPORT - 60,000 MILES JOB CARD

VEHICLE # **DATE** **RUNNING HOURS** **MILES** **SHEET 2 OF 3**

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	AXLE	SIDE	
INTERIOR	DOORS	DOOR LEAF ASSY B5	INSPECTION	B			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B6	INSPECTION	B			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B7	INSPECTION	B			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B8	INSPECTION	B			RH	R-P-04-05-00-00/I-00
		DOOR OPERATOR ASSY (B1/B2)	INSPECTION	B			LH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (B3/B4)	INSPECTION	B			LH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (B5/B6)	INSPECTION	B			RH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (B7/B8)	INSPECTION	B			RH	R-P-04-01-00-00/I-00

DEFECT FOUND / COMMENTS

(cont'd)



(cont'd)

Running Maintenance and Service Manual - Section 04

Running Maintenance and Service Manual - Section 04

DOORS - RUNNING PREVENTIVE MAINTENANCE REPORT - 60,000 MILES JOB CARD

VEHICLE #		DATE		RUNNING HOURS		MILES		SHEET 3 OF 3
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DOORS RUNNING PREVENTIVE MAINTENANCE REPORT 120,000 MILES JOB CARD						
VEHICLE #		DATE	RUNNING HOURS	MILES		SHEET 1 OF 5

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	AXLE	SIDE	
INTERIOR	DOORS	DOOR (A1/A2)	TEST	A			RH	R-P-04-00-00-00/T-00
		DOOR (A3/A4)	TEST	A			RH	R-P-04-00-00-00/T-00
		DOOR (A5/A6)	TEST	A			LH	R-P-04-00-00-00/T-00
		DOOR (A7/A8)	TEST	A			LH	R-P-04-00-00-00/T-00
		DOOR LEAF ASSY A1	CLEANING	A			RH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY A1	INSPECTION	A			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A2	CLEANING	A			RH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY A2	INSPECTION	A			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A3	CLEANING	A			RH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY A3	INSPECTION	A			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A4	CLEANING	A			RH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY A4	INSPECTION	A			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A5	CLEANING	A			LH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY A5	INSPECTION	A			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A6	CLEANING	A			LH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY A6	INSPECTION	A			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A7	CLEANING	A			LH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY A7	INSPECTION	A			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY A8	CLEANING	A			LH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY A8	INSPECTION	A			LH	R-P-04-05-00-00/I-00

(cont'd)

DOORS - RUNNING PREVENTIVE MAINTENANCE REPORT - 120,000 MILES JOB CARD						
VEHICLE #		DATE	RUNNING HOURS	MILES		SHEET 2 OF 5

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	AXLE	SIDE	
INTERIOR DOORS		DOOR OPERATOR ASSY (A1/A2)	INSPECTION	A			RH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (A3/A4)	INSPECTION	A			RH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (A5/A6)	INSPECTION	A			LH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (A7/A8)	INSPECTION	A			LH	R-P-04-01-00-00/I-00
		DRIVE ASSY (A1/A2)	LUBRICATION	A			RH	R-P-04-01-03-01/L-00
		DRIVE ASSY (A3/A4)	LUBRICATION	A			RH	R-P-04-01-03-01/L-00
		DRIVE ASSY (A5/A6)	LUBRICATION	A			LH	R-P-04-01-03-01/L-00
		DRIVE ASSY (A7/A8)	LUBRICATION	A			LH	R-P-04-01-03-01/L-00
		RAIL ASSY (A1/A2)	LUBRICATION	A			RH	R-P-04-01-02-00/L-00
		RAIL ASSY (A3/A4)	LUBRICATION	A			RH	R-P-04-01-02-00/L-00
		RAIL ASSY (A5/A6)	LUBRICATION	A			LH	R-P-04-01-02-00/L-00
		RAIL ASSY (A7/A8)	LUBRICATION	A			LH	R-P-04-01-02-00/L-00
		TORSION SPRING (A1/A2)	LUBRICATION	A			RH	R-P-04-01-05-05/L-00
		TORSION SPRING (A3/A4)	LUBRICATION	A			RH	R-P-04-01-05-05/L-00
		TORSION SPRING (A5/A6)	LUBRICATION	A			LH	R-P-04-01-05-05/L-00
		TORSION SPRING (A7/A8)	LUBRICATION	A			LH	R-P-04-01-05-05/L-00
		DOOR (B1/B2)	TEST	B			LH	R-P-04-00-00-00/T-00
		DOOR (B3/B4)	TEST	B			LH	R-P-04-00-00-00/T-00
		DOOR (B5/B6)	TEST	B			RH	R-P-04-00-00-00/T-00
		DOOR (B7/B8)	TEST	B			RH	R-P-04-00-00-00/T-00

(cont'd)

(cont'd)

DOORS - RUNNING PREVENTIVE MAINTENANCE REPORT - 120,000 MILES JOB CARD						
VEHICLE #		DATE	RUNNING HOURS		MILES	SHEET 3 OF 5

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	AXLE	SIDE	
INTERIOR DOORS		DOOR LEAF ASSY B1	CLEANING	B			LH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY B1	INSPECTION	B			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B2	CLEANING	B			LH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY B2	INSPECTION	B			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B3	CLEANING	B			LH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY B3	INSPECTION	B			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B4	CLEANING	B			LH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY B4	INSPECTION	B			LH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B5	CLEANING	B			RH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY B5	INSPECTION	B			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B6	CLEANING	B			RH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY B6	INSPECTION	B			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B7	CLEANING	B			RH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY B7	INSPECTION	B			RH	R-P-04-05-00-00/I-00
		DOOR LEAF ASSY B8	CLEANING	B			RH	R-P-04-05-00-00/C-00
		DOOR LEAF ASSY B8	INSPECTION	B			RH	R-P-04-05-00-00/I-00
		DOOR OPERATOR ASSY (B1/B2)	INSPECTION	B			LH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (B3/B4)	INSPECTION	B			LH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (B5/B6)	INSPECTION	B			RH	R-P-04-01-00-00/I-00
		DOOR OPERATOR ASSY (B7/B8)	INSPECTION	B			RH	R-P-04-01-00-00/I-00
		DRIVE ASSY (B1/B2)	LUBRICATION	B			LH	R-P-04-01-03-01/L-00
		DRIVE ASSY (B3/B4)	LUBRICATION	B			LH	R-P-04-01-03-01/L-00
		DRIVE ASSY (B5/B6)	LUBRICATION	B			RH	R-P-04-01-03-01/L-00
		DRIVE ASSY (B7/B8)	LUBRICATION	B			RH	R-P-04-01-03-01/L-00
		INTERNAL EGRESS DEVICE (B1/B2)	LUBRICATION	B			LH	R-P-04-04-00-00/L-00

(cont'd)

(cont'd)

DOORS - RUNNING PREVENTIVE MAINTENANCE REPORT - 120,000 MILES JOB CARD

VEHICLE #		DATE		RUNNING HOURS		MILES		SHEET 4 OF 5
-----------	--	------	--	---------------	--	-------	--	--------------

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	AXLE	SIDE	
INTERIOR	DOORS	INTERNAL EGRESS DEVICE (B3/B4)	LUBRICATION	B			LH	R-P-04-04-00-00/L-00
		INTERNAL EGRESS DEVICE (B5/B6)	LUBRICATION	B			RH	R-P-04-04-00-00/L-00
		INTERNAL EGRESS DEVICE (B7/B8)	LUBRICATION	B			RH	R-P-04-04-00-00/L-00
		RAIL ASSY (B1/B2)	LUBRICATION	B			LH	R-P-04-01-02-00/L-00
		RAIL ASSY (B3/B4)	LUBRICATION	B			LH	R-P-04-01-02-00/L-00
		RAIL ASSY (B5/B6)	LUBRICATION	B			RH	R-P-04-01-02-00/L-00
		RAIL ASSY (B7/B8)	LUBRICATION	B			RH	R-P-04-01-02-00/L-00
		TORSION SPRING (B1/B2)	LUBRICATION	B			LH	R-P-04-01-05-05/L-00
		TORSION SPRING (B3/B4)	LUBRICATION	B			LH	R-P-04-01-05-05/L-00
		TORSION SPRING (B5/B6)	LUBRICATION	B			RH	R-P-04-01-05-05/L-00
		TORSION SPRING (B7/B8)	LUBRICATION	B			RH	R-P-04-01-05-05/L-00

(cont'd)



(cont'd)

DOORS - RUNNING PREVENTIVE MAINTENANCE REPORT - 120,000 MILES JOB CARD

VEHICLE #		DATE		RUNNING HOURS		MILES		SHEET 5 OF 5
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DEFECT FOUND / COMMENTS

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04-III-03.03 Running -Preventive Maintenance Sheets (R-PMS)

Each R-PMS provides the following data consistent with Preventive Maintenance Plan (PMP), AB Design Documentation and Vehicle Systems Functional Tree:

- **R-PM Sheet Code**
- **SYSTEM, SUBSYSTEM /ASSEMBLY, UNIT, Component** (Names)
- **SYSTEM, SUBSYSTEM /ASSEMBLY, UNIT, Component** (Location) ·

Maintenance Interval (Miles)

- **Maintenance Task,**
- **Man Hours**, needed to perform the Task
- **SPARE PARTS**, needed to perform the Task

Each R-PMS also provides:

- **SAFETY PRECAUTIONS**, to be followed to safely accomplish the Task
- **TOOLS**, including Special Tools and Test Equipment, needed to accomplish the Task
- **CONSUMABLES**, required to accomplish the Task and consistent with those used by MTA
- **PROCEDURE**, consisting of **Preliminary Operations** and **Procedural Steps**, to be followed while performing Maintenance Tasks.
- **Illustrations** and **Pictures** are inserted in the text to facilitate the understanding of the topics and/or to explain step-by-step procedure.

04-III-03.03.01 Running- Preventive Maintenance Sheet (R-PMS) Form

The R-PMS Form (refer to Figure 04-III-03.2) consists of several fields containing the following data/ information:

RUNNING -PREVENTIVE MAINTENANCE SHEET (R-PMS) Form

ITEM #	TITLE	CONTENT	EXPLANATORY NOTES
1	Card code	Sheet code	<p>The Sheet Code is an alphanumerical code that identifies each R-PM Sheet.</p> <p>THE SHEET CODE IS THE EXPLICIT LINK BETWEEN R-PM MATRIXES, R-PMR /JOB CARDS AND R-PM SHEETS</p> <p>The Sheet Code consists of letters R-P followed by an 11 digit code number as follows:</p> <p>R-P-nn-mm-zz-ww/Y-kk</p> <p>R = Running P = Preventive</p> <p>nn may vary from 02 to 19, identifying the System/ Manual Section number.</p> <p>mm-zz-ww each one may vary from 00 to 99, according to AB System Functional Tree, allowing the identification of the Assembly/Unit/Component</p> <p>Y Maintenance Task Code. It may be one of the following:</p> <p>C=Cleaning I=Inspection L=Lubrication</p> <p>R=Replacement S=Service T=Test</p> <p> Test</p> <p>kk It may vary from 00 to 99.</p> <p>It is a progressive number allowing the explicit identification of RPMS when one of the following cases occur:</p> <p>1- same Maintenance Task pertaining to vehicle as a whole or to the same System/Subsystem/Assembly to be performed at same Maintenance Interval in different Vehicle Area (i.e Vehicle as a Whole DAILY Exterior /Interior INSPECTION)</p> <p>2- same Maintenance Task pertaining to the same Assembly/Unit/Component to be performed at different Maintenance Intervals and for this reason consisting of different Maintenance Procedure</p>
2	System	System name	This field indicates the System to which the Assembly/Unit/ Component belongs.
3	Subsystem/ Assembly	Subsystem/ Assembly name	This field indicates the Subsystem/Assembly to which the Unit/ Component belongs.
4	Unit	Unit name	This field indicates the Unit to which the Component belongs.
5	Component	Component name	This field indicates the Component the Maintenance Task is referring to
6	Maintenance Task	Maintenance Task name	This field indicates the Maintenance Task to be performed.
7	Interval Miles	Number	This field indicates the maintenance Interval Miles. It may be DAILY, 10,000 Miles, 30,000 Miles, 60,000 Miles, 120,000 Miles

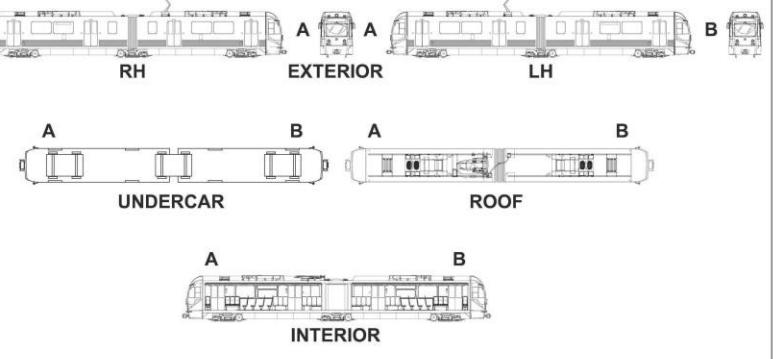
RUNNING -PREVENTIVE MAINTENANCE SHEET (R-PMS) Form (cont'd)			
ITEM #	TITLE	CONTENT	EXPLANATORY NOTES
8	Man Hours	Number	The Man Hour field indicates the time needed to perform the corresponding Maintenance Task, with the basic assumption that the Vehicle is staged on an Inspection Pit/Jacking tracks with the required Consumables, Tools And Materials Available.
9	Sheet	Pages numbering	This field indicates the progressive R-PMS sheet page number.
10	LOCATION	Illustration	<p>This field indicates the On Board Location of the Equipment to be maintained</p> <p>The following Graphic Symbols are used</p> <p>for: Assembly/Unit/Component •</p> <p>for System/Subsystem/Vehicle as a Whole □</p>
11	R	Letter	This field indicates that the Sheet pertains to Running Maintenance
12	P	Letter	This field indicates that the Sheet pertains to Preventive Maintenance
13	nn	Number	<p>This field indicates the System/Manual Section number to which the Sheet pertains.</p> <p>It may vary from 01 to 19</p>
14	rr	Number	This field indicates the Sheet Revision number
15	Page ##	Page ##	This field indicates the RMSM Section Page number
16	-#	Number	This field indicates the RMSM Section Revision number
17	SAFETY PRECAUTIONS	Text	This field presents the General and/or specific Safety Precautions to be followed to accomplish safely the relevant Maintenance Tasks.
18	TOOLS	Text	<p>This field lists the description and the P/N of the Standard tools, Special Tools and Test Equipment needed to accomplish the Maintenance Task.</p> <p>Refer to the TTE Manual for the TE and Special Tools detailed descriptions and tools maintenance.</p>
19	CONSUMABLES	Text	<p>This field lists the Consumables Materials (consistent with those used by MTA with the related P/N.) needed to accomplish the Maintenance Task.</p> <p>Cleaning agents are included</p>
20	SPARE PARTS	Text	<p>This field lists the Description and PN of Spare Parts (consistent with Illustrated Parts Catalog) needed to accomplish the Maintenance Task.</p>
21	PROCEDURE	Text	<p>The Procedure field provides Preliminary Operations and Procedural step by step Instructions to be followed while performing the Maintenance Task.</p> <p>Illustrations and Pictures are inserted in the text to facilitate the understanding of the topics and/or to explain step-by-step procedure.</p>

LACMTA P2550 LRV
Running Maintenance and Servicing Manual - Section 01

P2550 PREVENTIVE MAINTENANCE SHEET

System:	Card Code:	1	
Subsystem/Assy:	Sheet:	x/z	9
Component:	Unit:		
Maintenance Task:	Man Hours:	4	
	Interval/Miles:	8	

LOCATION:



10

11

12

13

14

15

16

R-P-nn-mm-zz-ww/Y-kk

Metro

Page 011 Draft

**Figure 04-III-03.2 R-PMS Form
(Sheet 1 of 2)**

LACMTA P2550 LRV Running Maintenance and Servicing Manual - Section 01		 AnsaldoBreda				
P2550 PREVENTIVE MAINTENANCE SHEET						
Card Code: R-P-nn-mm-zz-ww/Y-kk		Sheet: x/z				
System: _____		Unit: _____				
Subsystem/Assy: _____		Man Hours: _____				
Component: _____		Interval/Miles: _____				
SAFETY PRECAUTIONS:						
17. _____						
18. _____						
19. _____						
20. _____						
21. _____						
TOOLS:						
CONSUMABLES:						
SPARE PARTS:						
PROCEDURE:						
PRELIMINARY OPERATIONS						
Page 01-2 Draft						
 Metro						
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">R</td> <td style="padding: 2px;">P</td> <td style="padding: 2px;">nn</td> <td style="padding: 2px;">rr</td> </tr> </table>			R	P	nn	rr
R	P	nn	rr			

**Figure 04-III-03.2 R-PMS Form
(Sheet 2 of 2)**

04-III-03.03.02 How to Use the R-PM Sheets and R-PMR /Job Cards

To optimize the job organization, proceed as follows:

1. At Scheduled Preventive Maintenance Interval Expiration Date

- a) Use the relevant (Maintenance Interval) R-PMR/JOB CARD where the Subsystems/Assemblies/Units/Components, listed in the ITEMS column, are grouped by Work Area and Vehicle System and sequenced, in alphabetical order, in conjunction with their On Vehicle Location and Task to be performed.
- b) Select the Work Area and the System
- c) Select the first Equipment listed in the ITEMS column and the Sheet Code listed in conjunction with the Task to be performed and gather the relevant Sheet
- d) Read carefully the Sheet to fully understand the provided Data/Instructions.
- e) Carefully read:
 - The Safety Precautions to perform the Task safely;
 - The Preliminary Operations to set the Vehicle in safety conditions according to MTA Maintenance Shop Regulations;
 - The Tools, Consumables and Spare Parts listed in each Sheet which are needed to accomplish the Task, in order to have all of them available next to the location of the Equipment to be maintained before starting the activities.
- f) Fill the R-PMR/JOB CARD with the data required by the Maintainer at the start of the Maintenance Activities

2. Task Execution

- a) Follow carefully the prescribed Safety Precautions and Maintenance Procedural Steps provided in the R-PM Sheet.
- b) Perform the Maintenance Task Procedure on the first Equipment (listed in the ITEMS column of the relevant R-PMR /JOB CARD) at its On Vehicle LOCATION. as indicated in the LOCATION column of the R-PMR /JOB CARD.
- c) Upon completing the Maintenance Task on the first Equipment, highlight (with a flag) its LOCATION field on the R-PMR / JOB CARD.
- d) Note Equipment Defect Found and / or your Comments on the End Page of the R-PMR / JOB CARD
- e) Proceed to perform the same Task on the second (same) Equipment listed in the R-PMR / JOB CARD at its On Vehicle LOCATION, (different from the previous one) as indicated in the LOCATION column of the R-PMR /JOB CARD.
- f) Proceed as above to perform the same Task on every Equipment (to which the same Sheet Code refers) listed in the ITEMS column of the relevant (Maintenance Interval) R-PMR /JOB CARD.
- g) During Task execution, note any Areas / Items of the Assembly / Unit/ Component under Preventive Maintenance Process requiring Corrective Maintenance.
- h) Gather as much information about the Equipment as is practical to increase your Equipment knowledge (i.e.; knowledge about the malfunction in terms of correctly operating and incorrectly operating equipment processes).

3. At every Task Completion

- a) Carefully Follow the prescribed Safety Precautions before restoring Electrical Power to Vehicle.
- b) Check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.
- c) Perform this check on the IDU "A" as follows:

NOTE: Through the IDU you can check if all Systems are exchanging data through the MVB or LonWorks Bus and the Trainlines Status.

The IDU Display also shows in real time the Status of all Vehicle Systems.

Reading the IDU Fault List it is possible to immediately detect a fault
Using the IDU in the Operating Mode the Fault Indications are generic,

Using the IDU in Maintenance Mode the same Fault has a detailed description.

For more in depth troubleshooting use the PTU connected to the relevant system that requires further troubleshooting.

1. On IDU "A" access to the Maintenance Menu first and then to the "Faults" Screen by selecting, in sequence, the relevant icons.
2. Check, On IDU "A" through the list of the Current Active Faults shown in the "Faults" Screen, for "Fault" Codes related to the Subsystem to which the maintained Equipment pertains.

Refer to Section 18 of RMSM for Fault Signals Details.

3. As per "Fault" Codes check results proceed as follows:

➤ **No Faults are listed in the "Faults" Screen**

- a) Key OFF the Vehicle.
- b) Record Service and Test results on the Defect Report Card for administrative and maintenance planning.
- c) Fill the R-PMR /JOB CARD with the data required to the Maintainer at the completion of the Maintenance Activities and include your comments

➤ **Fault Codes are listed in the “Faults” Screen**

- a) Investigate/troubleshoot the Equipment previously maintained first and then the System/Subsystem/Assembly/Unit for Fault Probable Causes.
- b) Gather as much information about the failure symptoms as is practical.
- c) Refer to Section 18 of RMSM for Fault Signals Details.
- d) Try to identify the malfunction in terms of correctly operating and incorrectly operating equipment processes.
- e) Identify which equipment signals or parameters will best help you to localize the failure.
- f) Identify the source of the problem.
- g) Repair or replace the defective component.
- h) Verify that the repair is effective in eliminating all of the failure symptoms.
- i) Evaluate whether or not the defective component was the root cause of the failure.
- j) Once the Fault Codes are not found in the “Faults” Screen perform steps from 3-a through 3-c (previous subparagraph **“No Faults are listed in the “Faults” Screen”**).

04-III-03.03.03 Running- Preventive Maintenance Sheet (R-PMS) List

The Doors Running- Preventive Maintenance Sheets (R-PMS) List is provided in the following pages.

The R-PM Sheets are listed by Subsystem / Assembly / Unit / Component and sequenced by Maintenance Interval in conjunction with their Sheet Codes and Tasks (including SCPM flag) to be performed.

Table 04-III-03.3 Running Preventive Maintenance Sheets List

SYSTEM 04		DOORS			
SUBSYSTEM/ ASSY	ASSY /UNIT/ COMPONENT	SCPM	TASK	MAINTEN. INTERVAL (MILES)	 SHEET CODE
DOORS	DOORS	<input checked="" type="checkbox"/>	TEST	10,000	R-P-04-00-00-00/T-00
DOOR OPERATOR ASSY	DOOR OPERATOR ASSY	<input checked="" type="checkbox"/>	INSPECTION	60,000	R-P-04-01-00-00/I-00
DOOR OPERATOR ASSY	RAIL ASSEMBLY		LUBRICATION	120,000	R-P-04-01-02-00/L-00
DOOR OPERATOR ASSY	DRIVE ASSY		LUBRICATION	120,000	R-P-04-01-03-01/L-00
DOOR OPERATOR ASSY	TORSION SPRING		LUBRICATION	120,000	R-P-04-01-05-05/L-00
DOOR LEAF ASSEMBLY (COMPLETE)	DOOR LEAF ASSEMBLY (COMPLETE)	<input checked="" type="checkbox"/>	INSPECTION	60,000	R-P-04-05-00-00/I-00
DOOR LEAF ASSEMBLY (COMPLETE)	DOOR LEAF ASSEMBLY (COMPLETE)		CLEANING	120,000	R-P-04-05-00-00/C-00

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DOORS

Running - Preventive Maintenance Sheets

R-PMS

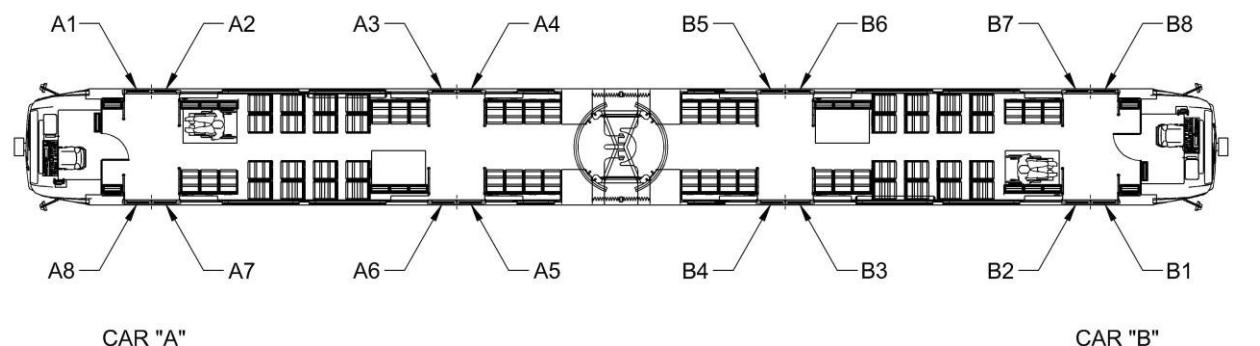
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P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System: DOORS	Sheet: 1/16
Subsystem/Assy: DOORS	Unit:
Component:	Man Hours: 0.89
Maintenance Task: TEST	Interval/Miles: 10,000

LOCATION:
DOORS LOCATION & IDENTIFICATION

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Sheet:

2/16

Subsystem/Assy:

DOORS

Unit:

Component:

DOORS

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000**SAFETY PRECAUTIONS:****CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE****TOOLS:**

LACMTA Maintenance Shop Standard Tools Kit

Step Ladder

Obstacle Gauge 0.4 x 3 in.

Obstacle Gauge 0.8 in x 1 in.

CONSUMABLES:

N/A

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET			
Card Code: R-P-04-00-00-00/T-00			
System: DOORS		Sheet: 3/16	
Subsystem/Assy: DOORS	Unit:		
Component:		Man Hours: 0.89	
Maintenance Task: TEST		Interval/Miles: 10,000	
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ol style="list-style-type: none"> 1. Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. 2. Set the Transfer switch to ON position 3. When indicated in the Procedure, remove the Power Supply from each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
TEST			
This Preventive Maintenance Sheet provides Instructions to perform the following Functional Checks :			
T1. OPENING / CLOSING TEST	T1.1 Manual Operations T1.2 Automatic Operations	T1.2.A Opening	
		T1.2.A.1 Using LH/RH DOOR OPEN PUSHBUTTONS	
		T1.2.A.2 Using LH/RH DOOR RELEASE & DOOR OPEN PUSHBUTTONS	
		T1.2.B Closing	
T2. OBSTACLE DETECTION TEST	T2.1 On Closing		
	T2.2 On Opening		
T3. CREW SWITCH TEST			
T4. FRONT DOOR SWITCH TEST			
T5. EMERGENCY OPENING TEST	T5.1 Emergency Access Device (EAD) Test		
	T5.2 Interior Emergency Device (IED) Test		
T6. LOCK OUT DEVICE TEST			
The Instructions are given for one Door and must be repeated for any Door.			

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Sheet:

4/16

Subsystem/Assy:

DOORS

Unit:

Component:

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000**FIGURE 1 - DOOR SYSTEM BLOCK DIAGRAM**

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-04-00-00-00/T-00	
System: DOORS	Sheet: 5/16
Subsystem/Assy: DOORS	Unit:
Component:	Man Hours: 0.89
Maintenance Task: TEST	Interval/Miles: 10,000
PROCEDURE (CONT'D):	
T1 OPENING / CLOSING TEST	
T1.1 Manual Operations	
<ol style="list-style-type: none"> 1. Remove the Door Power Supply to all Doors according to Table 1. 2. Perform the following Steps (a. through f. for each Door) <ol style="list-style-type: none"> a. Pull emergency device to free door from motor. b. Set the Door open. c. Quickly slide the Side Door Panel(s) towards closed position to test the Door Locking. d. Manually unlock the Door by rotating the Motor Body. e. Slide the Door open and make sure there is no noticeable mechanical resistance nor abnormal noise. f. Quickly slide the Side Door Panel(s) towards the Closed Position to close the Door 3. Restore the Door Power Supply to all Doors according to Table 1. 	
T1.2 Automatic Operations	
T1.2.A Opening:	
<ol style="list-style-type: none"> 1. Verify that all CBs listed in Table 1 are in Closed Position. 	
T1.2.A.1 Using LH/RH DOOR OPEN PUSHBUTTONS	
<ol style="list-style-type: none"> 1. Press LH/RH DOOR OPEN Pushbutton (Operator's Console). 2. Check the movement of the Doors (proper damping at end of opening stroke). 3. Check the opening time according to the following criteria: <p><input type="checkbox"/> from the beginning of the movement until the Side Doors reaches the end stops.= 2.0 ± 0.2 s.</p> 4. Pull the Door manually to make sure that the Door is free at the end of the Opening Phase. 5. Check on IDU (MAINTENANCE Screen) if fault messages have been logged 6. As per Test Results perform Troubleshooting and/or required Corrective Maintenance Actions by switching to OFF first the relevant Door Protection CB indicated in Table 1. 7. Upon completing the Maintenance Actions restore Power Supply to the relevant Door by switching ON the same CB. 	
T1.2.A.2 Using LH/RH DOOR RELEASE AND DOOR OPEN PUSHBUTTONS	
<p>NOTE: The RH/LH Door Release Pushbutton (Yellow) unlocks all the LH/RH Doors allowing to open any of them by pressing the relevant "Door Open" Pushbutton. After a Door has been opened using "Door Open" it closes automatically after a preset time interval or it can be closed by the Operator by means of the "Close" Pushbutton.</p>	
<ol style="list-style-type: none"> 1. Verify that all CBs listed in Table 1 are in Closed Position. 2. Release all the RH/LH Doors 3. Select the Door to be tested. 4. Press the relevant RH/LH Door Open External Pushbutton to open the selected Door 5. Check the movement of the Doors (proper damping at end of opening stroke). 	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Subsystem/Assy:

DOORS

Component:

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000

PROCEDURE (CONT'D):

T1.2 Automatic Operations (cont'd)

T1.2.B Closing:

1. Verify that all CBs listed in Table 1 are in Closed Position.

NOTE: It is assumed that all CBs listed in Table 1 are in closed position.

2. Press RH/LH Door CLOSE Pushbutton (Operator's Console).

3. Check that:

- a. the buzzer sounds before closing and ceases after,
- b. the ADA Lamp is blinking before closing and turns ON during the Closing Stroke,
- c. the opening push-buttons are deactivated.

4. Check the movement of the Leaves with end of travel damping.

5. Check the closing time according to the following criteria:

- From the beginning of the movement until the Doors reaches the End Stops =

2.2 s 0/+0.4 s.

6. Make sure that the Door is locked and that the Motor is no longer powered.

7. Check on IDU (MAINTENANCE Screen) if fault messages have been logged

8. As per Test Results perform Troubleshooting and/or required Corrective Maintenance Actions by switching to OFF first the relevant Door Protection CB indicated in Table 1.

9. Upon completing the Maintenance Actions restore Power Supply to the relevant Door by switching ON the same CB.

10. Record Test Results on the Defect Report Card for administrative and maintenance planning.

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-04-00-00-00/T-00	
System: DOORS	Sheet: 7/16
Subsystem/Assy: DOORS	Unit:
Component:	Man Hours: 0.89
Maintenance Task: TEST	Interval/Miles: 10,000
PROCEDURE (CONT'D):	
T2 OBSTACLE DETECTION TEST	
T2.1 On Closing (refer to Figure 2)	
<p>NOTE: This Test must be performed with the following Obstacle Gauges positioned with long edges vertical and length perpendicular to Door Panels:</p> <ul style="list-style-type: none"> • 0.4 x 3 in (10 x 75 mm) • 0.8 in x 1 in. (20 x 25 mm) <ol style="list-style-type: none"> 1. Verify that all CBs listed in Table 1 are in Closed Position. 2. Press the RH/LH Door Release Pushbutton (Yellow) (Console) to unlock all the RH /LH Doors allowing to open any RH /LH Door from inside or outside the Vehicle. <p>NOTE: The YELLOW LED of the Pushbutton is illuminated when the Door signal is given.</p> <ol style="list-style-type: none"> 3. Select the Door to be tested. 4. Press the relevant RH/LH Door Open (internal or external) pushbutton to open the Door. <p>NOTE: Using the Door Open Pushbutton the Door opens and then, after a preset time interval, closes automatically.</p> <ol style="list-style-type: none"> 5. When the Door is closing, place a 0.4 x 3 in (10 x 75 mm) gauge between the Door Leaves at 200 mm from the top of the leaves 6. Verify that: <ol style="list-style-type: none"> a. Door completely reopens, b. power to the Motor is cut for 4 seconds when Door reaches the End of Stroke. <p>NOTE: The Door will then attempt to fully close, just like a normal closing cycle..</p> <ol style="list-style-type: none"> 7. Verify the Obstacle Detection Cycle as follows: <ul style="list-style-type: none"> • The Door should fully reopen 5 times (adjustable parameter) and should remain open after the fifth time. • Remove the Obstacle Gauge and close the door: <ol style="list-style-type: none"> a. manually, b. by using LH/RH DOOR CLOSE Pushbutton (located on the Operator's Console) <p>In both cases the door returns to normal operation.</p> 	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Subsystem/Assy:

DOORS

Component:

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000

PROCEDURE (CONT'D):

T2.1 On Closing (cont'd)

8. Repeat this Test by placing the Obstacle Gauge 200 mm above Top Of Floor.
9. Repeat this Test by placing the Obstacle Gauge 1 m above Top Of Floor.
10. Remove the Gauge.
11. Verify that Door closes and locks.
12. Repeat steps 2 to 9 with the **0.8 in x 1 in. (20 x 25 mm)** Gauge.
13. As per Test Results perform Troubleshooting and/or required Corrective Maintenance Actions by switching to OFF first the relevant Door Protection CB indicated in Table 1.
14. Once completed the Maintenance Actions restore Power Supply to the relevant Door by switching ON the same CB.
15. Record Test Results on the Defect Report Card for administrative and maintenance planning.

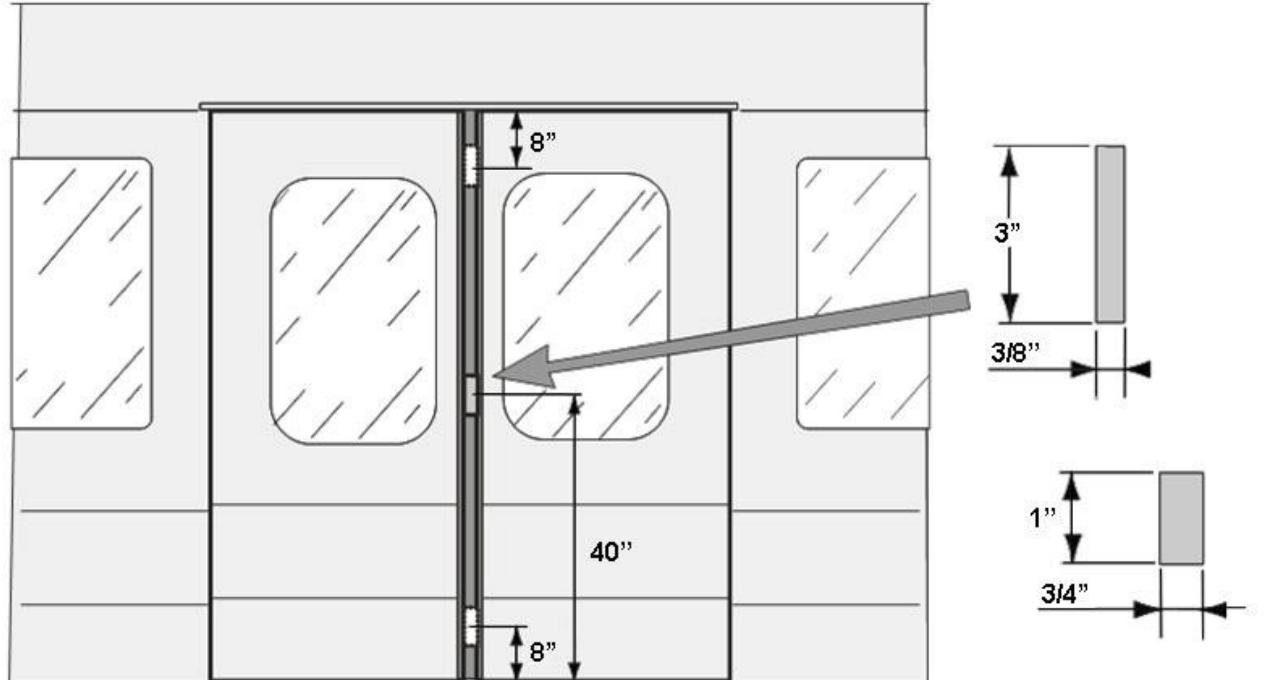


FIGURE 2 - OBSTACLE DETECTION TEST ON CLOSING

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Sheet:

9/16

Subsystem/Assy:

DOORS

Unit:

Component:

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000
PROCEDURE (CONT'D):
T2.2 On Opening (refer to Fig 3)

1. Press the RH/LH Door Release Pushbutton (Yellow) (Console) to unlock all the RH /LH Doors allowing to open any RH/LH Door from inside or outside the Vehicle.

NOTE: The YELLOW LED of the Pushbutton is illuminated when the Door signal is given.

2. Select the Door to be tested.
3. Press the relevant RH/LH Door Open pushbutton to open the Door.
4. When the Door being open, retain a Door Leaf with your hands.

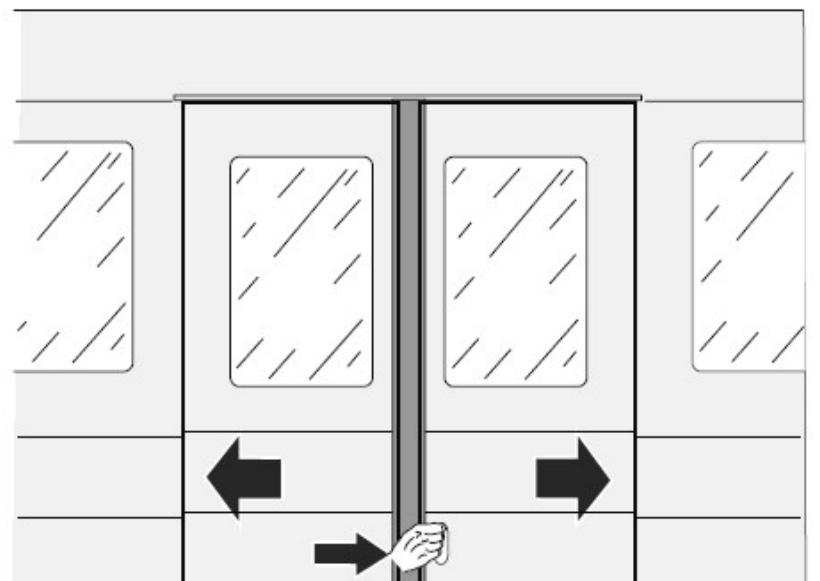
NOTE: Be sure to not activate the Sensitive Edge during this test

5. Verify that:
 - a. Door stops,
 - b. the Motor current is cut for a moment,
 - c. the Door remains free. for 2 seconds.

NOTE: The Door will then attempt to fully close as for a Normal Opening Cycle.

- d. After 5 obstacle detections, the Door tries to close when the delay is elapsed.

6. Reset the Door by pushing the Close Pushbutton on the Cab Console ..
7. Test the Door locally to verify that the Door is working properly.


Figure 3 - OBSTACLE DETECTION TEST ON OPENING

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Subsystem/Assy:

DOORS

Component:

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000**PROCEDURE (CONT'D):**

T3 CREW SWITCH TEST (Ref to Fig 4)

NOTE: It is assumed that A Section / B Section Front Doors are closed

1. Insert and rotate to OPEN the Maintenance Key.
2. Keep the Maintenance Key in the OPEN position during the complete door opening stroke..
3. Verify Front Door open.
4. Rotate to CLOSED position the Maintenance Key.
5. Verify Front Door closed.
6. Check on IDU (MAINTENANCE Screen) if fault messages have been logged

**FIGURE 4 - CREW SWITCH**

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Sheet:

11/16

Subsystem/Assy:

DOORS

Unit:

Component:

Man Hours:

0.89

Maintenance Task:

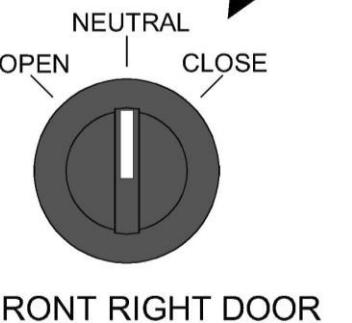
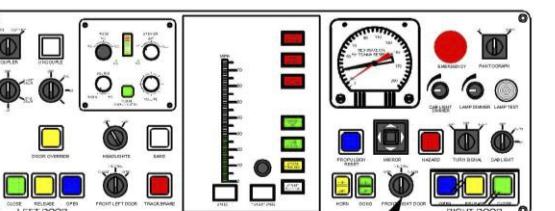
TEST

Interval/Miles:

10,000
PROCEDURE (CONT'D):
T4 FRONT DOOR SWITCH TEST (Ref to Fig 5)

NOTE: It is assumed that A Section / B Section Front Doors are closed.

1. Rotate the Front Door Switch to the OPEN position and hold it there, until the door is fully opened..
2. Verify Front Door open.
3. Rotate the Front Door Switch to the CLOSE position and hold it there, until the door is fully closed
4. Verify Front Door closed.
5. Check on IDU (MAINTENANCE Screen) if fault messages have been logged
6. Release the Front Door
7. Momentarily rotate the Front Door Switch to the OPEN position..
8. Verify Front Door open.
9. Momentarily rotate the Front Door Switch to the CLOSE position..
10. Verify Front Door closed.


FIGURE 5 FRONT DOOR SWITCH

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Subsystem/Assy:
DOORS

Books

Component	Mean Hours
	0.89

Maintenance Task: _____ Interval/Miles: _____

TEST **10,000**

PROCEDURE (CONT'D)

PROCEDURE (CONT'D):

T5 EMERGENCY OPENING TEST

T5.1 Exterior Emergency Device (EED) Test Refer to Fig 6.

NOTE It is assumed that all Doors are closed and locked

NOTE: The Exterior Emergency Device is operational also when relevant Door is cut out or not energized.

1. Pull the Handle of the EED (1).
 2. Verify that:
 - a. the Door is ajar at least **1 in.** (25 mm)
 - b. the Door is free to be opened manually (2).
 3. Reset the EED as follows:
 - a. reset with the Barrel Key at IED
 - b. rotate the Maintenance Key (clockwise) to operate the EDRS Switch
 4. Verify that the Door closes at low speed and lock.
 5. Cut out the Door w/COS.
 6. Test EED again by repeating the Steps 1 through 4

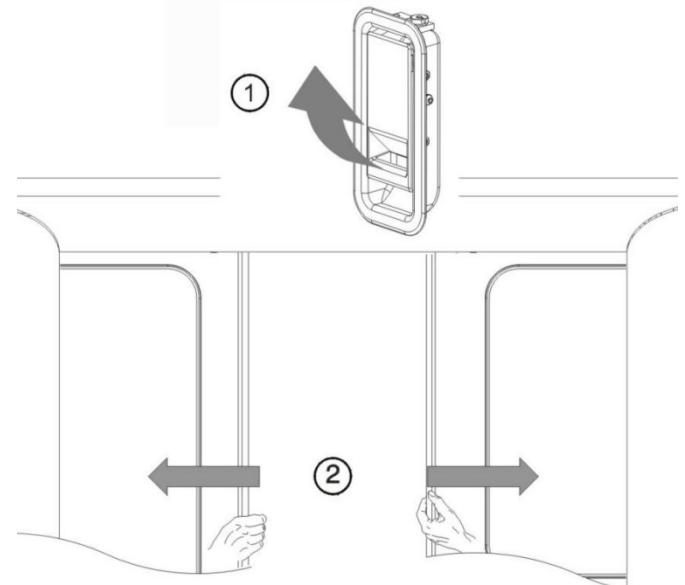


FIGURE 6 - EXTERIOR EMERGENCY DEVICE (EED)

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Sheet:

13/16

Subsystem/Assy:

DOORS

Unit:

Component:

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000
PROCEDURE (CONT'D):
T5.2 Interior Emergency Device (IED) Test (Refer To Fig 7).

NOTE: It is assumed that all Doors are closed and locked.

1. Pull the Handle of the IED (1).

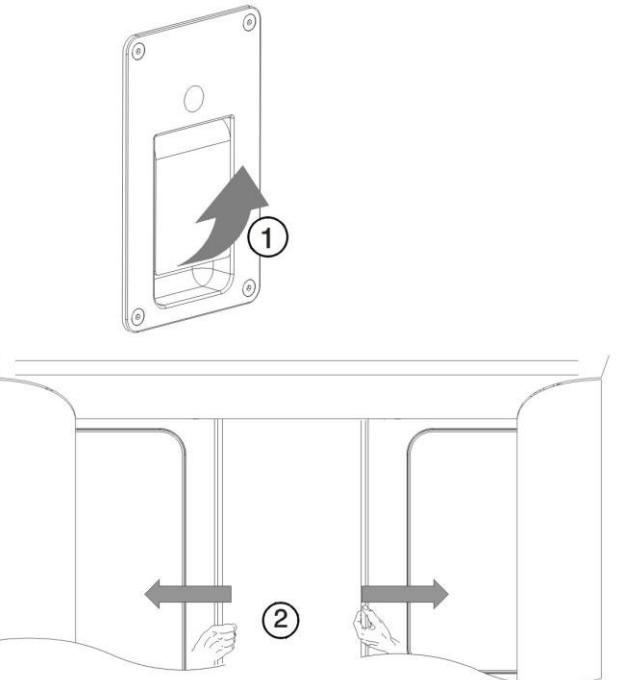
2. Verify that:

- a. the Door is ajar at least **1 in.** (25 mm),
- b. the Door is free to be opened manually (2).

3. To restore normal operation reset the IED by pushing the Handle down into the rest position and proceed as follows:

- a. insert the Maintenance Key at the side of the handle, of the relevant IED;
- b. rotate the Maintenance Key (clockwise) to operate the EDRS Switch

4. Verify that the Door close at low speed and lock.


FIGURE 7 - INTERIOR EMERGENCY DEVICE (IED)

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Subsystem/Assy:

DOORS

Component:

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000

Sheet:

14/16

PROCEDURE (CONT'D):

T6 LOCK OUT DEVICE (LOD) TEST (Refer to Fig 8)

NOTE: It is assumed that all Doors are closed and locked.

1. Inspect the LOD handle for any signs of damage
2. Check that the LOD cannot be activated when the Door is unlocked or open
3. Pull the LOD Handle (down) and verify that the Lock Out Switch is then actuated (a click can be heard upon actuation).
4. Reset the LOD.
5. If any discrepancies are found then immediately inform your Supervisor / Leader and repair as needed.

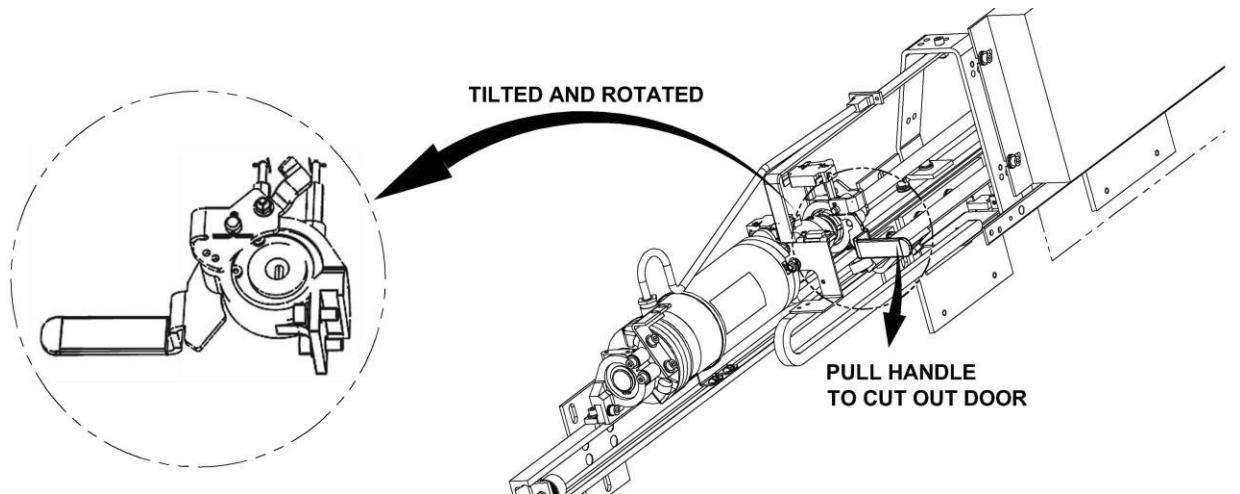


Figure 8 - LOCK OUT DEVICE (LOD)

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Sheet:

15/16

Subsystem/Assy:

DOORS

Unit:

Component:

Man Hours:

0.89

Maintenance Task:

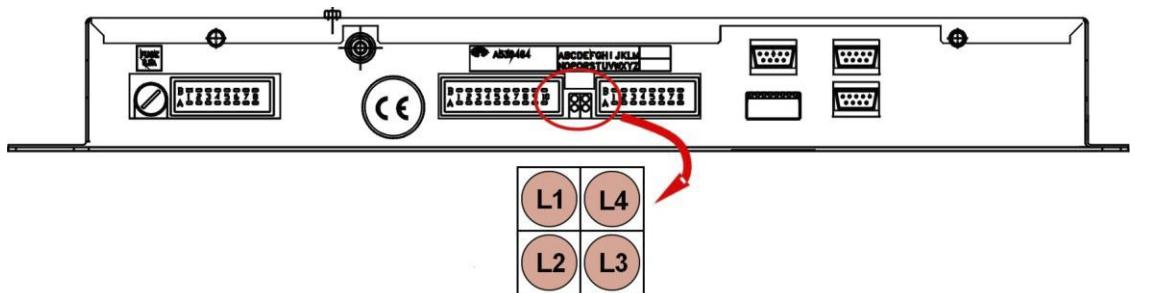
TEST

Interval/Miles:

10,000
PROCEDURE (CONT'D):
FINAL OPERATIONS
TESTs RESULTS

If any of the previous Tests fail, inform your Supervisor / Leader first and then troubleshoot / repair as needed.

Refer to the following Figure 9 for Door Control Unit (Dcu) Leds Indications



LED IDENTIFICATION	LIGHT STATUS	LIGHT STAUS MEANING
LED 1	Light ON	Door Failure
	Blinking	No failure
	Light OFF	DCU not working
LED 2	Light ON	Release mode on
	Blinking	Wrong network address
	Light OFF	Release mode off
LED 3	Light ON	DCS1 & 2 activated
	Blinking	Door failure
	Light OFF	DCS1 & 2 not activated
LED 4	Light ON	DLS activated
	Blinking	Door failure
	Light OFF	DLS not activated

FIG 9 - DOOR CONTROL UNIT (DCU) LEDs INDICATIONS

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-00-00-00/T-00

System:

DOORS

Sheet:

16/16

Subsystem/Assy:

DOORS

Component:

Man Hours:

0.89

Maintenance Task:

TEST

Interval/Miles:

10,000**INTENTIONALLY LEFT BLANK**

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

1/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

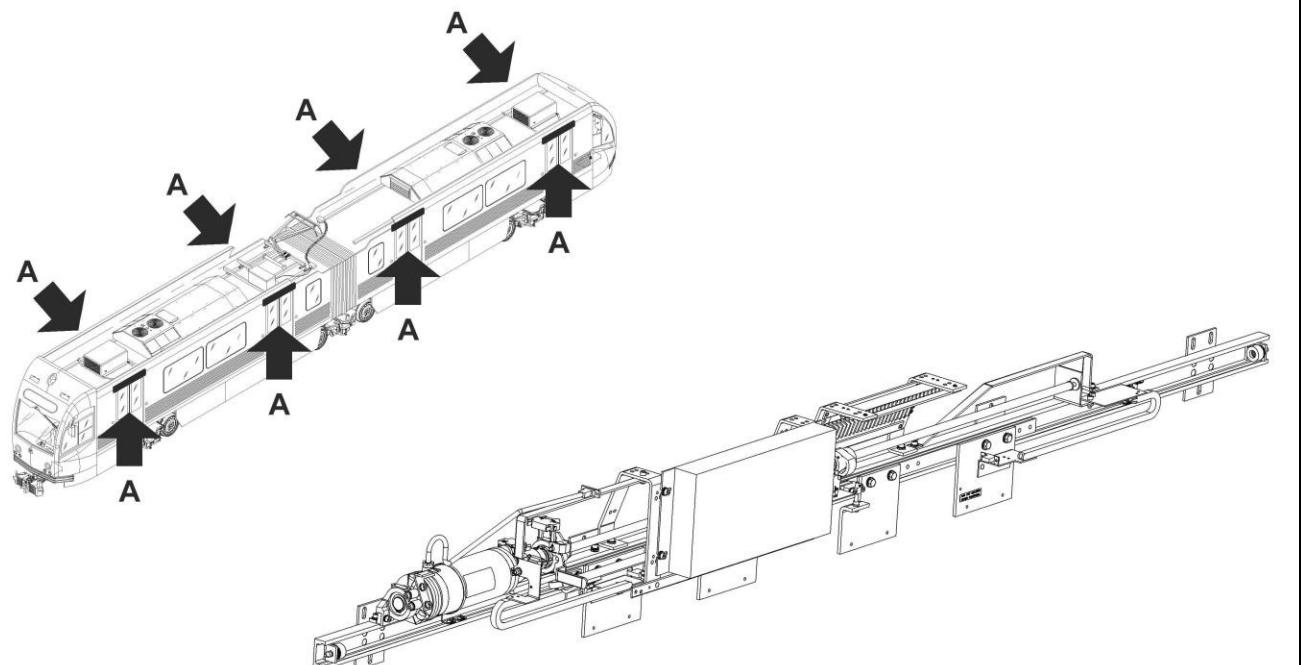
Maintenance Task:

INSPECTION

Interval/Miles:

60,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

2/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY PREVENTIVE MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING MAINTENANCE TASKS, SUCH AS VISUAL INSPECTION, CLEANING, OR GREASING.
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION : THE BOWDEN CABLE END FITTINGS SHOULD ALWAYS BE PERPENDICULAR TO THEIR SUPPORT BRACKETS (ANY BENDING OF THE BOWDEN CABLE END FITTING DURING HANDLING FOR INSTANCE WILL DECREASE THE CABLE ULTIMATE STRENGTH AND SHORTEN ITS LIFE)

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

N/A

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

3/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

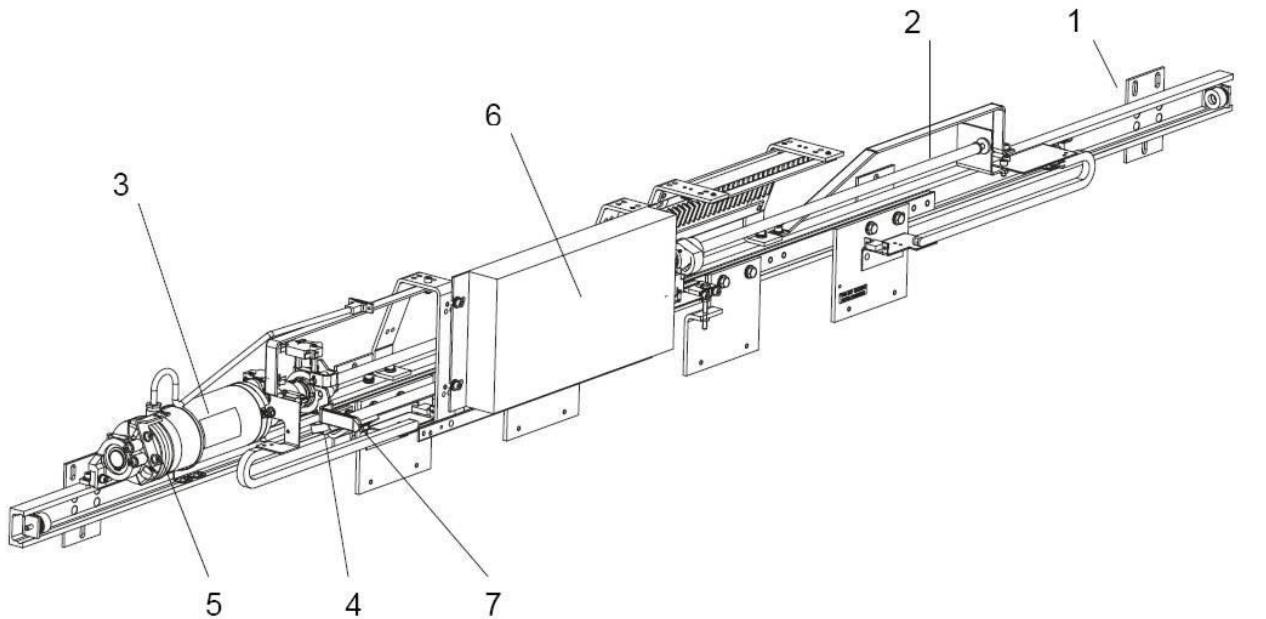
Maintenance Task:

INSPECTION

Interval/Miles:

60,000
PROCEDURE:

To perform the Task proceed as follows (Refer to Figure 1):



1. Hanging Rail With Steel Ball Sliders
2. Driving Screw Assembly with Two Ball Nuts
3. Motor With a Rubber Coupling
4. Door Closed Locking Device
5. Mechanical Unlocking Device
6. Electronic Door Control Unit DCU
7. Lock Out Handle

FIGURE 1 - DOOR OPERATOR COMPONENTS

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

4/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):

PRELIMINARY OPERATIONS

1. Set the Vehicle in safety condition in accordance with LACMTA Maintenance Shop Regulations.
2. Set the Transfer Switch (located on the Operator's Console) to "ON" position.
3. Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1

TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION

DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV

INSPECTION

To perform the inspection proceed as follows (refer to Figure 2):

1. Check that the Attachment Screws (8) of the Door Operator are not loose, and that no Shim is missing.
2. Check that Main Bearing (6) Fasteners are not loose.
3. Check the Coupling Sleeve (4) is not damaged (visual check).
4. Check that the DLS (3) Switch Supporting Plate is tightly fastened.
5. Check that the DCS Switch (9) is correctly fastened to its Bracket.
6. Check the driving Nuts Assemblies (7): verify there is no abnormal Axial Play by manually moving the Leaves, and check for any visible crack or corrosion.
7. Verify on the Driving Forks that the Blocking Pins and the Shim Washers are present.
8. Check the Locking Device Operation: watch the Roller (5) running along the Locking Bar to test its condition.
9. Rotate the Unlocking Pulley and check the condition of the Return Torsion Spring, Cable Ends and Unlocking Pins. Check the Bowden Cables for visible damage (kinked cable, nicked braid).
10. Check the Unlocking Cables connected to the Unlocking Pulleys. Verify there is no trace of wear, kinks, nicked braid or corrosion.

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

5/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

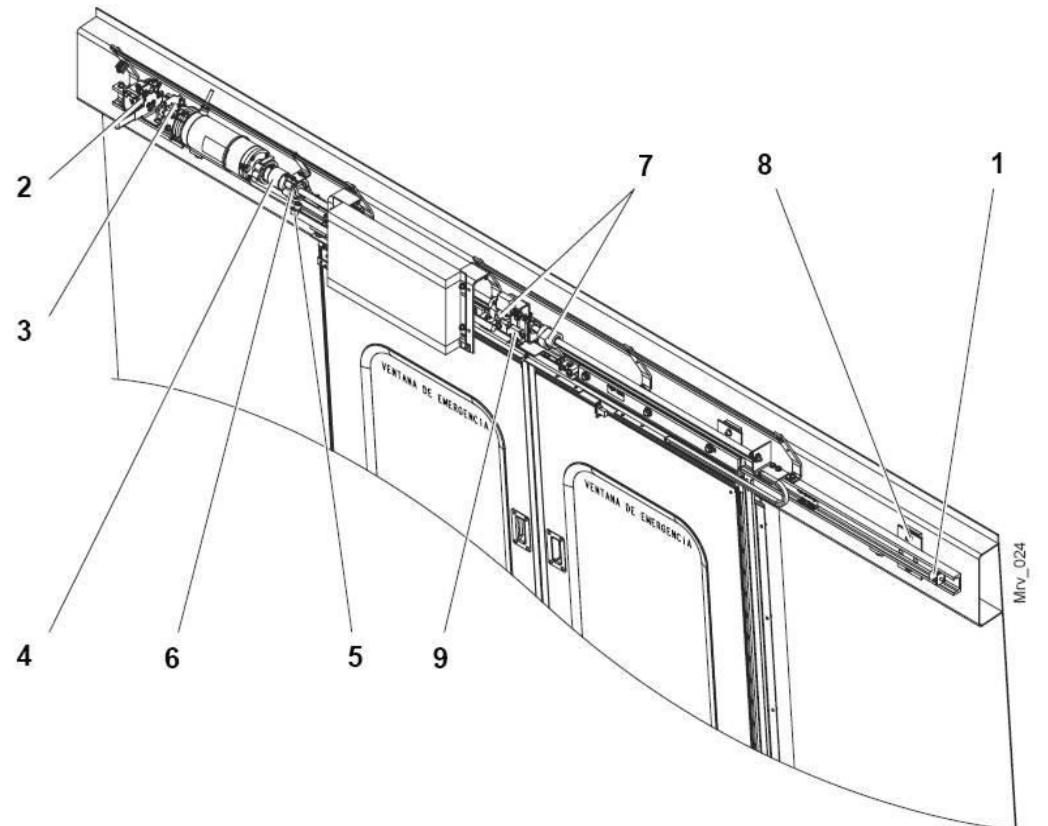
Maintenance Task:

INSPECTION

Interval/Miles:

60,000
PROCEDURE (CONT'D):
INSPECTION(CONT'D)

11. Check that the Switches are tightly fastened on the Lock Out Device (2).
12. Manually unlock the Door (rotate the Motor Body).
13. Visually verify that the Ball Cages and Ball Tracks are clean, smooth and sufficiently lubricated.
14. At each end of the Rail, check that the End-Stops (1) are not loose and not damaged.



- | | | |
|-------------------------|--------------------|-----------------|
| 1. End-stops | 2. Lock out device | 3. DLS |
| 4. Coupling sleeve | 5. Locking roller | 6. Main bearing |
| 7. Driving nut assembly | 8. Mounting Bolts | 9. DCS |

FIGURE 2 - DOOR OPERATOR INSPECTION

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

6/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):

ADJUSTMENT

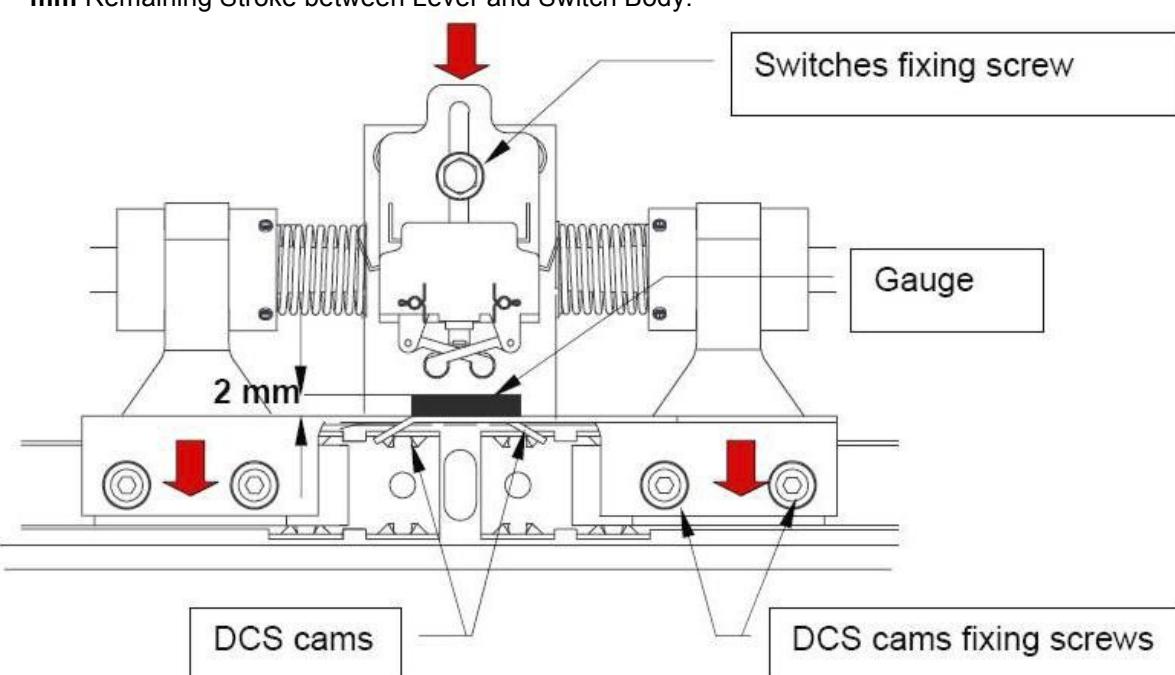
To perform the Adjustments proceed as follows:

PRELIMINARY OPERATIONS

- 1 Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1

TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION

DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-04-01-00-00/I-00	
System: DOORS	Sheet: 7/14
Subsystem/Assy: DOOR OPERATOR ASSY	Unit:
Component:	Man Hours: 0.5
Maintenance Task: INSPECTION	Interval/Miles: 60,000
PROCEDURE (CONT'D):	
ADJUSTMENT(CONT'D)	
<p>1. DCS Switches Height Adjustment (refer to Figure 3):</p> <ol style="list-style-type: none"> Loosen the DCS Cams Fixing Screws and make sure that the Cams are at their lowest location by pushing them downwards. Torque the DCS Cams Fixing Screws. Close and lock the Door. Place a 2 mm Gauge between the DCS Cams and the DCS Switch Rollers. Un-tighten the Switches Fixing Screw and slide down the DCS Switch Support till the Switch Levers are fully compressed against the 2 mm Gauge. Tighten the Switches Fixing Screw. Remove the 2 mm Gauge and check that the Switches are actuated in this position and have a 2 mm Remaining Stroke between Lever and Switch Body. 	
	
FIGURE 3 - DCS SWITCHES HEIGHT ADJUSTMENT	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

8/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):

ADJUSTMENT (CONT'D)

2. DCS Cams Horizontal Adjustment (refer to Figure 4):

- Make the Door ajar and insert a **0.3 inch (8 mm) Gauge** between the Front Door Seals as shown in Figure 4.
- Keep the Side Door Front Seals (Sensitive Edge) in contact with the Gauge.
- Loosen the Fixing Screws of the DCS1 Cam.
- During the whole Adjustment Phase, make sure the Cam stays at its lowest position.
- Move the DCS1 Cam backward till the Switch gets de-actuated.
- Move the DCS1 Cam forward till DCS1 Switch is actuated (audible click), tighten the DCS1 Cam screws in this very position.
- Repeat steps c through f. with the DCS2 Cam and DCS2 Switch.

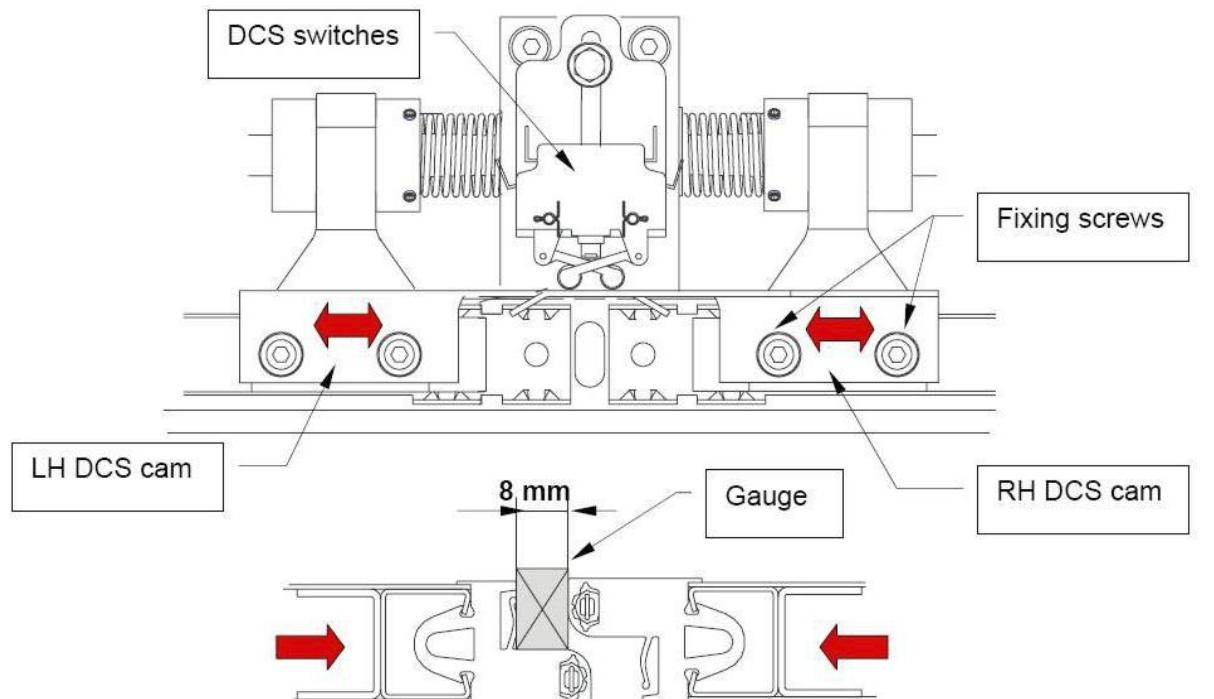


FIGURE 4 - DCS CAMS HORIZONTAL ADJUSTMENT

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

9/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

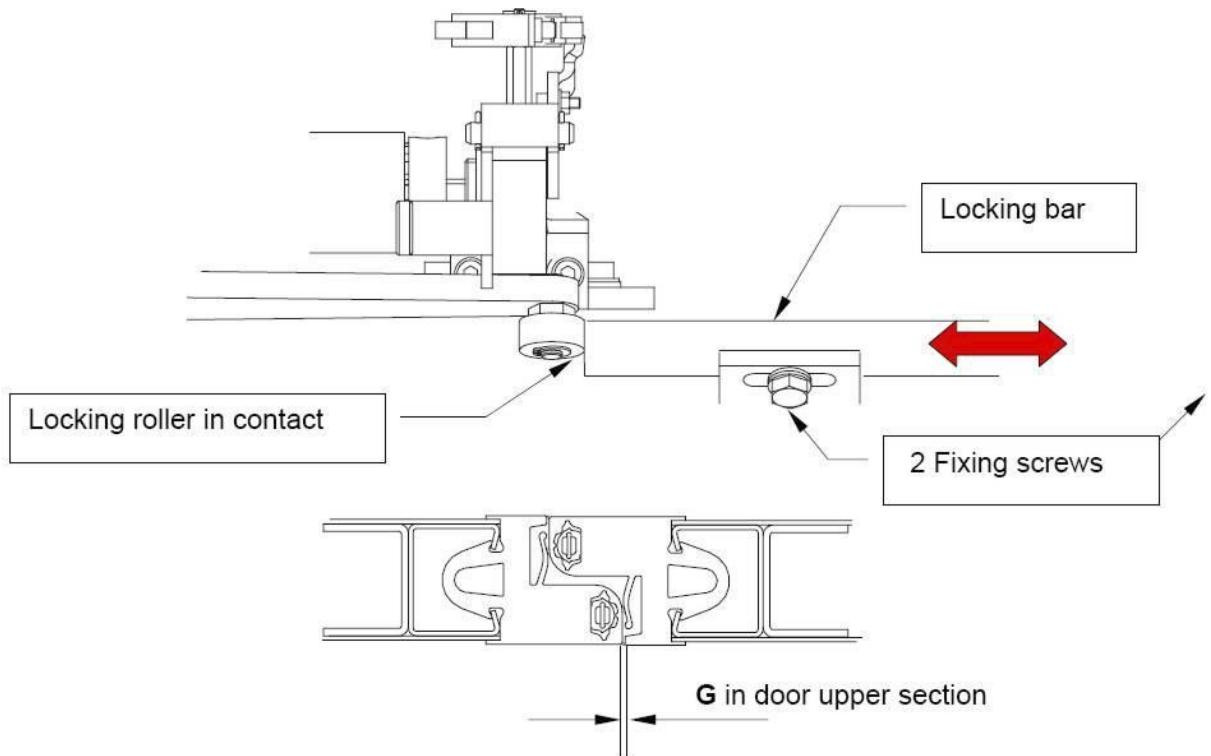
Maintenance Task:

INSPECTION

Interval/Miles:

60,000
PROCEDURE (CONT'D):
ADJUSTMENT (CONT'D)
3. Locking Bar Adjustment (refer to Figure 5):

- Close and lock the Door and make sure that the Gap between Seal at Top of Door is **1mm < G < 4mm**.
 - If the Gap value is not as indicated above , adjust the Locking Bar as needed until the value of the Gap "G" is **1mm - 4mm**
- Note:** Sometimes adjusting locking creates other door problems such us unsuspected unlocking.


FIGURE 5 - LOCKING BAR ADJUSTMENT

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Subsystem/Assy:

DOOR OPERATOR ASSY

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):

ADJUSTMENT (CONT'D)

4. Bowden Cables

NOTE : There is a long or a short Bowden Cable between the Door operator and the IED depending on the type of Door (Front or Rear Door).

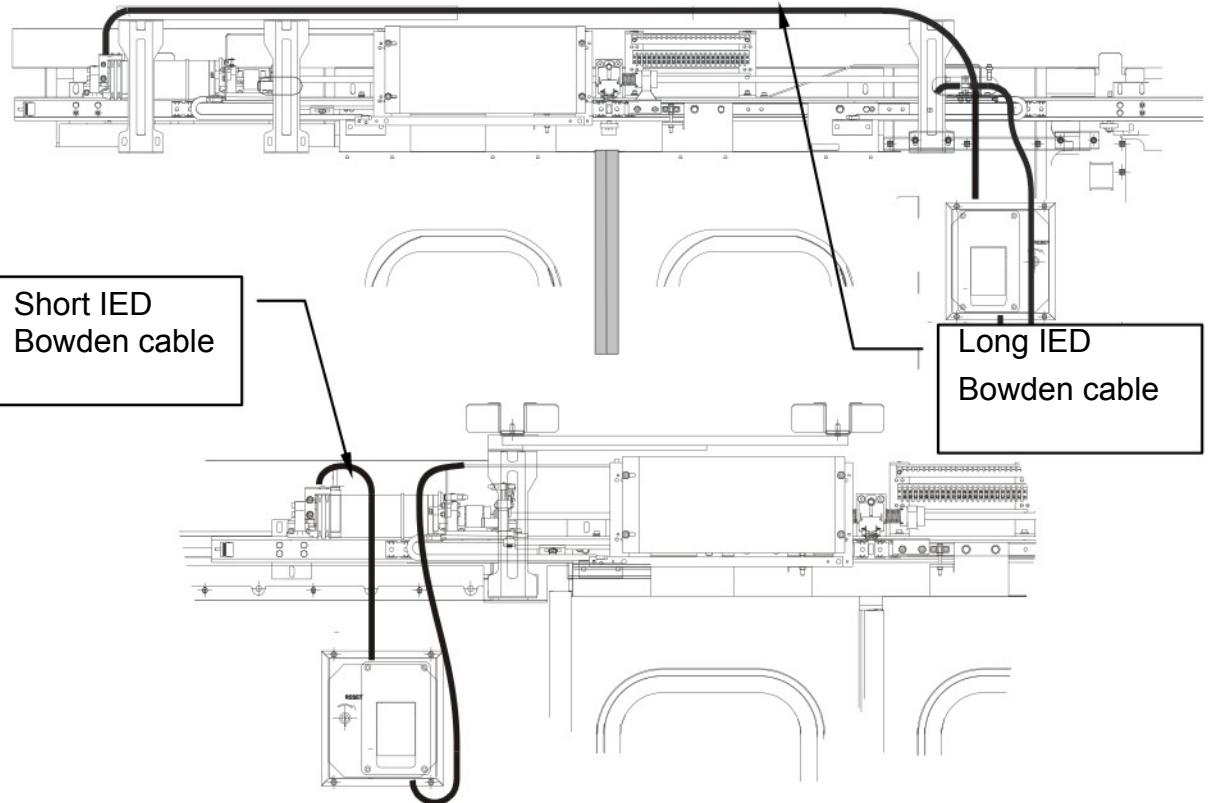


FIGURE 6 - BOWDEN CABLES TYPES

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

11/14Subsystem/Assy:
DOOR OPERATOR ASSY

Unit:

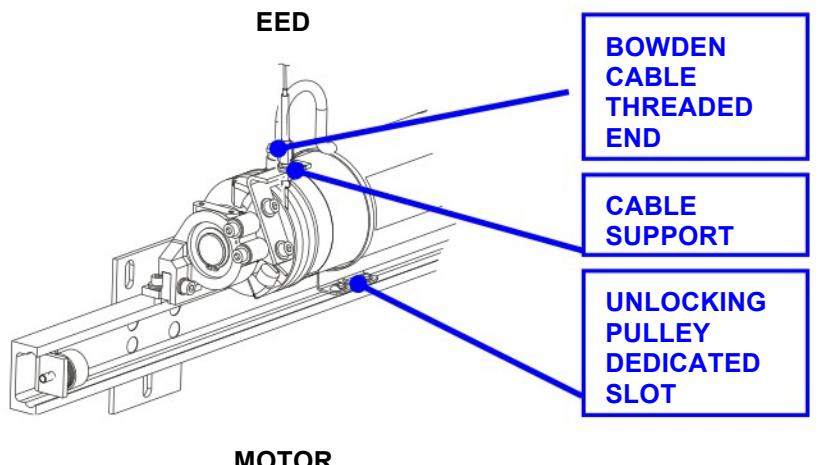
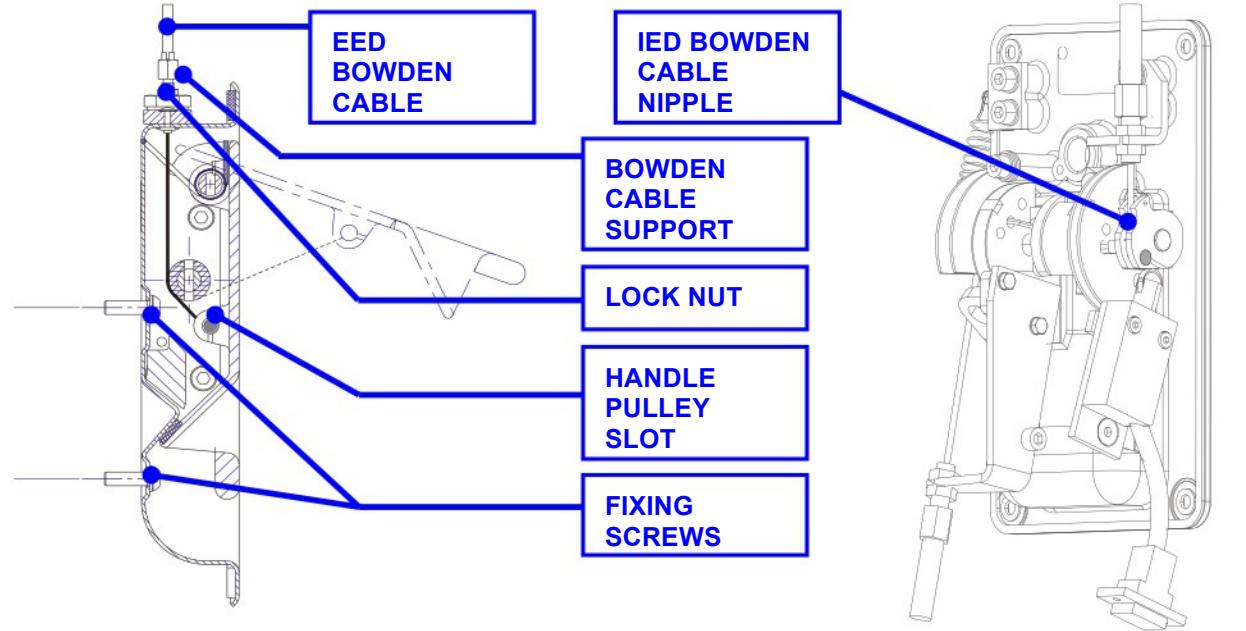
Component:

Man Hours:
0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000
PROCEDURE (CONT'D):
**MOTOR****FIGURE 7 - BOWDEN CABLES -INSTALLATION DETAILS**

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

12/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):

4.1 Bowden cable (Motor side)

NOTE: The bending radius of the Bowden Cable sheath must be always greater than **100** mm all along the cable run

- a. Check the Cable End for proper fit in the Door Operator Unlocking Pulley Dedicated Slot.
- b. Check the Bowden Cable Threaded End on the Cable Support for proper installation. (Half of the threads above and half of the threads below the Bracket)
As per check result adjust it so that the Threaded End is centered on the Support.

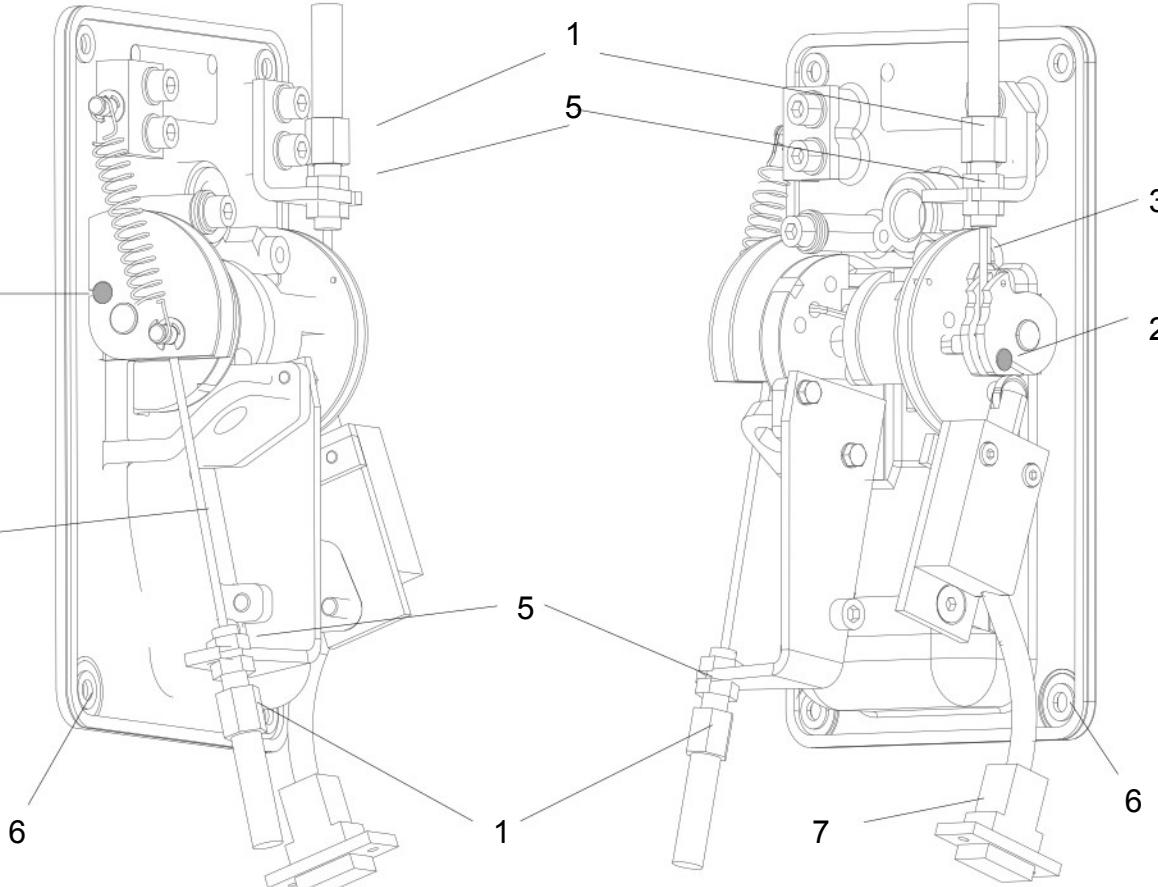
CAUTION : THE BOWDEN CABLE END FITTINGS SHOULD ALWAYS BE PERPENDICULAR TO THEIR SUPPORT BRACKETS (ANY BENDING OF THE BOWDEN CABLE END FITTING DURING HANDLING FOR INSTANCE WILL DECREASE THE CABLE ULTIMATE STRENGTH AND SHORTEN ITS LIFE)

- c.
- d. Check that the Lock Nuts are tight.
- e. Check the clamps / ty-wraps of the bowden cable for proper installation / damage / missing along the bowden cable run

4.2 Bowden cable (EED) (only First Door)

- a. Check the Bowden Cable for proper fitting on the the EED Dedicated Cable Support.
- b. Make sure the Threaded Section of the Bowden Cable End is centered on its support
- c. Check the Lock Nut (4) for proper tightening
- d. Check that the Cable End is properly fit into the Handle Pulley Slot.
- e. Check the 4 Mounting Screws for the proper torque of **7.2** Nm.

NOTE : The Bowden Cable adjustment is provided in the next step **4.3**

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-04-01-00-00/I-00	
System: DOORS	Sheet: 13/14
Subsystem/Assy: DOOR OPERATOR ASSY	Unit:
Component:	Man Hours: 0.5
Maintenance Task: INSPECTION	Interval/Miles: 60,000
PROCEDURE (CONT'D):	
<p>4.3 Bowden cables (EED & IED)</p>  <p>EED IED</p> <p>FIGURE 8 - BOWDEN CABLES ADJUSTMENT</p>	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-00-00/I-00

System:

DOORS

Sheet:

14/14

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):

NOTE: The Cable coming from the Door Operator Motor is fitted on the top of the IED, the one coming from the EED is fitted on the bottom of the EED.

- a. Check that the Cable Ends are properly fitted into their dedicated Pulley Slots (2).
- b. Check the Bowden Cable Threaded Ends for proper installation on their dedicated Brackets (1).
- c. Adjust the tension of the top Bowden Cable (3) linked to the Motorization so that there is no remaining slack in the Cable when the Handle is in nominal position.

NOTE: Tension can be adjusted as follows : by using the Nut (5) on the Bowden Cable End Fitting move the Threaded Section of the Cable end towards the Cable End to decrease the tension, or in opposite direction to increase the tension.

- d. Check that the Door unlocks when the IED handle is pulled.
- e. Adjust the tension of the Bowden Cable (1) linked to the EED Handle to eliminate any slack (4).
- f. Check that the Door unlocks when the EED Handle is pulled.
- g. Check for proper tightening all the Bowden Cable End Fitting Nuts (5).
- h. Check the Mounting Screws (6) for the proper torque of 7.2 Nm.

FINAL OPERATIONS

- 1 Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1

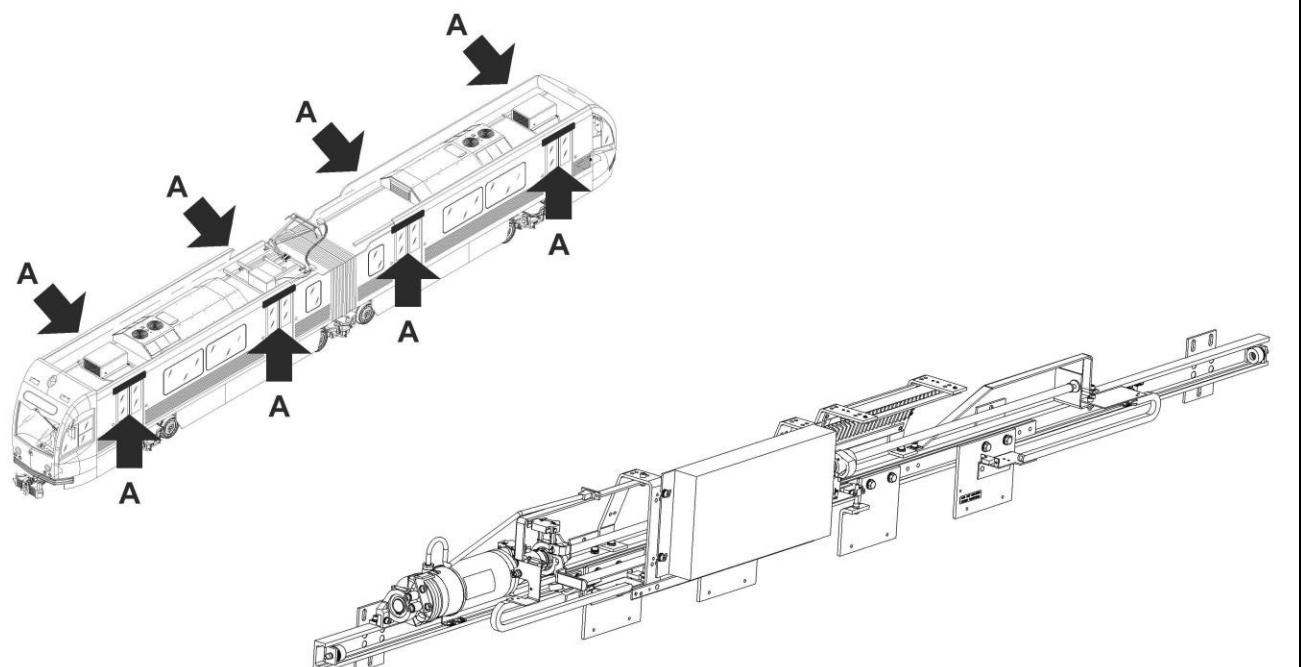
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-02-00/L-00

System: DOORS	Sheet: 1/4
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: RAIL ASSEMBLY
Component:	Man Hours: 0.25
Maintenance Task: LUBRICATION	Interval/Miles: 120,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-02-00/L-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

RAIL ASSEMBLY

Component:

Man Hours:

0.25

Maintenance Task:

LUBRICATION

Interval/Miles:

120,000

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY PREVENTIVE MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING MAINTENANCE TASKS, SUCH AS VISUAL INSPECTION, CLEANING, OR GREASING.
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit
Grease Gun

CONSUMABLES:

Lint-free rags
Degreaser (Commercial)
SIKA activator (solvent) PN 9580212-000
Grease Shell Alvania 2 PN 149973

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET																																									
Card Code: R-P-04-01-02-00/L-00																																									
System: DOORS		Sheet: 3/4																																							
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: RAIL ASSEMBLY																																								
Component:		Man Hours: 0.25																																							
Maintenance Task: LUBRICATION		Interval/Miles: 120,000																																							
PROCEDURE: PRELIMINARY OPERATIONS <ol style="list-style-type: none"> Set the Vehicle in safety condition in accordance with LACMTA Maintenance Shop Regulations. Set the Transfer Switch (located on the Operator's Console) to "ON" position. Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 																																									
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION <table border="1"> <thead> <tr> <th rowspan="2">DOOR IDENTIFICATION</th> <th rowspan="2">CB IDENTIFICATION</th> <th colspan="2">CB LOCATION</th> </tr> <tr> <th>Section</th> <th>Locker</th> </tr> </thead> <tbody> <tr> <td>(A1/A2)</td> <td>9F05</td> <td>A</td> <td>LV</td> </tr> <tr> <td>(A3/A4)</td> <td>9F07</td> <td>A</td> <td>LV</td> </tr> <tr> <td>(A5/A6)</td> <td>9F06</td> <td>A</td> <td>LV</td> </tr> <tr> <td>(A7/A8)</td> <td>9F04</td> <td>A</td> <td>LV</td> </tr> <tr> <td>(B1/B2)</td> <td>9F05</td> <td>B</td> <td>LV</td> </tr> <tr> <td>(B3/B4)</td> <td>9F07</td> <td>B</td> <td>LV</td> </tr> <tr> <td>(B5/B6)</td> <td>9F06</td> <td>B</td> <td>LV</td> </tr> <tr> <td>(B7/B8)</td> <td>9F04</td> <td>B</td> <td>LV</td> </tr> </tbody> </table>				DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION		Section	Locker	(A1/A2)	9F05	A	LV	(A3/A4)	9F07	A	LV	(A5/A6)	9F06	A	LV	(A7/A8)	9F04	A	LV	(B1/B2)	9F05	B	LV	(B3/B4)	9F07	B	LV	(B5/B6)	9F06	B	LV	(B7/B8)	9F04	B	LV
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(A5/A6)	9F06	A	LV																																						
(A7/A8)	9F04	A	LV																																						
(B1/B2)	9F05	B	LV																																						
(B3/B4)	9F07	B	LV																																						
(B5/B6)	9F06	B	LV																																						
(B7/B8)	9F04	B	LV																																						

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-02-00/L-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

RAIL ASSEMBLY

Component:

Man Hours:

0.25

Maintenance Task:

LUBRICATION

Interval/Miles:

120,000

PROCEDURE (CONT'D):

CLEANING AND GREASING

1. Clean the Rail Assy with a soft lint-free rag and recommended cleaner
2. Grease all the surface with the Grease Gun and Shell Alvania 2 grease

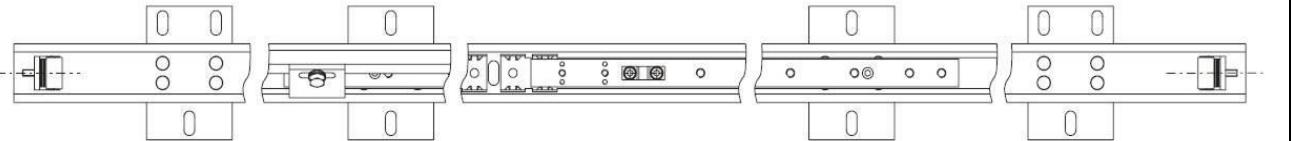


Figure 1 - HANGING RAIL

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-03-01/L-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSY

Component:

DRIVE ASSY

Man Hours:

0.17

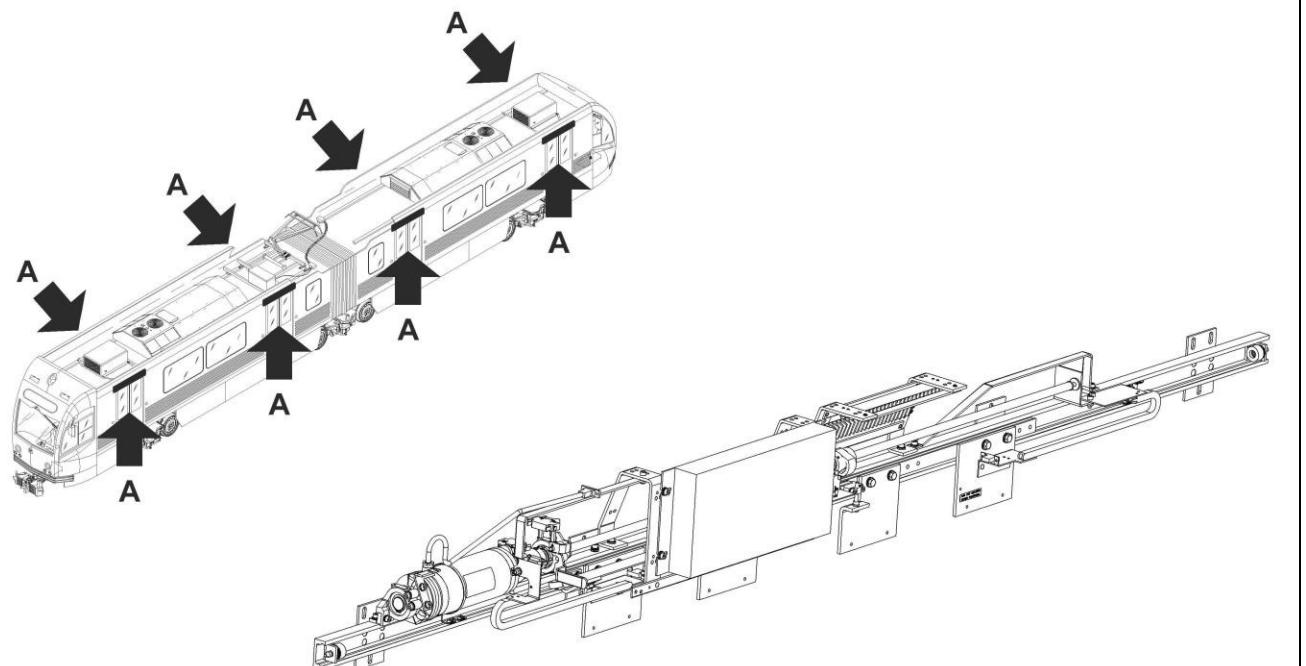
Maintenance Task:

LUBRICATION

Interval/Miles:

120,000

LOCATION:



DETAIL A

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-03-01/L-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSY

Component:

DRIVE ASSY

Man Hours:

0.17

Maintenance Task:

LUBRICATION

Interval/Miles:

120,000

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY PREVENTIVE MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING MAINTENANCE TASKS, SUCH AS VISUAL INSPECTION, CLEANING, OR GREASING.
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Grease Gun

CONSUMABLES:

Lint-free rags		
Grease Shell Alvania 2	PN	149973
SIKA Activator (Solvent)	PN	9580212-000

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET			
Card Code: R-P-04-01-03-01/L-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: DRIVE ASSY		
Component: DRIVE ASSY		Man Hours: 0.17	
Maintenance Task: LUBRICATION	Interval/Miles: 120,000		
PROCEDURE:			
To perform the Task proceed as follows (Refer to Figure 1):			
PRELIMINARY OPERATIONS			
<ol style="list-style-type: none"> 1. Set the Vehicle in safety condition in accordance with LACMTA Maintenance Shop Regulations 2. Set the Transfer Switch (located on the Operator's Console) to "ON" position. 3. Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
CLEANING AND GREASING (refer to Figure 1)			
<ol style="list-style-type: none"> 1. Manually unlock the Door (rotate the Motor Body up wise). 2. Manually slide the Door Leaves open. 3. Using a cloth impregnated with the Cleaning Agent, carefully remove old grease along the Threads of the Driving Screw. 4. Put a small quantity of Shell Alvania 2 grease (~ 1 tsp) on the Screw, against the Ball Nuts. 5. Brush the Nuts Body under the Spring with grease. 6. Manually close the Door. 7. Put the same amount of Shell Alvania 2 grease against the other side of the Ball Nuts. 8. Slide the Door Leaves fully opened and fully closed 5 times. 9. Remove the excess of grease with a cloth. 10. Close and lock the Door manually. 			

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-03-01/L-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSY

Component:

DRIVE ASSY

Man Hours:

0.17

Maintenance Task:

LUBRICATION

Interval/Miles:

120,000

PROCEDURE (CONT'D)

CLEANING AND GREASING (CONT'D)

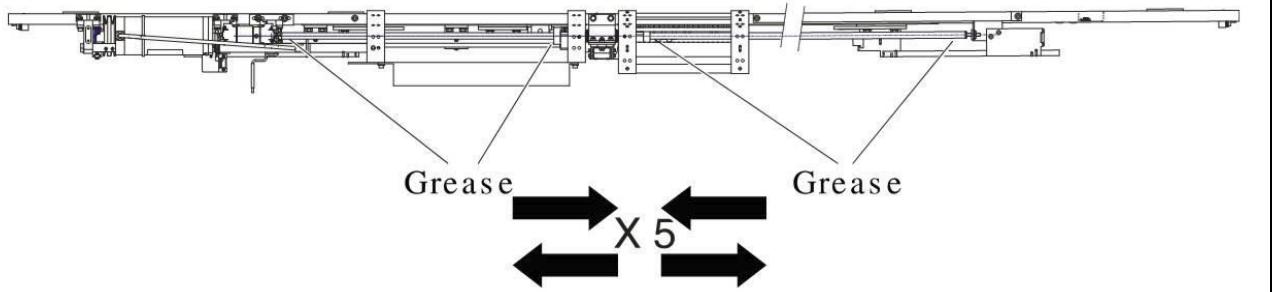


FIGURE 1 DRIVE ASSY LUBRICATION

FINAL OPERATIONS

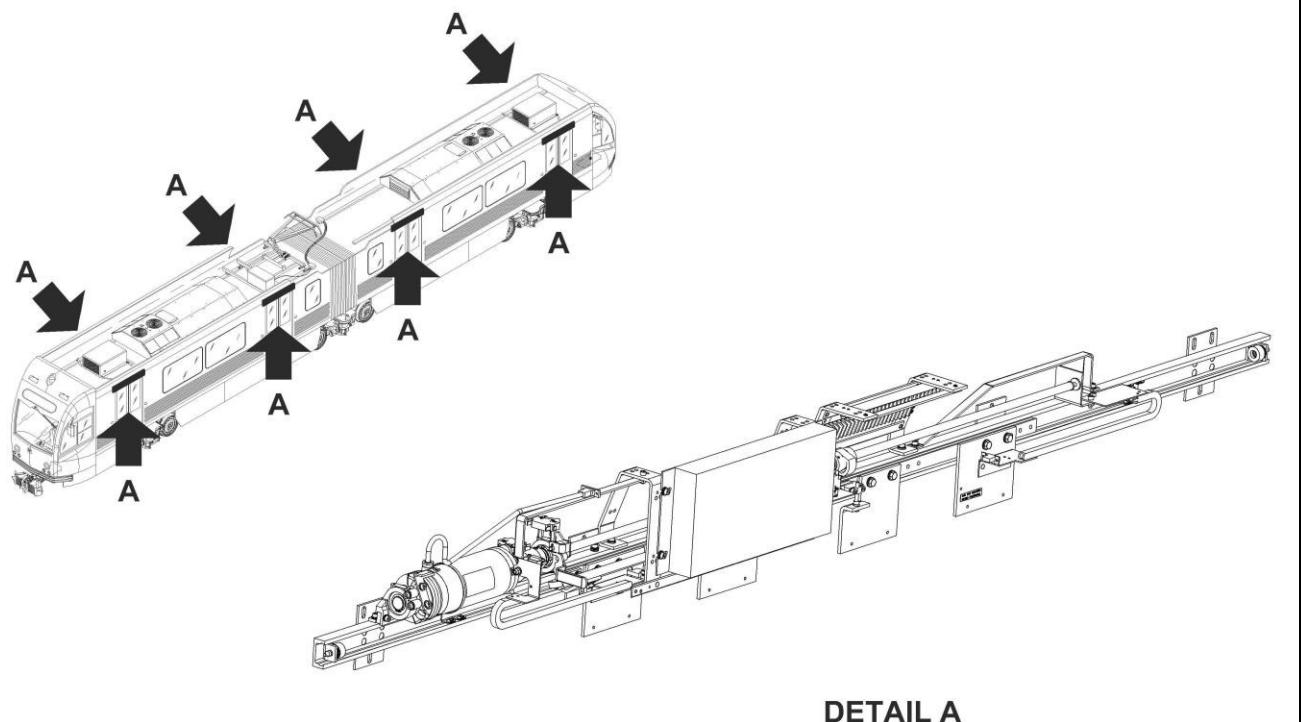
- 1 Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-05-05/L-00

System: DOORS	Sheet: 1/4
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: MOTORIZATION
Component: TORSION SPRING	Man Hours: 0.25
Maintenance Task: LUBRICATION	Interval/Miles: 120,000

LOCATION:

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-05-05/L-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

MOTORIZATION

Component:

TORSION SPRING

Man Hours:

0.25

Maintenance Task:

LUBRICATION

Interval/Miles:

120,000

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY PREVENTIVE MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING MAINTENANCE TASKS, SUCH AS VISUAL INSPECTION, CLEANING, OR GREASING.
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Grease Gun

CONSUMABLES:

Lint-free rags

Compressed air in aerosol can

SIKA Activator (Solvent) PN 9580212-000

Grease Shell Alvania 2 PN 149973

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-04-01-05-05/L-00	
System: DOORS	Sheet: 3/4
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: MOTORIZATION
Component: TORSION SPRING	Man Hours: 0.25
Maintenance Task: LUBRICATION	Interval/Miles: 120,000

PROCEDURE:

To perform Torsion Spring Cleaning and Greasing Procedure proceed as follows (Refer to Figure 1):

PRELIMINARY OPERATIONS

1. Set the Vehicle in safety condition in accordance with LACMTA Maintenance Shop Regulations
2. Set the Transfer Switch (located on the Operator's Console) to "ON" position

GREASING

To perform the Task proceed as follow (refer to Figures 1& 2)

1. Grease using Shell Alvania 2 grease the Rear Motor Shaft and the Torsion Spring.
2. Engage the Torsion Spring on the Shaft.

FINAL OPERATIONS

1. Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-01-05-05/L-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

MOTORIZATION

Component:

TORSION SPRING

Man Hours:

0.25

Maintenance Task:

LUBRICATION

Interval/Miles:

120,000

PROCEDURE (CONT'D):

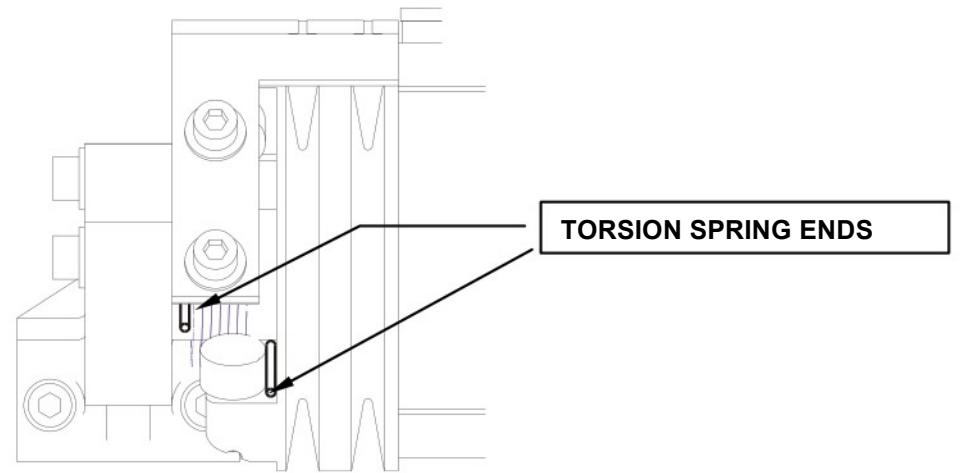
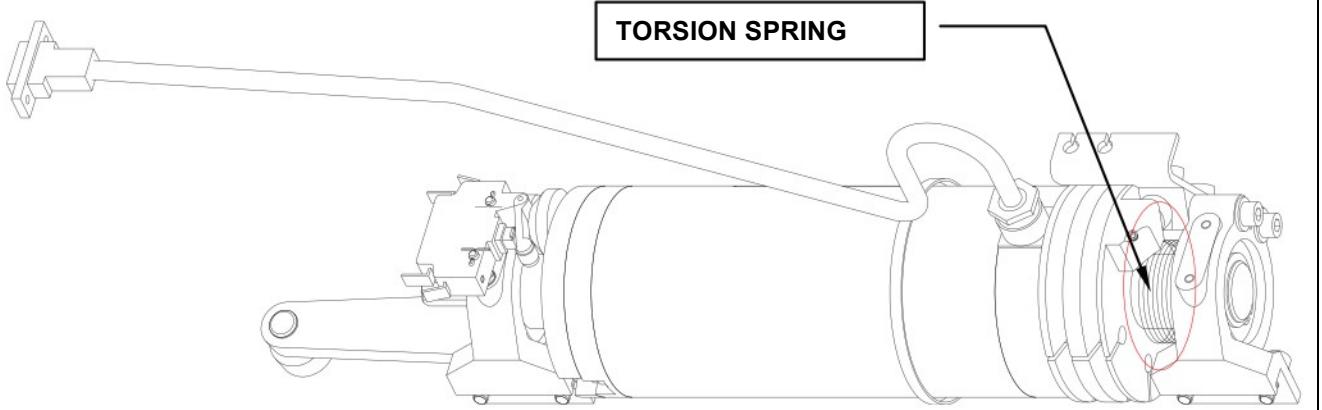


FIGURE 1 - TORSION SPRING LUBRICATION

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/I-00

System:

DOORS

Sheet:

1/8

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Unit:

Component:

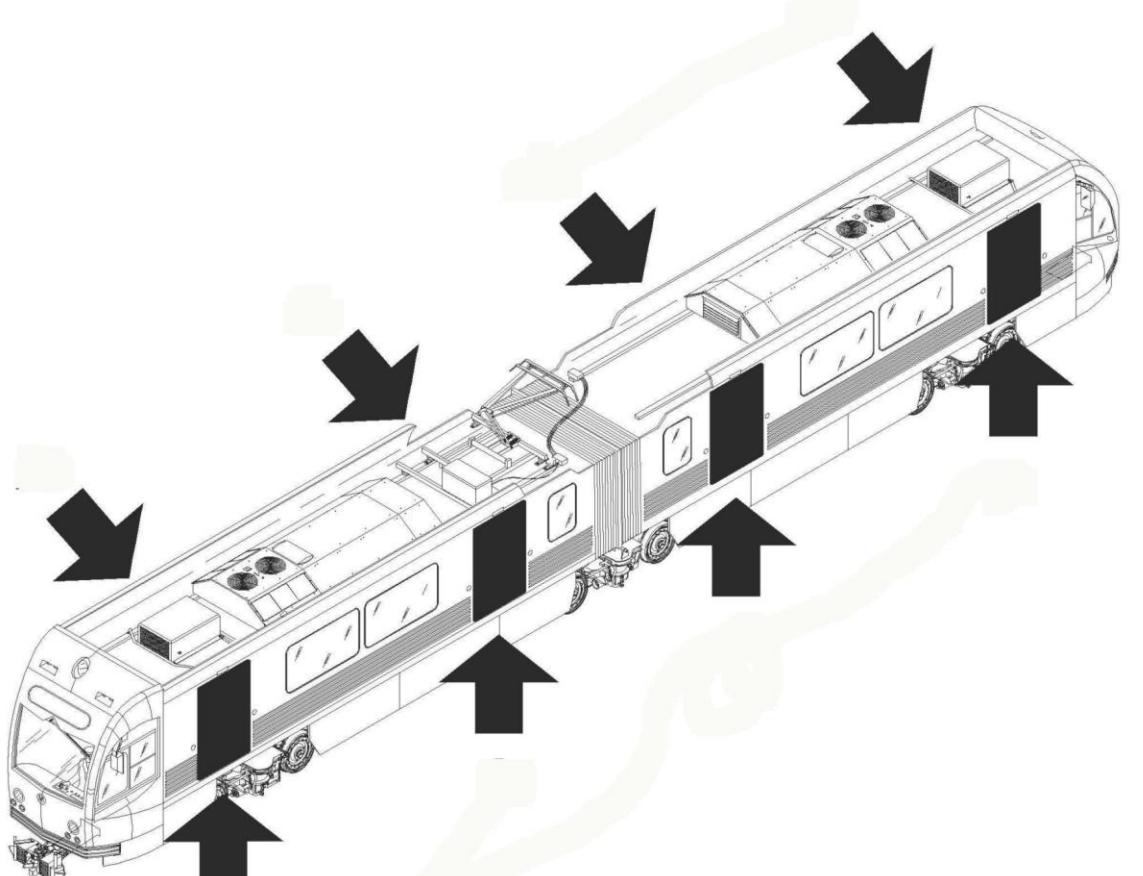
Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000**LOCATION:**

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/I-00

System:

DOORS

Sheet:

2/8

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

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- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :TO AVOID POSSIBLE CAR BODY DEFLECTION IT IS ADVISED DURING MAINTENANCE PROCESS TO HAVE THE VEHICLE POSITIONED ON HORIZONTAL TRACK WITH BRAKES ON.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

N/A

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET			
Card Code: R-P-04-05-00-00/I-00			
System: DOORS		Sheet: 3/8	
Subsystem/Assy: DOOR LEAF ASSEMBLY (COMPLETE)	Unit:		
Component:		Man Hours: 0.5	
Maintenance Task: INSPECTION	Interval/Miles: 60,000		
<p>PROCEDURE:</p> <p>To perform the Task proceed as follows :</p> <p>PRELIMINARY OPERATIONS</p> <ol style="list-style-type: none"> 1. Set the Vehicle in safety condition in accordance with LACMTA Maintenance Shop Regulations 2. Set the Transfer Switch (located on the Operator's Console) to "ON" position 3. Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
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(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
<p>INSPECTION</p> <p>To perform the inspection proceed as follows (refer to Figure 1):</p> <ol style="list-style-type: none"> 1. Verify that both L/R Door leaves are correctly attached (1) to the corresponding Ball Bearing Rail. 2. Check each Door Panel for damages. 3. Check particularly that the Window Seal and the Key Rubber are in place. 4. Inspect the door window glass for chipping and cracking that would affect the strength of the glass. Replace chipped or cracked window glass. Replace any broken glass. 5. Verify the condition of the Front Seals (Sensitive Edge) (2) as follows : <ol style="list-style-type: none"> a. they shall not present any crack b. the Rubber must be flexible and aligned with the Panel Front Post c. the single Lip must be straight d. the Seal Anchorage must be properly engaged all along the Door Panel Front Post 6. Close and lock the Door manually. 			

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/I-00

System:

DOORS

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Component:

Man Hours:

0.5

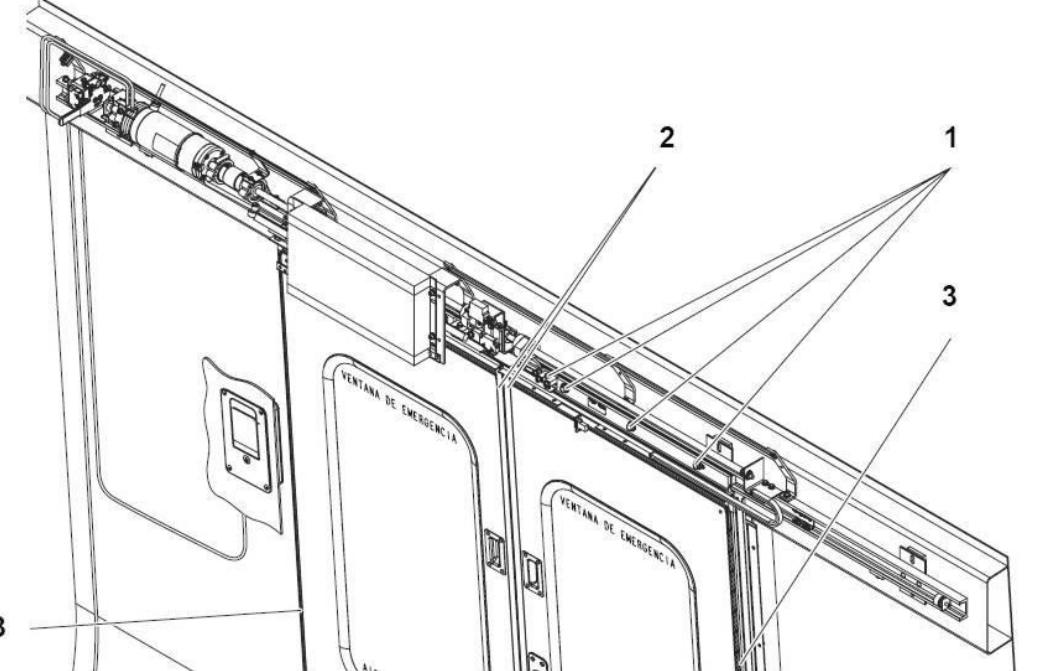
Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):



- 1. Leaf Attachment
- 2. Front Seal
- 3. Rear Seal

FIGURE 1 - DOOR LEAVES INSPECTION

ADJUSTMENT

1. "V" Adjustment:

NOTE : The purpose of the "V" adjustment is to ensure that the pressure on the Front Seals (Sensitive Edge) is evenly distributed to ensure a good water tightness of the Door in closed and locked position. This adjustment also compensates for the effect of the slight play in the suspension which could make the Door obstacle detection less effective at the bottom of the Door.

The "V" adjustment is done by using the Adjustment Screw on the Door Operator Front Suspension Brackets

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/I-00

System:

DOORS

Sheet:

5/8

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Unit:

Component:

Man Hours:

0.5

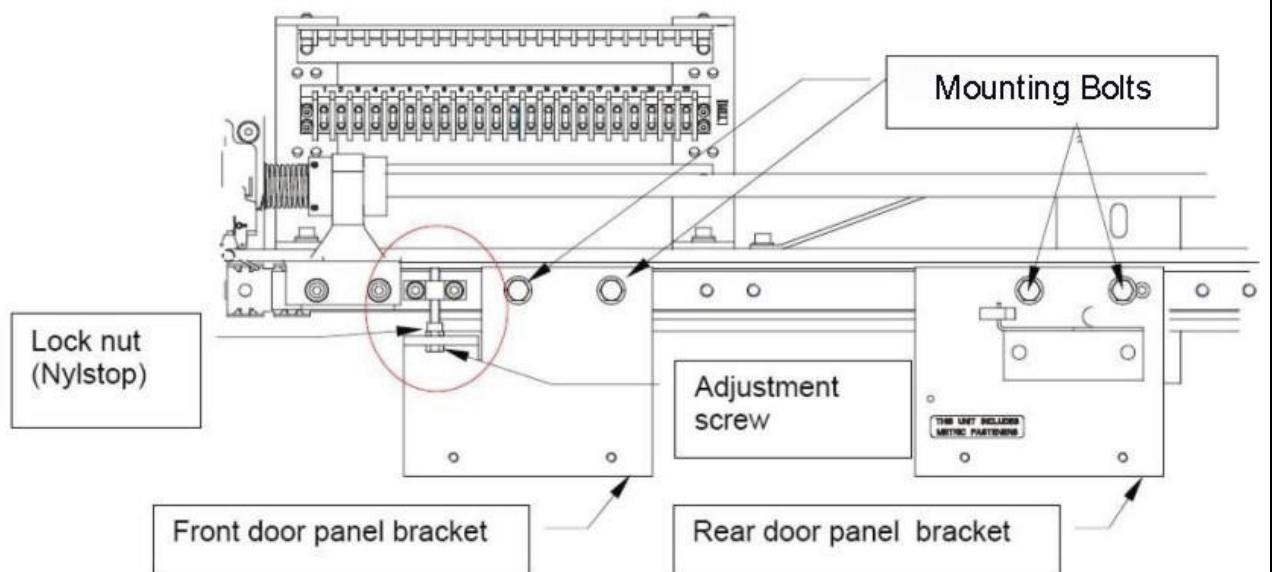
Maintenance Task:

INSPECTION

Interval/Miles:

60,000
PROCEDURE (CONT'D):
ADJUSTMENT(CONT'D)
V" Adjustment: (cont'd) (refer to Figures 2 & 3)

- a. Manually open the Door Half Way.
- b. Loosen the 8 Mounting Bolts.
- c. Loosen the Nylstop Adjustment Lock Nuts on both Front Suspension Brackets.


Figure 2 - "V" ADJUSTMENT, ITEMS LOCATION

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/I-00

System:

DOORS

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):

ADJUSTMENT (CONT'D)

V" Adjustment: (cont'd)

- d. With the Adjustment Screws lift equally each Front Side Door in order to have

$$X1 = X2 + 5/64" \text{ (2 mm)}$$

(X1 and X2 being measured at 4" from Top and Bottom of Side Doors

- e. Tighten the Adjustment Lock Nuts and the 8 Mounting Bolts. of the Suspension Brackets

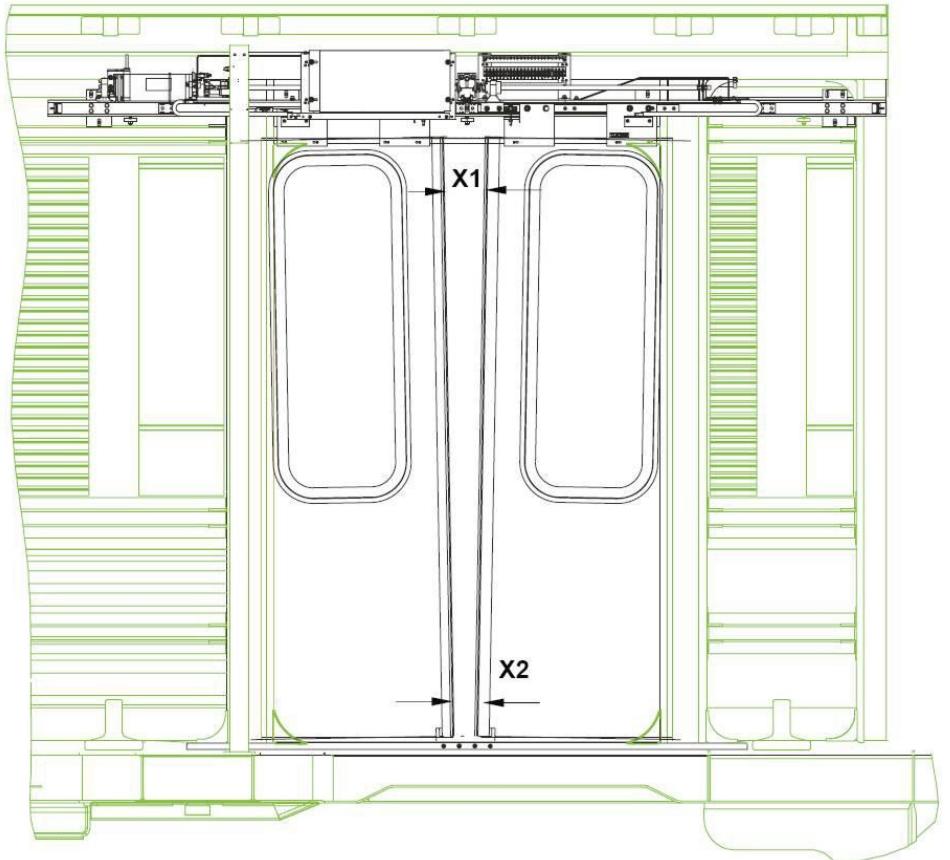


Figure 3 - "V" ADJUSTMENT MEASURING

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/I-00

System:

DOORS

Sheet:

7/8

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

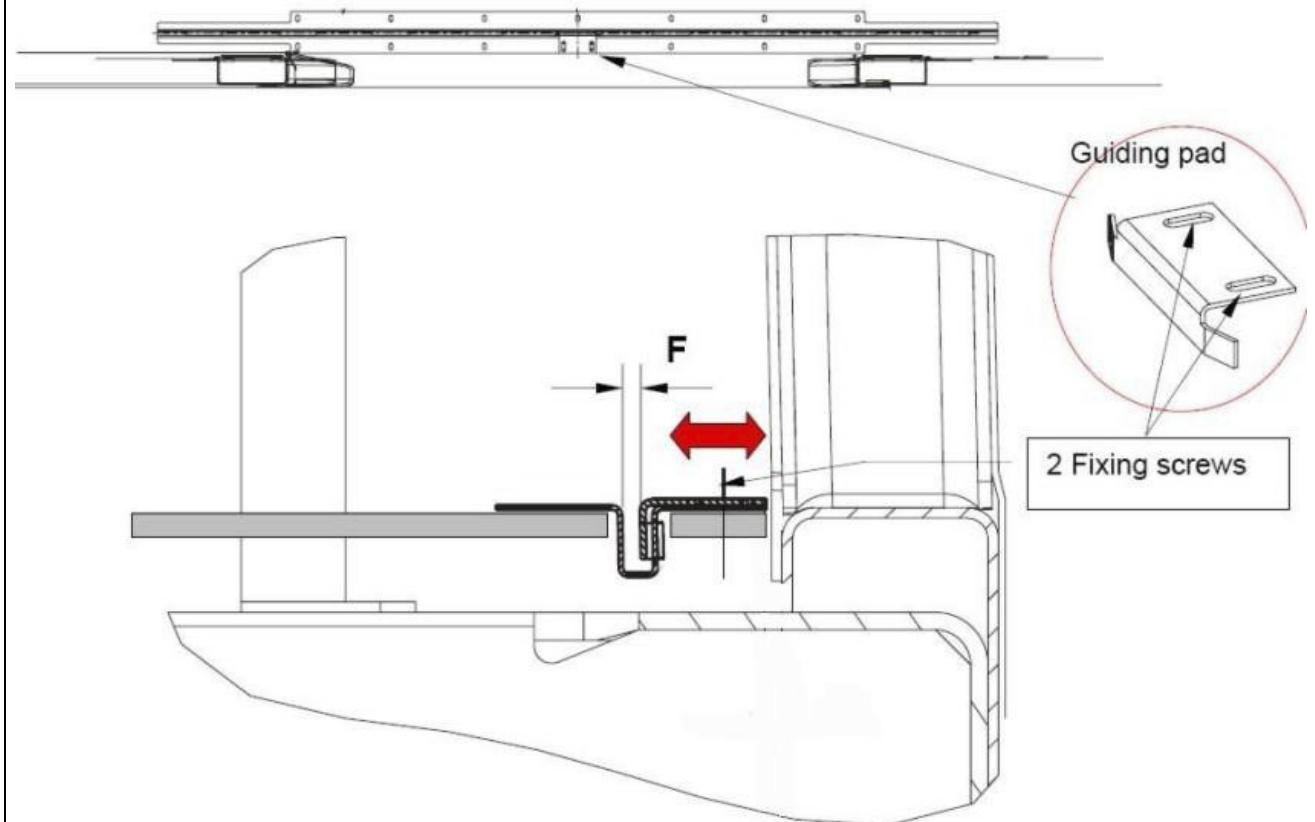
Interval/Miles:

60,000
PROCEDURE (CONT'D):
ADJUSTMENT (CONT'D)
2. Guiding Pad Adjustment (refer to Figure 4):

- a. Close the Door and push the Guiding Pad against the Door Panel Lower Guides to eliminate any play between Panel and Guiding Pad in closed position (prevents Door rattling when train is running).

NOTE: The nominal value of the distance "F" must be = **0.27559 in.(7 mm)..**

- b. Check the value of the distance "F" and adjust as needed
c. Tighten the 2 Fixing Screws of the Guiding Pad to **6.2 ft lb**


FIGURE 4 - GUIDING PAD ADJUSTMENT

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/I-00

System:

DOORS

Sheet:

8/8

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Unit:

Component:

Man Hours:

0.5

Maintenance Task:

INSPECTION

Interval/Miles:

60,000

PROCEDURE (CONT'D):

ADJUSTMENT (CONT'D)

3. Bottom Guide Gap Adjustment (refer to Figure 5):

- a. Perform the Bottom Guide Gap Adjustment according to the following Criteria.

The Gap in the Bottom of the Threshold Rail on all length of Doors Bottom Guides should be **0.27559 in. (7 mm)**..in opened and closed positions.

- b. Adjust the Bottom Guides in order to fulfill the above Criteria.
- c. Torque the 5 Mounting Bolts on each Door.

NOTE: This Gap Adjustment is only to compensate the Door Panels "V" adjustment.

If the above Criteria cannot be fulfilled then adjust the Door Height Setting (H) first according to Sheet R-P-04-01-00-00/I-00).

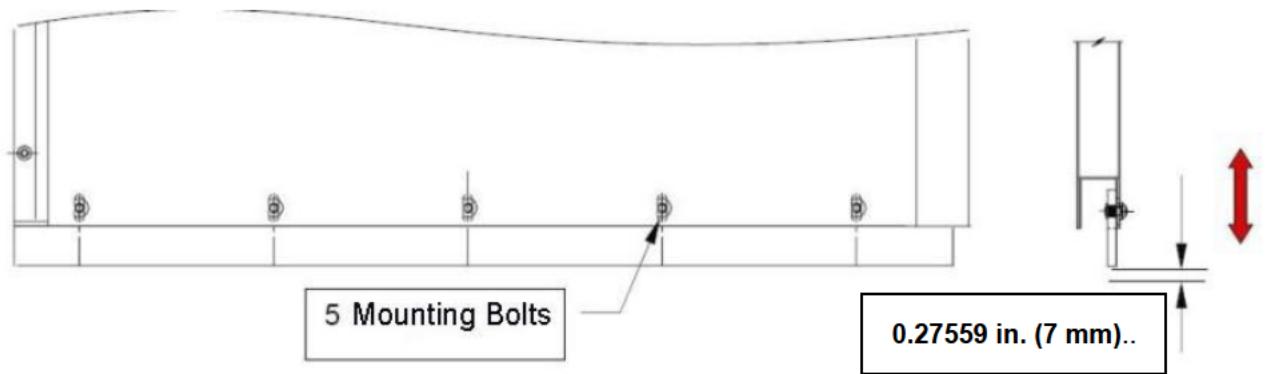


Figure 5 - BOTTOM GUIDE GAP ADJUSTMENT

FINAL OPERATIONS

- 1 Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1

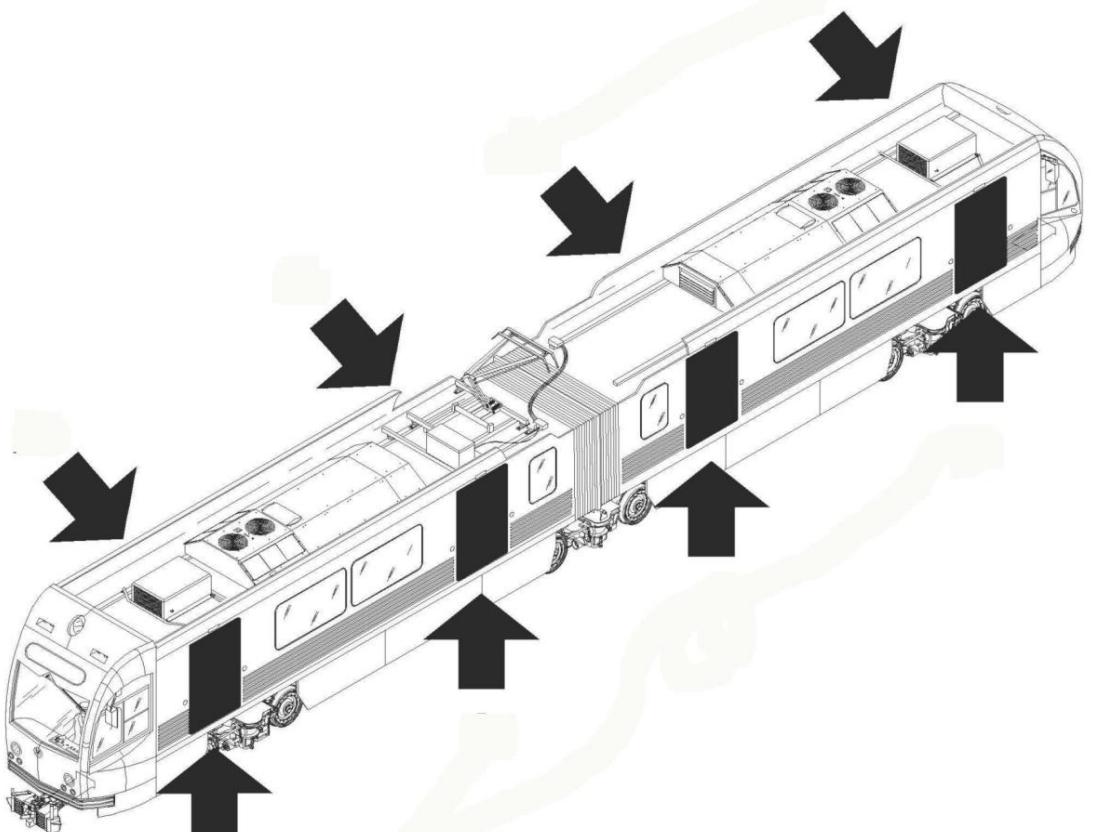
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/C-00

System: DOORS	Sheet: 1/4
Subsystem/Assy: DOOR LEAF ASSEMBLY (COMPLETE)	Unit:
Component:	Man Hours: 0,25
Maintenance Task: CLEANING	Interval/Miles: 120,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/C-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Unit:

Component:

Man Hours:

0,25

Maintenance Task:

CLEANING

Interval/Miles:

120,000**SAFETY PRECAUTIONS:**

LACMTA Safety Rules & Regulations

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE**TOOLS:**

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

Lint-free rags

Compressed air in aerosol can

Soy Foam

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-04-05-00-00/C-00	
System: DOORS	Sheet: 3/4
Subsystem/Assy: DOOR LEAF ASSEMBLY (COMPLETE)	Unit:
Component:	Man Hours: 0,25
Maintenance Task: CLEANING	Interval/Miles: 120,000

PROCEDURE:

To perform Task proceed as follows

PRELIMINARY OPERATIONS

1. Set the Vehicle in safety condition in accordance with LACMTA Maintenance Shop Regulations
2. Set the Transfer Switch (located on the Operator's Console to "ON" position

CLEANING

1. Clean the Door Panels , Window Glass and Door Seals (Sensitive Edges)

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-04-05-00-00/C-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR LEAF ASSEMBLY (COMPLETE)

Unit:

Component:

Man Hours:

0,25

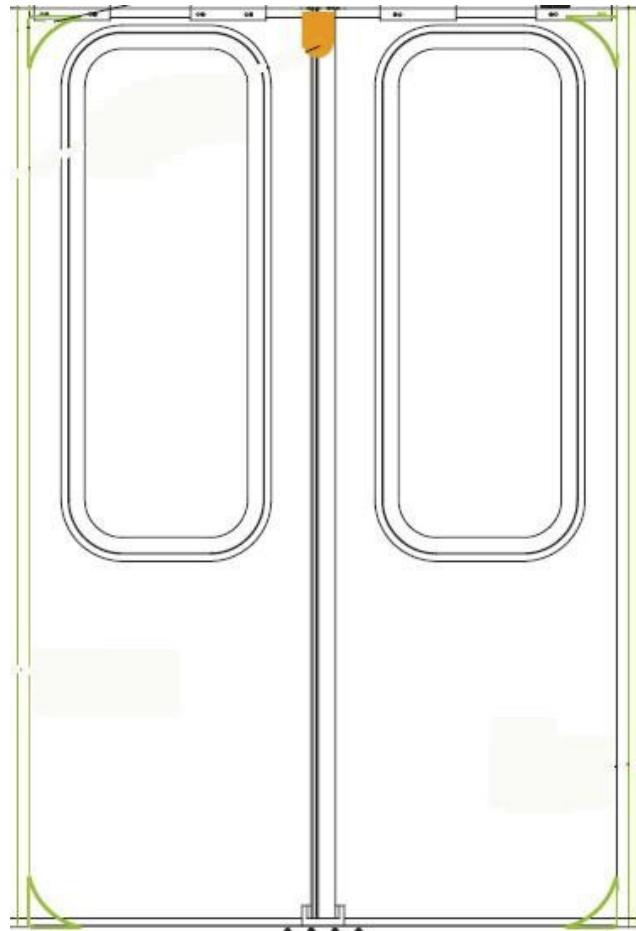
Maintenance Task:

CLEANING

Interval/Miles:

120,000

PROCEDURE (CONT'D)



DOOR LEAFS INTERIOR VIEW



DOOR LEAFS EXTERIOR VIEW

04-III-04 RUNNING -CORRECTIVE MAINTENANCE**04-III-04.01 Running -Corrective Maintenance Sheets (R-CMS)**

Each R-CMS provides the following data consistent with Corrective Maintenance Analysis (CMA), AB Design Documentation and Vehicle Systems Functional Tree:

- **R-CM Sheet Code**
- **SYSTEM, SUBSYSTEM /ASSEMBLY, UNIT, Component (Names)** ·
- SYSTEM, SUBSYSTEM /ASSEMBLY, UNIT, Component (Location)** ·

Maintenance Task,

The following definitions are applicable to the R-CM Tasks

- Inspection:** Maintenance procedures such as those required to ascertain the serviceability of a Part, Assembly, System or the specific interrelationship of Parts that perform a functional operation.
 - Leveling:** Procedure to adjust the distance between the Vehicle Floor to the Top Of Rail and the designated Vehicle Height
 - Replacement:** Provides the Components / Assemblies and Subassemblies removal & installation in a logical sequential order.
 - Re-Profiling:** Provides the procedure to maintain the safe and proper "wheel profile".
 - Repair:** Provides detailed procedures for the repair of a specific Equipment / Component
 - Service:** Operation performed to replenish Sand, Windshield Wiper Washer Fluid, HVAC Coolant, Gear and Compressor Oil, and Vehicle Lubrication.
- **Man Hours**, needed to perform the Task
 - **SPARE PARTS**, needed to perform the Task

Each R-CMS also provides:

- **SAFETY PRECAUTIONS**, to be followed to safely accomplish the Task
- **TOOLS**, including Special Tools and Test Equipment, needed to accomplish the Task
- **CONSUMABLES**, required to accomplish the Task and consistent with those used by MTA
- **PROCEDURE**, consisting of Preliminary Operations and Procedural Steps, to be followed while performing Maintenance Tasks.
- **Illustrations and Pictures** are inserted in the text to facilitate the understanding of the topics and/or to explain step-by-step procedure.

Each R-CM Sheet refers to one Task and consists of several pages where Safety Precautions and Maintenance Instructions to perform safely the Task are provided by Procedural Steps in conjunction with Illustrations and Pictures.

04-III-04.01.01 Running- Corrective Maintenance Sheet (R-CMS) Form

The R-CMS Form (refer to Figure 04-III-04.1) consists of several fields containing the following data/ information:

RUNNING -CORRECTIVE MAINTENANCE SHEET (R-CMS) Form			
ITEM #	TITLE	CONTENT	EXPLANATORY NOTES
1	Card code	Sheet code	<p>The Sheet Code is an alphanumerical code that identifies each R-CM Sheet.</p> <p>THE SHEET CODE IS EXPLICIT</p> <p>The Sheet Code consists of letters R-C followed by an 11 digit code number as follows:</p> <p>R-C-nn-mm-zz-ww/Y-kk</p> <p>R = Running C= Corrective</p> <p>nn may vary from 02 to 19, identifying the System/ Manual Section number.</p> <p>mm-zz-ww each one may vary from 00 to 99, according to AB System Functional Tree, allowing the identification of the Assembly/Unit/Component</p> <p>Y Maintenance Task Code. It may be one of the following:</p> <p>I = Inspection LL =Leveling</p> <p>R = Replacement RP= Re-Profiling</p> <p>RR = Repair S = Service</p> <p>SP = Safety Precautions</p> <p>kk It may vary from 00 to 99. It is a progressive number allowing the explicit identification of R-CMS</p> <p>NOTE : The code R-C-nn-00-00-00-R-kk identifies a Typical Replacement Procedure The Typical Replacement Procedure is provided for the following items : Board, Circuit Breaker, Diode, Indicator Lamp, Main Contactor, Switch & Relays</p>
2	System	System name	This field indicates the System to which the Assembly/Unit/Component belongs.
3	Subsystem/ Assembly	Subsystem/ Assembly name	This field indicates the Subsystem/Assembly to which the Unit/Component belongs.
4	Unit	Unit name	This field indicates the Unit to which the Component belongs.
5	Component	Component name	This field indicates the Component the Maintenance Task is referring to
6	Maintenance Task	Maintenance Task name	This field indicates the Maintenance Task to be performed.
7	Man Hours	Number	The Man Hour field indicates the time needed to perform the corresponding Maintenance Task. with the basic assumption that the Vehicle is staged on an Inspection Pit/Jacking tracks with the required Consumables, Tools and Materials available.

RUNNING -CORRECTIVE MAINTENANCE SHEET (R-CMS) Form (cont'd)			
ITEM #	TITLE	CONTENT	EXPLANATORY NOTES
8	Sheet	Pages numbering	This field indicates the progressive R-CMS sheet page number.
9	LOCATION	Illustration	This field indicates the On Board Location of the Equipment to be maintained The following Graphic Symbols are used for: Assembly/Unit/Component for System/Subsystem/Vehicle as a Whole
10	R	Letter	This field indicates that the Sheet pertains to Running Maintenance
11	C	Letter	This field indicates that the Sheet pertains to Corrective Maintenance
12	nn	Number	This field indicates the System/Manual Section number to which the Sheet pertains. It may vary from 01 to 19
13	rr	Number	This field indicates the Sheet Revision number
14	Page ##	Page ##	This field indicates the RMSM Section Page number
15	#	Number	This field indicates the RMSM Section Revision number
16	SAFETY PRECAUTIONS	Text	This field presents the General and/or specific Safety Precautions to be followed to accomplish safely the relevant Maintenance Tasks.
17	TOOLS	Text	This field lists the description and the P/N of the Standard tools, Special Tools and Test Equipment needed to accomplish the Maintenance Task. Refer to the TTE Manual for the TE and Special Tools detailed descriptions and tools maintenance.
18	CONSUMABLES	Text	This field lists the Consumables Materials (consistent with those used by MTA with the related P/N.) needed to accomplish the Maintenance Task. Cleaning agents are included
19	SPARE PARTS	Text	This field lists the Description and PN of Spare Parts (consistent with Illustrated Parts Catalog) needed to accomplish the Maintenance Task.
20	PROCEDURE	Text	The Procedure field provides Preliminary Operations and Procedural step by step Instructions to be followed while performing the Maintenance Task. Illustrations and Pictures are inserted in the text to facilitate the understanding of the topics and/or to explain step-by-step procedure.

LACMTA P2550 LRV
Running Maintenance and Servicing Manual - Section 01

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code: **R-C-nn-mm-zz-ww/Y-kk**

System: **x/z**

Subsystem/Assy: Unit:

Component: Man Hours:

Maintenance Task:

LOCATION:

B RH EXTERIOR LH

A UNDERCAR B ROOF

A INTERIOR B

R C nn rr

M Metro

Page 011 Draft

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

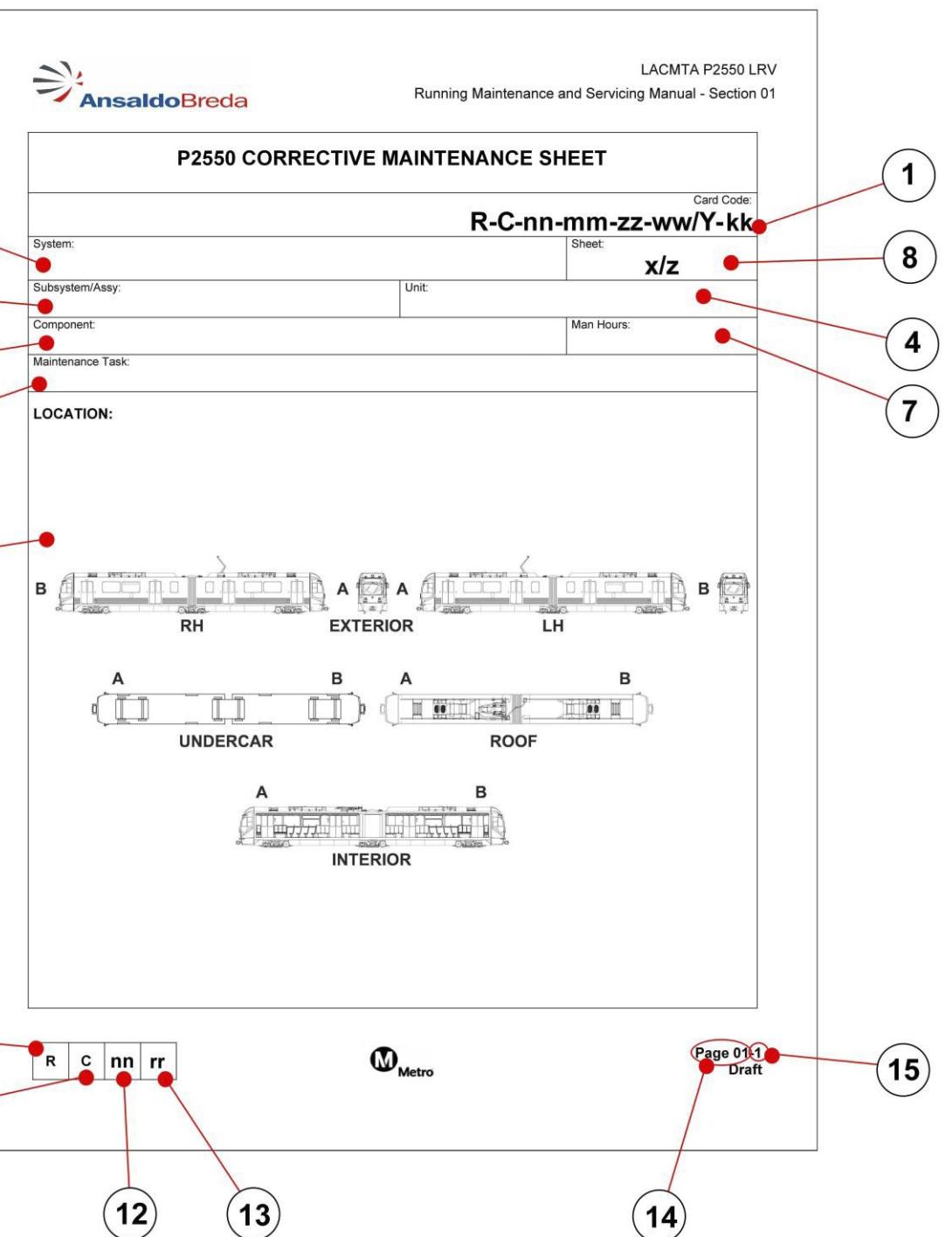


Figure 04-III-04.1 R-CMS Form
(Sheet 1 of 2)

LACMTA P2550 LRV
Running Maintenance and Servicing Manual - Section 01

AnsaldoBreda

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code: R-C-nn-mm-zz-ww/Y-kk	Sheet: x/z
System:	Unit:
Subsystem/Assy:	Component:
Maintenance Task:	
SAFETY PRECAUTIONS:	
TOOLS:	
CONSUMABLES:	
SPARE PARTS:	
PROCEDURE:	
PRELIMINARY OPERATIONS	
16	
17	
18	
19	
20	

Page 01-2
Draft

M Metro

R C nn rr

**Figure 04-III-04.1 R-CMS Form
(Sheet 2 of 2)**

04-III-04.01.02 How to Use the R-CM Sheets

To optimize the job organization it is suggested to proceed as follows:

1. Before Task Execution

- a) Carefully read the sheets to ensure that you fully understand all safety precautions, preliminary conditions required, warnings, notes & procedures that will be followed
- b) Particularly read
 - The Safety Precautions to perform safely the Task
 - The Preliminary Operations to set the Vehicle in safety conditions according to MTA Maintenance Shop Regulations
 - The Tools, Consumables and Spare Parts listed in each Sheet that are needed to accomplish the Task and to have all of them available next the location of the Equipment to be maintained before starting the activities.

2. During Task Execution

- a) Follow accurately the prescribed Safety Precautions and Maintenance Procedural Steps
- b) Note any Areas/Items of the Assembly/Unit/Component under Corrective Maintenance Process requiring further Corrective Maintenance
- c) Gather as much information about the Equipment as is practical
(i.e. knowledge about the malfunction in terms of correctly operating and incorrectly operating equipment processes) to increase your equipment knowledge.

3. At every Task Completion

- a) Carefully follow the prescribed Safety Precautions before restoring the Electrical Power to Vehicle.
- b) Check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.
- c) It is suggested to perform this check on the IDU "A" as follows:

NOTE: Through the IDU you can check if all Systems are exchanging data by MVB or LonWorks Bus and the Trainlines Status.

The IDU Display also shows in real time the Status of all Vehicle Systems.

Reading the IDU Fault List it is possible to immediately detect a fault

Using the IDU in the Operating Mode the Fault Indications are generic,

Using the IDU in Maintenance Mode the same Fault has a detailed description.

For more in depth troubleshooting use the PTU connected to the relevant system that requires further troubleshooting.

1. On IDU "A" access to the Maintenance Menu first and then to the "Faults" Screen by selecting, in sequence, the relevant icons
2. Check, On IDU "A" through the list of the Current Active Faults shown in the "Faults" Screen, for Fault Codes related to the Subsystem to which the maintained Equipment pertains.

Refer to Section 18 of RMSM for Fault Signals Details

3. As per "Fault" Codes check results proceed as follows:

➤ **No Faults are listed in the "Faults" Screen**

- a) Key OFF the Vehicle
- b) Record Service and Test results on the Defect Report Card for administrative and maintenance planning.

➤ **Fault Codes are listed in the "Faults" Screen**

- a) Investigate/troubleshoot the Equipment previously maintained first and then the System/Subsystem/Assembly/Unit for Fault Probable Causes
- b) Gather as much information about the failure symptoms as is practical.
Refer to Section 18 of RMSM for Fault Signals Details
- c) Try to identify the malfunction in terms of correctly operating and incorrectly operating equipment processes.
- d) Identify which equipment signals or parameters will best help you to localize the failure.
- e) Identify the source of the problem.
- f) Repair or replace the defective component.
- g) Verify that the repair is effective in eliminating all of the failure symptoms.
- h) Evaluate whether or not the defective component was the root cause of the failure.
- i) Once the Fault Codes are not found in the "Faults" Screen perform steps from 3-a through 3-b (previous subparagraph **No Faults are listed in the "Faults" Screen**)

04-III-04.01.03 Running- Corrective Maintenance Sheet (R-CMS) List

The Doors Running- Corrective Maintenance Sheets (R-CMS) List is provided in the following Table 04-III-04.1

The R-CM Sheets are listed by Subsystem / Assembly / Unit / Component and sequenced by Sheet Codes and Tasks to be performed

Table 04-III-04.1 Running Corrective Maintenance Sheets List

SYSTEM 04 DOORS				
SUBSYSTEM / ASSY	UNIT	COMPONENT	TASK	SHEET CODE
DOORS CONTROL	LV CIRCUITRY	CIRCUIT BREAKER TYPE S280	REPLACEMENT (TYPICAL)	R-C-04-00-00-00/R-00
DOORS CONTROL	LV CIRCUITRY	RELAYS	REPLACEMENT (TYPICAL)	R-C-04-00-00-00/R-01
DOORS CONTROL	LV CIRCUITRY	SWITCH	REPLACEMENT (TYPICAL)	R-C-04-00-00-00/R-02
DOORS CONTROL	LV CIRCUITRY	DIODE	REPLACEMENT (TYPICAL)	R-C-04-00-00-00/R-03
DOOR OPERATOR			REPLACEMENT	R-C-04-01-00-00/R-00
DOOR OPERATOR	RAIL ASSEMBLY		REPLACEMENT	R-C-04-01-02-00/R-00
DOOR OPERATOR	RAIL ASSEMBLY	OPENING END STOPS	REPLACEMENT	R-C-04-01-02-02/R-00
DOOR OPERATOR	RAIL ASSEMBLY	ADJUSTABLE CAM	REPLACEMENT	R-C-04-01-02-03/R-00
DOOR OPERATOR	DRIVE ASSEMBLY		REPLACEMENT	R-C-04-01-03-00/R-00
DOOR OPERATOR	DRIVE ASSEMBLY	SCREW ASSEMBLY	REPLACEMENT	R-C-04-01-03-02/R-00
DOOR OPERATOR	DRIVE ASSEMBLY	SCREW ASSY SPRING RING	REPLACEMENT	R-C-04-01-03-02/R-01
DOOR OPERATOR	DRIVE ASSEMBLY	COMPRESSION SPRING	REPLACEMENT	R-C-04-01-03-03/R-00
DOOR OPERATOR	DRIVE ASSEMBLY	CENTRAL BEARING ASSY	REPLACEMENT	R-C-04-01-03-05/R-00
DOOR OPERATOR	DRIVE ASSEMBLY	DCS SWITCHES	REPLACEMENT	R-C-04-01-03-05/R-01
DOOR OPERATOR	DRIVE ASSEMBLY	EXTREMITY BEARING ASSMBLY	REPLACEMENT	R-C-04-01-03-06/R-00
DOOR OPERATOR	DRIVE ASSEMBLY	LOCKOUT BALL BEARING ASSY	REPLACEMENT	R-C-04-01-03-07/R-00
DOOR OPERATOR	DRIVE ASSEMBLY	LOCK-OUT HANDLE	REPLACEMENT	R-C-04-01-03-08/R-00
DOOR OPERATOR	DRIVE ASSEMBLY	LOCK-OUT SWITCH	REPLACEMENT	R-C-04-01-03-09/R-00
DOOR OPERATOR	COUPLING ASSEMBLY		REPLACEMENT	R-C-04-01-04-00/R-00
DOOR OPERATOR	MOTORIZATION ASSY		REPLACEMENT	R-C-04-01-05-00/R-00
DOOR OPERATOR	MOTORIZATION ASSY	MOTOR	REPLACEMENT	R-C-04-01-05-02/R-00
DOOR OPERATOR	MOTORIZATION ASSY	MOTOR END STOPS	REPLACEMENT	R-C-04-01-05-02/R-01
DOOR OPERATOR	MOTORIZATION ASSY	MOTOR LOCKING ROLLER	REPLACEMENT	R-C-04-01-05-02/R-02
DOOR OPERATOR	MOTORIZATION ASSY	FRONT BEARING	REPLACEMENT	R-C-04-01-05-03/R-00
DOOR OPERATOR	MOTORIZATION ASSY	REAR BEARING	REPLACEMENT	R-C-04-01-05-04/R-00
DOOR OPERATOR	MOTORIZATION ASSY	TORSION SPRING	REPLACEMENT	R-C-04-01-05-05/R-00

Table 04-III-04.1 Running Corrective Maintenance Sheets List (cont'd)

SYSTEM	04	DOORS	(cont'd)	
SUBSYSTEM / ASSY	UNIT	COMPONENT	TASK	SHEET CODE
DOOR OPERATOR	MOTORIZATION ASSY	DLS SWITCH	REPLACEMENT	R-C-04-01-05-06/R-00
DOOR OPERATOR	FORK ASSY		REPLACEMENT	R-C-04-01-06-00/R-00
DOOR OPERATOR	WIRING CHAIN		REPLACEMENT	R-C-04-01-08-00/R-00
DOOR OPERATOR	EDCU		REPLACEMENT	R-C-04-01-10-00/R-00
THRESHOLD ASSY			REPLACEMENT	R-C-04-02-00-00/R-00
DOORS CONTROL	LV CIRCUITRY	EXTERIOR EMERGENCY DEVICE	REPLACEMENT	R-C-04-03-00-00/R-00
DOORS CONTROL	LV CIRCUITRY	INTERIOR EMERGENCY DEVICE	REPLACEMENT	R-C-04-04-00-00/R-00
DOOR LEAF ASSY	DOOR LEAF		REPLACEMENT	R-C-04-05-01-00/R-00
DOOR LEAF ASSY		FRONT SEAL	REPLACEMENT	R-C-04-05-03-00/R-00
DOOR LEAF ASSY		REAR SEAL LAND	REPLACEMENT	R-C-04-05-04-00/R-00
DOOR LEAF ASSY	DOOR WINDOW	WINDOW & WINDOW SEAL	REPLACEMENT	R-C-04-05-05-00/R-00
DOOR LEAF ASSY		LOWER GUIDE	REPLACEMENT	R-C-04-05-07-00/R-00
DOORS CONTROL	LV CIRCUITRY	EXTERNAL PUSH BUTTON ASSY	REPLACEMENT	R-C-04-06-00-00/R-00
DOORS CONTROL	LV CIRCUITRY	INTERNAL PUSH BUTTON ASSY	REPLACEMENT	R-C-04-07-00-00/R-00
DOORS CONTROL	LV CIRCUITRY	DOOR OUT OF SERVICE INDICATOR	REPLACEMENT	R-C-04-08-00-00/R-00
DOORS CONTROL	LV CIRCUITRY	CREW SWITCH	REPLACEMENT	R-C-04-09-00-00/R-00
DOORS CONTROL	LV CIRCUITRY	INTERIOR DOOR CLOSING WARNING LIGHT (ADA LAMP)	REPLACEMENT	R-C-04-10-00-00/R-00

04-III-04.01.04 **Running- Corrective Maintenance Sheets (R-CMS)**

DOORS

Running - Corrective Maintenance Sheets

R-CMS

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P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

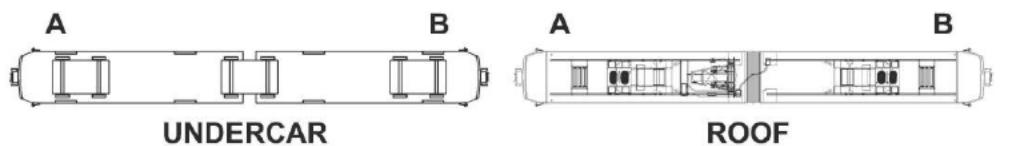
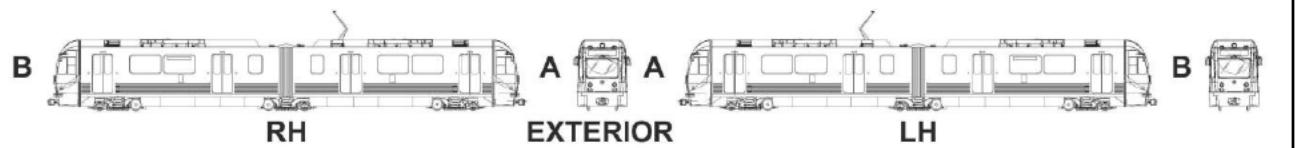
R-C-04-00-00-00/R-00

System: DOORS	Sheet: 1/10
-------------------------	-----------------------

Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
---	------------------------------

Component: CIRCUIT BREAKER TYPE S280	Man Hours: 0.5
--	--------------------------

Maintenance Task: REPLACEMENT (TYPICAL)

LOCATION:

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-00

System:

DOORS

Sheet:

2/10

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CIRCUIT BREAKER TYPE S280

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)**APPLICABILITY:** This Replacement procedure is applicable to the following Items :**TABLE 1 CIRCUIT BREAKERS IDENTIFICATION & LOCATIONS**

LABEL	DESCRIPTION	TYPE	P/N	CAR	LOCATION	FUNCTIONAL DIAGRAMS	
						SCHEMATICS	SHEET#
9F02	SUPPLY COMMAND DOORS SWITCH (LOCAL)	S282 C 6A	211EK22984B31	A - B	CAB -LV CB PANEL	LV	83
9F04	FIRST LEFT DOORS CONTROL UNIT	S281 C 6A	211EK22984B01	A - B	LV LOCKER	LV	93
9F05	FIRST RIGHT DOORS CONTROL UNIT	S281 C 6A	211EK22984B01	A - B	LV LOCKER	LV	94
9F06	SECOND LEFT DOORS CONTROL UNIT	S281 C 6A	211EK22984B01	A - B	LV LOCKER	LV	95
9F07	SECOND RIGHT DOORS CONTROL UNIT	S281 C 6A	211EK22984B01	A - B	LV LOCKER	LV	96
9F08	EM. CIRCUIT CIRCUIT BREAKER FOR DOORS	S281 K 3A	211EK22984B14	A	CAB -LV CB PANEL	LV	81
9F09	C.B. FOR DOORS CLOSED LOOP OPEN CIRCUIT	S281 K 3A	211EK22984B14	A - B	CAB -LV CB PANEL	LV	81
9F10	CIRCUIT BREAKER FOR END TRAIN RELAY	S281 K 3A	211EK22984B14	A - B	LV LOCKER	LV	82
9F11	C.B. FOR DOORS OPEN LOOP CIRCUIT (MULTIPLE)	S281 K 3A	211EK22984B14	A - B	LV LOCKER	LV	82

SAFETY PRECAUTIONS:

LACMTA Maintenance Shop Safety Rules & Regulations

CAUTION :SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO PERFORM THE REPLACEMENT OF ANY CB LISTED IN THE PREVIOUS TABLE 1

TOOLS:

LACMTA Standard Tools Kit

CONSUMABLES:

CRC 2000 Contact Cleaner

SPARE PARTS:

Refer to Table 1 Circuit Breakers Identification & Locations

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-00-00-00/R-00	
System: DOORS	Sheet: 3/10
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: CIRCUIT BREAKER TYPE S280	Man Hours: 0.5
Maintenance Task: REPLACEMENT (TYPICAL)	
PROCEDURE:	
PRELIMINARY OPERATIONS	
Set the Vehicle in safety conditions in accordance with LACMTA Maintenance Shop Regulations:	
<ol style="list-style-type: none">1. Place the Vehicle in the Maintenance Shop.2. Set the Master Controller Handle to FSB position.3. Make sure that all Parking Brakes are applied (by checking on the IDU "Parking Brake A and B Not Released" and on Indicator Panel "A" "Park / Friction Brake" ON).4. Remove Electrical Power from Vehicle by lowering the Pantograph.5. Turn the Transfer Switch to OFF.6. Attach a tag with the person's name who removed power.	
NOTE: That person knows why the Power was removed and when it safe to restore it. Only the individual whose name appears on the tag or a person with his approval should remove the tag and restore power.	
CAUTION : SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO PERFORM THE REPLACEMENT OF ANY CB LISTED IN THE PREVIOUS TABLE 1	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-00

System:

DOORS

Sheet:

4/10

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CIRCUIT BREAKER TYPE S280

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)

PROCEDURE (CONT'D): (Refer to Figures 1 through 7)

REMOVAL

To perform the Task proceed as follows:

1. Locate the Circuit Breaker to be replaced according to the Label identification and the Location provided in the previous Table 1

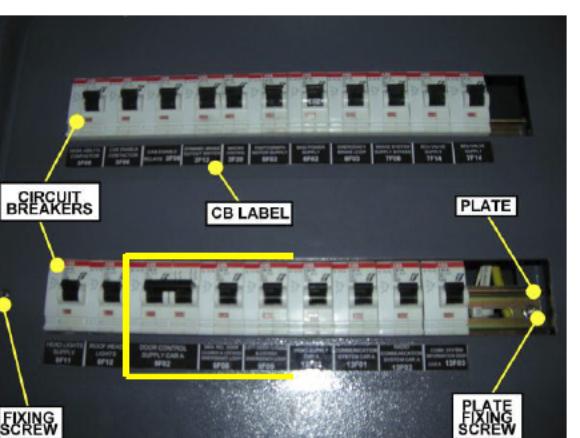
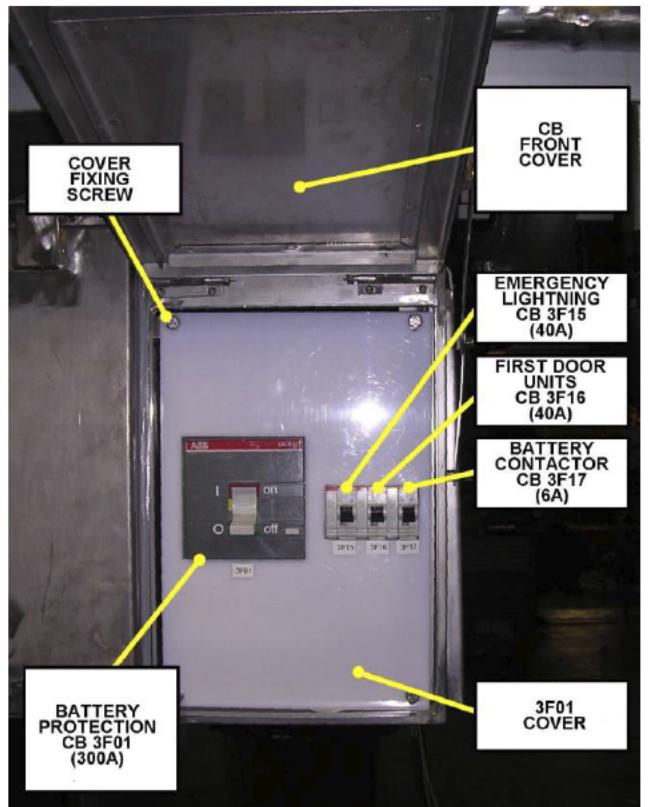


FIG 1 BATTERY BOX LV CB 3F01 LOCATION

FIG 3 CAB LV CB PANEL

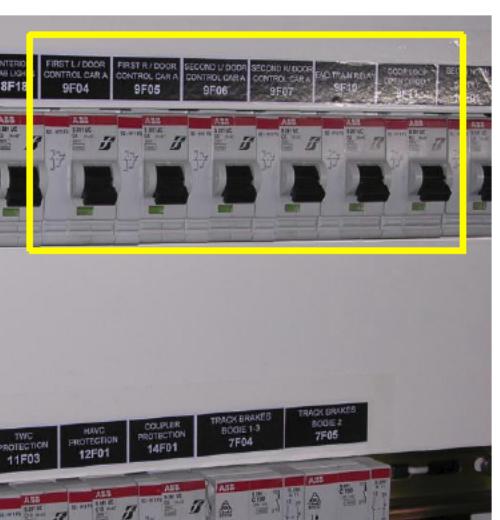


FIG 2 "A/B" LV LOCKER CB PANEL

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-00

System:

DOORS

Sheet:

5/10

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

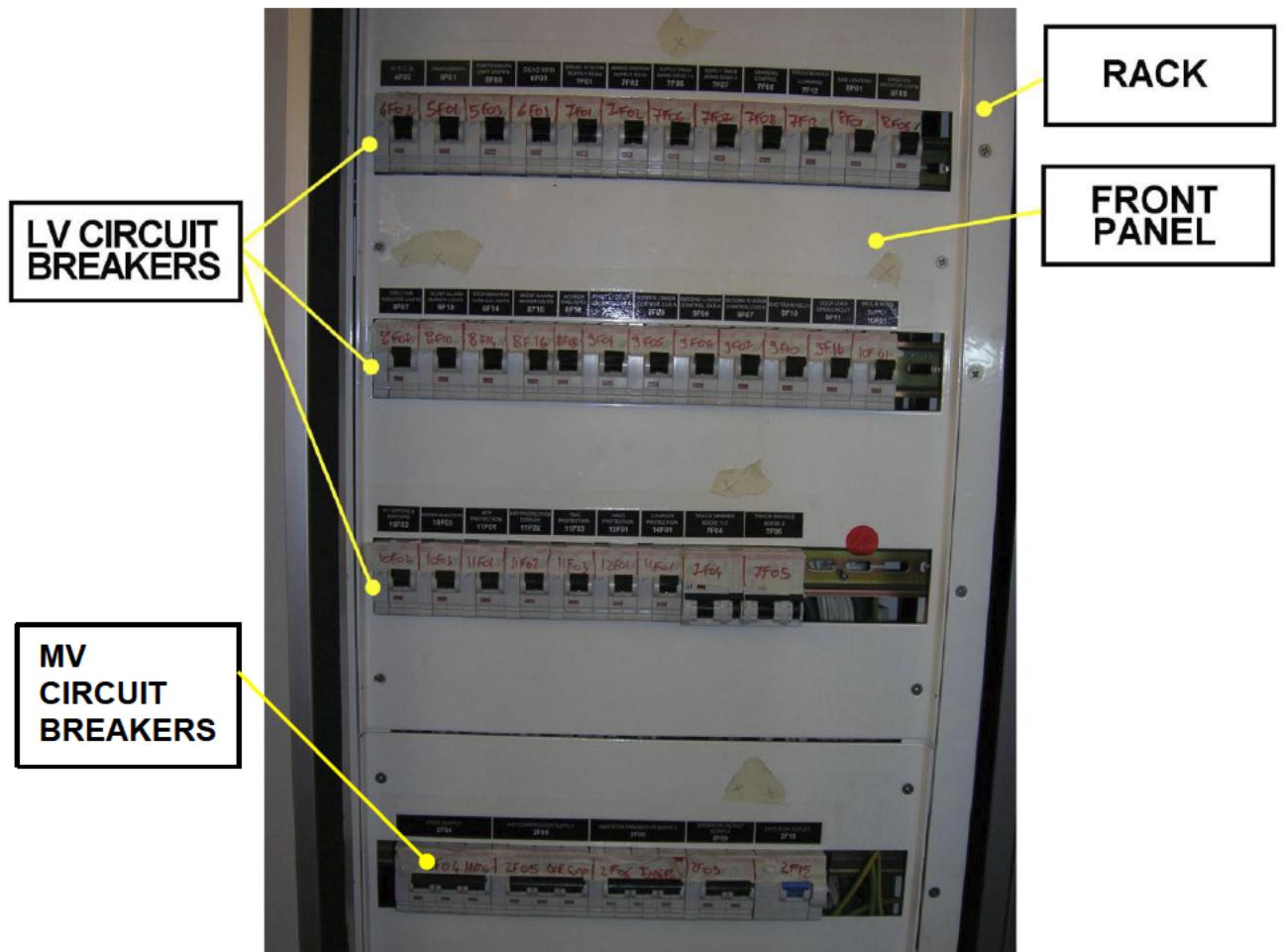
Component:

CIRCUIT BREAKER TYPE S280

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)**PROCEDURE (CONT'D):**
FIG 4 CAB LV LOCKER LV & MV CB RACK RACKS

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-00

System:

DOORS

Sheet:

6/10

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CIRCUIT BREAKER TYPE S280

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)

PROCEDURE (CONT'D):

2. Remove the Circuit Breaker Front Panel by loosening the relevant Fixing Screws.
Retain them for later use

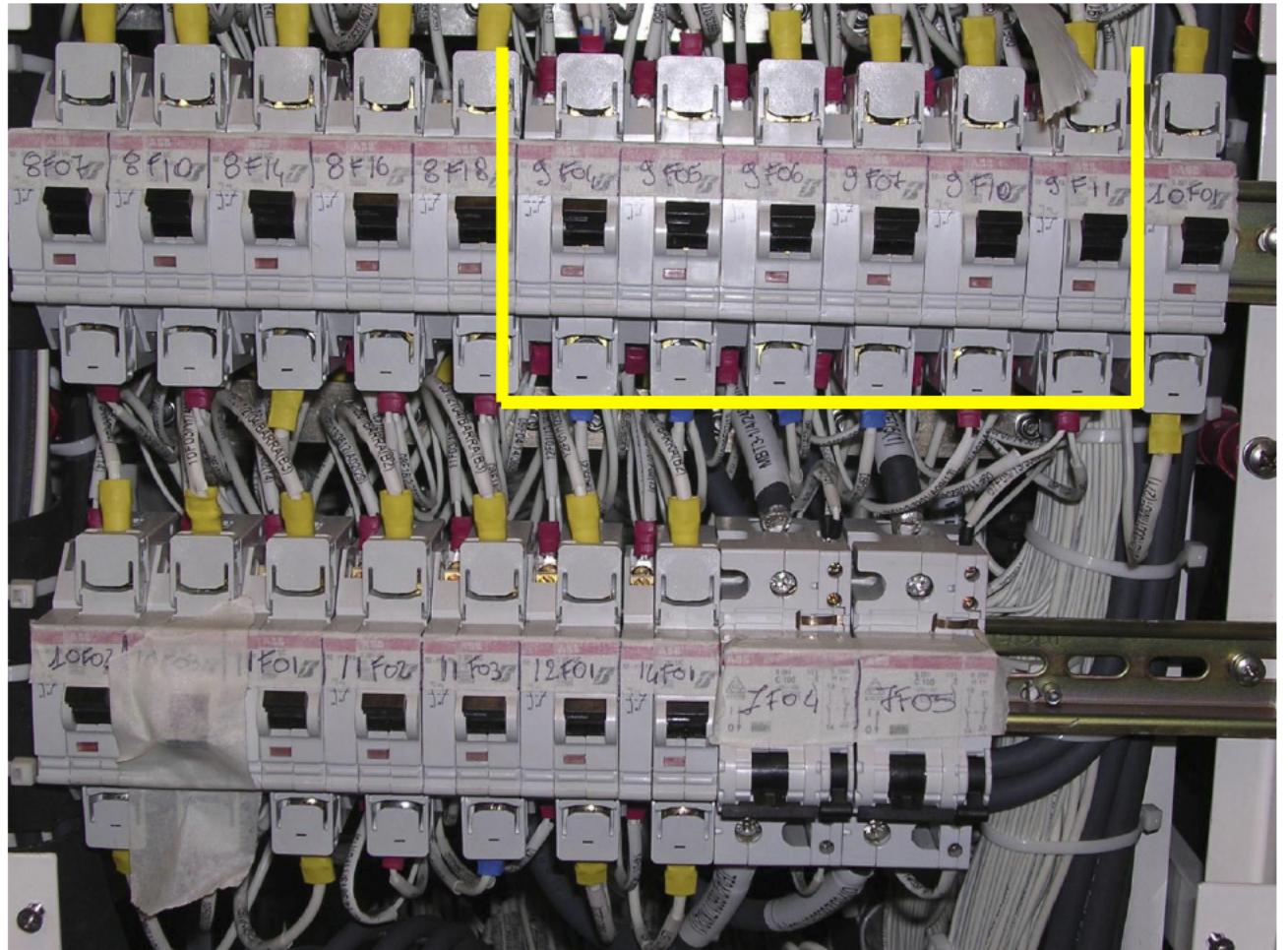


FIG 5 LV CB CONNECTIONS (TYPICAL)

P2550 CORRECTIVE MAINTENANCE SHEET

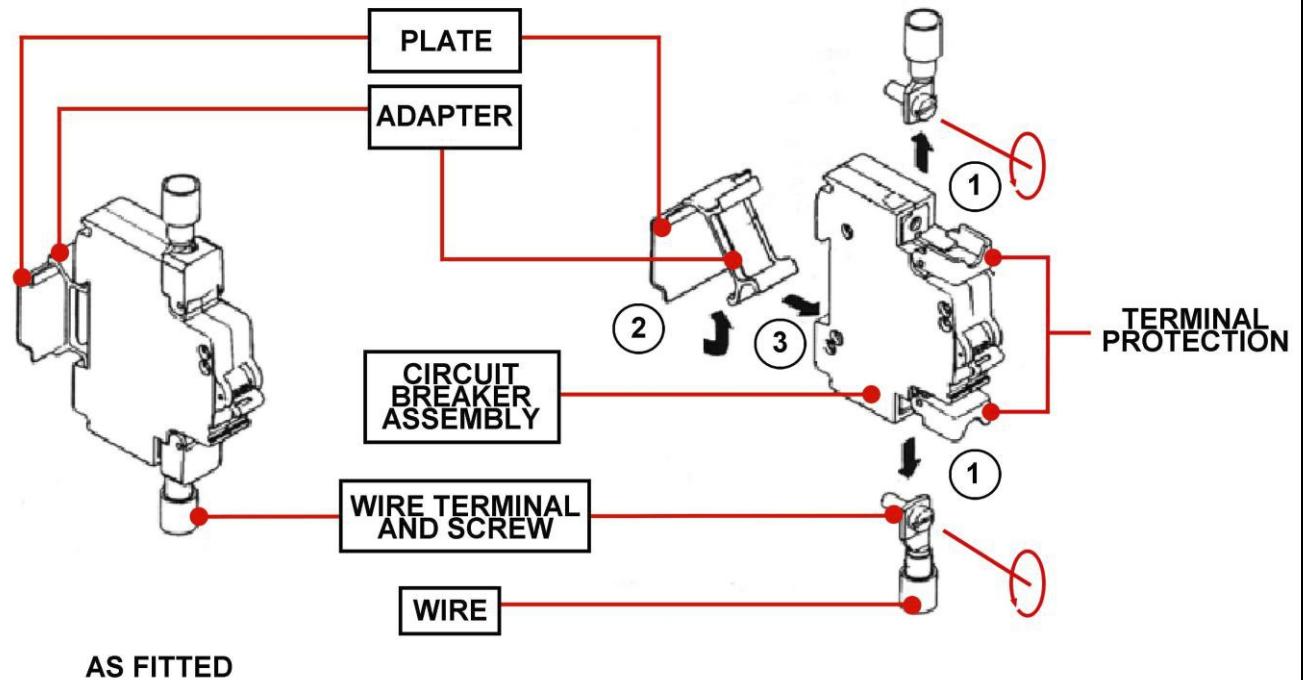
Card Code:

R-C-04-00-00-00/R-00

System: DOORS	Sheet: 7/10
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: CIRCUIT BREAKER TYPE S280	Man Hours: 0.5

 Maintenance Task:
REPLACEMENT (TYPICAL)
PROCEDURE(CONT'D) :

3. Remove and discard the Circuit Breaker according to the Instructions provided in the following Figure 6


FIGURE 6 -CIRCUIT BREAKER REMOVAL

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-00

System:

DOORS

Sheet:

8/10

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CIRCUIT BREAKER TYPE S280

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)

PROCEDURE (CONT'D):

INSTALLATION

To perform the Task proceed as follows:

1. Clean the Circuit Breaker Seat using recommended Cleaner / Agent and lint-free rags.
2. Check CB Plate for installation / missing / loosen Hardware. Torque, as per check result, to **15.2 ft-lb**.
3. Check Wires and Wire Terminals for signs of overheating.
4. Install the "new" Circuit Breaker according to the instructions provided in the following figure 7

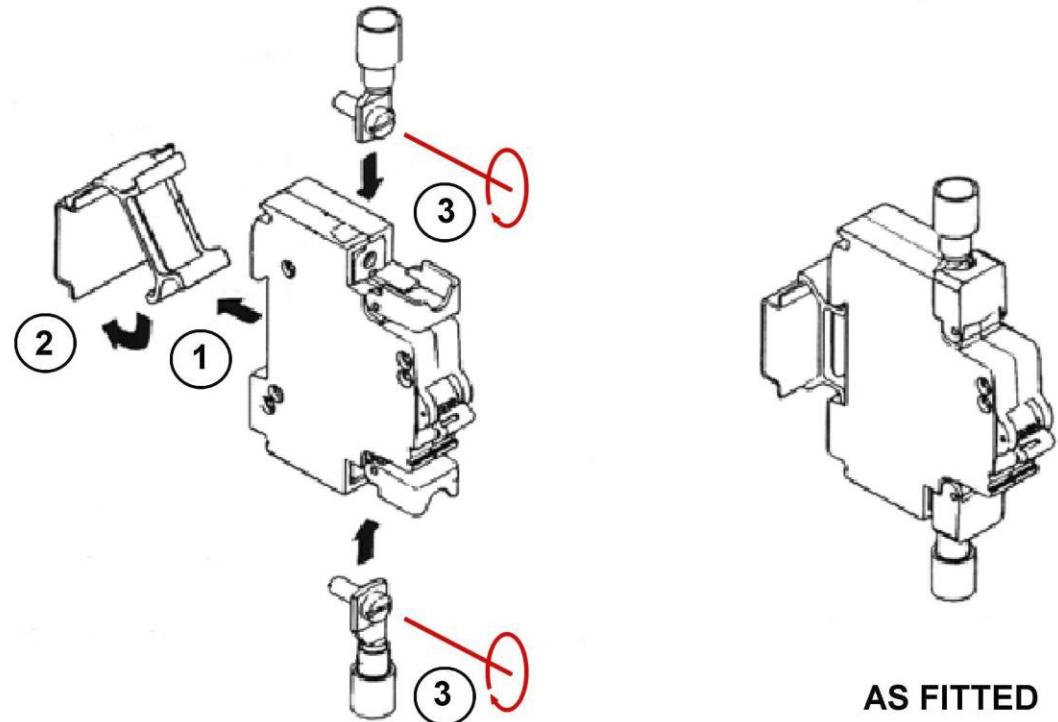


FIGURE 7 -CIRCUIT BREAKER INSTALLATION

P2550 CORRECTIVE MAINTENANCE SHEET										
Card Code: R-C-04-00-00-00/R-00										
System: DOORS	Sheet: 9/10									
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY									
Component: CIRCUIT BREAKER TYPE S280	Man Hours: 0.5									
Maintenance Task: REPLACEMENT (TYPICAL)										
PROCEDURE (CONT'D):										
5. Tighten the Wires Terminals Screws according to the following Torque Values :										
<table><thead><tr><th colspan="2">MAIN CONTACTS</th><th>AUX CONTACTS</th></tr><tr><th>SCREW</th><th>M5</th><th>M3</th></tr><tr><th>TORQUE</th><th>5 ft-*lb</th><th>4 ft-*lb</th></tr></thead></table>		MAIN CONTACTS		AUX CONTACTS	SCREW	M5	M3	TORQUE	5 ft-*lb	4 ft-*lb
MAIN CONTACTS		AUX CONTACTS								
SCREW	M5	M3								
TORQUE	5 ft-*lb	4 ft-*lb								
6. Install the Circuit Breakers Front Panel and secure it by installing and tightening the relevant Fixing Screws.										
7. Switch on the "new" installed CB										
8. Restore Electrical Power										
FINAL OPERATIONS										
Record Task Results on the Defect Report Card for administrative and maintenance planning										
NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the replaced Equipment pertains.										
Refer to HOW TO USE THE R-CM SHEETS (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 " At every Task Completion ".										

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-00

System:

DOORS

Sheet:

10/10

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CIRCUIT BREAKER TYPE S280

Man Hours:

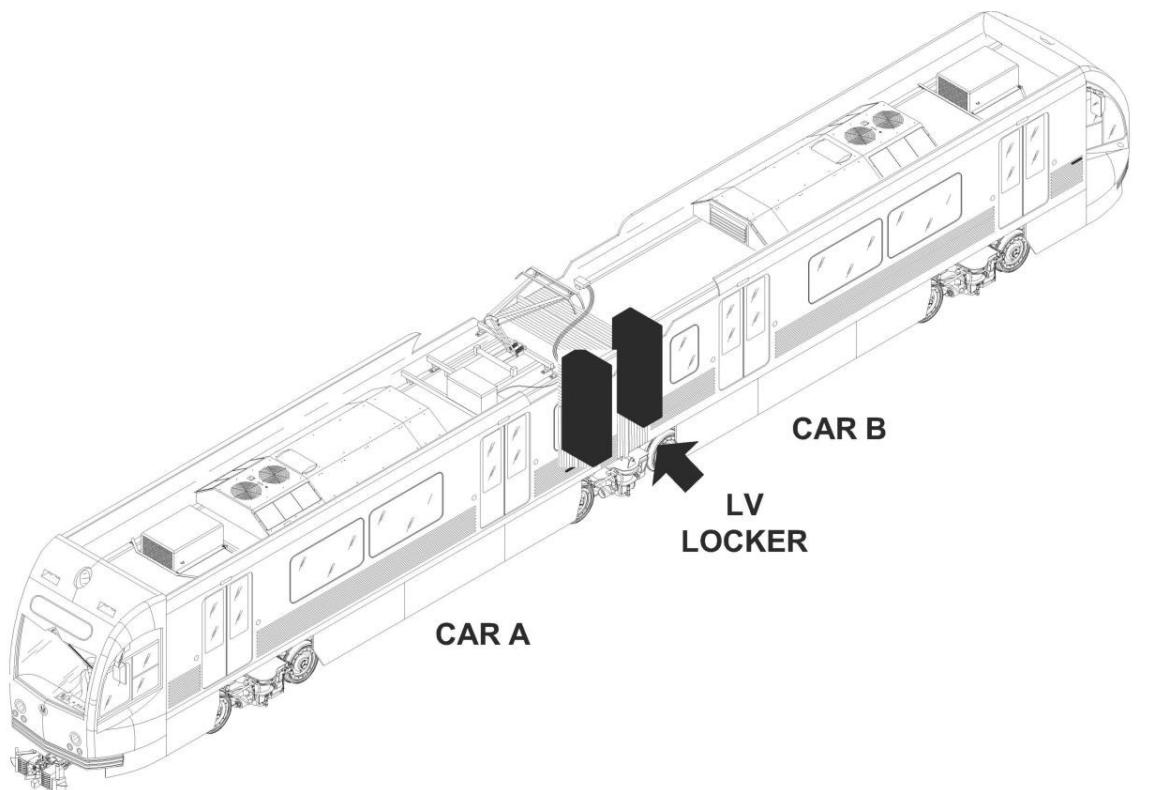
0.5

Maintenance Task:

REPLACEMENT (TYPICAL)**INTENTIONALLY
LEFT BLANK**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-01System: **DOORS** Sheet: **1/6**Subsystem/Assy: **DOORS CONTROL** Unit: **LV CIRCUITRY**Component: **RELAY** Man Hours: **1.0**Maintenance Task:
REPLACEMENT (TYPICAL)**LOCATION**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-10-00-00-00/R-01

System:

DOORS

Sheet:

2/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

RELAY

Man Hours:

1.0

Maintenance Task:

REPLACEMENT (TYPICAL)

APPLICABILITY:

This Replacement procedure is applicable to the following Items :

TABLE 1 RELAY IDENTIFICATION & LOCATIONS

LABEL	DESCRIPTION	TYPE	P/N	CAR	LOCATION	FUNCTIONAL DIAGRAMS	
						SCHEMATICS	SHEET #
9K01	DOOR OVERRIDE RELAY	6 POLES	211VK01374B0801	A - B	LV LOCKER	LV	80
9K02	EMERGENCY CIRCUIT FOR DOORS RELAY	6 POLES	211VK01374B0801	A	LV LOCKER	LV	81
9K03	DOOR CLOSED LOOP RELAY	2 POLES	211VK01374B0801	A - B	LV LOCKER	LV	81
9K04	OPEN DOOR LOOP RELAY (MULTIPLE)	6 POLES	211VK01374B0803	A - B	LV LOCKER	LV	82
9K05	DOOR CLOSED LOOP RELAY (MULTIPLE)	3 POLES	211VK01374B0802	A - B	LV LOCKER	LV	82
9K06	END OF TRAIN RELAY	6 POLES	211VK01374B0803	A - B	LV LOCKER	LV	82
9K07	LH CLOSED DOOR LOOP RELAY (MULTIPLE)	6 POLES	211VK01374B0803	A - B	LV LOCKER	LV	82
9K08	END OF TRAIN RELAY	6 POLES	211VK01374B0803	A - B	LV LOCKER	LV	82
9K09	DOOR CLOSED LOOP RELAY (MULTIPLE)	3 POLES	211VK01374B0802	A - B	LV LOCKER	LV	82
9K10	DOOR ENABLING RELAY	6 POLES	211VK01374B0803	A - B	LV LOCKER	LV	83
9K11	DOOR OPENING RELAY	3 POLES	211VK01374B0802	A - B	LV LOCKER	LV	83
9K12	DOOR CLOSING RELAY	6 POLES	211VK01374B0801	A - B	LV LOCKER	LV	83
9K13	DOOR ENABLING RELAY	6 POLES	211VK01374B0803	A - B	LV LOCKER	LV	83
9K14	DOOR OPENING RELAY	3 POLES	211VK01374B0802	A - B	LV LOCKER	LV	83
9K15	DOOR CLOSING RELAY	6 POLES	211VK01374B0801	A - B	LV LOCKER	LV	83
9d01	9K12 RELAY TIMING UNIT	6 POLES	211VD00903B04	A - B	LV LOCKER	LV	83
9d 02	9k15 RELAY TIMING UNIT	6 POLES	211VD00903B04	A - B	LV LOCKER	LV	83

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code:	
R-C-10-00-00-00/R-01	
System: DOORS	Sheet: 3/6
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: RELAY	Man Hours: 1.0
Maintenance Task: REPLACEMENT (TYPICAL)	
SAFETY PRECAUTIONS:	
LACMTA Maintenance Shop Safety Rules & Regulations	
CAUTION : SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO PERFORM THE REPLACEMENT OF ANY ITEM LISTED IN THE PREVIOUS TABLE 1	
TOOLS:	
LACMTA Standard Tools Kit	
CONSUMABLES:	
CRC 2000 Contact Cleaner	
SPARE PARTS:	
Refer to Table 1 Relay Identification & Locations	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-10-00-00-00/R-01

System:

DOORS

Sheet:

4/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

RELAY

Man Hours:

1.0

Maintenance Task:

REPLACEMENT (TYPICAL)

PROCEDURE:

PRELIMINARY OPERATIONS

1. Set the Vehicle in safety conditions in accordance with LACMTA Maintenance Shop Regulations:

**CAUTION :SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO
PERFORM THE REPLACEMENT OF ANY ITEM LISTED IN THE PREVIOUS
TABLE 1**

To perform the Task proceed as follows:

REMOVAL

2. Gain access to the Relays Rack installed in the "A" & "B" LV Lockers, by opening the relevant LV Locker Door using Maintenance Key.
3. Locate the Relay to be replaced

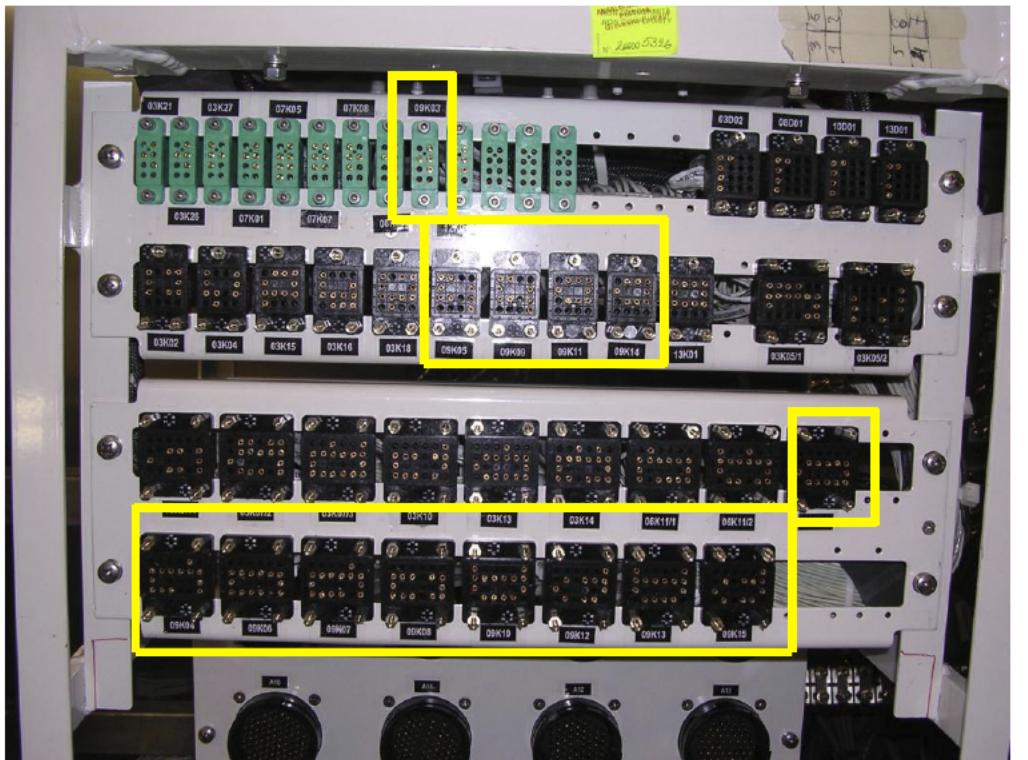


FIGURE 1 - LV LOCKER -RELAYS REPLACEMENT (TYPICAL)

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-10-00-00-00/R-01	
System: DOORS	Sheet: 5/6
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: RELAY	Man Hours: 1.0
Maintenance Task: REPLACEMENT (TYPICAL)	
PROCEDURE (CONT'D):	
REMOVAL (cont'd)	
<ol style="list-style-type: none">4. Loose and remove the Self Locking Nuts & Washers fixing the Relay to the Rack. Retain them for later use5. Slide out the Relay in order to gain access to the relevant Wiring and Terminals connections6. Take note of Wiring Color Codes and relevant positions on Relay Terminals7. Disconnect the Wiring Cable from Relay Terminals8. Remove and discard the Relay.	
INSTALLATION	
<ol style="list-style-type: none">1. Clean the Relay Seat using recommended Cleaner / Agent and lint-free rags.2. Check Relay Plate for installation / missing / loosen Hardware.3. Torque, as per check result, to 15.2 ft-lb.4. Check Wires and Wire Terminals for signs of overheating.5. Connect the Wiring to the Relay Terminals according to their position and Color Codes previously noted Refer to the Functional Schematic Sheet listed in the previous Table 1 for complete Wiring Details6. Torque the Wires Screw Terminals to 4 ft-lb7. Install the Relay in its position8. Install the Relay attaching Washers and Self Locking Nuts. Torque to 4 ft-lb9. Leave the LV Locker10. Close and the LV locker Door using Maintenance Key11. Restore Electrical Power12. Record Task results on the a Defect Report Card for administrative and maintenance planning	
NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the replaced Equipment pertains.	
Refer to HOW TO USE THE R-CM SHEETS (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 " At every Task Completion ".	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-10-00-00-00/R-01

System:

DOORS

Sheet:

6/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

RELAY

Man Hours:

1.0

Maintenance Task:

REPLACEMENT (TYPICAL)**INTENTIONALLY
LEFT BLANK**

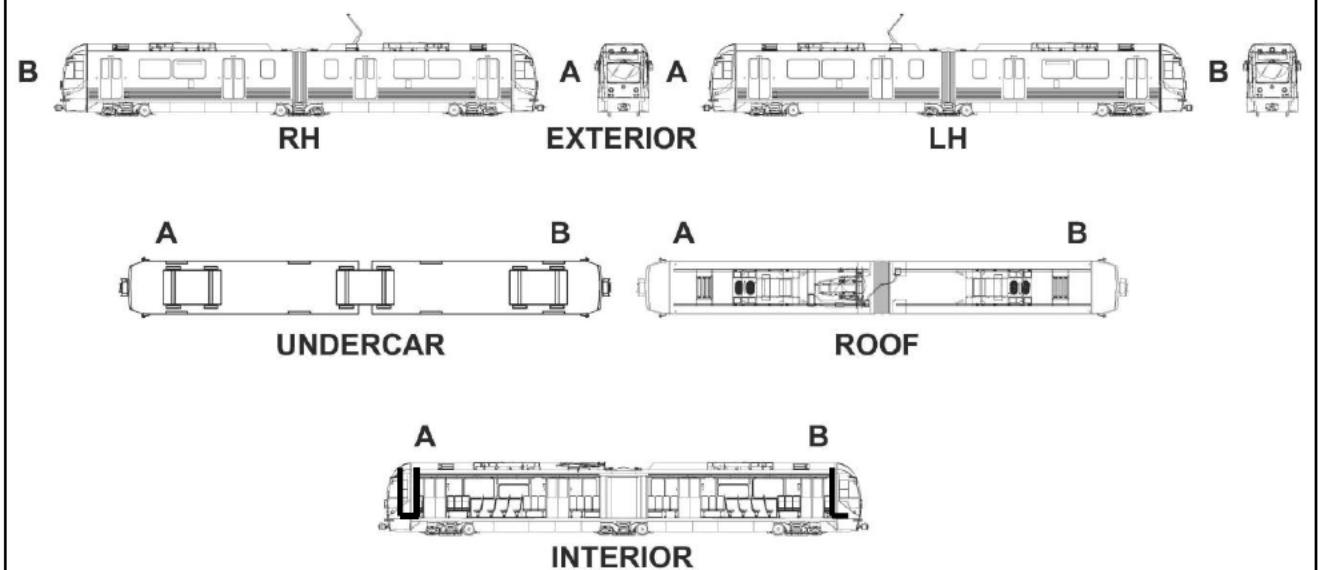
P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-02

System: DOORS	Sheet: 1/8
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: SWITCH / PUSHBUTTON	Man Hours: 0.5
Maintenance Task: REPLACEMENT (TYPICAL)	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-02

System:

DOORS

Sheet:

2/8

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

SWITCH / PUSHBUTTON

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)

APPLICABILITY

This Replacement procedure is applicable to the following Items :

TABLE 1 SWITCHES / PUSHBUTTONS IDENTIFICATION & LOCATIONS

LABEL	DESCRIPTION	TYPE	MFR P/N	CAR	LOCATION	FUNCTIONAL DIAGRAMS	
						SCHEMATICS	SHEET #
9S01	LEFT DOORS RELEASE SWITCH	Momentary Illuminated Yellow PB W/Guard	P9SPLLGD	A - B	CONSOLE	LV	83
9S02	LEFT DOORS OPEN SWITCH	Momentary Illuminated Blue PB	P9SPLLGD	A - B	CONSOLE	LV	83
9S03	LEFT DOORS CLOSE SWITCH	Momentary Illuminated Green PB	P9SPLLGD	A - B	CONSOLE	LV	83
9S04	RIGHT DOORS RELEASE SWITCH	Momentary Illuminated Yellow PB w/Guard	P9SPLLGD	A - B	CONSOLE	LV	83
9S05	RIGHT DOORS OPEN SWITCH	Momentary Illuminated Blue PB	P9SPLLGD	A - B	CONSOLE	LV	83
9S06	LEFT DOORS CLOSE SWITCH	Momentary Illuminated Green PB	P9SPLLGD	A - B	CONSOLE	LV	83
9S07	FRONT DOOR SWITCH	3 Positions Knob Selector Switch	P9SSM23N	A - B	CONSOLE	LV	87
9S09	FRONT DOOR SWITCH	3 Momentary Positions Knob Selector Switch	P9SSM23N	A - B	CONSOLE	LV	87
9S11	RIGHT DOORS BY PASS	Cut Out Switch	211VQ00840B04	A - B	CAB BY PASS PANEL	LV	26
9S12	LEFT DOORS BY PASS	Cut Out Switch	211VQ00840B05	A - B	CAB BY PASS PANEL	LV	26
9S13	DOOR OVERRIDE SWITCH	Momentary Illuminated Yellow PB	P9SPLLGD	A - B	CONSOLE	LV	80

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-00-00-00/R-02	
System: DOORS	Sheet: 3/8
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: SWITCH / PUSHBUTTON	Man Hours: 0.5
Maintenance Task: REPLACEMENT (TYPICAL)	
SAFETY PRECAUTIONS:	
LACMTA Maintenance Shop Safety Rules & Regulations	
CAUTION : SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO PERFORM THE REPLACEMENT OF ANY SWITCH / PUSHBUTTON LISTED IN THE PREVIOUS TABLE 1	
TOOLS:	
LACMTA Standard Tools Kit	
CONSUMABLES: CRC 2000 Contact Cleaner	
SPARE PARTS:	
Identification 9S01 "Left Door Release" Switch Lamp 9S02 "Left Door Open" Switch Lamp 9S03 "Left Door Close" Switch Lamp 9S04 "Right Door Release" Switch Lamp 9S05 "Right Door Open" Switch Lamp 9S06 "Right Door Close" Switch Lamp 9S013 "Door Override" Switch Lamp	Type/PN MB400-NFW28H-BP
Refer to previous Table 1 Switches / Pushbuttons Identification & Locations	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-02

System:

DOORS

Sheet:

4/8

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

SWITCH / PUSHBUTTON

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)

PROCEDURE (CONT'D):



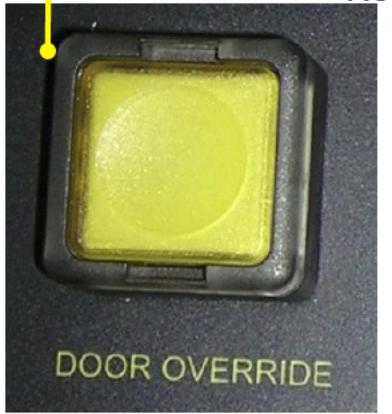
P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-02

System: DOORS	Sheet: 5/8
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: SWITCH / PUSHBUTTON	Man Hours: 0.5

Maintenance Task:
REPLACEMENT (TYPICAL)

PROCEDURE:
**FIG 1 CONSOLE****FIG 5 9S13 SWITCH****FIG 6 9S07 SWITCH**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-02

System:

DOORS

Sheet:

6/8

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

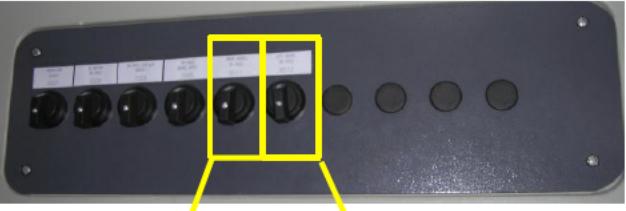
Component:

SWITCH / PUSHBUTTON

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)**PROCEDURE (CONT'D):**

CAB A

CAB B

FIG 7 BY PASS PANEL



FIG 8 9S11 SWITCH



FIG 9 9S12 SWITCH



FIG 10 9S11 SWITCH



FIG 11 9S12 SWITCH

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-00-00-00/R-02	
System: DOORS	Sheet: 7/8
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: SWITCH / PUSHBUTTON	Man Hours: 0.5
Maintenance Task: REPLACEMENT (TYPICAL)	
PROCEDURE: <p>PRELIMINARY OPERATIONS</p> <ol style="list-style-type: none"> 1. Set the Vehicle in safety conditions in accordance with LACMTA Maintenance Shop Regulations: <p>CAUTION :SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO PERFORM THE REPLACEMENT OF ANY SWITCH / PUSHBUTTON LISTED IN THE PREVIOUS TABLE 1</p> <p>REPLACEMENT</p> <p>To perform the Switch Replacement proceed as follows (Refer to Figures 1 through 11):</p> <ol style="list-style-type: none"> 1. Removal <ol style="list-style-type: none"> a) Locate the Switch / Pushbutton to be replaced. b) Gain access to the rear of the Panel Assy where the relevant Switch / Pushbutton is installed on, by unscrewing and removing the relevant Panel Assy attaching hardware (Screws and Washers). NOTE: It is advised to retain the attaching Hardware for later use. c) On the rear of the Panel Assy, locate the Switch / Pushbutton Body to be replaced and its Electrical Connections. d) Note the Switch / Pushbutton Body Wiring Identification Codes. e) Disconnect the Switch / Pushbutton Body electrical Connections. f) Disengage the Switch / Pushbutton Assy from its seat. g) Remove the Switch / Pushbutton Assy by pushing it from the rear toward the front of the Panel Assy. 2. Installation <ol style="list-style-type: none"> a) Install and engage on its seat the Switch / Pushbutton Assy to be installed. b) Connect the Switch / Pushbutton Body Electrical Connections according to the previously noted Wiring Identification Codes. c) Refer to the Functional Schematic Sheet listed in the previous Table 1 for complete Wiring Details. d) Position the Panel Assy on which the relevant "new" Switch / Pushbutton have been installed. e) Install and torque the Panel Assy attaching Hardware. f) Key on the Vehicle and check that the " new" Switch / Pushbutton works properly. g) Record Task results on the a Defect Report Card for administrative and maintenance planning. <p>NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the replaced Equipment pertains. Refer to HOW TO USE THE R-CM SHEETS (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion".</p> 	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-02

System:

DOORS

Sheet:

8/8

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

SWITCH / PUSHBUTTON

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)**INTENTIONALLY
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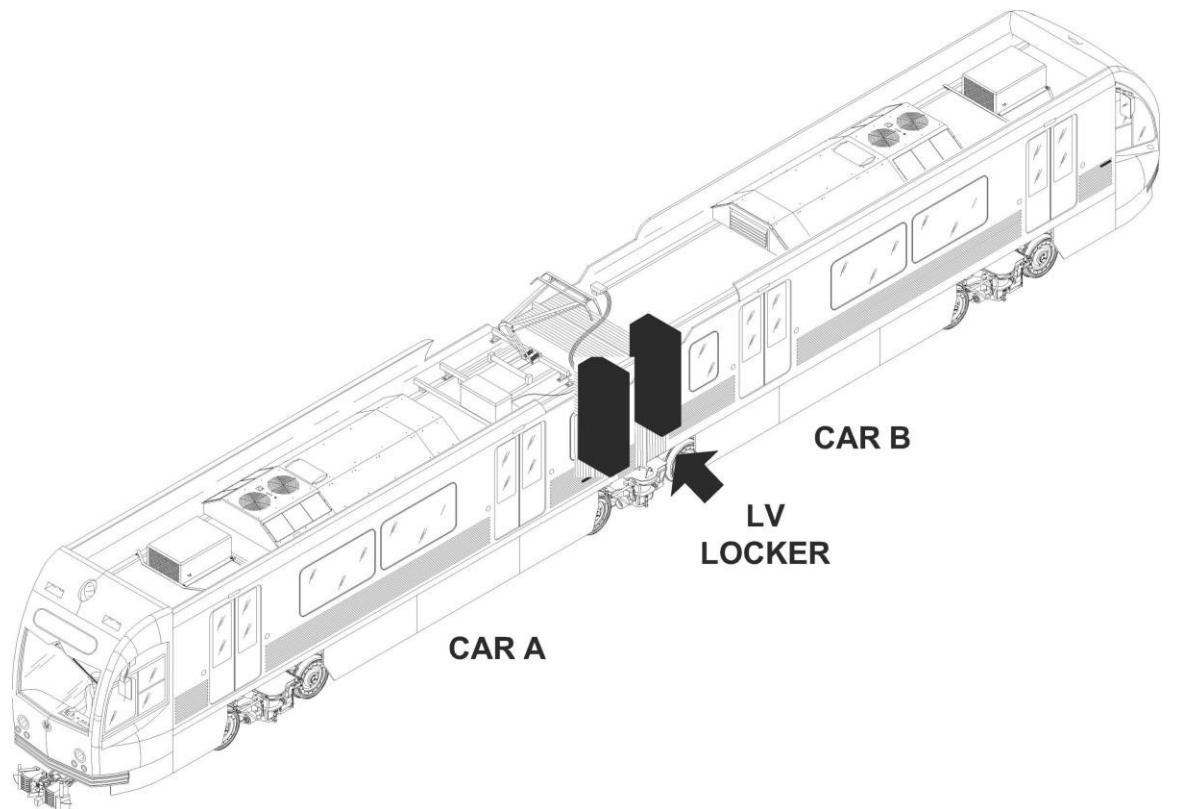
P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-03

System: DOORS	Sheet: 1/8
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: DIODE	Man Hours: 0.5
Maintenance Task: REPLACEMENT(TYPICAL)	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-03

System:

DOORS

Sheet:

2/8

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

DIODE

Man Hours:

0.5

Maintenance Task:

REPLACEMENT(TYPICAL)**APPLICABILITY:**

This Replacement procedure is applicable to the following Items :

TABLE 1 DIODES IDENTIFICATION & LOCATIONS

LABEL	DESCRIPTION	TYPE	P/N	CAR	LOCATION	FUNCTIONAL DIAGRAMS	
						SCHEMATICS	SHEET
9V01	PROTECTIVE DIODE	ABB DACOM	211VV01044B	A-B	LV LOCKER	LV	83
9V02	PROTECTIVE DIODE	ABB DACOM	211VV01044B	A-B	LV LOCKER	LV	83
9V03	PROTECTIVE DIODE	ABB DACOM	211VV01044B	A-B	LV LOCKER	LV	83
9V04	PROTECTIVE DIODE	ABB DACOM	211VV01044B	A-B	LV LOCKER	LV	83
9V05	RECTIFIER DIODE	IXYS	DSA 17-16A	A-B	LV LOCKER	LV	82
9V07	PROTECTIVE DIODE	ABB DACOM	211VV01044B	A-B	LV LOCKER	LV	87
9V08	PROTECTIVE DIODE	ABB DACOM	211VV01044B	A-B	LV LOCKER	LV	87
9V09	PROTECTIVE DIODE	ABB DACOM	211VV01044B	A-B	LV LOCKER	LV	83

SAFETY PRECAUTIONS:

LACMTA Maintenance Shop Safety Rules & Regulations

**CAUTION :SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO PERFORM THE
REPLACEMENT OF ANY ITEM LISTED IN THE PREVIOUS TABLE 1****TOOLS:**

SOLDERING STATION

LACMTA Maintenance Shop Standard Tools Kit

MULTIMETER (FLUKE 87 V/E) PN 4EB19

CONSUMABLES:

CRC 2000 Contact Cleaner

SPARE PARTS:

Refer to Table 1 Diodes Identification & Locations

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-00-00-00/R-03	
System: DOORS	Sheet: 3/8
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: DIODE	Man Hours: 0.5
Maintenance Task: REPLACEMENT(TYPICAL)	

PROCEDURE:

PRELIMINARY OPERATIONS

Set the Vehicle in safety conditions in accordance with LACMTA Maintenance Shop Regulations:

1. Place the Vehicle in the Maintenance Shop.
2. Set the Master Controller Handle to FSB position.
3. Make sure that all Parking Brakes are applied (by checking on the IDU "Parking Brake A and B Not Released" and on Indicator Panel "A" "Park / Friction Brake" ON).
4. Remove Electrical Power from Vehicle by lowering the Pantograph.
5. Turn the Transfer Switch to OFF.
6. Set the Pantograph Control Motor Switch (5F02 CB LV Locker "A" Section) to OFF.
7. Attach a tag with the person's name who removed power.

NOTE: That person knows why the Power was removed and when it safe to restore it.
Only the individual whose name appears on the tag or a person with his approval should remove the tag and restore power.

CAUTION :SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO PERFORM THE REPLACEMENT OF ANY ITEM LISTED IN THE PREVIOUS TABLE 1.

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-03

System:

DOORS

Sheet:

4/8

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

DIODE

Man Hours:

0.5

Maintenance Task:

REPLACEMENT(TYPICAL)

PROCEDURE (CONT'D):

To perform the Task proceed as follows:

REMOVAL (refer to Figures 1& 2)

1. Gain access to the Diodes Section on the side of the Rack installed in the "A" & "B" LV Lockers, by opening the relevant LV Locker Door using Maintenance Key.
2. Locate the Diode to be replaced.

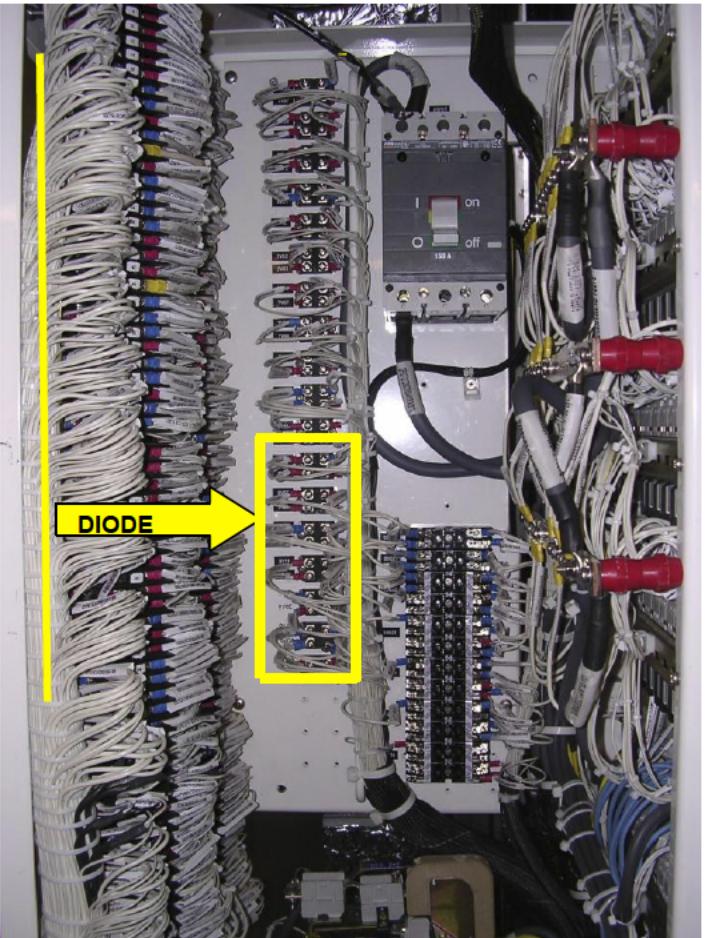


FIGURE 1 DIODE LOCATION

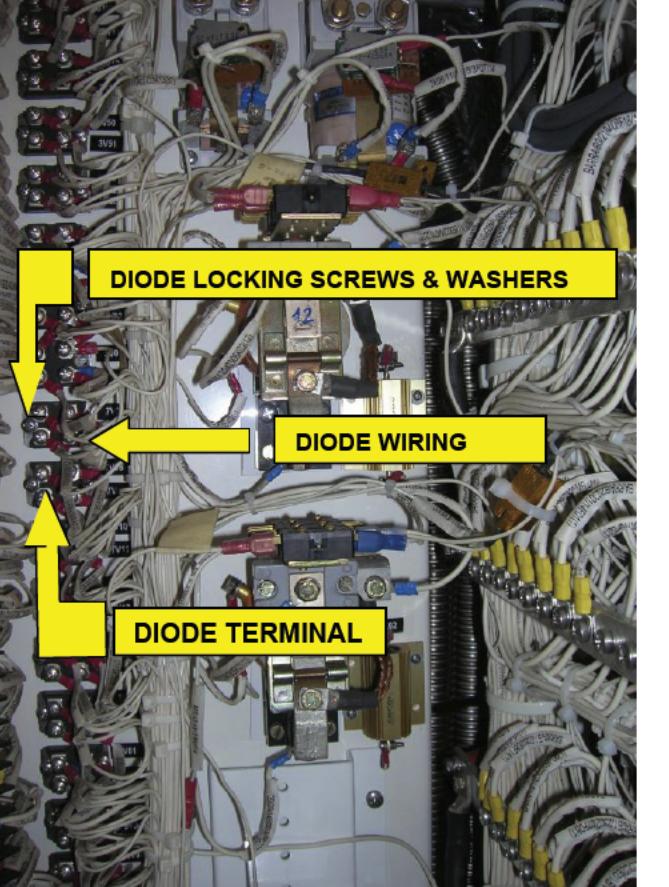
P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-00-00-00/R-03	
System: DOORS	Sheet: 5/8
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: DIODE	Man Hours: 0.5
Maintenance Task: REPLACEMENT(TYPICAL)	
PROCEDURE (CONT'D): 3. Take note of Wiring Color Codes and relevant positions on Diode Terminals. 4. By means of Soldering Station, disconnect the Wiring from Diode Terminals by loosening and removing the relevant Screws on 4 Diode Terminals. Retain them for later use. 5. Loose and remove the Diode Locking Screws & Washers. Retain them for later use. 6. Remove the Diode and discard it.	
INSTALLATION 1. Install the Diode in position. 2. Install Diode Locking Screws & Washers Torque as required. 3. Connect the Wiring to the Diode Terminals according to their position and Color Codes previously noted. Torque as required 4. Leave the LV Locker and close the LV locker Door using Maintenance Key 5. Restore Electrical Power	
	

FIGURE 2 DIODE REPLACEMENT

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-03

System:

DOORS

Sheet:

6/8

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

DIODE

Man Hours:

0.5

Maintenance Task:

REPLACEMENT(TYPICAL)

PROCEDURE (CONT'D):

9V05 DIODE REMOVAL (Refer to Figure 3)

NOTE: Refer to Figure 04-I-02.39 (PART I of this Section) for 9V05 Diode detailed Wiring Diagram Functional Schematic

1. Position the 9F11(K3) CB to OFF position
2. Locate the B3 Bus Bar (A/B Locker) where the Diode to be replaced is installed
3. Remove and discard the heat-shrink pipe from Diode Terminal
4. Disconnect the Cable from Diode Ring by unsoldering the tin welding
5. Disconnect the Plate (with Diode) from the Bus Bar
6. Remove and discard the Diode from the Plate, paying attention to not damage the Plate.

9V05 DIODE INSTALLATION (Refer to Figure 3)

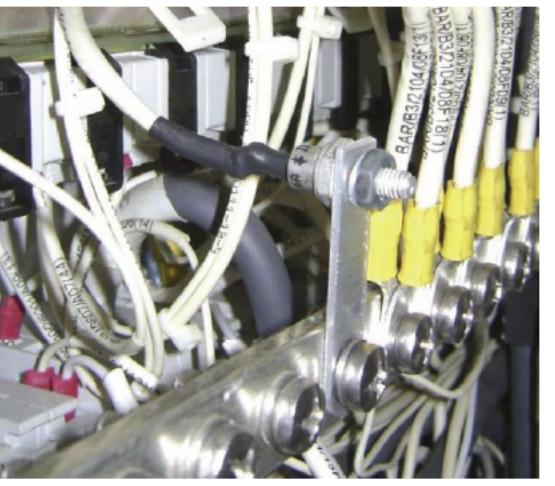
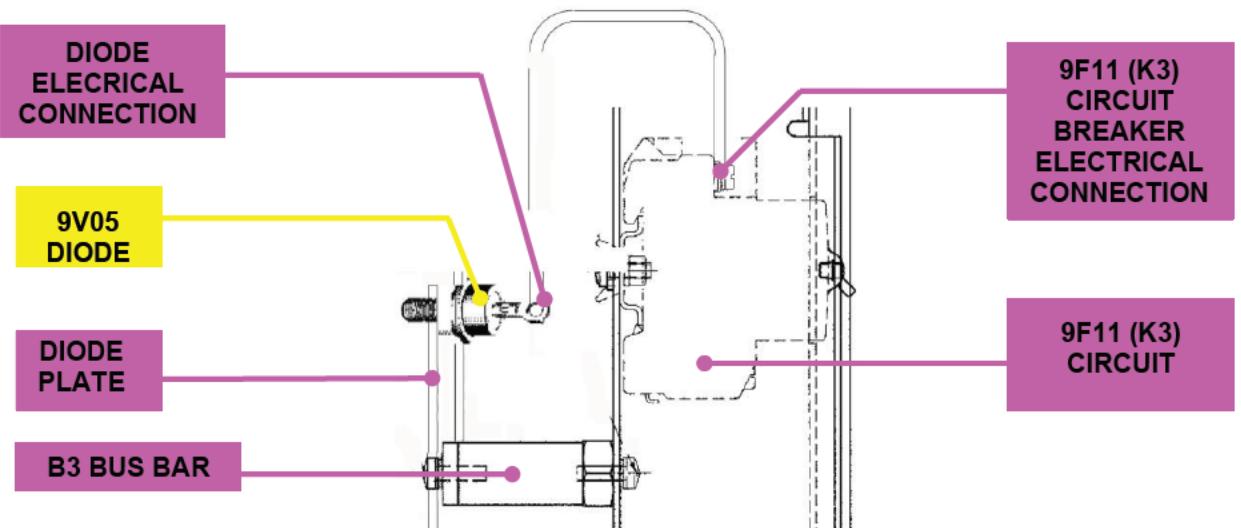
1. Ins9F11(K3) CB tall and secure a "new" Diode on the Plate.
2. Cut /re-size the Diode Terminal Cable in order to be properly fitted into the Diode Ring, then make a tin solder.
3. Protect the Terminal after soldering by "new" suitable heat-shrink pipe.
4. Install the Plate (with Diode) on the B3 Bus Bar in the same location where was previously removed
5. Position the 9F11(K3) CB to OFF position

FINAL OPERATIONS

1. Upon completing the Diode Replacement it is advised to test the Door System
2. Record Task Results on the Defect Report Card for administrative and maintenance planning

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the replaced Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion.**"

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-00-00-00/R-03	
System: DOORS	Sheet: 7/8
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: DIODE	Man Hours: 0.5
Maintenance Task: REPLACEMENT(TYPICAL)	
PROCEDURE (CONT'D):	
	
9V05 DIODE ON THE B3 BUS BAR "A" CAR 9V05 DIODE ON THE B3 BUS BAR "B" CAR	
	
FIGURE 3 RECTIFIER DIODE REPLACEMENT	

B3 BUS BAR

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-00-00-00/R-03

System:

DOORS

Sheet:

8/8

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

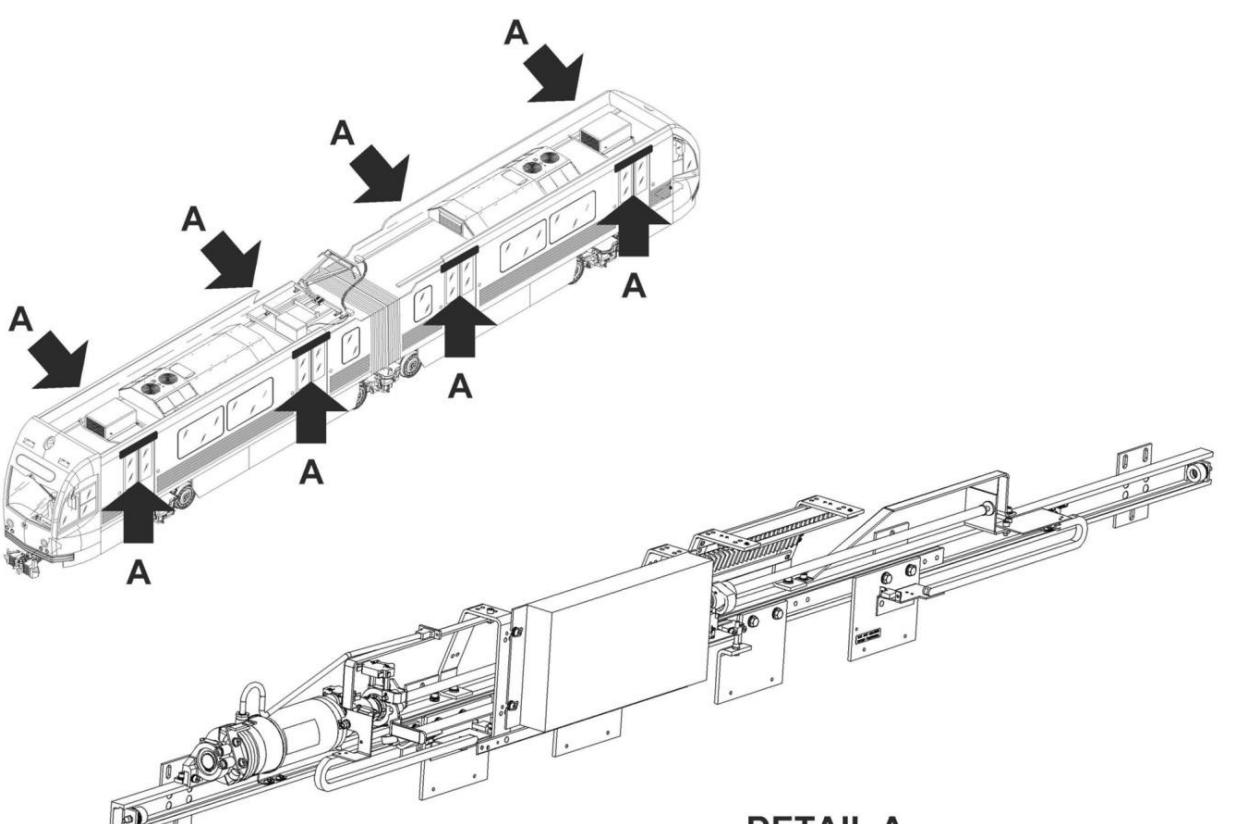
DIODE

Man Hours:

0.5

Maintenance Task:

REPLACEMENT(TYPICAL)**INTENTIONALLY LEFT BLANK**

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-01-00-00/R-00	
System: DOORS	Sheet: 1/6
Subsystem/Assy: DOOR OPERATOR	Unit:
Component:	Man Hours: 7
Maintenance Task: REPLACEMENT	
LOCATION:	
 DETAIL A	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-00-00/R-00

System:

DOORS

Sheet:

2/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

Component:

Man Hours:

7

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

**WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF.
POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.**

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

CAUTION :TO AVOID POSSIBLE CAR BODY DEFLECTION IT IS ADVISED DURING ALL INSTALLATION PROCESS TO HAVE THE CAR POSITIONED ON A CALIBRATED HORIZONTAL TRACK WITH BRAKES ON.

TOOLS:

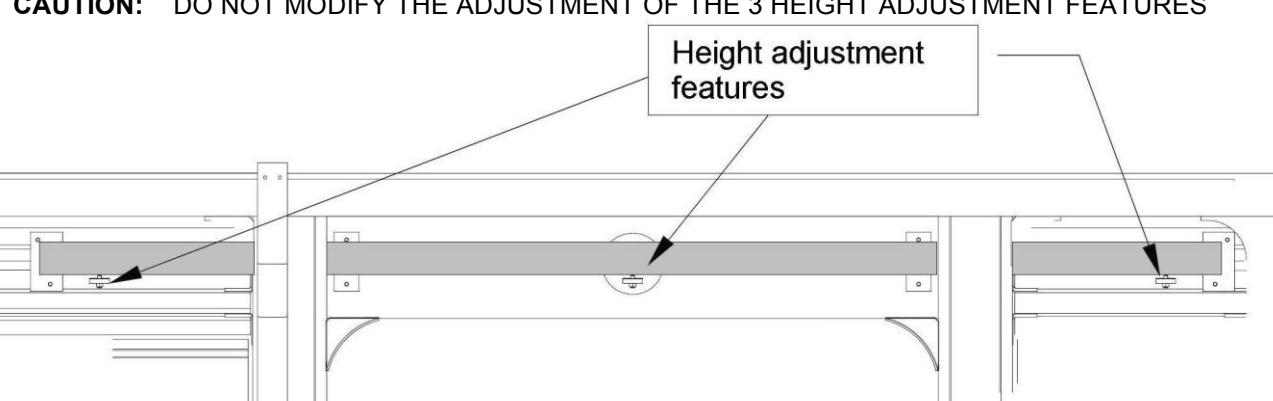
LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

CONTACTAL (Grease) P/N: 9550123-000

SPARE PARTS:

DOOR OPERATOR P/N: AA03GY0 (E149408-0101)

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-00-00/R-00			
System: DOORS	Sheet: 3/6		
Subsystem/Assy: DOOR OPERATOR	Unit:		
Component:	Man Hours: 7		
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT: CAUTION: DO NOT MODIFY THE ADJUSTMENT OF THE 3 HEIGHT ADJUSTMENT FEATURES			
			
FIGURE 1 - HEIGHT ADJUSTMENT FEATURES			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-00-00/R-00

System:

DOORS

Subsystem/Assy:

DOOR OPERATOR

Component:

Unit:

Sheet:

4/6

Component:

Man Hours:

7

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D)

REMOVAL

- a) Unplug the Connectors from the EDCU.
- b) Disconnect the Grounding Wire on EDCU.
- c) Remove the two Door Panels according to Sheet R-C-04-05-01-00-R-00.
- d) Remove all Door Operator Fixing Hardware (5, 6, 7) but NOT the Central one (11, 12, 13).
- e) Mark the location and put aside the Shims (8, 9, 10).
- f) Remove the Central Fixing Hardware (11, 12, 13)
- g) Support and remove the Door Operator (1).

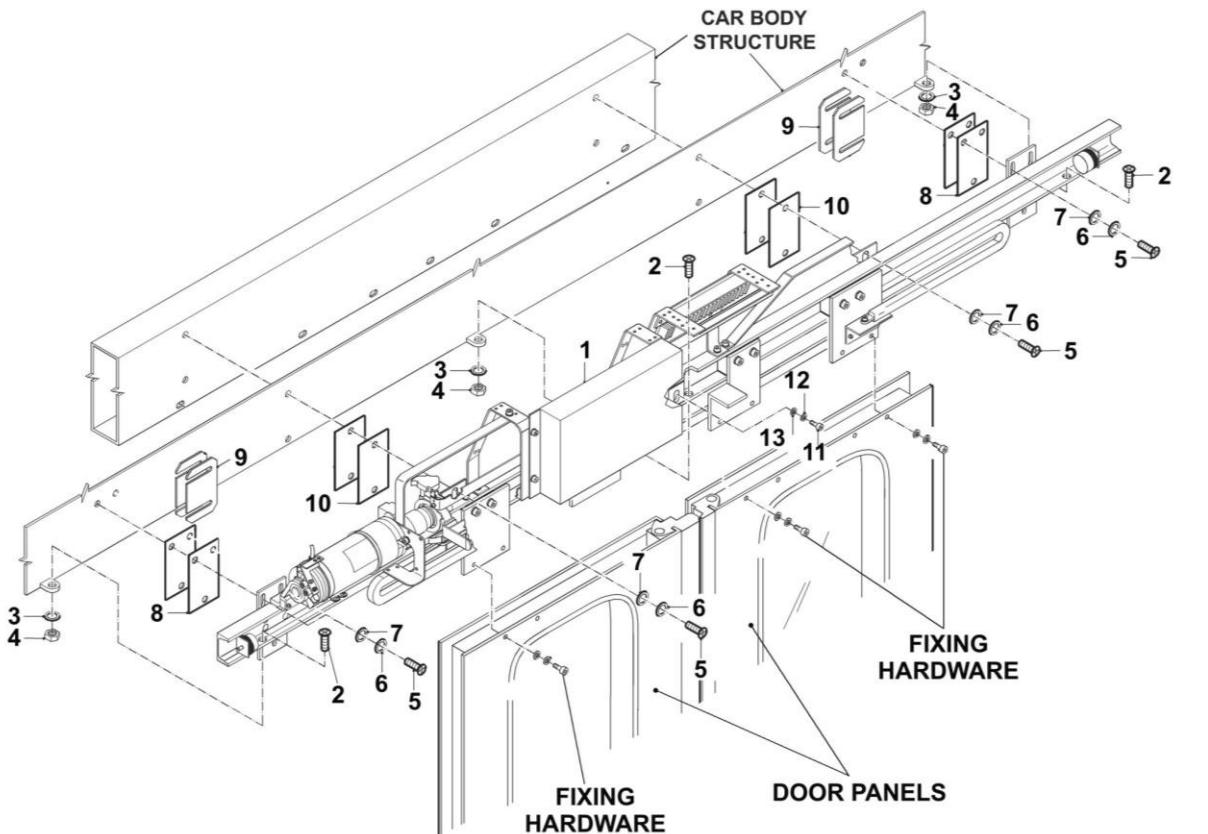


FIGURE 2 - DOOR OPERATOR REPLACEMENT

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-01-00-00/R-00	
System: DOORS	Sheet: 5/6
Subsystem/Assy: DOOR OPERATOR	Unit:
Component:	Man Hours: 7
Maintenance Task: REPLACEMENT	
PROCEDURE:	
INSTALLATION	
a)	Put the Door Operator suspension on Top of the 3 Height Adjustment Features (2, 3, 4).
b)	Install the Central Fixing Hardware (11, 12, 13) while putting back on the original amount of Shims.
c)	Install the 10 others Fixing Hardware (5, 6, 7) along with the original amount of Shims (8, 9, 10).
d)	Torque the Fixing Screws at nominal torque value (16 ft-lb).
e)	Reinstall the Door Panels according to Sheet R-C-04-05-01-00-R-00.
f)	Connect the Grounding Wire to EDCU with CONTACTAL Grease.
g)	Plug in all Connectors to EDCU Sockets.
ADJUSTMENT	
a)	The Dipswitches configuration on EDCU will be set according to the relevant Door Identification.
b)	Perform the Dipswitches "V" Adjustment according to Sheet R-P-04-01-00-00/I-00.
c)	Perform the V" Adjustment:, Threshold Final Adjustment and Bottom Guide Gap Adjustment according to Sheet R-P-04-05-00-00/I-00.
FINAL OPERATIONS	
a)	Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1
b)	Record Task Results on the Defect Report Card for administrative and maintenance planning.
NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.	
Refer to HOW TO USE THE R-CM SHEETS (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 " At every Task Completion. "	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-00-00/R-00

System:

DOORS

Subsystem/Assy:

DOOR OPERATOR

Component:

Unit:

Sheet:

6/6

Man Hours:

7

Maintenance Task:

REPLACEMENT**INTENTIONALLY
LEFT BLANK**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-00/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

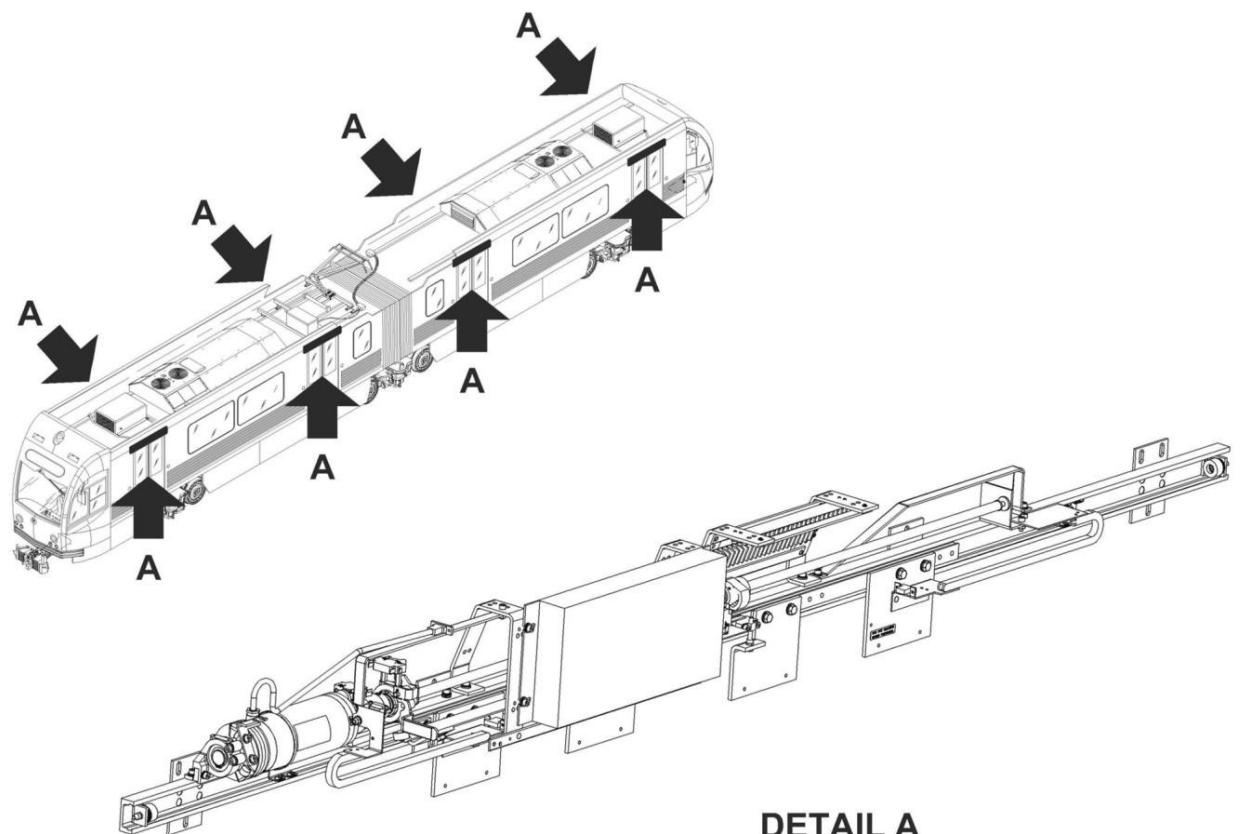
7

Man Hours:

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

Man Hours:

7

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION : THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

CAUTION : TO AVOID POSSIBLE CAR BODY DEFLECTION IT IS ADVISED DURING ALL INSTALLATION PROCESS TO HAVE THE CAR POSITIONED ON A CALIBRATED HORIZONTAL TRACK WITH BRAKES ON.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 243 P/N: 951 02 07-000

SPARE PARTS:

RAIL ASSEMBLY P/N: E149409-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-02-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: RAIL ASSEMBLY		
Component:		Man Hours:	7
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Remove the Door Operator according to Maintenance Sheet R-C-04-01-01-01-R-00. b) Remove the EDCU according to Maintenance Sheet R-C-04-01-10-00-R-00. c) Remove the Motorization according to Maintenance Sheet R-C-04-01-03-01-R-00. d) Remove the Driving Screw according to Maintenance Sheet R-C-04-01-05-01-R-00. e) Remove the two Driving Forks according to Maintenance Sheet R-C-04-01-06-00-R-00. f) Remove and put aside all wiring and other supports fitted on top of Hanging Rail. g) Remove the Hanging Rail. h) Install a new Hanging Rail i) Mount all the Equipment which was fitted on Top of the Hanging Rail. j) Install and adjust the Driving Forks according to Maintenance Sheet R-C-04-01-06-00-R-00. k) Install and adjust the Driving Screw according to Maintenance Sheet R-C-04-01-03-01-R-00. l) Install and adjust the Motorization according to Maintenance Sheet R-C-04-01-05-01-R-00. m) Install and adjust the EDCU according to Maintenance Sheet R-C-04-01-10-00-R-00. n) Install and adjust the Door Operator according to Maintenance Sheet R-C-04-01-01-R-00. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

Man Hours:

7

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

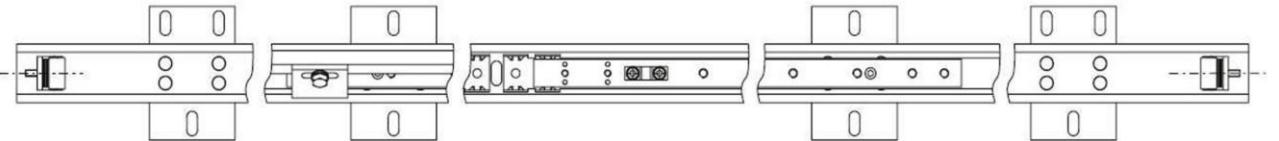


FIGURE 1 - HANGING RAIL ASSEMBLY

FINAL OPERATIONS

- a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- b) Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-02/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

OPENING END STOPS

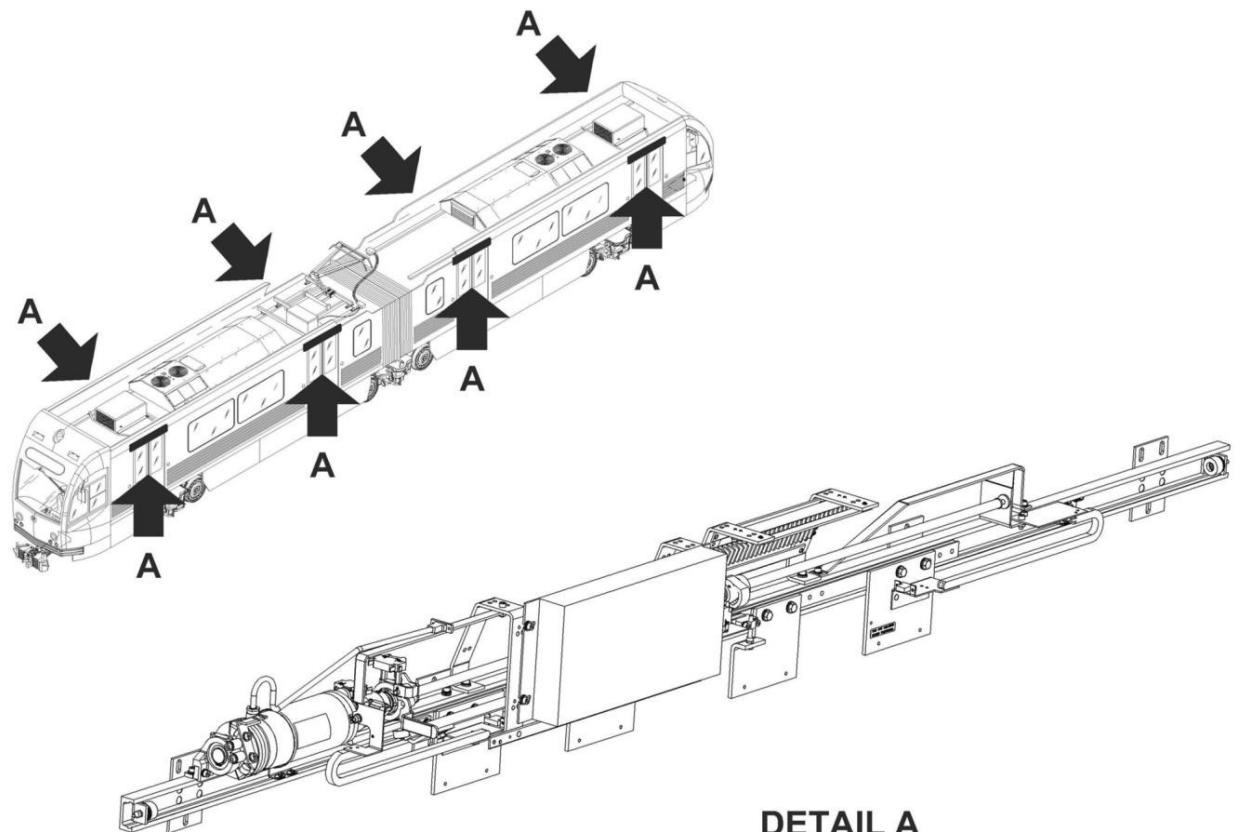
Man Hours:

0.17

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-02/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

OPENING END STOPS

Man Hours:

0.17

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 243 P/N: 951 02 07-000

SPARE PARTS:

OPENING END STOPS P/N: E139825-0102

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-02-02/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: RAIL ASSEMBLY		
Component: OPENING END STOPS		Man Hours: 0.17	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
a)	Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations.		
b)	Set the Transfer switch to ON or LOCAL position		
c)	Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1		
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
a)	Remove the equipped End Stop Central Screw and put it aside.		
b)	Put the Spring Washer and the Rubber Buffer Adjusting Washers aside.		
c)	Assemble all Adjusting Washers, the Rubber Buffer, the Spring Washer and the Screws.		
d)	Torque the fixing screw.		
e)	Proceed to the Opening End Stop Adjustment to make sure that Door Opening is nominal and that both Door Panels reach the End Stop at the End of the Opening Stroke as follows :		
1.	Open the Door manually till the Door reaches the End of the Opening Stroke.		
2.	Adjust the Door Opening by adding or removing Washers (1 mm thick) from the Equipped End Stops in order to obtain a Door Opening Width of 48 + 0.15 inch , measured at 3.3 ft above Floor Level.		
3.	Make sure both End Stops are in contact with the Door Panel in open position.		

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-02/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

OPENING END STOPS

Man Hours:

0.17

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

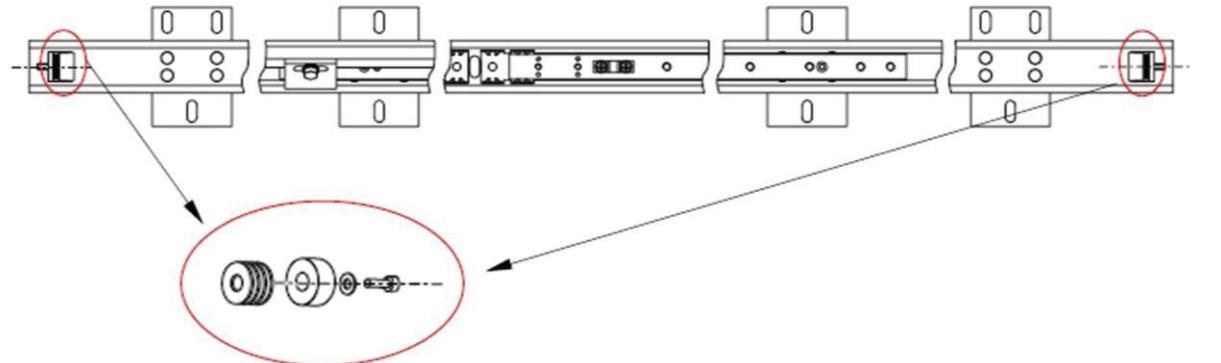


FIGURE1 - OPENING END STOPS REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-03/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

ADJUSTABLE CAM

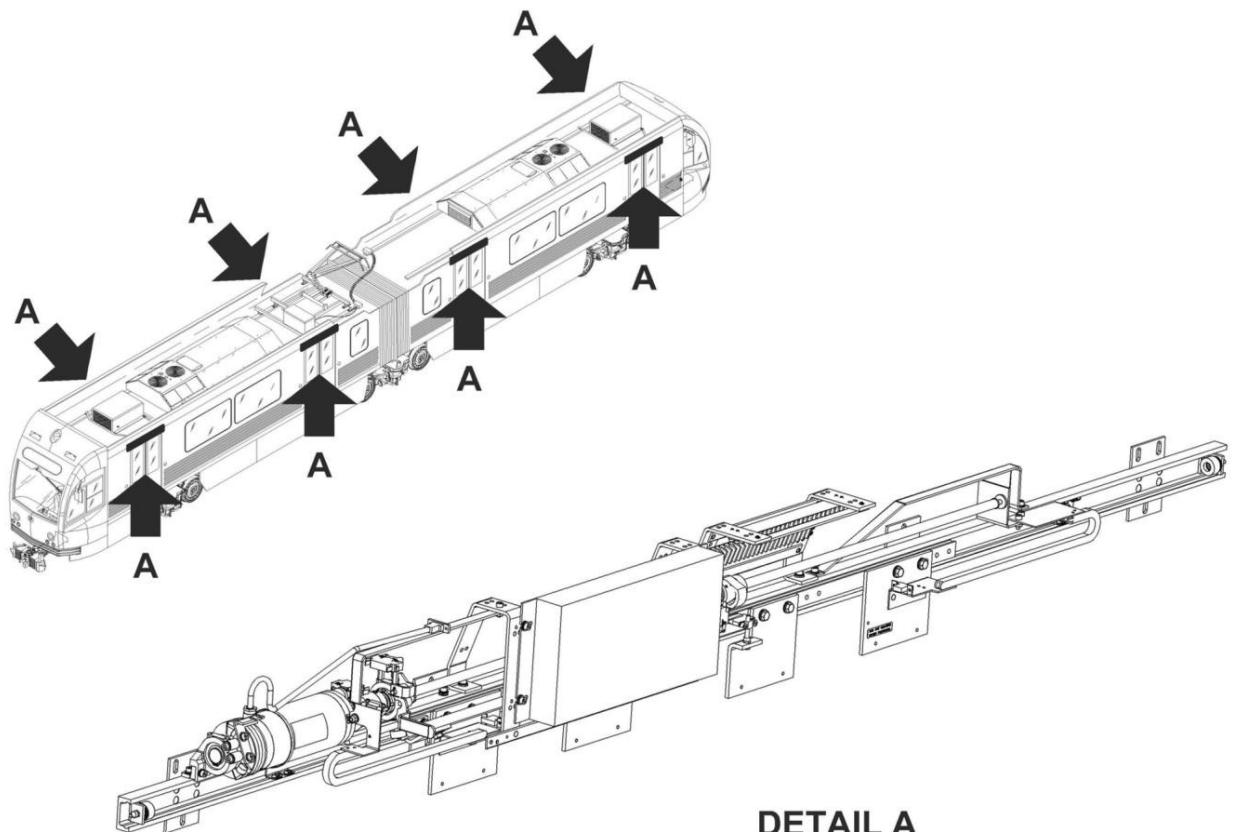
Man Hours:

0.25

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-03/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

ADJUSTABLE CAM

Man Hours:

0.25

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

N/A

SPARE PARTS:

ADJUSTABLE CAM P/N: E145932-0001

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-02-03/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: RAIL ASSEMBLY		
Component: ADJUSTABLE CAM		Man Hours: 0.25	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Remove the two Fixing Screws and Washers. b) Remove the Adjustable Cam. c) Place the new Adjustable Cam while taking care of its orientation. d) Mount and torque the Fixing Screws and Washers e) Proceed to the Adjustment according to Sheet R-P-04-01-00-00/I-00 Step 3 			
FINAL OPERATIONS <ul style="list-style-type: none"> a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1. b) Record Task Results on the Defect Report Card for administrative and maintenance planning. <p>NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.</p> <p>Refer to HOW TO USE THE R-CM SHEETS (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."</p>			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-02-03/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

RAIL ASSEMBLY

Component:

ADJUSTABLE CAM

Man Hours:

0.25

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

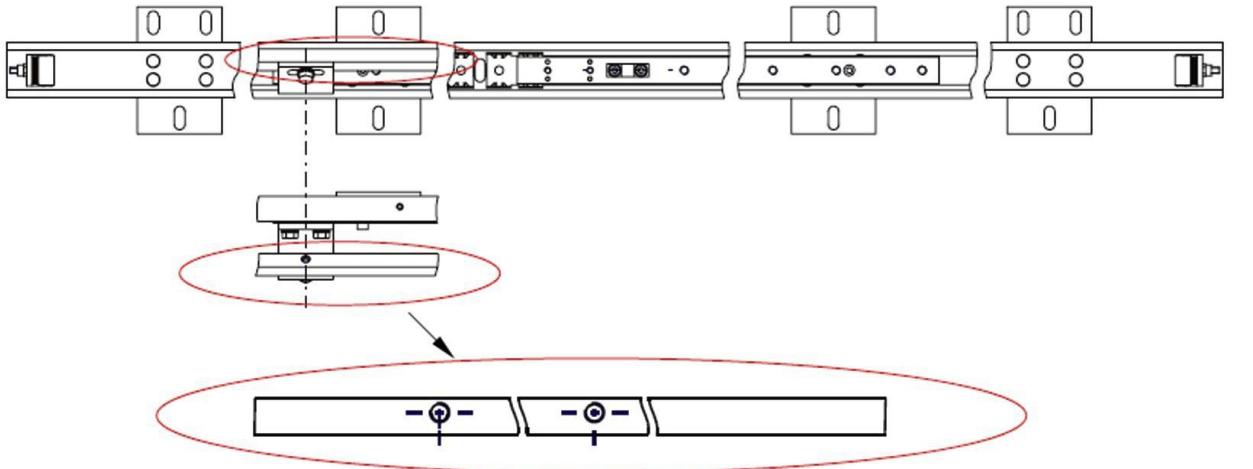


FIGURE 1 - ADJUSTABLE CAM REPLACEMENT

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-00/R-00

System:

DOORS

Sheet:

1/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

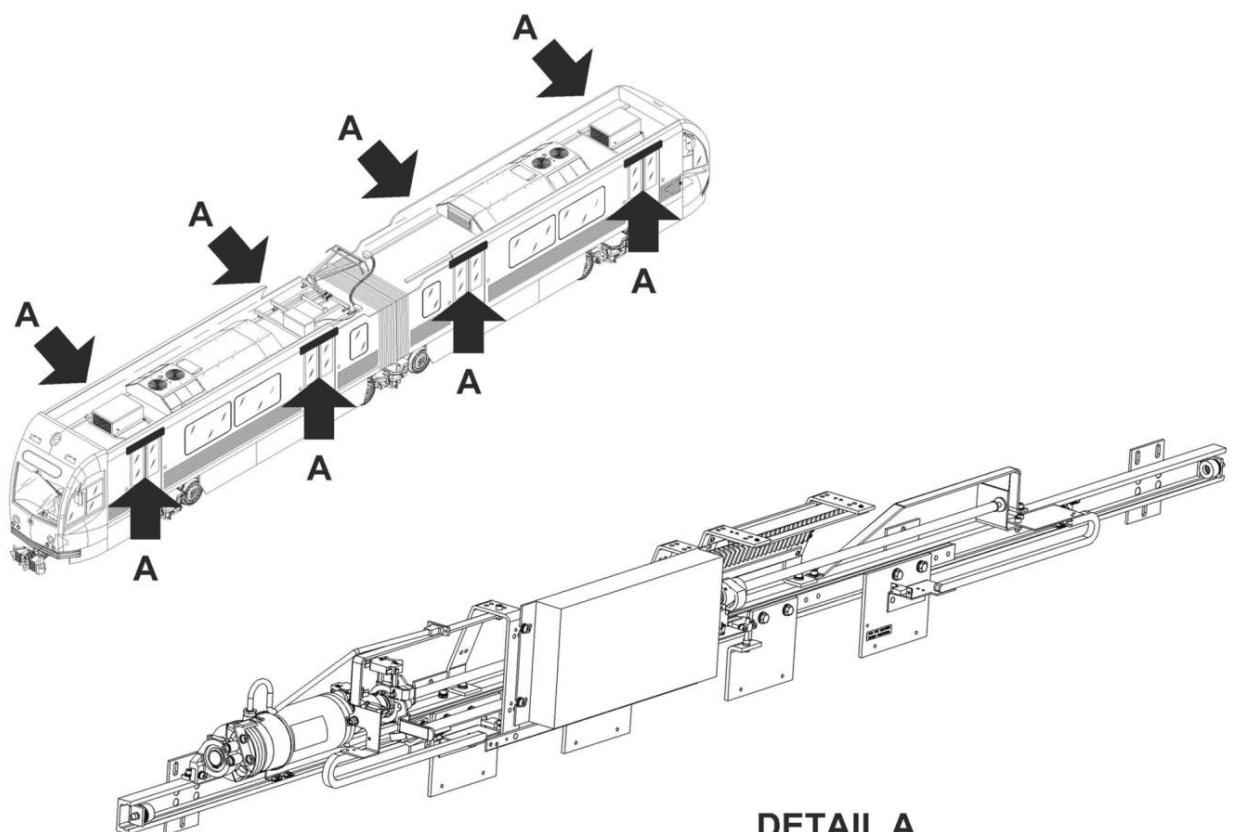
Man Hours:

2

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-00/R-00

System:

DOORS

Sheet:

2/6

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSEMBLY

Component:

Man Hours:

2

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Millimeter Rule

CONSUMABLES:

LOCTITE 243

P/N: 9510207-000

SPARE PARTS:

DRIVING SCREW ASSEMBLY

P/N: E149410-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-00/R-00			
System: DOORS		Sheet: 3/6	
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: DRIVE ASSEMBLY		
Component:		Man Hours:	2
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Remove the Door Operator according to Maintenance Sheet R-C-04-01-01-R-00. b) Note the Wire Label Locations on DCS & LOS Switches Terminals. c) Disconnect the Wires on the LOS Switch (1) and on the two DCS Switches (2). d) Remove the two Fixing Screws (3) from the Extremity Bracket. e) Remove the two Fixing Screws (4) from Lockout Bearing. f) Remove the two Fixing Screws (5) from the Central Bearing. g) Disengage the Driving Ball Nuts (6) from the Driving Forks. h) Remove the Coupling Cogged Boss from the Driving Screw Shaft End (7). i) Get a new Drive Assembly. j) Position and secure the DCS vertically in the upper position. k) Fit the LH Coupling Cogged Boss on Driving Screw Shaft End. l) Slide the Ball Nuts (6) along the Screw to align them with the Driving Forks and engage them in the Forks. m) Install the Coupling Rubber Sleeve on the Motor Cogged Boss. n) Fit the Driving Screw Coupling Cogged Boss into the Rubber Sleeve. o) Install and torque the Lockout (4), Central (5) and Extremity (3) Bearing Fixing Screws. p) Reconnect the LOS (1) Switch and DCS (2) Wires as noted prior to disconnection. q) Install the Door Operator according to Maintenance Sheet R-C-04-01-01-R-00. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-00/R-00

System:

DOORS

Sheet:

4/6

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSEMBLY

Component:

Man Hours:

2

Maintenance Task:

REPLACEMENT

PROCEDURE:

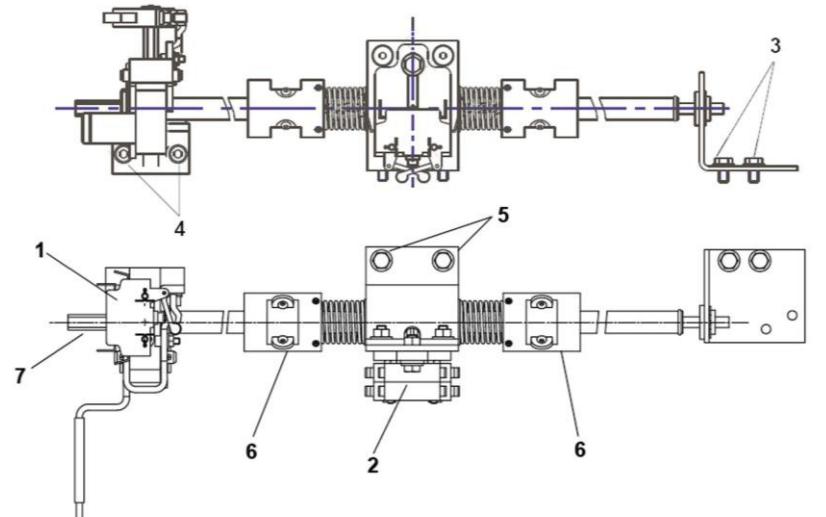


FIGURE 1 - DRIVE ASSY REMOVAL

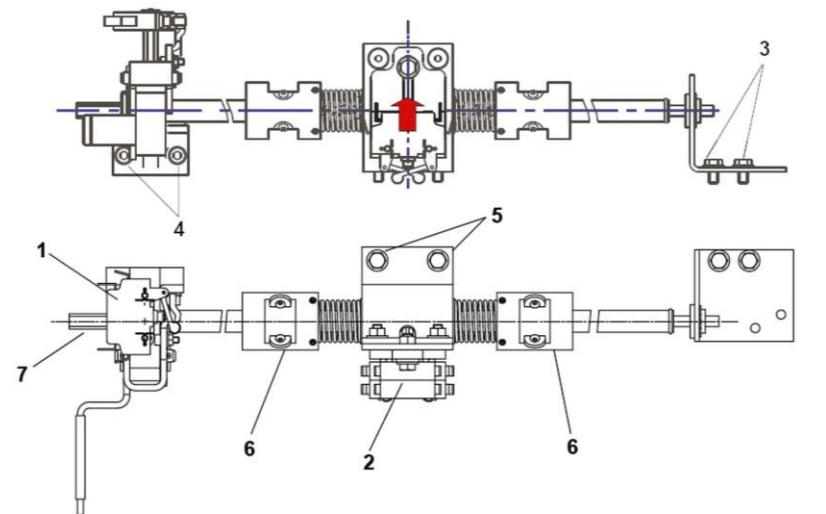


FIGURE 2 - DRIVE ASSY INSTALLATION

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-00/R-00

System:

DOORS

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSEMBLY

Component:

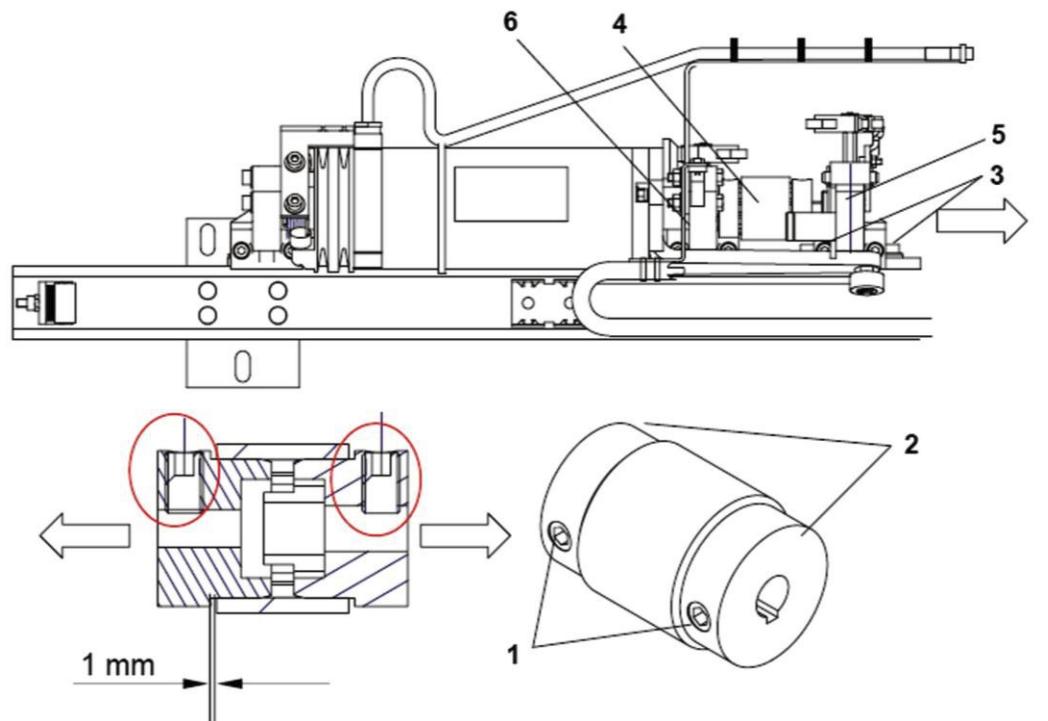
Man Hours:

2

Maintenance Task:

REPLACEMENT
PROCEDURE:
ADJUSTMENT

- a) Adjust the Driving Screw Cogged Boss in order to keep **0.04 inch (1 mm)** play with the Coupling Rubber Sleeve.
- b) Torque the HC M10x 16 Fixing Screw on Driving Screw Cogged Boss with Loctite 243.
- c) DCS Switches (2, Figure 2) Vertical Adjustment will be done on board the vehicle according to Sheet R-P-04-01-00-00/I-00 Step 1.


FIGURE 3 - DRIVE ASSY ADJUSTMENT

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-00/R-00

System:

DOORS

Sheet:

6/6

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSEMBLY

Component:

Man Hours:

2

Maintenance Task:

REPLACEMENT**PROCEDURE:****FINAL OPERATIONS**

- a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- b) Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-02/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

SCREW ASSEMBLY

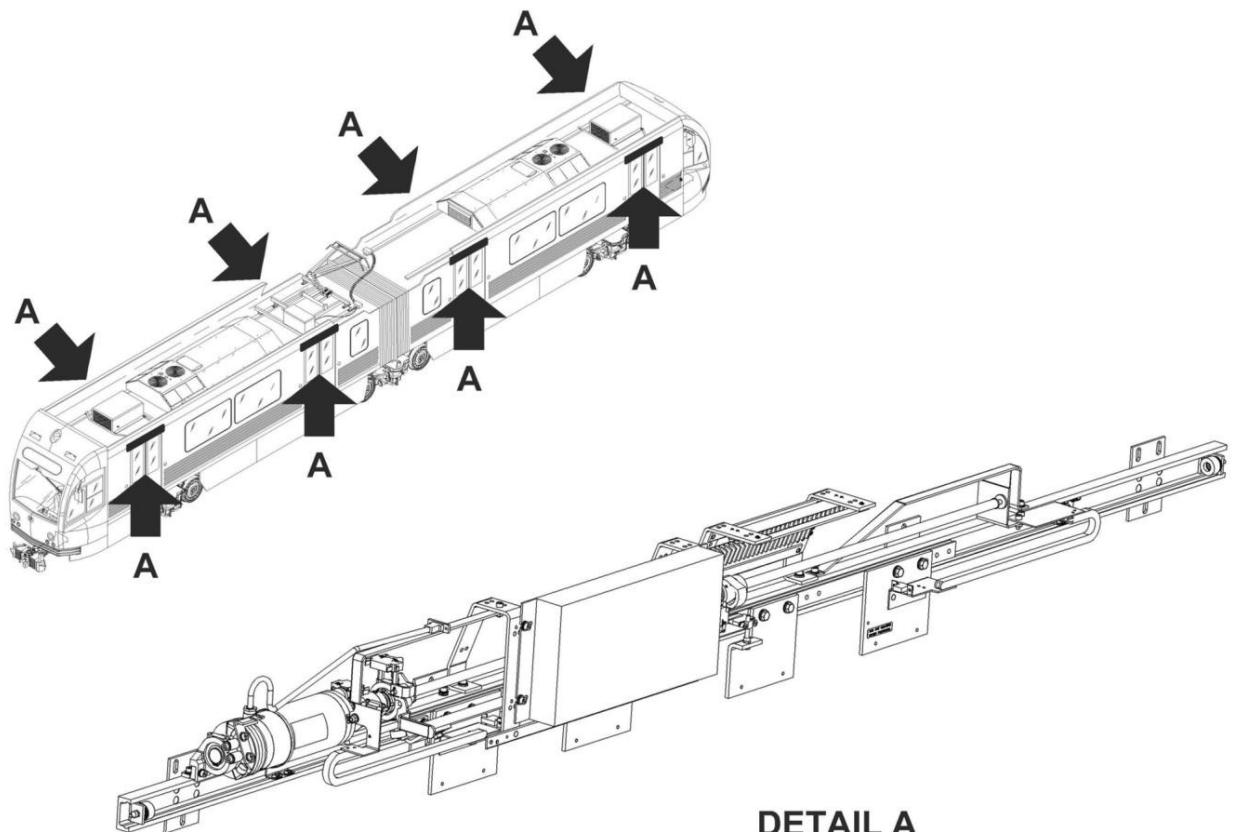
Man Hours:

2

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-02/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSEMBLY

Component:

SCREW ASSEMBLY

Man Hours:

2

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

NA

SPARE PARTS:

Screw Assembly (Driving Screw)

P/N: E149411-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-02/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: DRIVE ASSEMBLY		
Component: SCREW ASSEMBLY		Man Hours:	2
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Drive Assembly according to Maintenance Sheet R-C-04-01-03-00/R-00. b) Remove the Extremity Bearing Assembly according to Maintenance Sheet R-C-04-01-03-06-R-00. c) Remove the Inner Ring with Grooved Pin (1). d) Remove the Lockout Bearing according to Maintenance Sheet R-C-04-01-03-07-R-00. e) Remove the Central Bearing according to Maintenance Sheet R-C-04-01-03-05-R-00. f) Remove the Driving Screw Assembly. g) Get a new Driving Screw. Assy h) Install the Central Bearing according to Maintenance Sheet R-C-04-01-03-05-R-00 on the new Driving Screw Assy i) Install the retrieved Inner Ring with a new Grooved Pin 4x24 on the new Driving Screw Assy j) Install the Lockout Bearing according to Maintenance Sheet R-C-04-01-03-07-R-00 on the new Driving Screw. k) Install the Extremity Bearing Assembly on the the new Driving Screw Assy according to Sheet R-C-04-01-03-06-R-00. l) Install the Drive Assembly according to Maintenance Sheet R-C-04-01-03-00/R-00. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-02/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSEMBLY

Component:

SCREW ASSEMBLY

Man Hours:

2

Maintenance Task:

REPLACEMENT

PROCEDURE:

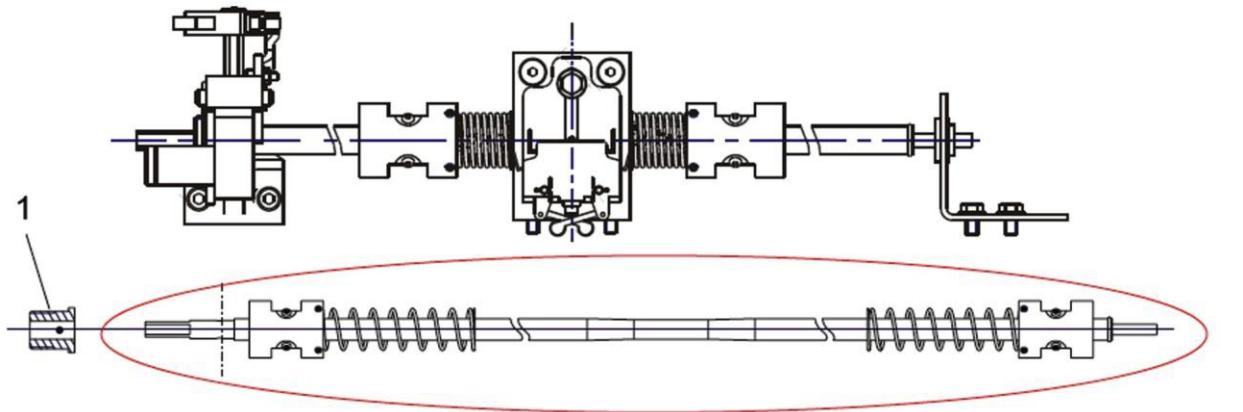


FIGURE 1 - DRIVING SCREW REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-02/R-01

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

SCREW ASSY SPRING RING

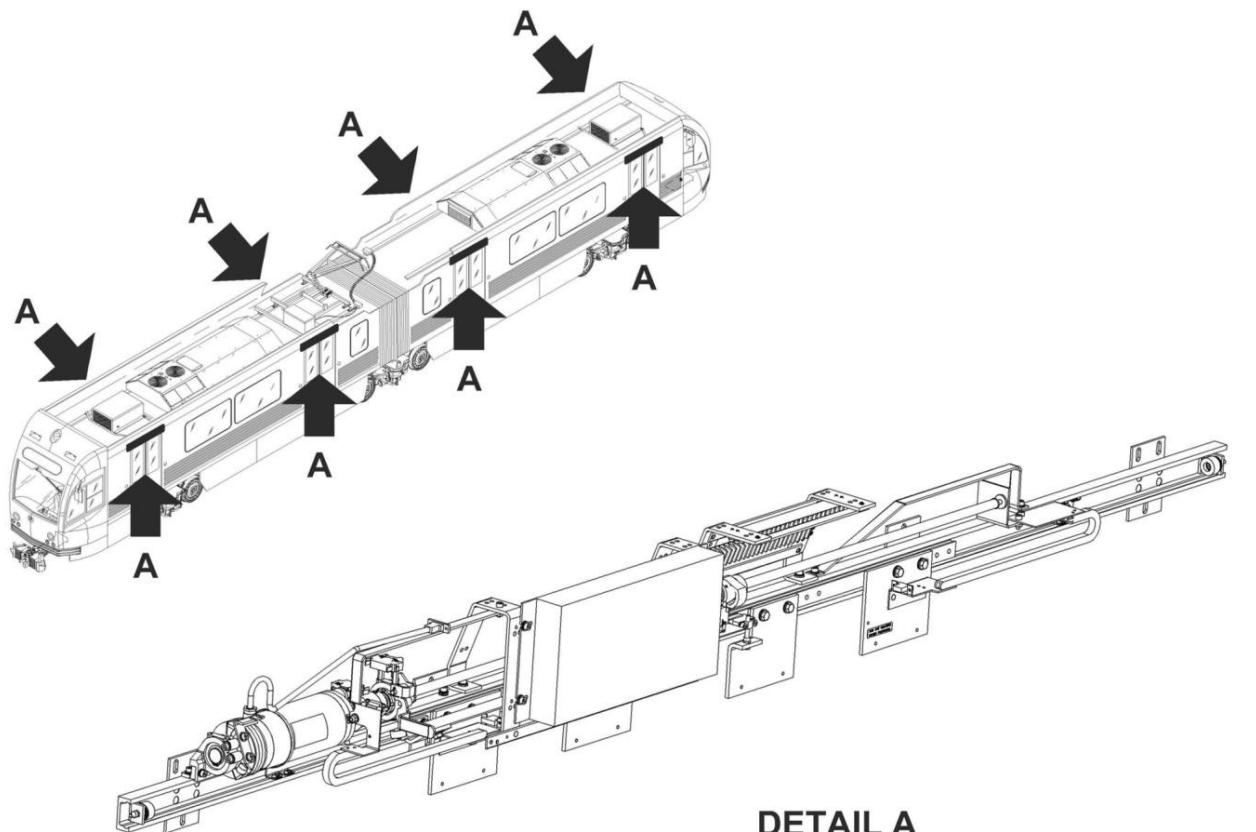
Man Hours:

2

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-02/R-01

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

SCREW ASSY SPRING RING

Man Hours:

2

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Millimeter Rule

CONSUMABLES:

NA

SPARE PARTS:

SPRING RING

P/N: E132209-001

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-02/R-01			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: DRIVE ASSEMBLY		
Component: SCREW ASSY SPRING RING		Man Hours: 2	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<p>CAUTION MAKE SURE THE DRIVING BALL NUTS REMAIN ENGAGED ON THE SCREW AT ANY TIME.</p> <ul style="list-style-type: none"> a) Remove the Driving Screw according to Maintenance Sheet R-C-04-01-03-02/R-00. b) Dismount the Spring Ring with a Retaining Ring Pliers and a flat Screwdriver. c) Get a new Spring Ring. d) Install the new Spring Ring with a Retaining Ring Pliers. e) Install the Driving Screw according to Maintenance Sheet R-C-04-01-03-02/R-00. f) Check that the Spring Ring properly sits in its dedicated Groove. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-02/R-01

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

SCREW ASSY SPRING RING

Man Hours:

2

Maintenance Task:

REPLACEMENT

PROCEDURE:

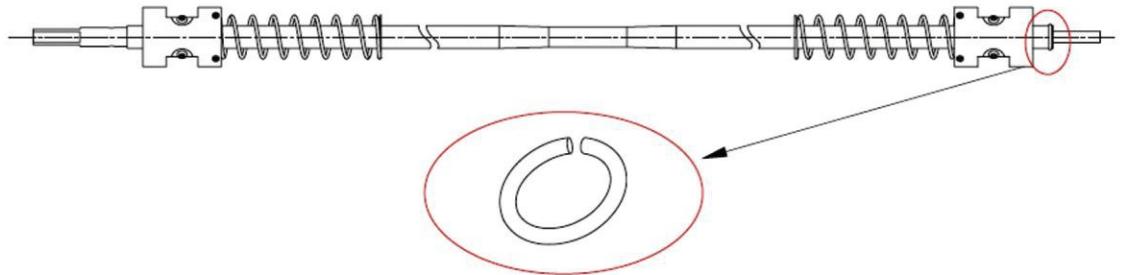


FIGURE 1 - SPRING RING REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion**”.

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-03/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

COMPRESSION SPRING

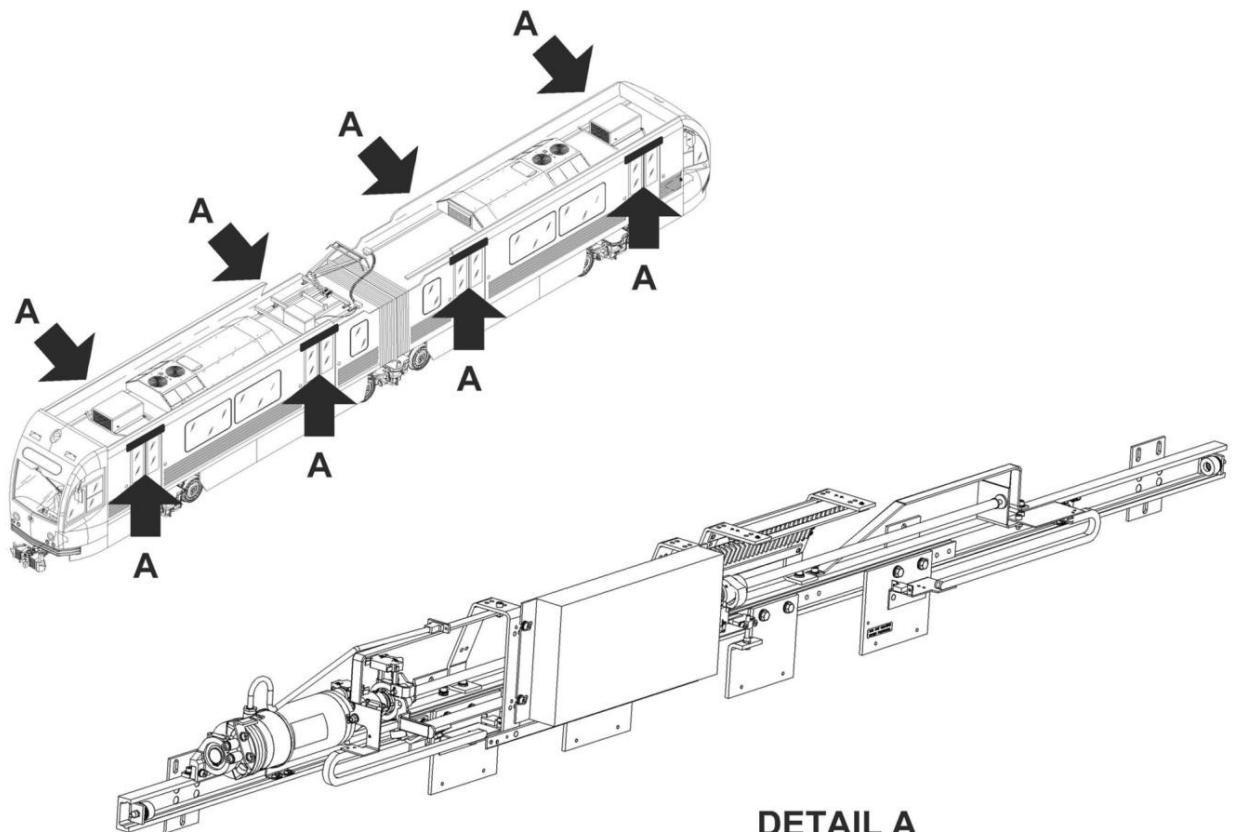
Man Hours:

0.25

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-03/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

COMPRESSION SPRING

Man Hours:

0.25

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Millimeter Rule

CONSUMABLES:

BARDHAL POLYPLEX (grease)

SPARE PARTS:

COMPRESSION SPRING

P/N: E149465-001

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-03/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: DRIVE ASSEMBLY		
Component: COMPRESSION SPRING		Man Hours: 0.25	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Driving Screw according to Sheet R-C-04-01-03-02/R-00. b) Push the Ball Nuts apart to make sure the Springs are not compressed. c) Loosen the 2 Screws fixing the Spring on each Driving Ball Nut. d) With a pair of pliers hold the Spring first Loop open and insert it onto the Driving Screw Shaft. e) Turn the Spring around the Driving Screw Shaft until the Spring is disengaged. f) Get a new Compression Spring g) Grease the Compression Springs with BARDHAL POLYPLEX. h) With a pair of pliers hold the Spring first Loop open and insert it on the Driving Screw Shaft. i) Turn the Spring around the Driving Screw Shaft until the Spring is fully engaged. j) Inset the Spring in the Ball Nut Groove and torque the 2 Holding Screws. k) Repeat the same procedure with the other Compression Spring on the other side. l) Install the Driving Screw according to Maintenance Sheet R-C-04-01-03-02/R-00. m) Check that the Compression Springs are integral with the Ball Nuts. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-03/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

COMPRESSION SPRING

Man Hours:

0.25

Maintenance Task:

REPLACEMENT

PROCEDURE:

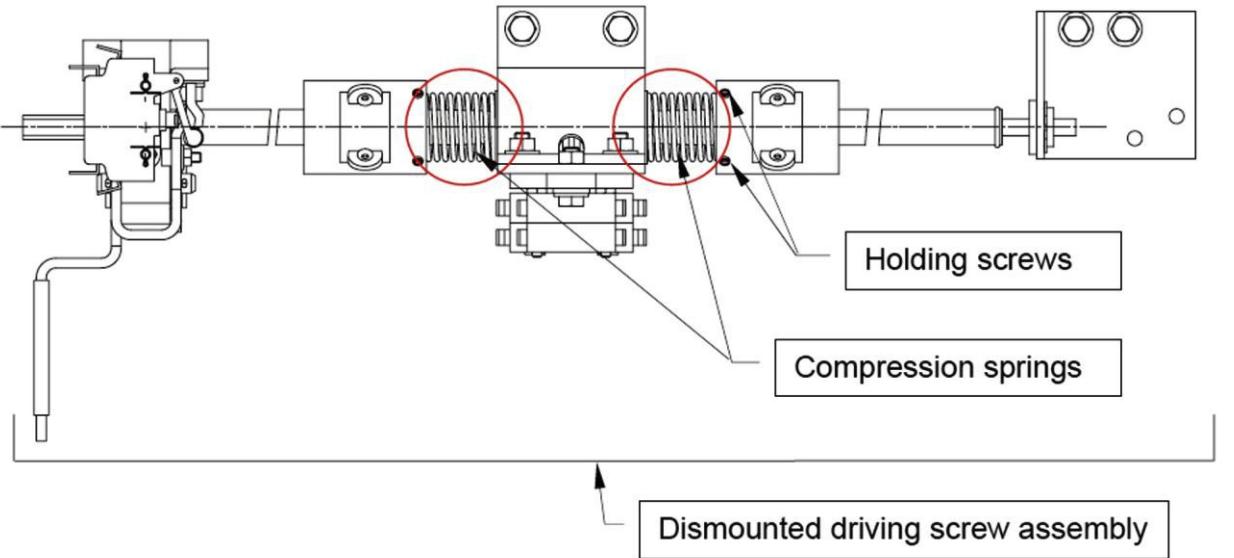


FIGURE 1 - COMPRESSION SPRING REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-05/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

CENTRAL BEARING ASSY

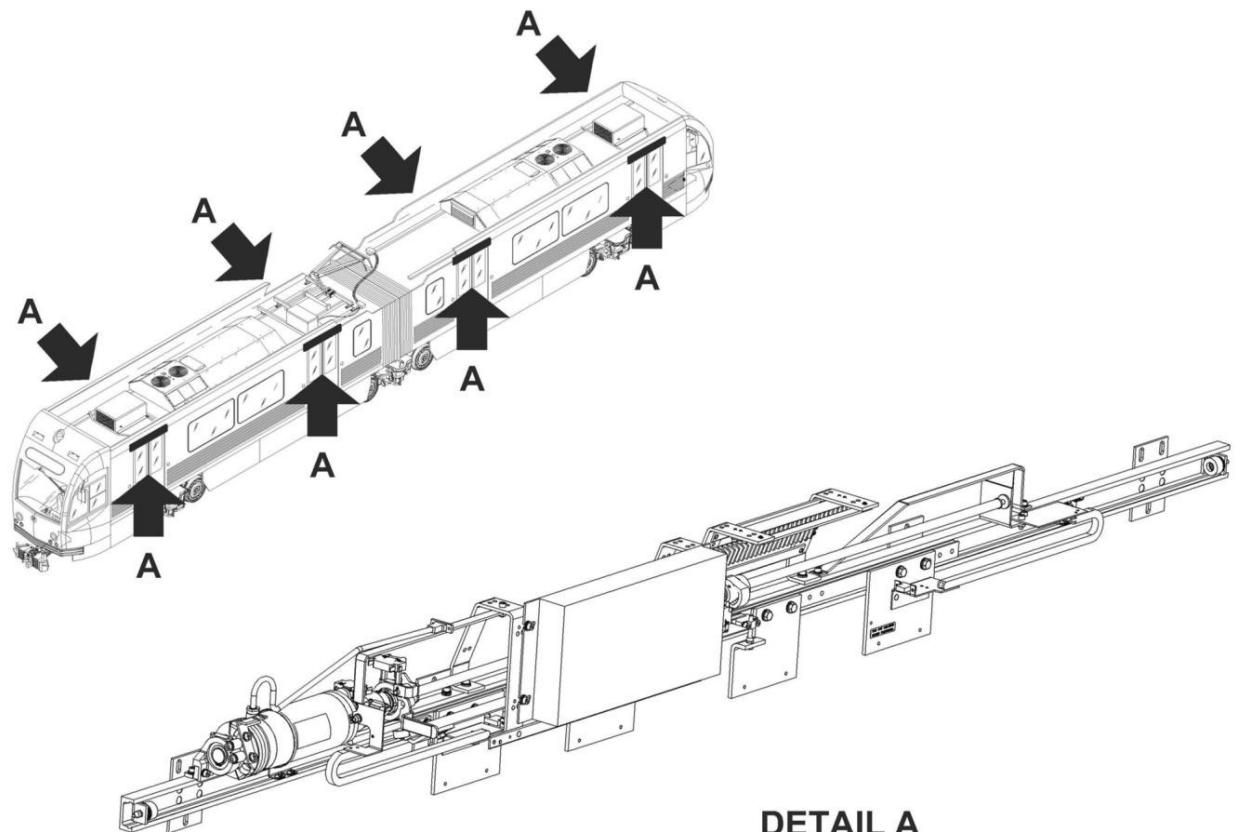
Man Hours:

0.5

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-05/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

CENTRAL BEARING ASSY

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Retaining Ring Pliers

Notched Nut Spanner

CONSUMABLES:

LOCTITE 243	P/N: 9510207-000
Grease BARDHAL POLYPLEX	P/N: 9550132-000 or SKF LGEP-2

SPARE PARTS:

CENTRAL BEARING ASSY	P/N: E149339-0103
HALF BUSHING	P/N: E132332-001

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-05/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: DRIVE ASSEMBLY		
Component: CENTRAL BEARING ASSY		Man Hours:	0.5
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Drive Assembly from the Door Operator according to Sheet R-C-04-01-03-00/R-00. b) Disconnect the DSC Switches Connections Take notes of the relevant Wiring Codes. c) Remove the two Bolts. d) Remove the Half Bushings. e) Remove the two the Central Bearing Bracket Fixing Screws. f) If necessary remove the DSC Switches according to Sheet R-C-04-01-03-05/R-01. g) Get new Central Bearing Assy and relevant new Half Bushings. h) If removed, install the DCS switches according to Sheet R-C-04-01-03-05/R-01. i) Grease the Half Bushings with BARDHAL POLYPLEX or SKF LGEP-2 Grease. j) Install the two Half Bushings on the Driving Screw. k) Assemble the remaining parts around the two Half Bushings. l) Torque the 2 Fixing Bolts. m) Install the Drive Assembly on the Door Operator according to Sheet R-C-04-01-03-00/R-00. n) Check that the Switches are freely actuated by hand. o) Check the orientation of the DCS Switches according to Figure 1 (Actuating Rollers on Right and Left sides). 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-05/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

CENTRAL BEARING ASSY

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE:

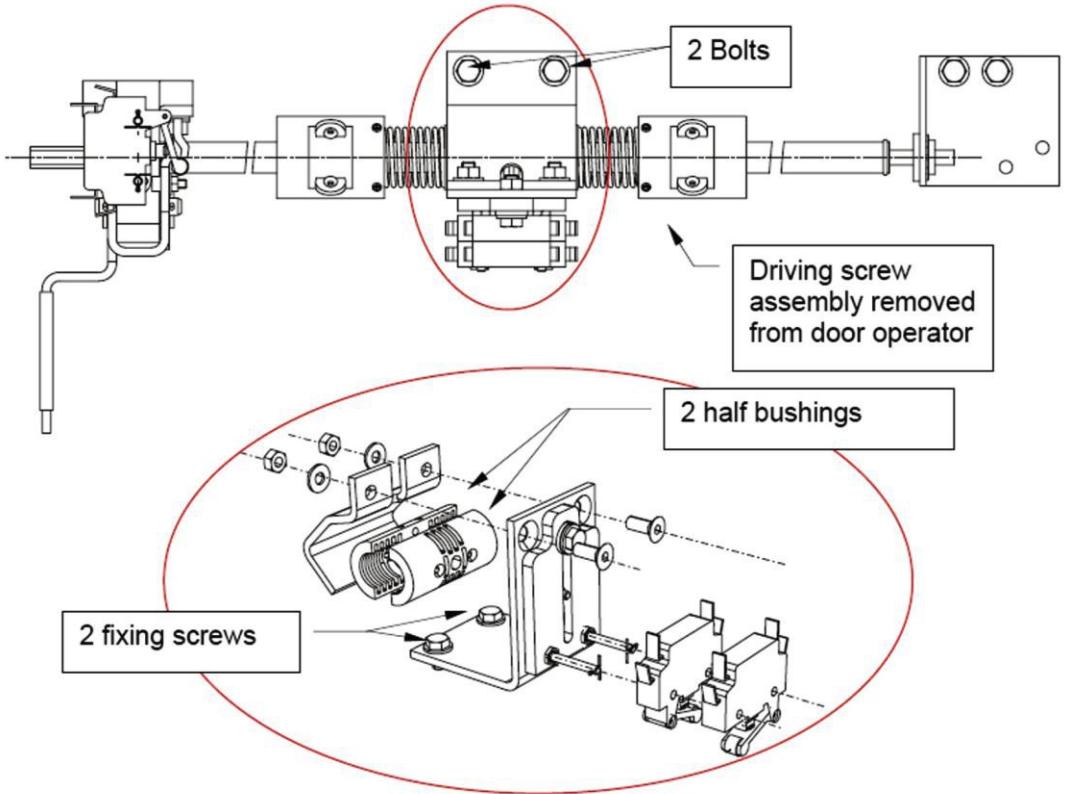


FIGURE 1 - CENTRAL BEARING ASSEMBLY REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

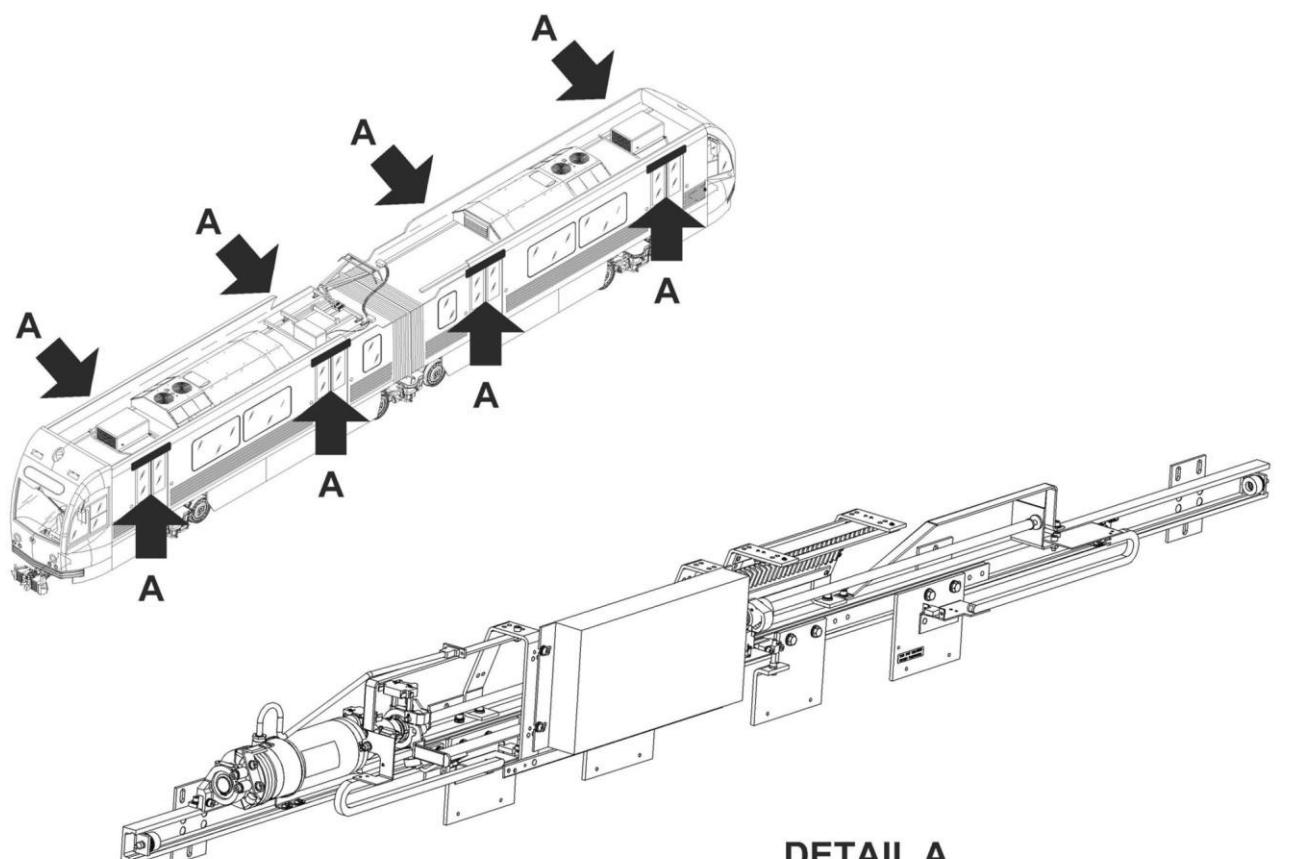
P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-05/R-01

System: DOORS	Sheet: 1/4
Subsystem/Assy: DOOR OPERATOR	Unit: DRIVE ASSEMBLY
Component: DCS SWITCHES	Man Hours: 0.33
Maintenance Task: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-05/R-01

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

DCS SWITCHES

Man Hours:

0.33

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Retaining Ring Pliers

Notched Nut Spanner

CONSUMABLES:

LOCTITE 243
Grease BARDHAL POLYPLEX

P/N: 9510207-000
P/N: 95 50132-000 or SKF LGEP-2

SPARE PARTS:

DCS Switches P/N: E149314-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-05/R-01			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: DRIVE ASSEMBLY		
Component: DCS SWITCHES		Man Hours: 0.33	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Disconnect the DSC Switches Connections Take notes of the relevant Wiring Codes. b) Remove the two Cotter Pins and put them aside. c) Remove the DCS Switches. d) Place the new Switches on their Studs as shown on Figure, paying attention to the Lever orientation. e) Install the retaining Cotter Pins and secure them. f) Reconnect the DCS Switches Wires according to the Wiring layout. Previously noted g) Check that the Switches are freely actuated by hand. h) Check the orientation of the DCS Switches according to Figure 1 (Actuating Rollers on Right and Left sides). 			
FINAL OPERATIONS			
<ul style="list-style-type: none"> a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1 b) Record Task Results on the Defect Report Card for administrative and maintenance planning. 			
<p>NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains. Refer to HOW TO USE THE R-CM SHEETS (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion".</p>			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-05/R-01

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

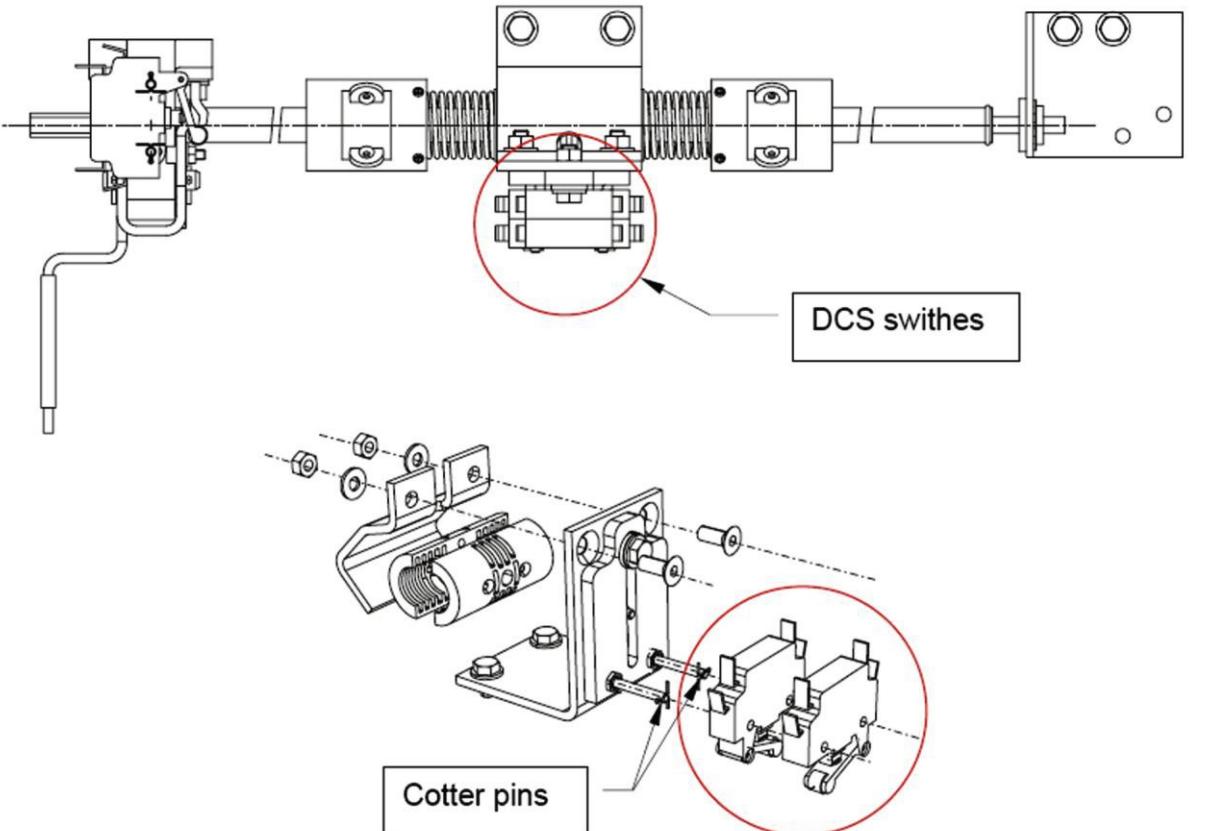
Component:

DCS SWITCHES

Man Hours:

0.33

Maintenance Task:

REPLACEMENT**PROCEDURE:****FIGURE 1 - DCS SWITCHES REPLACEMENT**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-06/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

EXTREMITY BEARING ASSEMBLY

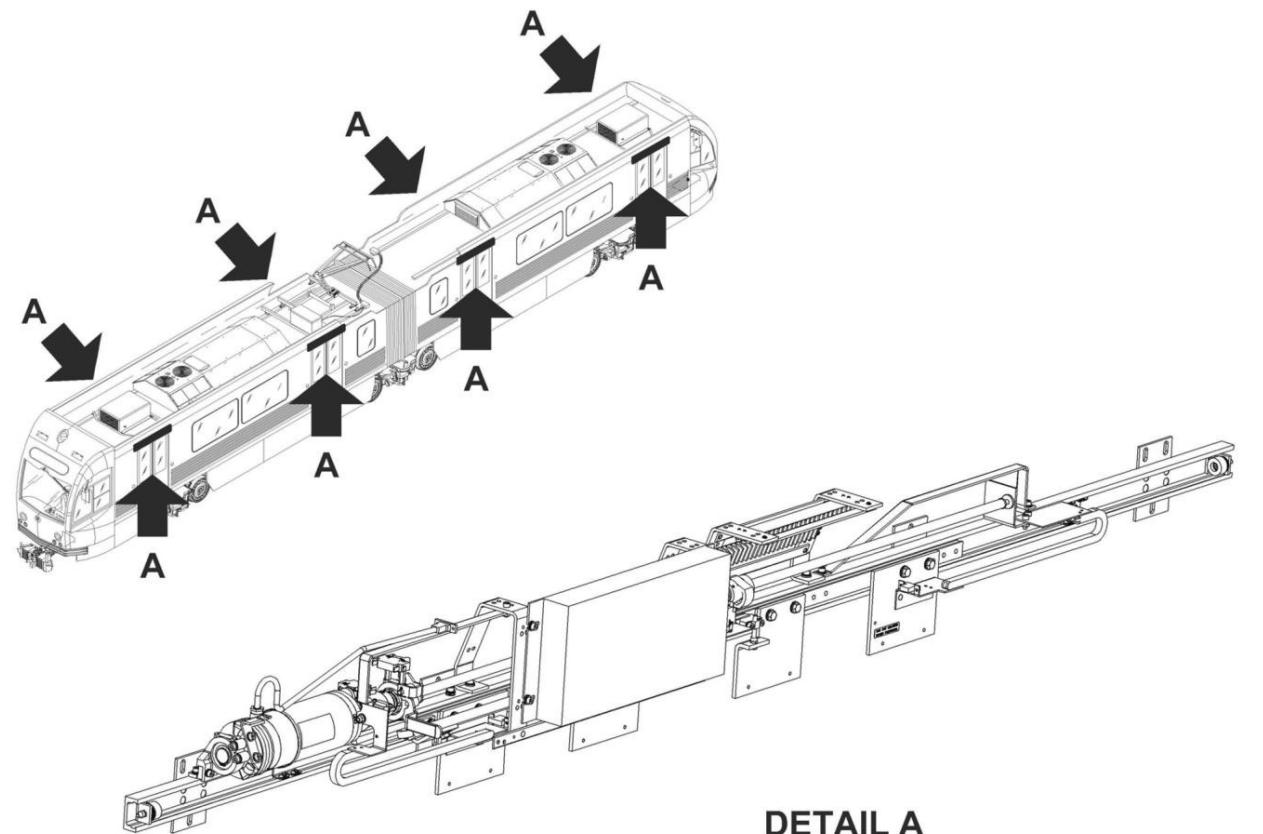
Man Hours:

0.5

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-06/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSEMBLY

Component:

EXTREMITY BEARING ASSEMBLY

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Retaining Ring Pliers

CONSUMABLES:

LOCTITE 243	P/N: 9510207-000
Grease BARDHAL POLYPLEX	P/N: 9550132-000

or SKF LGEP-2

SPARE PARTS:

Extremity Bearing	P/N: E142913-0102
Ring Assy	P/N: E149319-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-06/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: DRIVE ASSEMBLY		
Component: EXTREMITY BEARING ASSEMBLY		Man Hours: 0.5	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Remove the two Screws fixing the Wiring Chain Support. b) Remove the two Fixing Screws on Suspension Rail. c) Pull out the Bearing Assembly from the Driving Screw Shaft End. d) Get new Bearing. e) Grease the Bearing inside with BARDHAL POLYPLEX or SKF LGEP2 Grease. f) Engage the Bearing on the Driving Screw Shaft End. g) Install the two Fixing Screws on the Suspension Rail. h) Install the Screws fixing the Wiring Chain Support. 			
FINAL OPERATIONS <ul style="list-style-type: none"> a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1. b) Record Task Results on the Defect Report Card for administrative and maintenance planning. 			
NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.			
Refer to HOW TO USE THE R-CM SHEETS (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-06/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

DRIVE ASSEMBLY

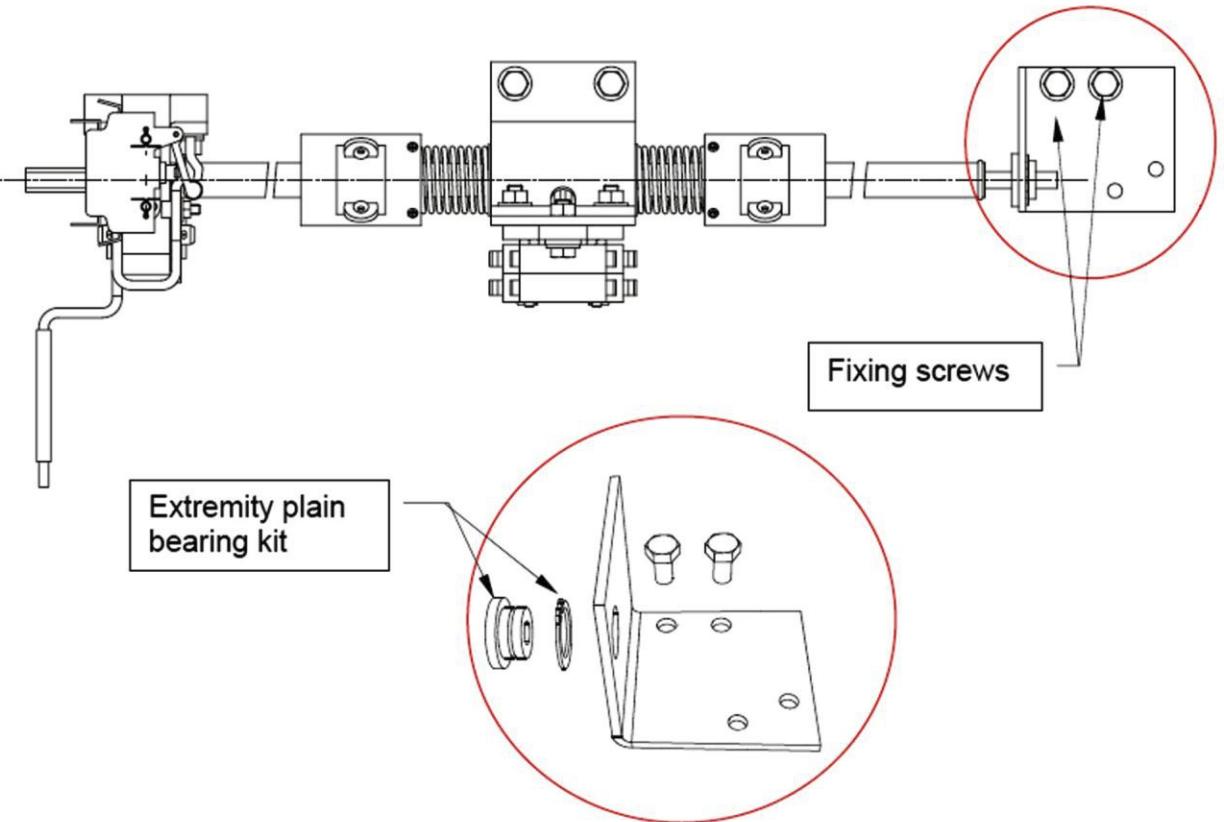
Component:

EXTREMITY BEARING ASSEMBLY

Man Hours:

0.5

Maintenance Task:

REPLACEMENT**PROCEDURE:****FIGURE 1 - EXTREMITY BEARING ASSEMBLY REPLACEMENT**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-07/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCKOUT BALL BEARING ASSY

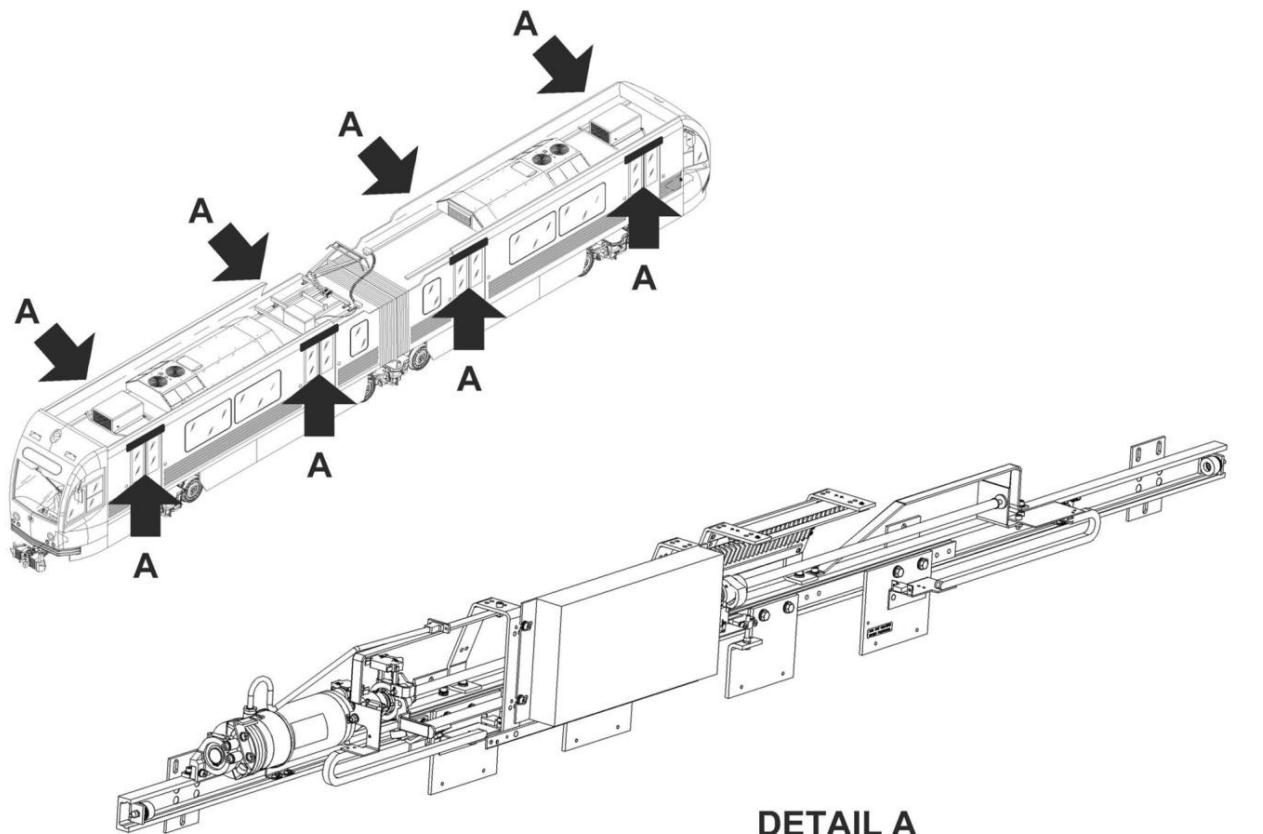
Man Hours:

2

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-07/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCKOUT BALL BEARING ASSY

Man Hours:

2

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Retaining Ring Pliers

Notched Nut Spanner

CONSUMABLES:

LOCTITE 243	P/N: 9510207-000
Grease BARDHAL POLYPLEX	P/N: 9550132-000

or SKF LGEP-2

SPARE PARTS:

BEARING LOCKOUT ASSY	P/N: E149494103
BALL BEARING KIT	P/N: E149322-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-07/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: DRIVE ASSEMBLY		
Component: LOCKOUT BALL BEARING ASSY		Man Hours:	2
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Drive Assembly from the Door Operator according to Sheet R-C-04-01-03-00/R-00. b) Remove the LOS Switch according to Sheet R-C-04-01-03-09/R-00. c) Unscrew the 2 LOS mounting Studs. d) Remove the Lockout Handle according to Maintenance Sheet R-C-04-01-03-08/R-00. e) Unscrew the Notched Nut. f) Pull out and discard the Lockout Ball Bearing Assembly. g) Get a new Lockout Ball Bearing Assembly. h) Grease the inside of the Ball Bearing with BARDHAL POLYPLEX or SKF LGEP-2 grease. i) Reinstall the Lockout Handle according to Maintenance Sheet R-C-04-01-03-08/R-00. j) Reinstall the LOS Switch Studs with Loctite 243. k) Reinstall the LOS Switch according to Maintenance Sheet R-C-04-01-03-09/R-00. l) Insert the Ball Bearing on the Driving Screw Shaft End. m) Install and torque the Notched Nut. n) Install the Drive Assembly on the Door Operator according to Sheet R-C-04-01-03-00/R-00. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-07/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCKOUT BALL BEARING ASSY

Man Hours:

2

Maintenance Task:

REPLACEMENT

PROCEDURE:

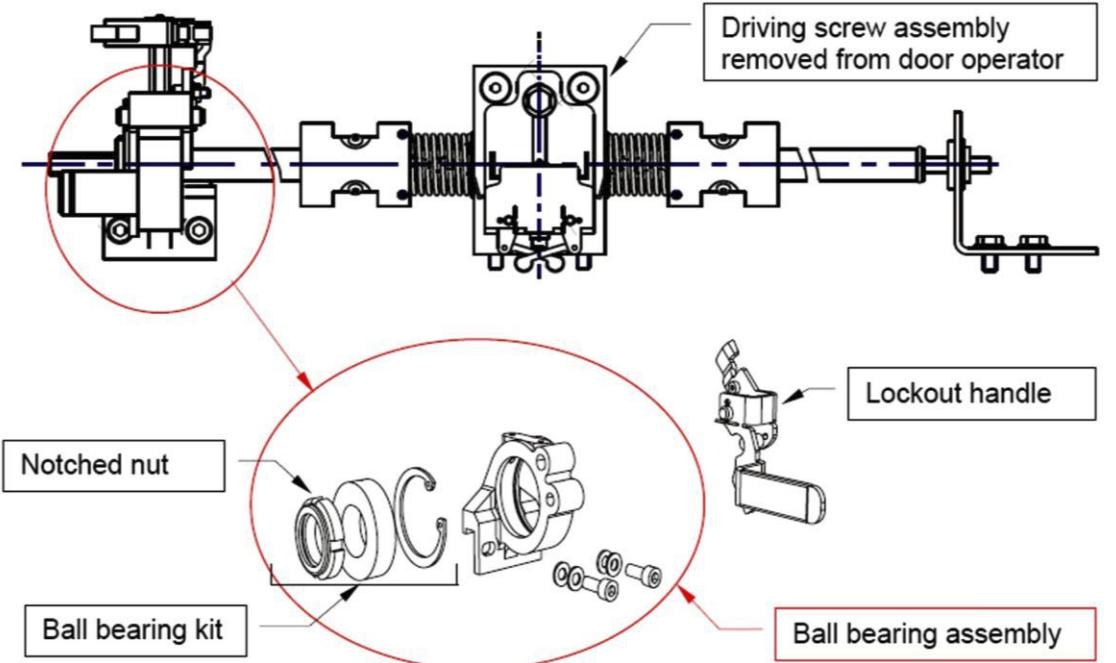


FIGURE 1 - LOCK OUT BALL BEARING ASSEMBLY REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-08/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCK-OUT HANDLE

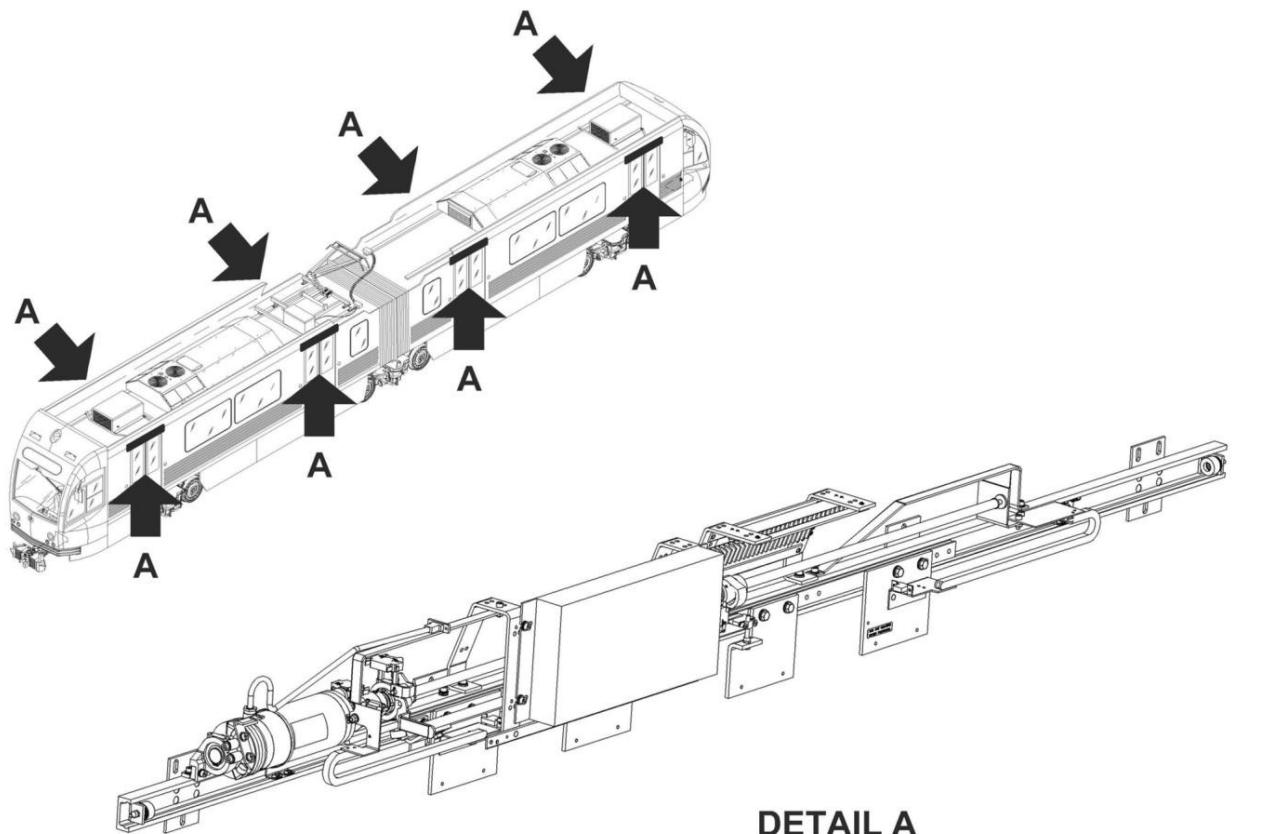
Man Hours:

0.5

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-08/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCK-OUT HANDLE

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Small Allen Keys

Pliers for Cotter Pins

CONSUMABLES:

LOCTITE 243 P/N: 9510207-000
 Grease BARDHAL POLYPLEX P/N: 9550132-000 or SKF LGEP-2

SPARE PARTS:

LOCK OUT HANDLE P/N: E149467-101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-08/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: DRIVE ASSEMBLY		
Component: LOCK-OUT HANDLE		Man Hours: 0.5	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove one Cotter Pin from the Lockout Shaft. b) Extract the Lockout Shaft. c) Remove the Lockout Handle. d) Remove the Spring Ball Indexing. e) Get a new Lockout Handle. f) Grease the Lockout Shaft and the Handle Hole with POLYPLEX or LGEP-2 Grease. g) Install the Lockout Handle on the Ball Bearing Assembly. h) Insert the Lockout Shaft in its Hole and secure it by means of the Cotter Pin. i) Reinstall the Spring Ball Indexing with Loctite 243. j) Check that the Handle operates freely through ON - OFF marked positions. k) While operating the Lockout Handle adjust the position of the Spring Ball Indexing using an Allen key. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-08/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCK-OUT HANDLE

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE:

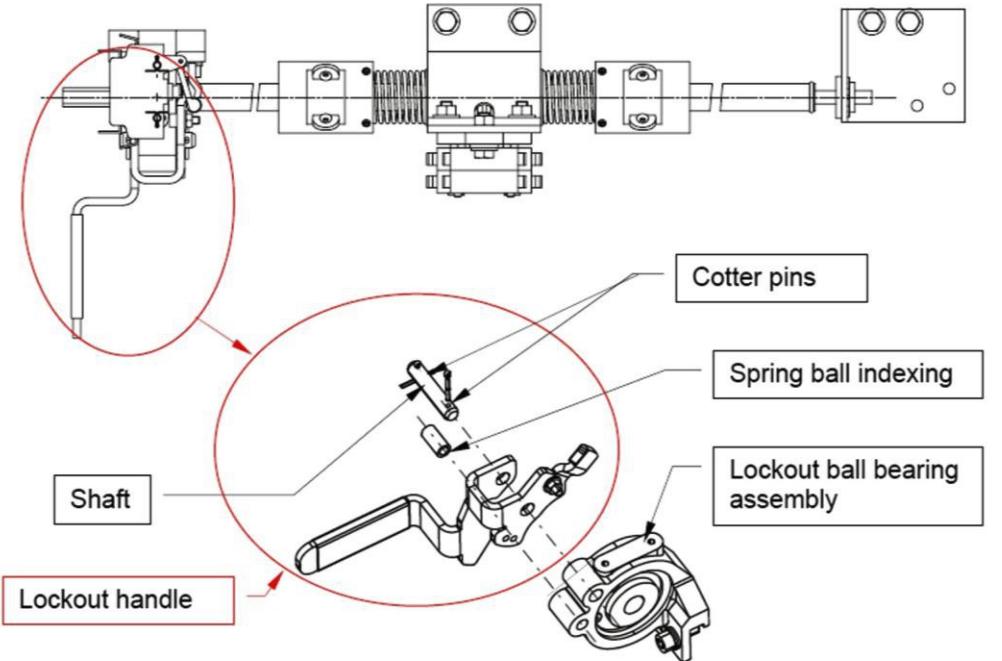


FIGURE 1 - LOCK-OUT DEVICE SCREW REMOVAL/INSTALLATION

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion**”.

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-09/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCK-OUT SWITCH

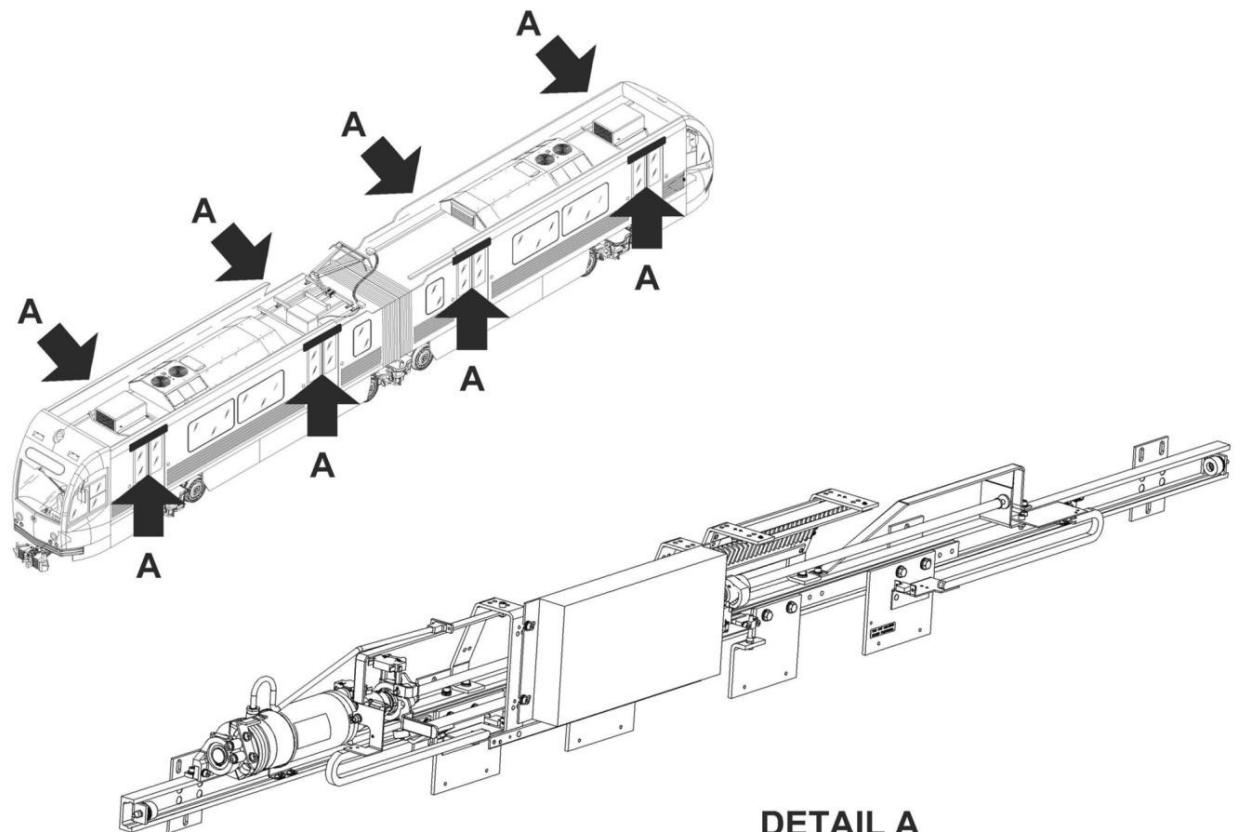
Man Hours:

0.33

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-09/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCK-OUT SWITCH

Man Hours:

0.33

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Pliers for Cotter Pins

CONSUMABLES:

NA

SPARE PARTS:

LOCK OUT SWITCH P/N: E149314-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-03-09/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: DRIVE ASSEMBLY		
Component: LOCK-OUT SWITCH		Man Hours: 0.33	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Disconnect the Wires from the LOS Switch. Take note of the Wiring Codes. b) Remove the two Cotter Pins and put them aside. c) Remove and discard the LOS Switch. d) Place the new Switch on its Studs as shown on Figure 1, paying attention to the lever orientation. e) Install the retaining Cotter Pins and secure them. f) Connect the Wires to the LOS Switch according to the previous noted Wiring Codes g) Check that the Switch is freely actuated by hand. h) Check the orientation of the LOS Switch according to Figure 1 (Actuating Roller on Lockout Handle Side). 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-03-09/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

DRIVE ASSEMBLY

Component:

LOCK-OUT SWITCH

Man Hours:

0.33

Maintenance Task:

REPLACEMENT

PROCEDURE:

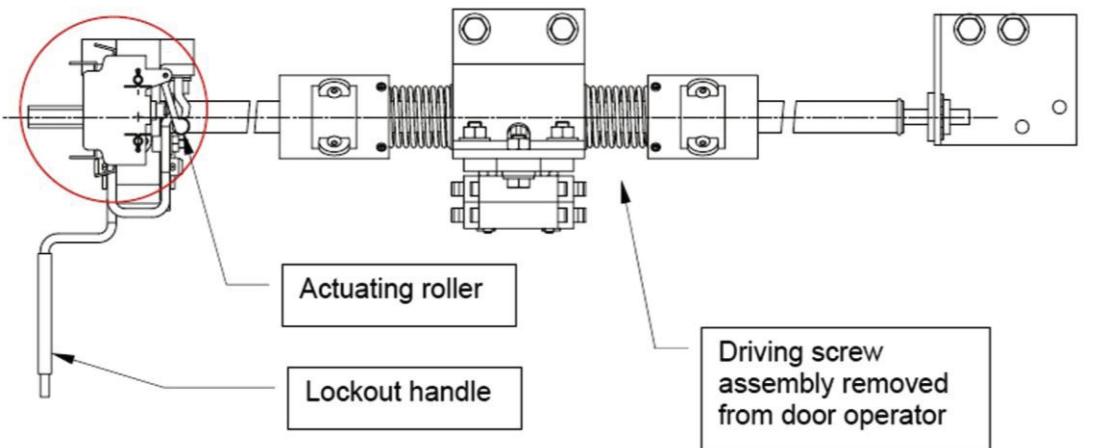


FIGURE 1 - LOCK-OUT SWITCH REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-04-00/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

COUPLING ASSEMBLY

Component:

1

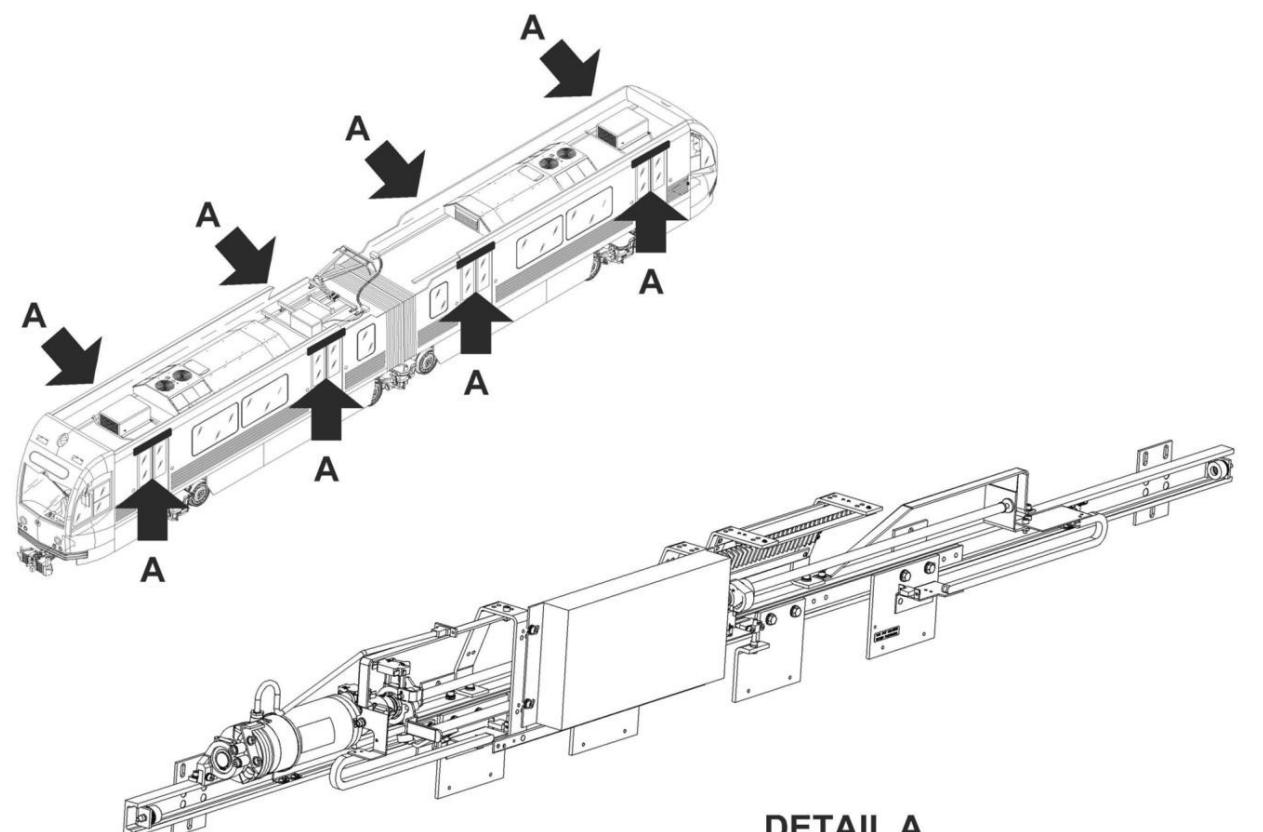
Man Hours:

1

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-04-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

COUPLING ASSEMBLY

Component:

Man Hours:

1

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Millimeter Rule

CONSUMABLES:

LOCTITE 243

P/N: 9510207-000

SPARE PARTS:

COUPLING ASSY

P/N: E138066-101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-04-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR ASSY	Unit: COUPLING ASSEMBLY		
Component:		Man Hours:	1
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Note the Distance between the Rear Surface of each Cogged Boss (2) and their adjacent Bearings (5, 6). b) Remove the 2 Fixing Screws (3) of the Lock Out Bearing (5). c) Remove the 2 Fixing Screws of the Extremity Bracket. d) Push the Driving Screw away from the Motor. e) Loosen the Fixing Screws (1) on both Coupling Cogged Bosses (2). f) Remove the Coupling Rubber Sleeve (4) and the two Cogged Bosses (2). g) Install one of the new Coupling Cogged Boss (2) on Driving Screw. h) Install the other new Coupling Cogged Boss (2) on Motor Shaft. i) Install the Coupling Rubber Sleeve (4) in between the two Cogged Bosses. j) Reinstall the Lockout Bearing (5) and the Extremity Bracket and torque its 4 Fixing Screws. 			
ADJUSTMENT <ul style="list-style-type: none"> a) Set the Cogged Bosses in the exact position they were prior to removal (refer to notes taken about the distance between Cogged Boss and Bearing). b) Check that there is 0.04 inch (1 mm) play on both sides between the Coupling Rubber Sleeve and the Cogged Bosses. c) Smear Loctite 243 and torque the two HC M10 x 16 Pressure Screws (1). 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-04-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR ASSY

Unit:

COUPLING ASSEMBLY

Component:

Man Hours:

1

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

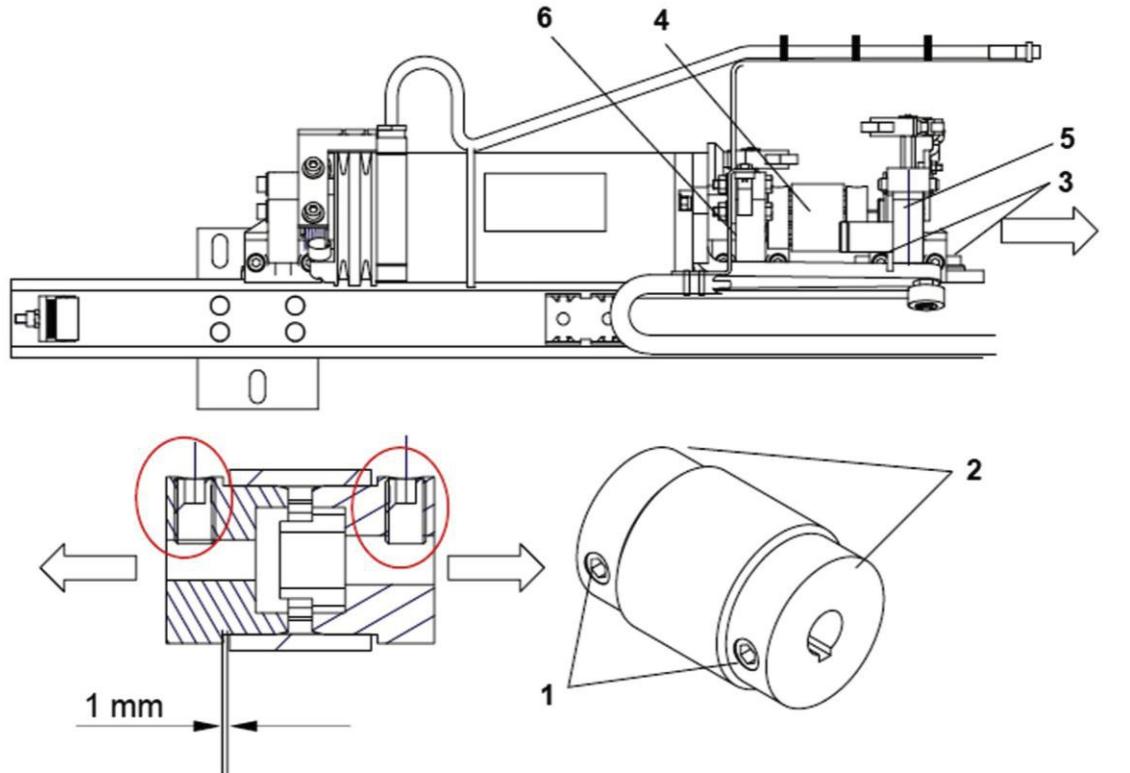


FIGURE 1 - COUPLING REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-00/R-00

System:

DOORS

Sheet:

1/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

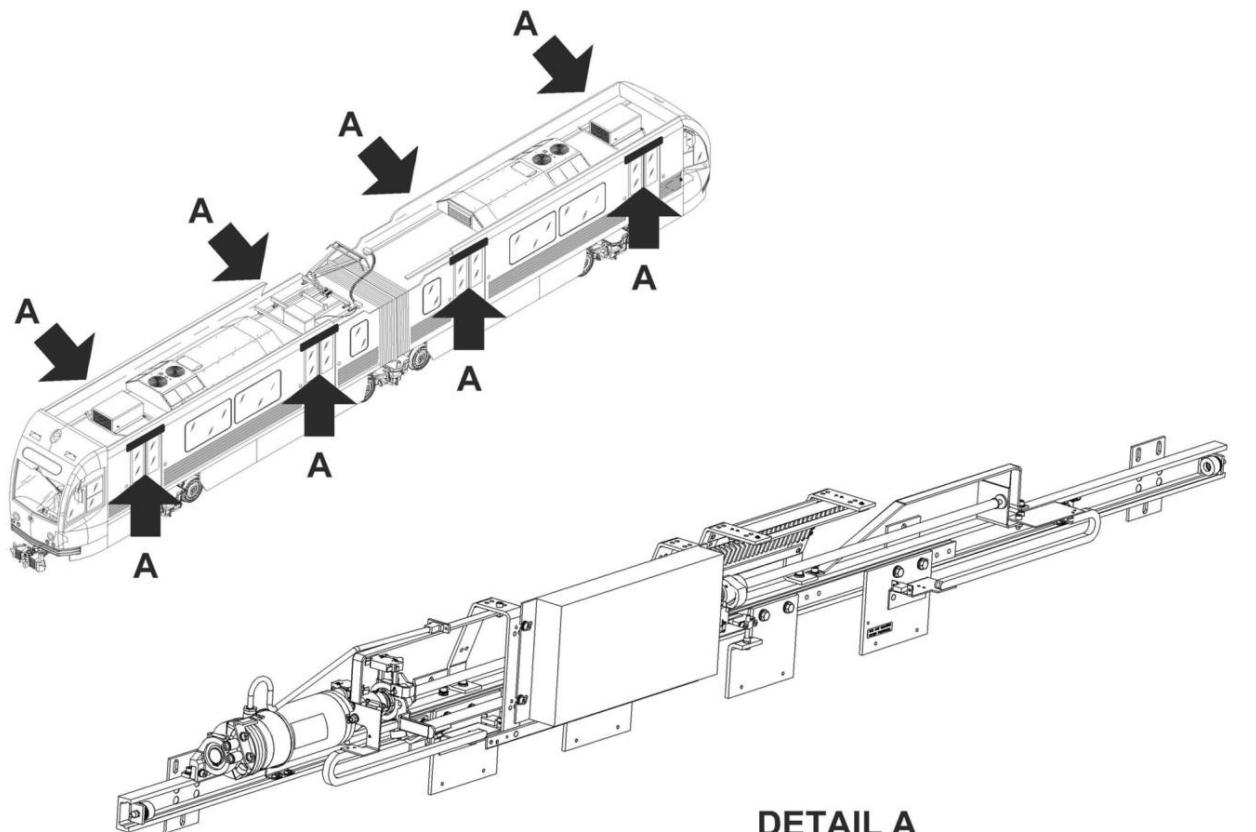
Man Hours:

0.75

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-00/R-00

System:

DOORS

Sheet:

2/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Cutting Pliers

Ty-wrap Gun

CONSUMABLES:

LOCTITE 243 P/N: 9510207-000

SPARE PARTS:

MOTORIZATION ASSY P/N: E149412-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-05-00/R-00			
System: DOORS		Sheet: 3/6	
Subsystem/Assy: DOOR OPERATOR	Unit: MOTORIZATION ASSEMBLY		
Component:		Man Hours: 0.75	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Unplug the Motor Power Cable (1) and cut the Ty-wraps (6). b) Unplug the DLS (2) Terminals (Fastons). c) Remove and put aside the Bolts (3) fixing the Wiring Supports on Front Bearing. d) Loosen the four Fixing Screws (4) of the Motor Assembly on the Suspension (put Screws and Washers aside). e) Slide the Motorization towards the Rear End of the Suspension and disengage it from the Motor Coupling. f) Remove and put aside the LH Coupling Cogged Boss (7) and the Coupling Rubber Sleeve (5). g) Install the Coupling Cogged Boss (7) on Motor Shaft and the Coupling Sleeve (5) on the opposite Cogged Boss (fitted on the Screw). h) Engage the Motor Bearings on the Suspension Rail. i) Torque the 4 Bearing Fixing Screws and Washers (4). j) Install and torque the two Bolts (3) fixing the Wiring Supports on Front Bearing. k) Reconnect the DLS (2) Switch Wires (Fastons). l) Plug in the Motor Power Cable (1) and put new Ty-wraps in place (6). 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-00/R-00

System:

DOORS

Sheet:

4/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

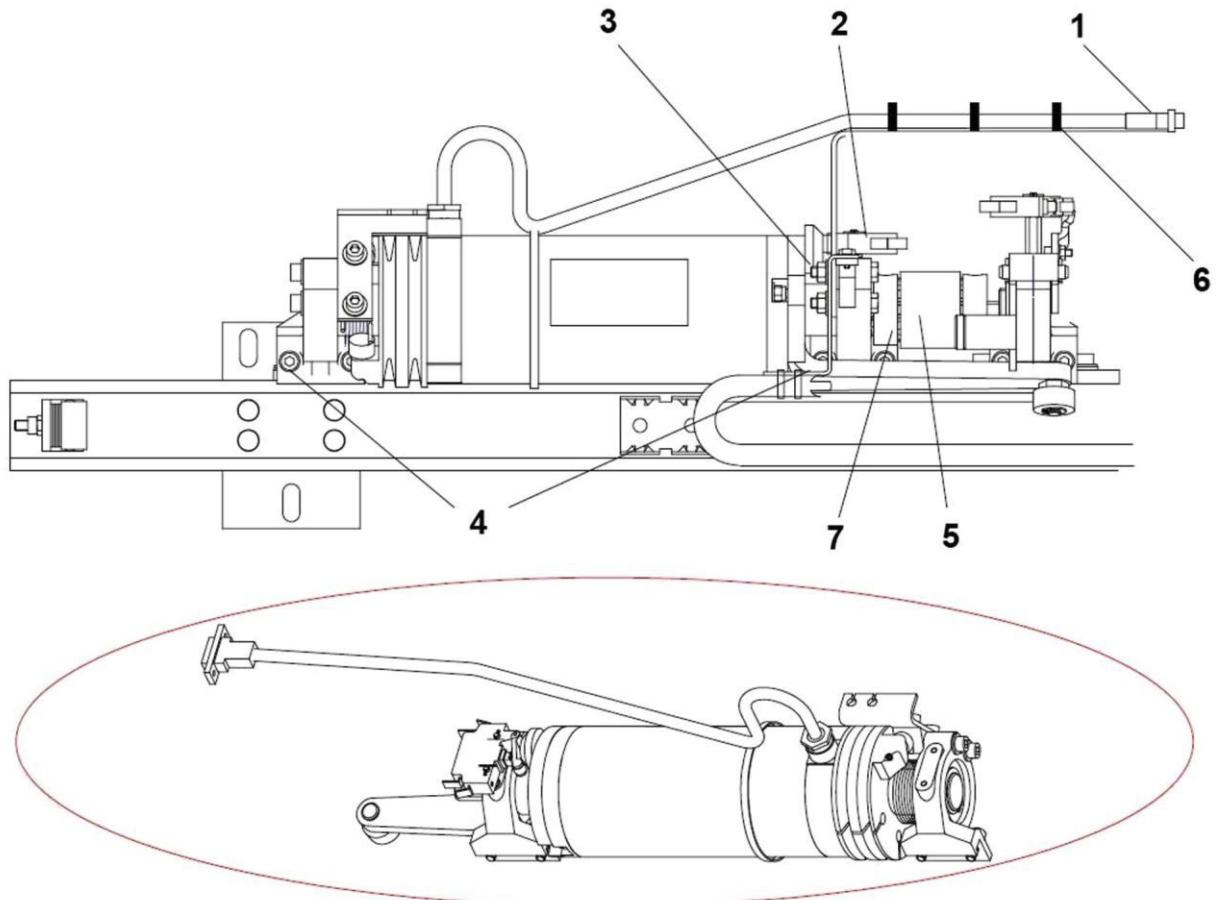


FIGURE 1 - MOTORIZATION REMOVAL

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-00/R-00

System:

DOORS

Sheet:

5/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

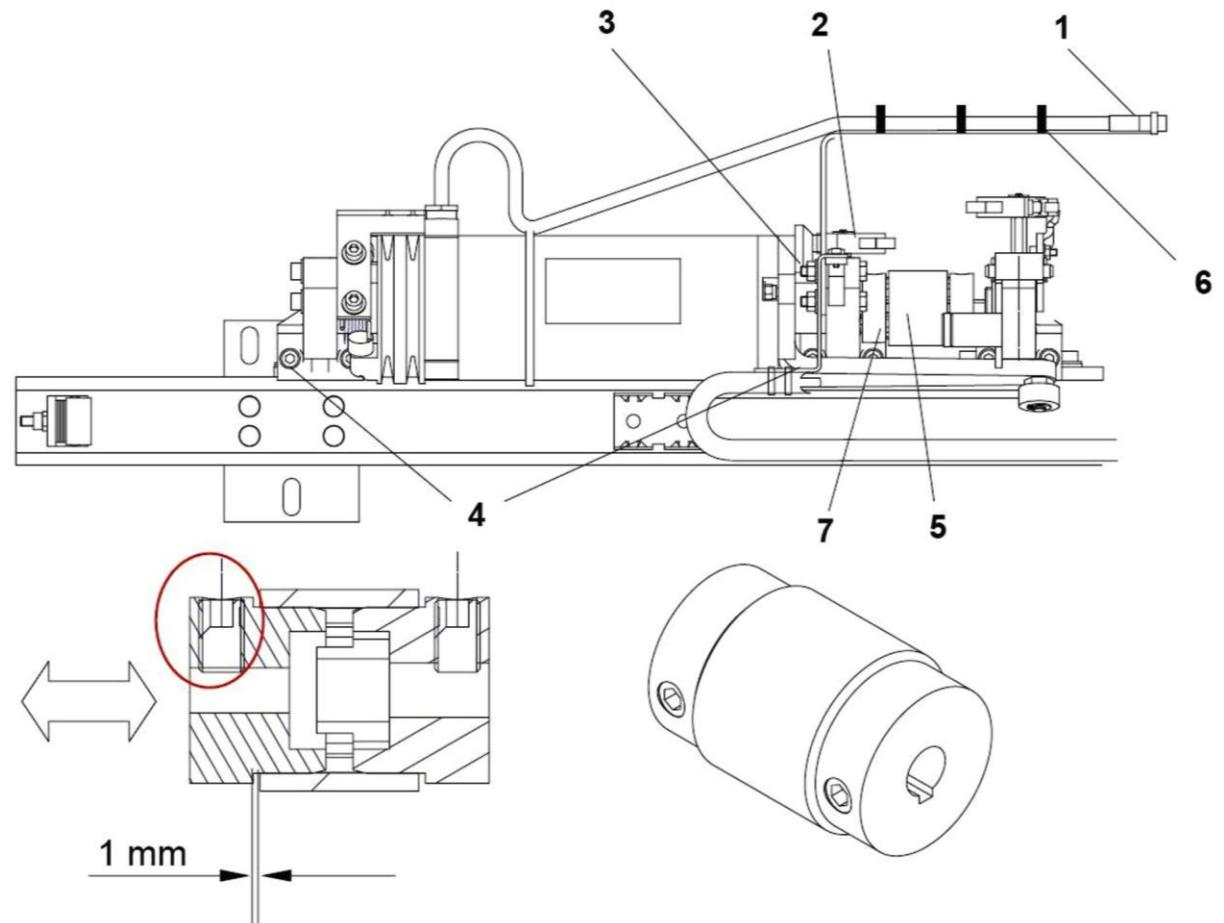
MOTORIZATION ASSEMBLY

Component:

Man Hours:

0.75

Maintenance Task:

REPLACEMENT
PROCEDURE (CONT'D):

FIGURE 2 - MOTORIZATION INSTALLATION

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-00/R-00

System:

DOORS

Sheet:

6/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

ADJUSTMENT

- a) Adjust the Motor LH Cogged Boss in order to keep **0.04 inch (1 mm)** play on each side of the Coupling Sleeve.
- b) Torque the HC M10 x 16 fixing Screw on Motor LH Cogged Boss with Loctite 243.

FINAL OPERATIONS

- a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1
- b) Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion**".

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR

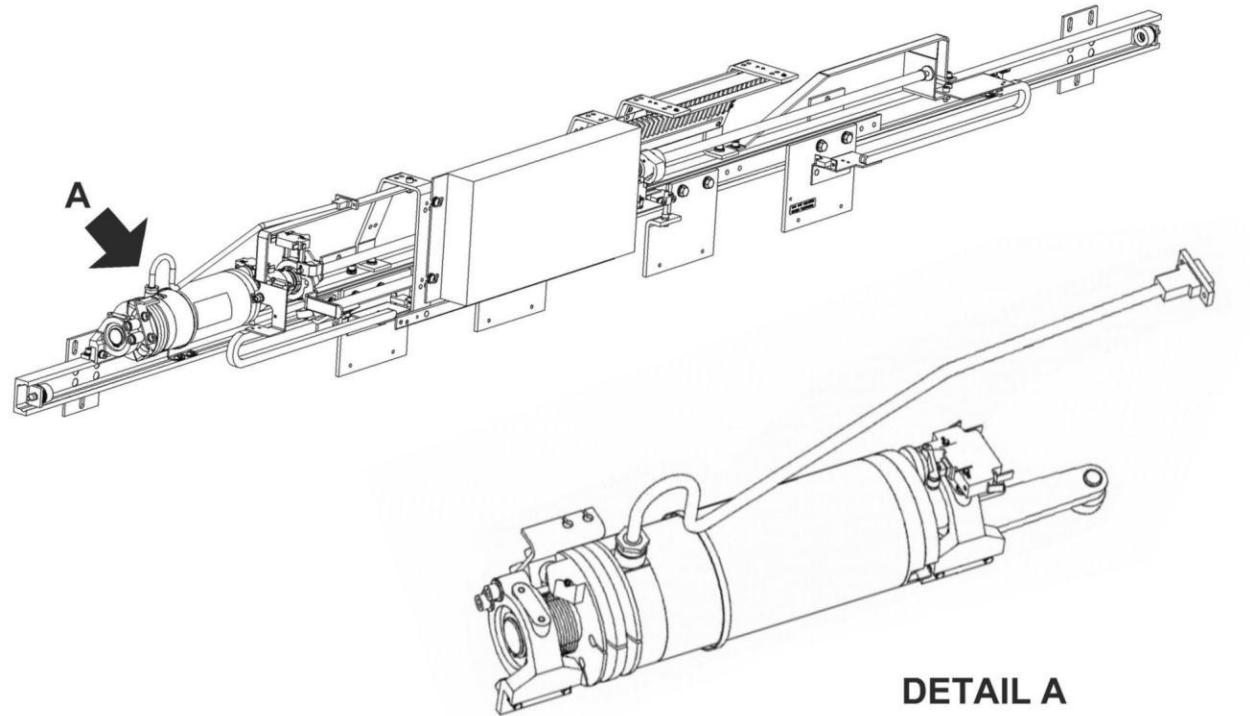
Man Hours:

0.75

Maintenance Task:

REPLACEMENT

LOCATION:

**DETAIL A**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 243 P/N: 9510207-000
 Grease BARDHAL POLYPLEX P/N: 9550132-000 or SKF LGEP-2

SPARE PARTS:

MOTOR ASSY P/N: E149413-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-05-02/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: MOTORIZATION ASSEMBLY		
Component: MOTOR		Man Hours: 0.75	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Remove the Motorization from Door Operator according to Sheet R-C-04-01-05-00/R-00. b) Remove the Rear Bearing Assembly according to Sheet R-C-04-01-05-04/R-00. c) Remove the Torsion Spring according to Sheet R-C-04-01-05-05/R-00. d) Remove the DLS Switch according to Sheet R-C-04-01-05-06/R-00. e) Remove the Front Bearing according to Sheet R-C-04-01-05-03/R-00. f) The Motor Assembly is the remaining part. g) If necessary remove the End Stops and the Locking Roller from the Motor according to Sheet R-C-04-01-05-02/R-01 and R-C-04-01-05-02/R-02 respectively. h) Get a new Motor. i) If removed, install the End Stops and the Locking Roller on the Motor according to Sheet R-C-04-01-05-02/R-01 and R-C-04-01-05-02/R-02 respectively. j) Install the Front Bearing according to Sheet R-C-04-01-05-03/R-00. k) Install the DLS Switch according to Sheet R-C-04-01-05-06/R-00. l) Install the Torsion Spring according to Sheet R-C-04-01-05-04/R-00. m) Install the Rear Bearing Assembly R-C-04-01-05-05/R-00. n) The Motorization is now fully equipped. o) Install the Motorization on Door Operator according to Sheet R-C-04-01-05-00/R-00. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

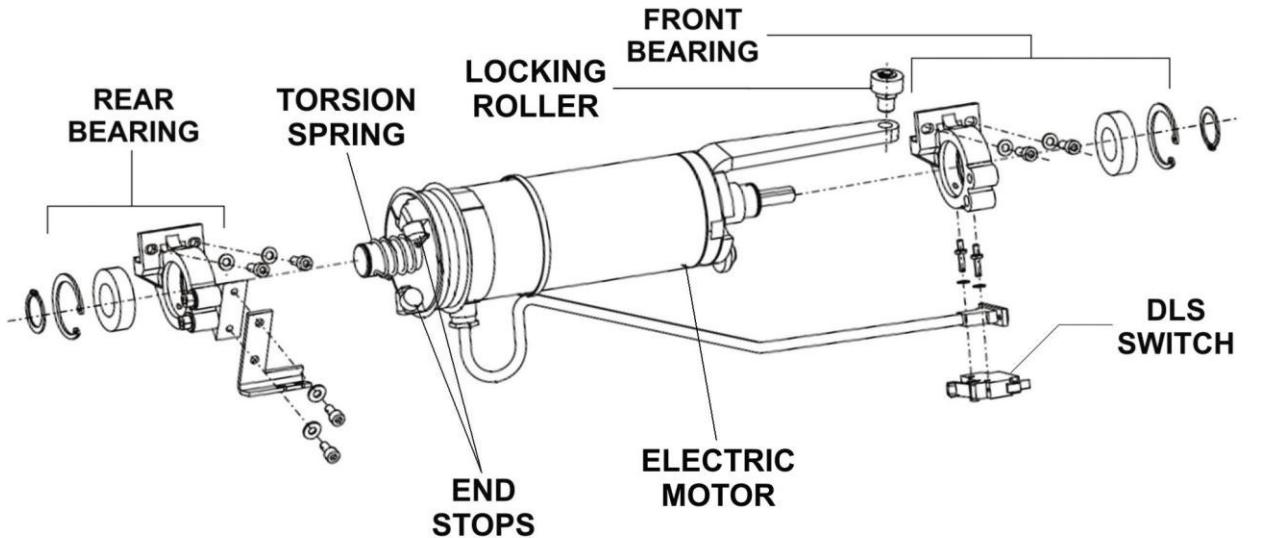


FIGURE 1 -MOTOR REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-01

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR END STOPS

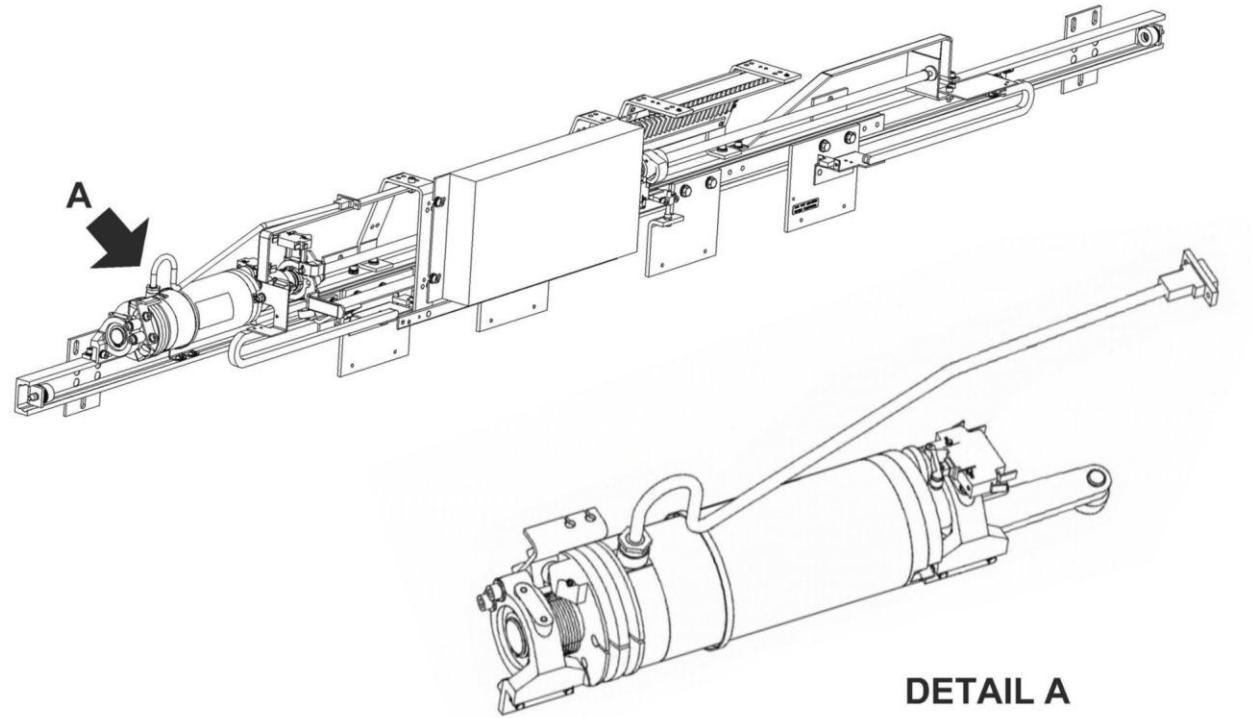
Man Hours:

0.75

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-01

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR END STOPS

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 243 P/N: 9510207-000

SPARE PARTS:

Motor End Stops P/N: E149340-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-05-02/R-01			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: MOTORIZATION ASSEMBLY		
Component: MOTOR END STOPS		Man Hours: 0.75	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Motorization from Door Operator according to Sheet R-C-04-01-05-00/R-00. b) Remove the Torsion Spring according to Sheet R-C-04-01-05-05/R-00. c) Remove the Motor End Stops with an Allen Key. d) Install and torque using Allen Key. the two new End Stops with Loctite 243. e) Reinstall the Torsion Spring according to Sheet R-C-04-01-05-05/R-00. f) Install the Motorization on Door Operator according to Sheet R-C-04-01-05-00/R-00. g) Verify that the Retaining Ring properly sits in the Shaft Groove. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-01

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR END STOPS

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

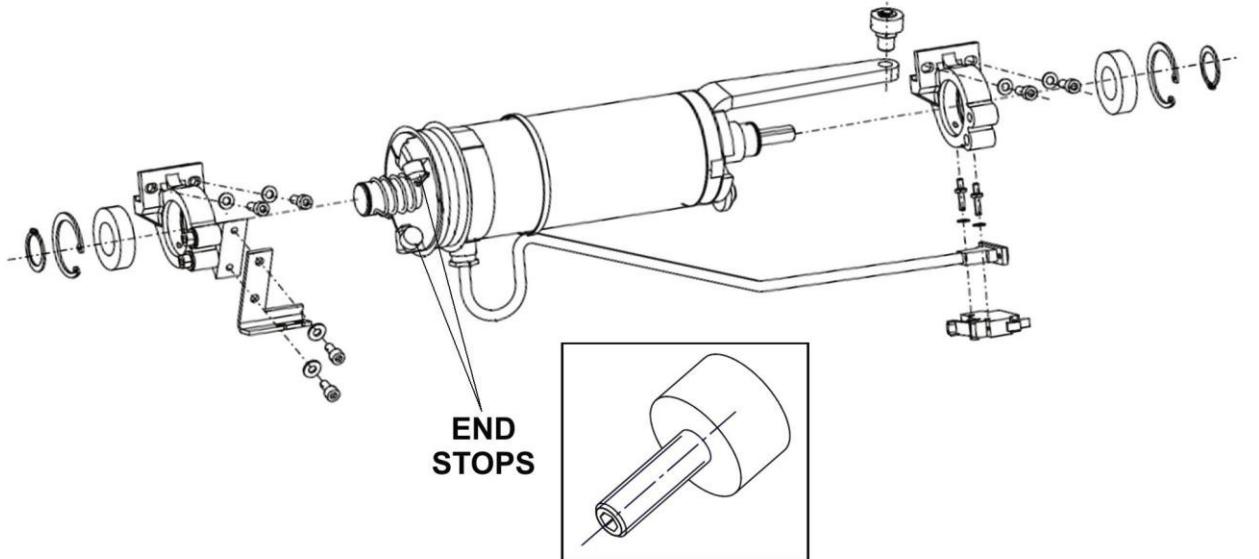


FIGURE 1 - END STOPS REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion**".

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-02

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR LOCKING ROLLER

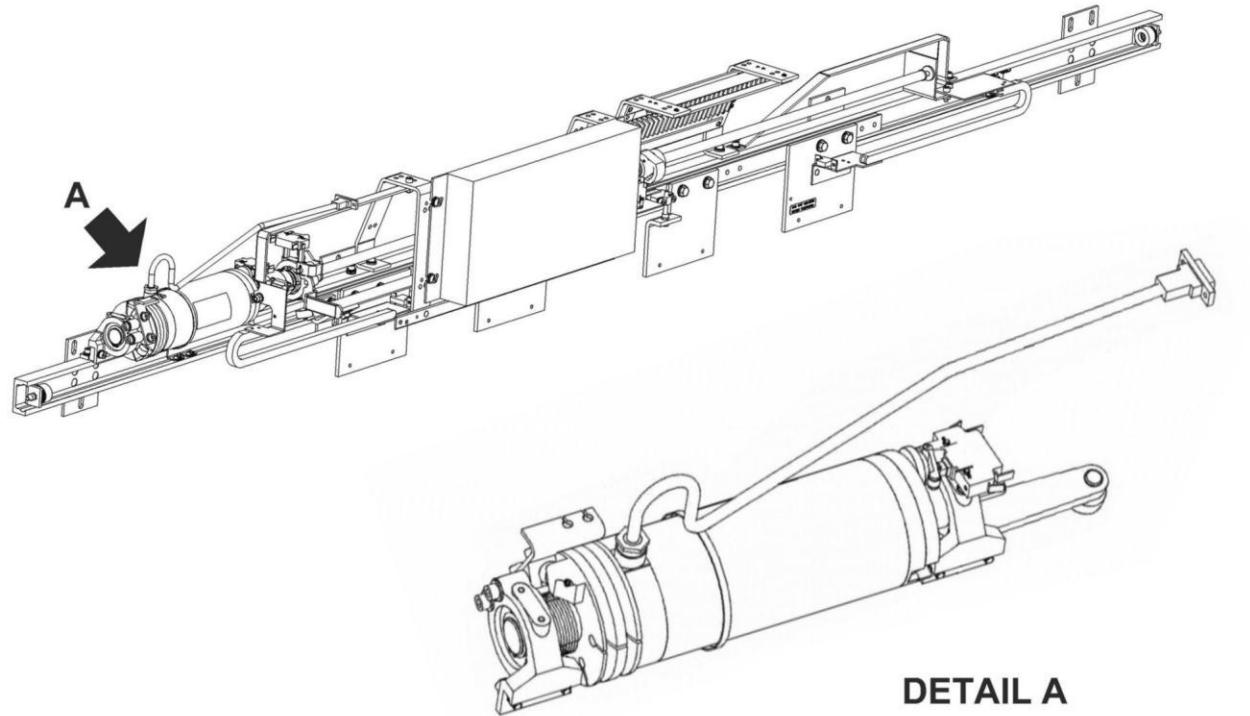
Man Hours:

0.17

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-02

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR LOCKING ROLLER

Man Hours:

0.17

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 243 P/N: 9510207-000

SPARE PARTS:

Locking Roller P/N: E149320-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-05-02/R-02			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: MOTORIZATION ASSEMBLY		
Component: MOTOR LOCKING ROLLER		Man Hours: 0.17	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Unscrew the Locking Roller. b) Remove the Locking Roller. c) Get a new Locking Roller. d) Screw and torque the new Locking Roller with Loctite 243. e) Verify that the Roller rotate freely by hand. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-02/R-02

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

MOTOR LOCKING ROLLER

Man Hours:

0.17

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

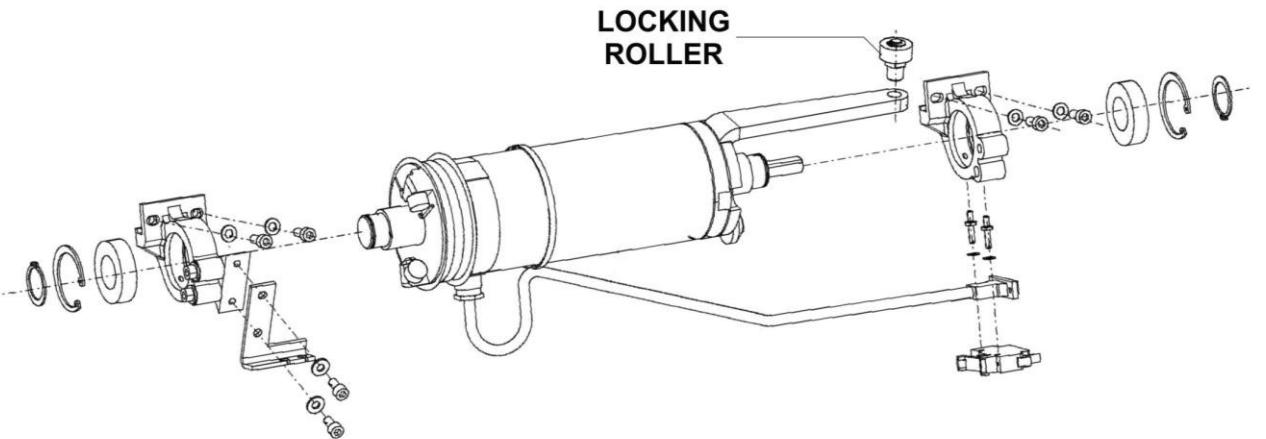


FIGURE 1 - LOCKING ROLLER REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion**".

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-03/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

FRONT BEARING

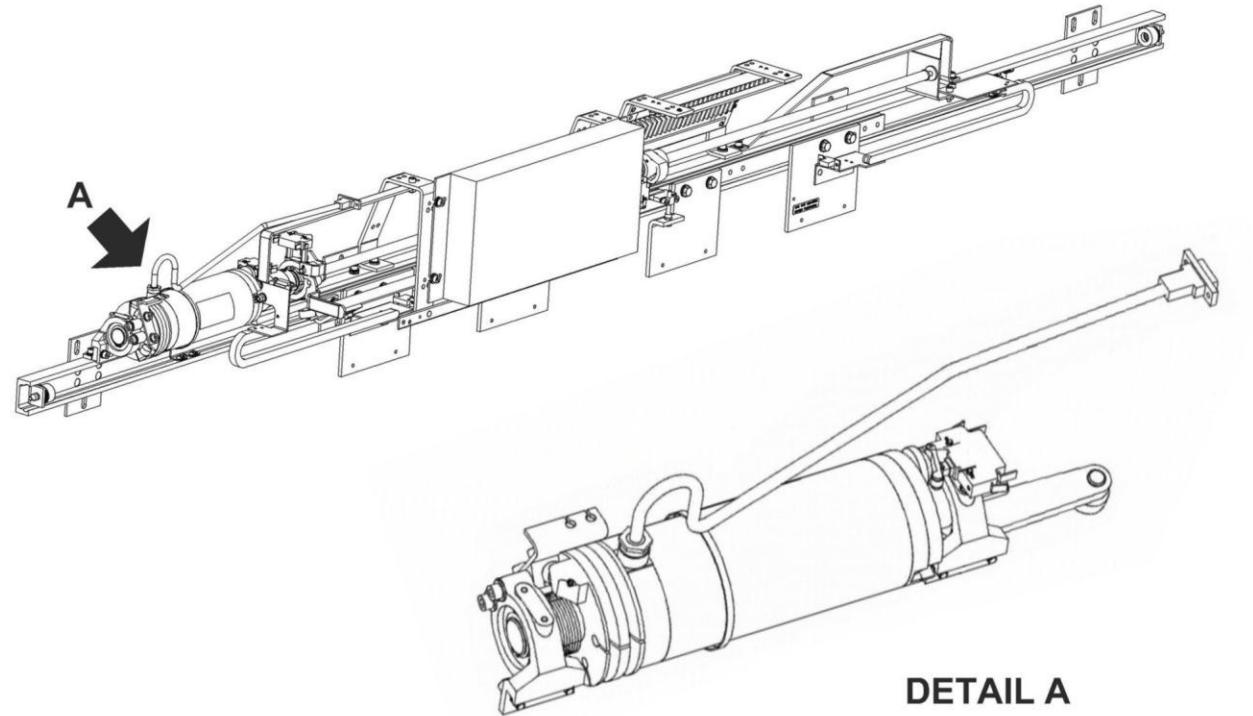
Man Hours:

0.75

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-03/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

FRONT BEARING

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Retaining Ring Pliers

CONSUMABLES:

Grease BARDHAL POLYPLEX P/N: 9550132-000 or SKF LGEP-2
LOCTITE 243

SPARE PARTS:

Front Bearing Assy P/N: E149494-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-05-03/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: MOTORIZATION ASSEMBLY		
Component: FRONT BEARING		Man Hours: 0.75	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Remove the Motorization from Door Operator according to Sheet R-C-04-01-05-00/R-00. b) Remove and put aside the DLS Switch according to Sheet R-C-04-01-05-06/R-00. c) Remove and put aside the DLS fixing Studs. d) Remove and put aside the Retaining Ring from Motor Shaft. e) Remove and discard the Front Bearing. f) Grease the Motor Shaft with BARDHAL Polyplex or SKF LGEP-2 g) Insert the new Front Bearing on Motor Shaft while paying attention to its orientation. h) Install the Retaining Ring into Motor Shaft dedicated Groove. i) Install and torque the Switch Studs with Loctite 243. j) Install and secure the DLS Switch according to Sheet R-C-04-01-05-06/R-00. k) Install the Motorization on Door Operator according to Sheet R-C-04-01-05-00/R-00. l) Verify that the Retaining Ring properly sits in the Shaft Groove. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-03/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

FRONT BEARING

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

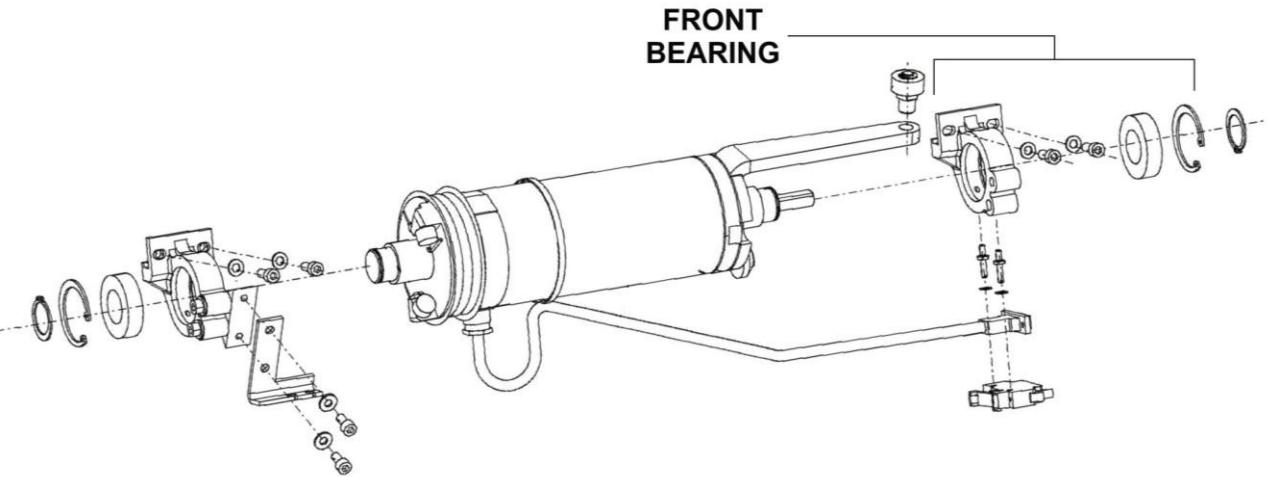


FIGURE 1 - FRONT BEARING REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion**.”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-04/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

REAR BEARING

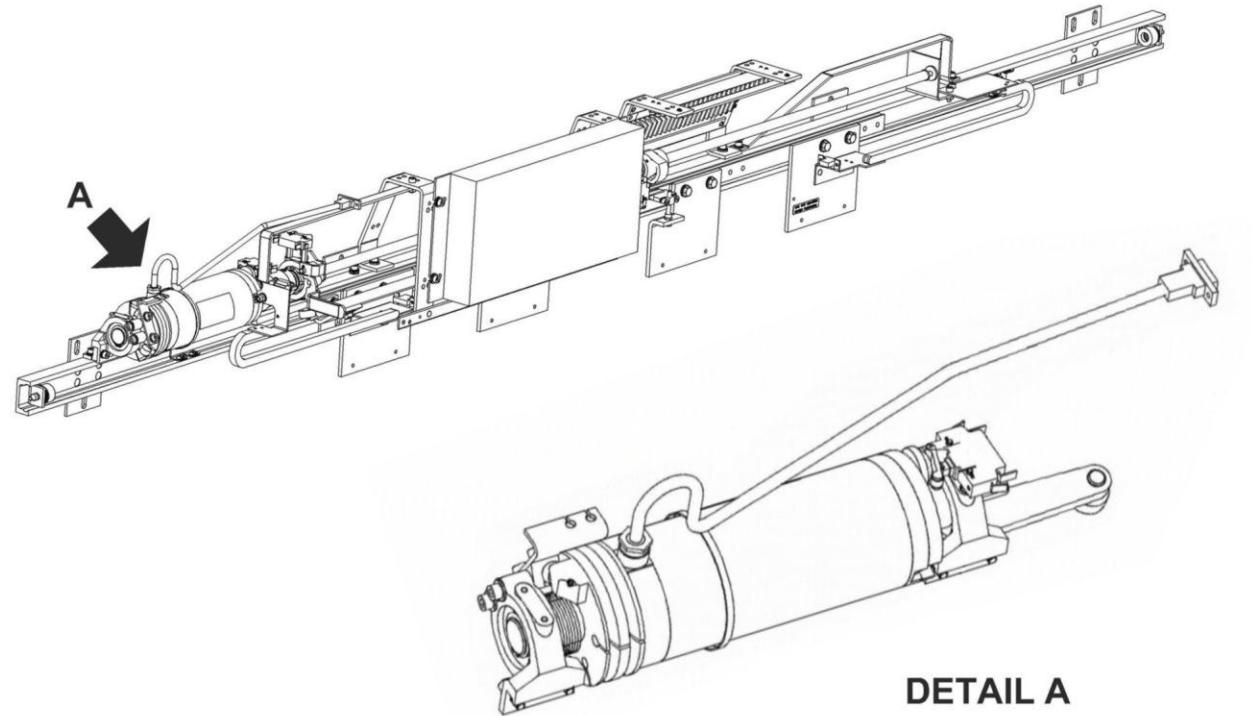
Man Hours:

0.75

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-04/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

REAR BEARING

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Retaining Ring Pliers

CONSUMABLES:

Grease BARDHAL POLYPLEX P/N: 9550132-000 or SKF LGEP-2
LOCTITE 243

SPARE PARTS:

Rear Bearing Assy P/N: E149494-0102

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-05-04/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: MOTORIZATION ASSEMBLY		
Component: REAR BEARING		Man Hours: 0.75	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Motorization from Door Operator according to Sheet R-C-04-01-05-00/R-00. b) Note how the Torsion Spring is mounted. c) Remove and put aside the End Stop Block by removing the 2 relevant Fixing Screws. d) Remove and put aside the Retaining Ring from the Motor Shaft. e) Remove and discard the Rear Bearing. f) Grease the Motor Shaft with BARDHAL Polyplex or SKF LGEP-2. g) Insert the Rear Bearing on Motor Shaft while paying attention to the Bearing orientation. h) Place the Torsion Spring, refer to notes taken in previous step b). i) Install the Retaining Ring into the Motor Shaft dedicated Groove. j) Reinstall the End Stop Block and torque the two Fixing Screws. k) Install the Motorization on Door Operator according to Sheet R-C-04-01-05-00/R-00. l) Verify that the Retaining Ring properly sits in the Shaft Groove. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-04/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

REAR BEARING

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

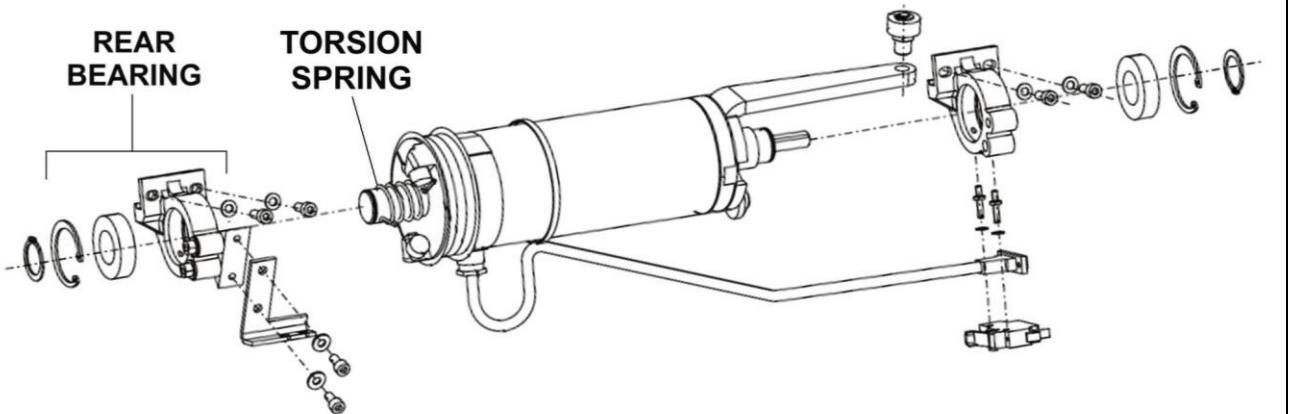


FIGURE 1 - REAR BEARING REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-05/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

TORSION SPRING

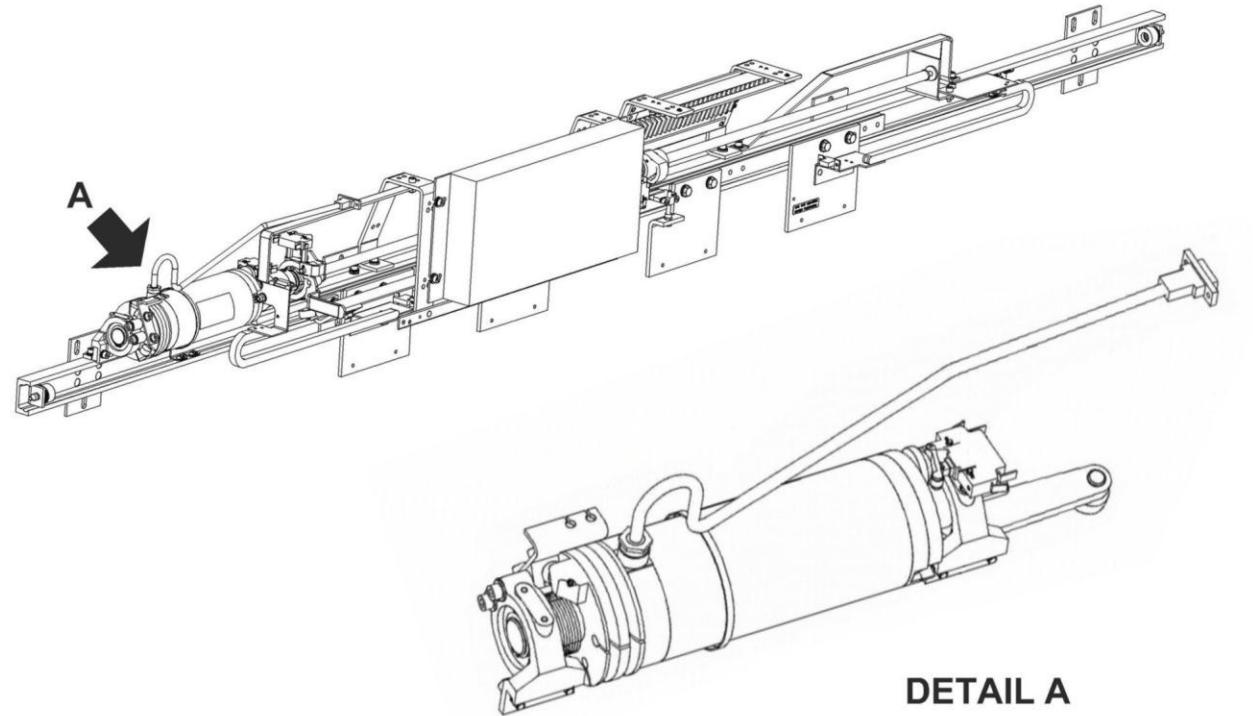
Man Hours:

0.75

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-05/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

TORSION SPRING

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

Grease BARDHAL POLYPLEX P/N: 9550132-000 or SKF LGEP-2
LOCTITE 243

SPARE PARTS:

Torsion Spring P/N: E141987-0001

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-05-05/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: MOTORIZATION ASSEMBLY		
Component: TORSION SPRING		Man Hours: 0.75	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Motorization from Door Operator according to Sheet R-C-04-01-05-00/R-00. b) Note how the Torsion Spring is mounted. c) Remove the Retaining Ring from the Motor Shaft. d) Remove the Rear Bearing and the Torsion Spring. e) Discard the Torsion Spring. f) Grease the Rear Motor Shaft and the Torsion Spring with BARDHAL Polyplex or SKF LGEP-2 Grease. g) Engage the new Torsion Spring on the Shaft. h) Engage the Rear Bearing onto the Motor Rear Shaft while paying attention to the Bearing orientation. i) Finalize the Torsion Spring installation as per notes taken in the previous step b). j) Install the Retaining Ring into the Motor Shaft dedicated Groove. k) Install the Motorization on Door Operator according to Sheet R-C-04-01-05-00/R-00. l) Verify that the Retaining Ring properly sits in the Shaft Groove. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-05/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

TORSION SPRING

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

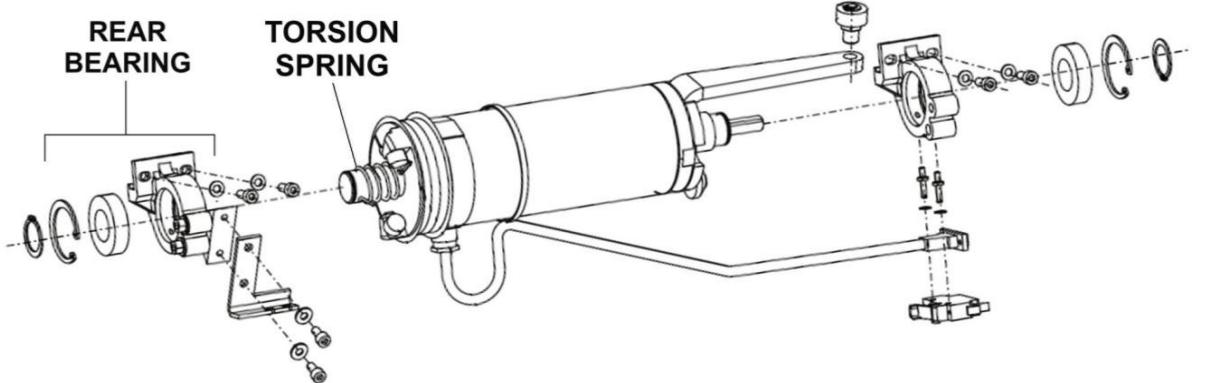


FIGURE 1 - TORSION SPRING REPLACEMENT

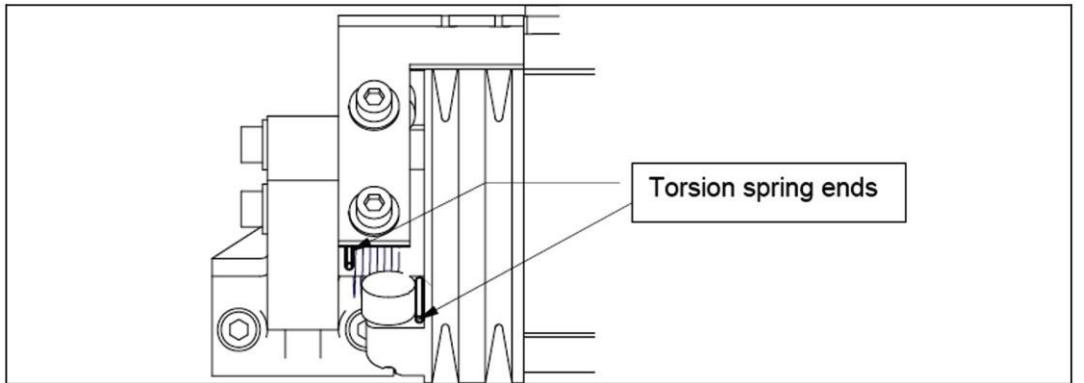


FIGURE 2 - TORSION SPRING DETAILS

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.
Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion**".

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-06/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

DLS SWITCH

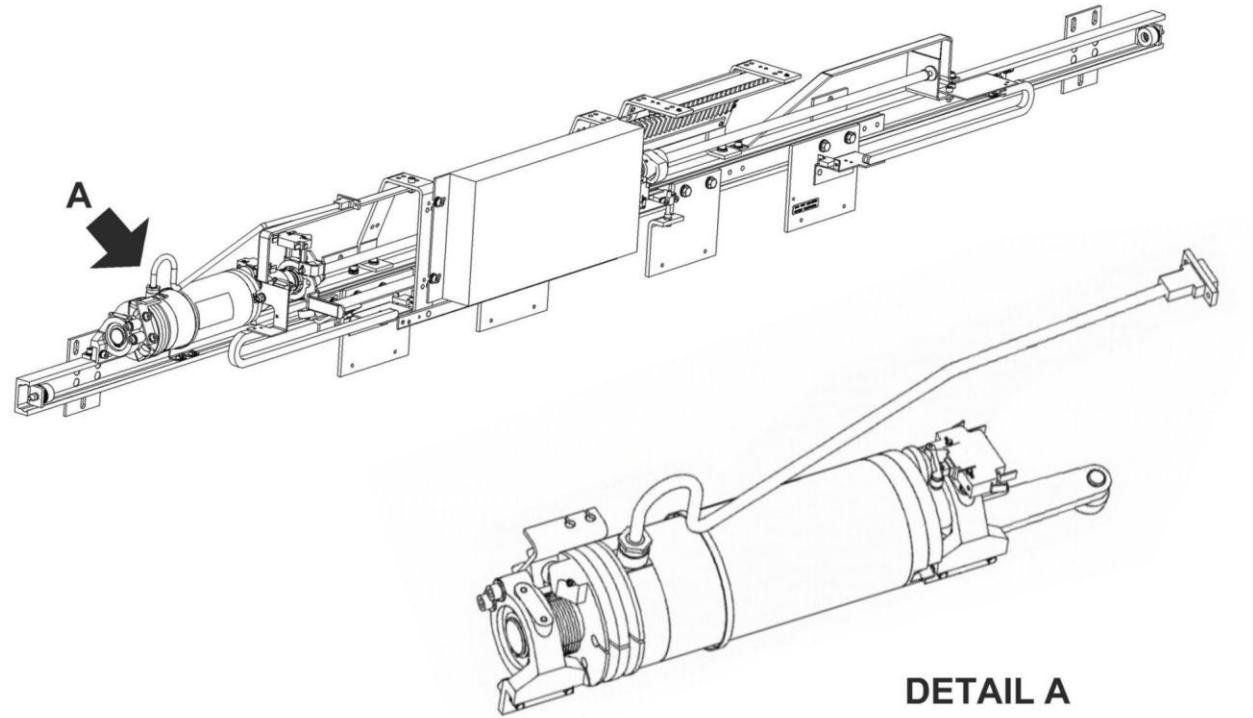
Man Hours:

0.33

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-06/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

DLS SWITCH

Man Hours:

0.33

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE

TOOLS:

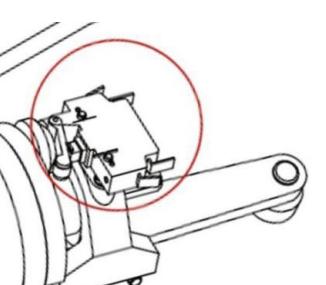
LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

NA

SPARE PARTS:

Door Closed Switch (DCS) P/N: E149314-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-05-06/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: MOTORIZATION ASSEMBLY		
Component: DLS SWITCH		Man Hours: 0.33	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Disconnect the DLS Wires Take note of the Wiring Codes. b) Remove the two Cotter Pins and put them aside. c) Remove the DLS Switch. d) Place the new DLS Switch on its Studs, paying attention to the orientation of the Lever. e) Install and secure the Cotter Pins. f) Connect the DLS Wires according to the Wiring codes previously noted. g) Check that the Switch is freely actuated by hand. h) Check the orientation of the DLS Switch as indicated. 			
 DLS SWITCH ORIENTATION			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-05-06/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

MOTORIZATION ASSEMBLY

Component:

DLS SWITCH

Man Hours:

0.33

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

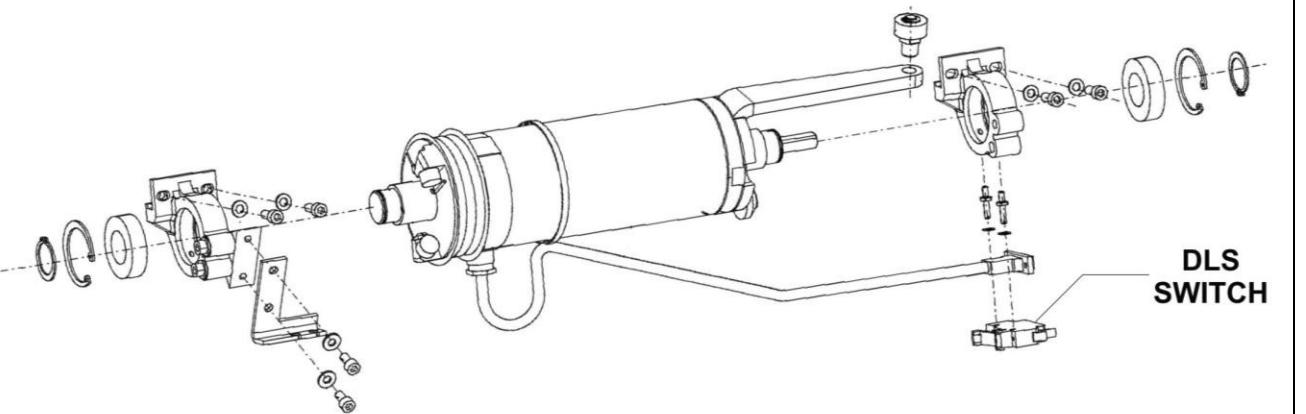


FIGURE 1 - DLS SWITCH REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion.**"

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-06-00/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

FORK ASSY

Component:

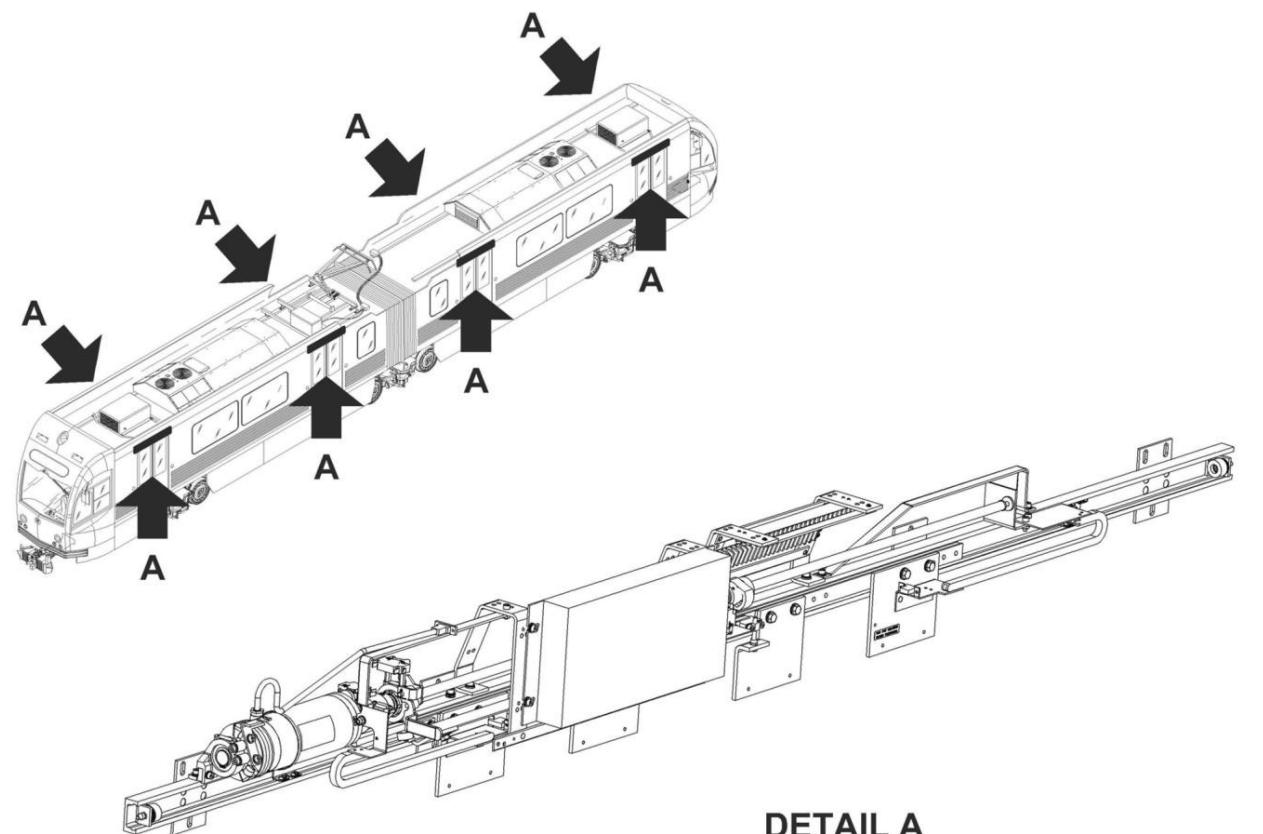
Man Hours:

0.33

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-06-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

FORK ASSY

Component:

Man Hours:

0.33

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

CONTACTAL Grease P/N: 9550123-000

SPARE PARTS:

RH DRIVING FORK	P/N: E149317-0104
LH DRIVING FORK	P/N: E149317-0102

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-06-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: FORK ASSY		
Component:		Man Hours: 0.33	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Remove the 4 M6 Screws (2) fixing the Driving Forks (1, 4) to the Suspension (two per Fork), b) Put the DCS Actuation Cams (3) aside. c) Remove the Forks. d) Fully open the Door (Door Panels in contact with the End Stops). e) Slide the Driving Ball Nuts along the Screw to align them with the Driving Fork location. f) Engage the new Forks on the Ball Nuts. Use the locating Pins for that purpose. g) Install the DCS Cams and secure the Forks and the Cams to the Suspension with the 4 Screws and 8 Washers. h) Torque the Fork attachment Screws. i) Perform DCS Cam Horizontal Adjustment according to Sheet R-P-04-01-00-00/I-00 Step2 j) Perform Final Torqueing k) Manually open and close the Door to verify that the Door Panels move freely and reach the Opening Stops simultaneously. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-06-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

FORK ASSY

Component:

Man Hours:

0.33

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

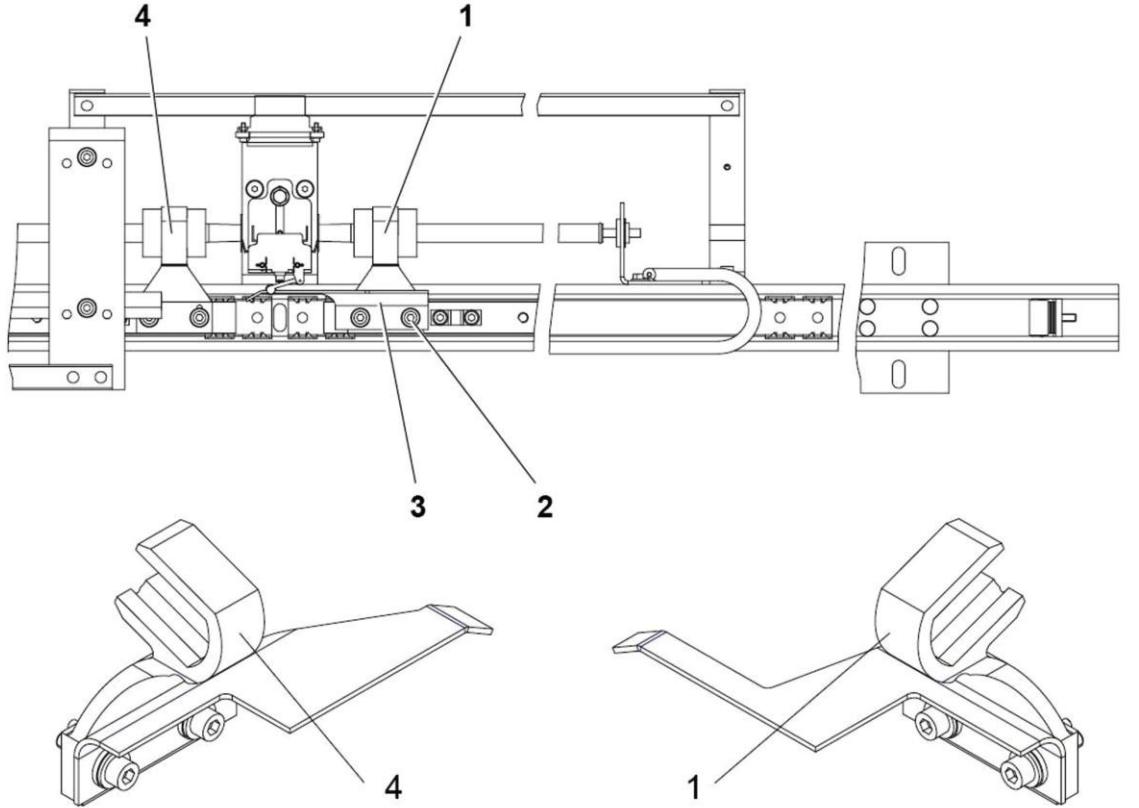


FIGURE 1 - DRIVING FORKS REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion.**"

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-08-00/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

WIRING CHAIN

Component:

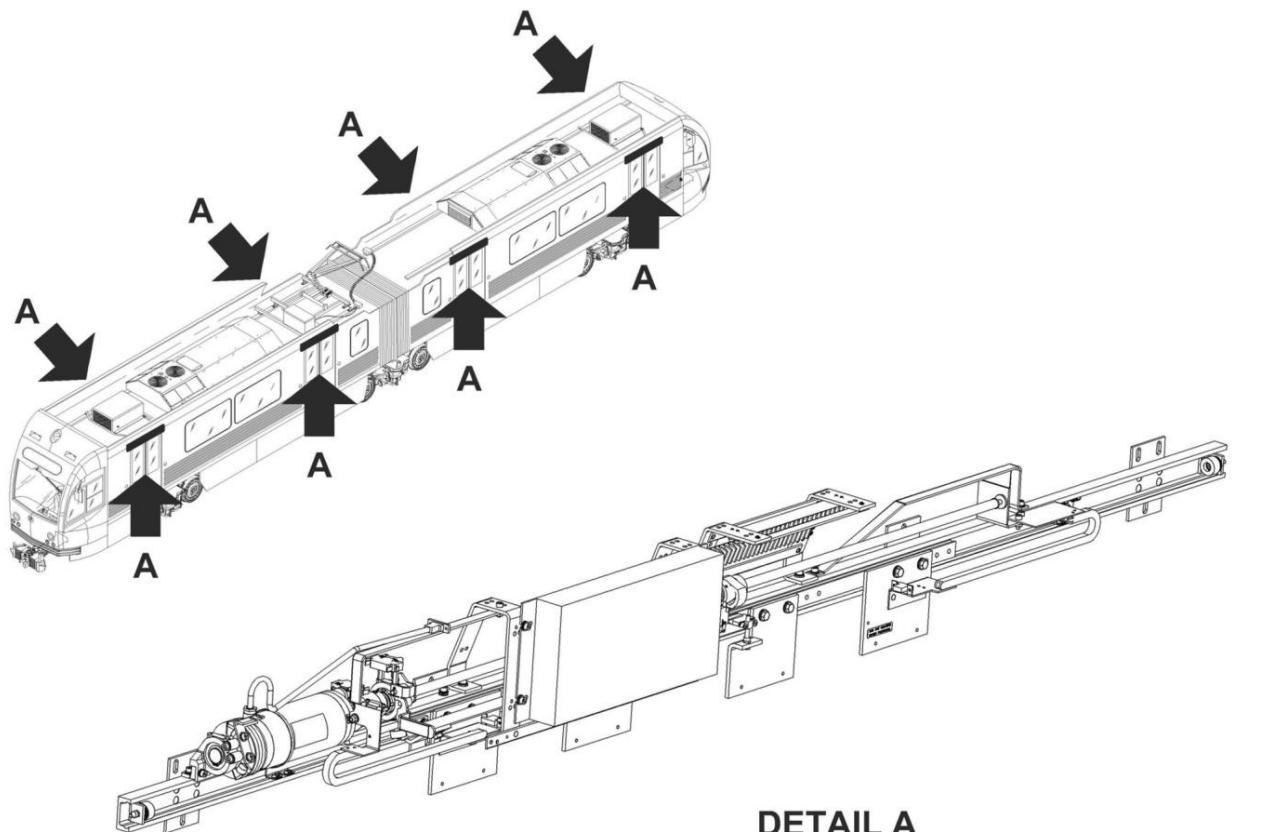
Man Hours:

0.5

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-08-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

WIRING CHAIN

Component:

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Cutting Pliers

Ty-wrap Gun

CONSUMABLES:

CONTACTAL Grease P/N: 9550123-000

SPARE PARTS:

WIRING CHAIN P/N: E088335-0101

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-08-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR OPERATOR	Unit: WIRING CHAIN		
Component:		Man Hours: 0.5	
Maintenance Task: REPLACEMENT			
PROCEDURE: <p>PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Disconnect both the Wiring Chain Connectors from the Panel Socket of the Door Panels. b) Remove the 2 Screws fixing the Wiring Chain Socket to the Door Operator Support Bracket. c) Cut the Ty-wrap fixing the Wiring Chain on to its Supporting Brackets. d) Remove the Wiring Chain. Make the Wiring Chain available for repair or discard it. e) Install and secure (with the 2 Fixing Screws) the new Wiring Chain Socket on the Door Operator Support Bracket. f) Secure the Wiring Chain Extremities to their Supports with two Ty-wraps. <p>NOTE : The Smaller Ty-wrap goes through the Chain and holds the Wires together with the Plastic Chain. Each Support has dedicated Holes to pass the Ty-wrap trough.</p> <ul style="list-style-type: none"> g) Connect the Wiring Chain to the Panel Socket of the Door Panels. h) Manually operate the Door and make sure that there is no interference between the Chain and its surrounding Environment along the opening / closing stroke. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-08-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR OPERATOR

Unit:

WIRING CHAIN

Component:

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

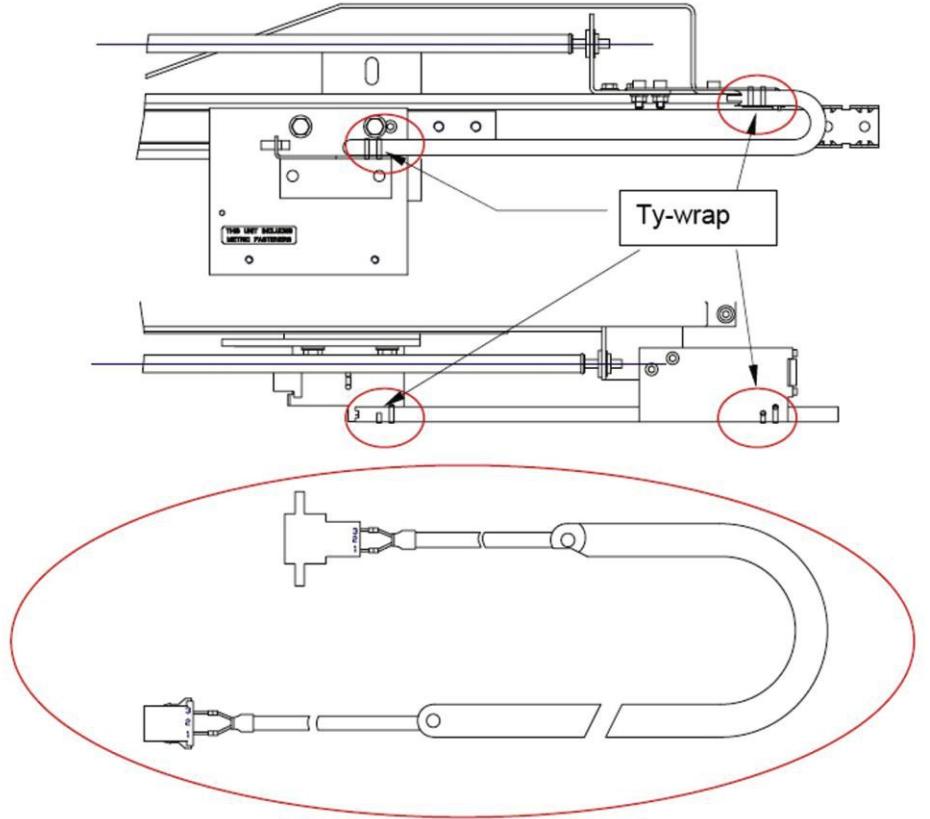


FIGURE 1 - WIRING CHAINS REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion**.”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-10-00/R-00

System:

DOORS

Sheet:

1/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

EDCU

Component:

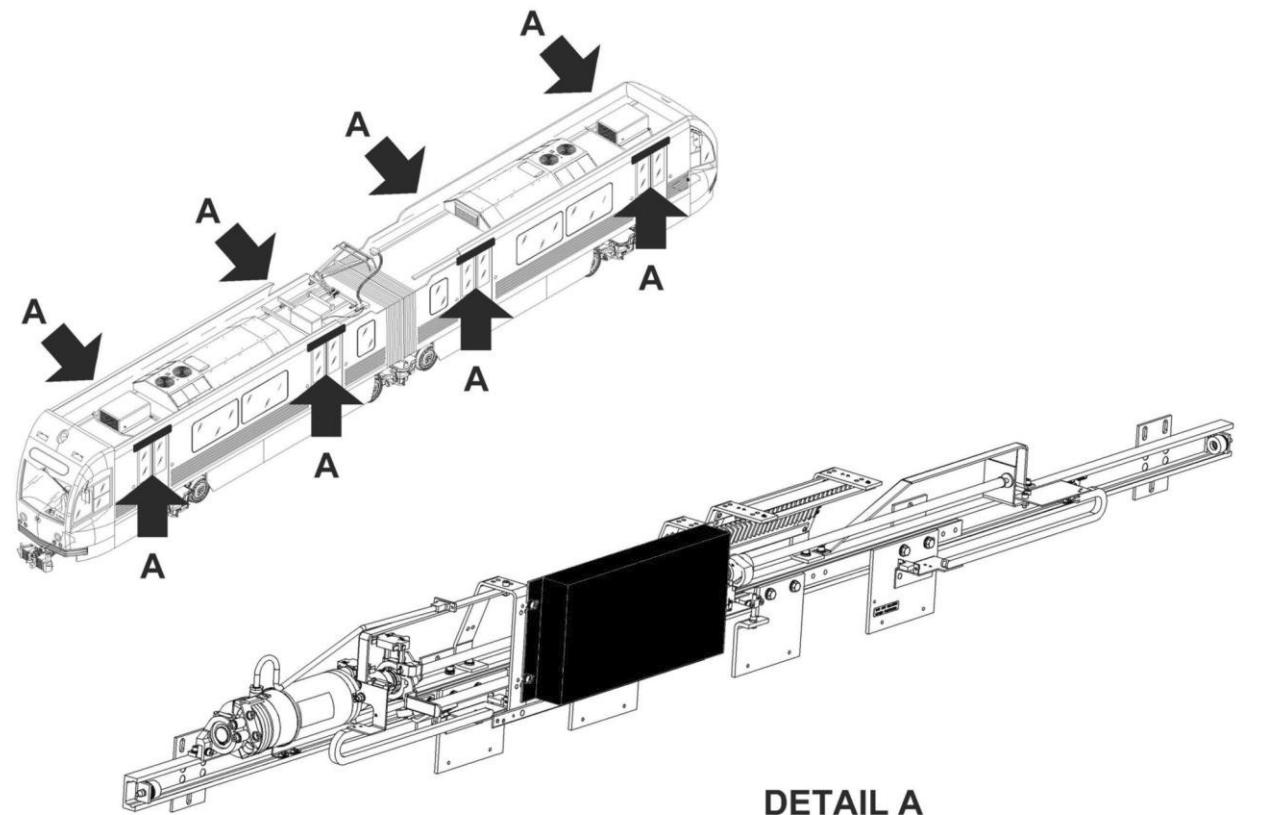
Man Hours:

0.25

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-10-00/R-00

System:

DOORS

Sheet:

2/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

EDCU

Component:

Man Hours:

0.25

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

CONTACTAL Grease

P/N: 9550123-000

SPARE PARTS:

ELECTRONIC DOOR CONTROL UNIT (EDCU)

P/N: A539464

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-01-10-00/R-00			
System: DOORS		Sheet: 3/6	
Subsystem/Assy: DOOR OPERATOR	Unit: EDCU		
Component:		Man Hours: 0.25	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Unplug the Connectors (3) from the EDCU (2). b) Disconnect the Grounding Wire from the EDCU Grounding Stud. NOTE: Make sure that the Nut and Washers are still engaged on the DCU Grounding Stud to avoid losing them. c) Loosen the 4 Hexagonal Nuts (1) and slide out the EDCU. NOTE: The EDCU is not repairable by the Customer. Only the Fuse can be replaced. The Fuse Holding Screw is a $\frac{1}{4}$ turn Plastic Screw. Use a Screw Driver to remove or install the Fuse Holder. d) Slide the new EDCU (2) into place then tighten the Hexagonal Nuts (1). e) Connect the Grounding Wire to the new EDCU and apply CONTACTAL grease. f) Plug in the EDCU Connectors into their dedicated Sockets. g) Configure the "new" EDCU according to the relevant Door Identification on which the new EDCU has been installed. Refer to the following Table 3 for EDCU Network Address Codes. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-10-00/R-00

System:

DOORS

Sheet:

4/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

EDCU

Component:

Man Hours:

0.25

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

NOTE: To be able to dialog on the network, each DCU has to have a specific address. To do so, network address is defined by strap mounting on LON add-on board connectors.

Input reading and address setting is made only once at power up.

If the DCU reads a coding not defined in the table below (no valid address), the whole functioning is inhibited and the door stays in its position.

TABLE 2 EDCU NETWORK ADDRESS CODES

DCU Number	Device address	Strap 1 (pin 3-7)	Strap 2 (pin 2-6)	Strap 3 (pin 3-7)	Strap 4 (pin 9-8)	Coding value
	(LON node ID)	Female connector	Male Connector	Male Connector	Male Connector	
EDCU_12A	11	0	0	0	1	32
EDCU_34A	12	0	0	1	0	64
EDCU_56B	13	0	1	0	0	128
EDCU_78B	14	0	1	1	1	224
EDCU_78A	15	1	0	0	0	16
EDCU_56A	16	1	0	1	1	112
EDCU_34B	17	1	1	0	1	176
EDCU_12B	18	1	1	1	0	208

FINAL OPERATIONS

- a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- b) Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE H-PM SHEETS** (para 04-III-03-03-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-10-00/R-00

System:

DOORS

Sheet:

5/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

EDCU

Component:

Man Hours:

0.25

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

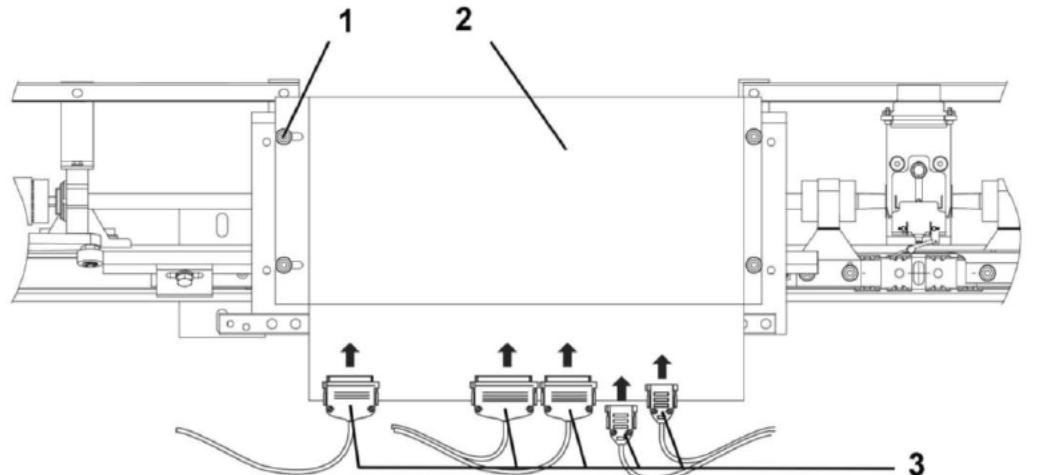


FIGURE 1 - EDCU REPLACEMENT

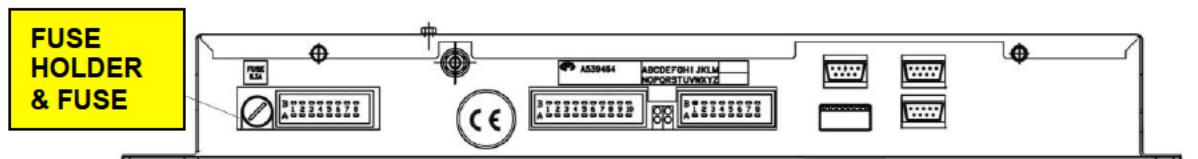


FIGURE 2 - EDCU FUSE HOLDER & FUSE LOCATION

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.
 Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-01-10-00/R-00

System:

DOORS

Sheet:

6/6

Subsystem/Assy:

DOOR OPERATOR

Unit:

EDCU

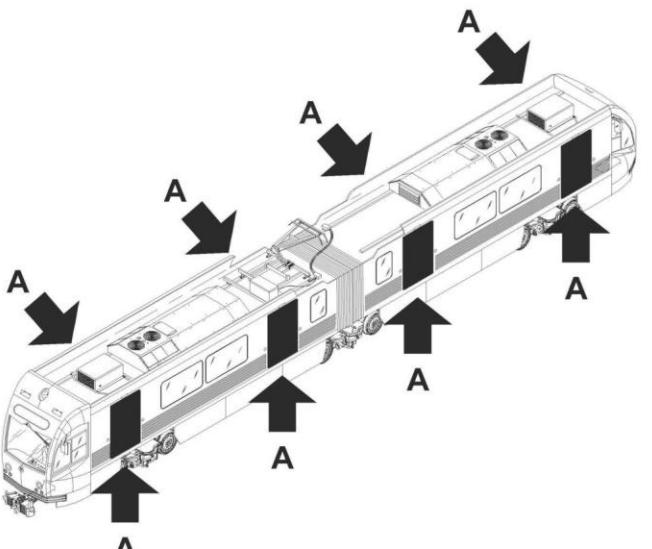
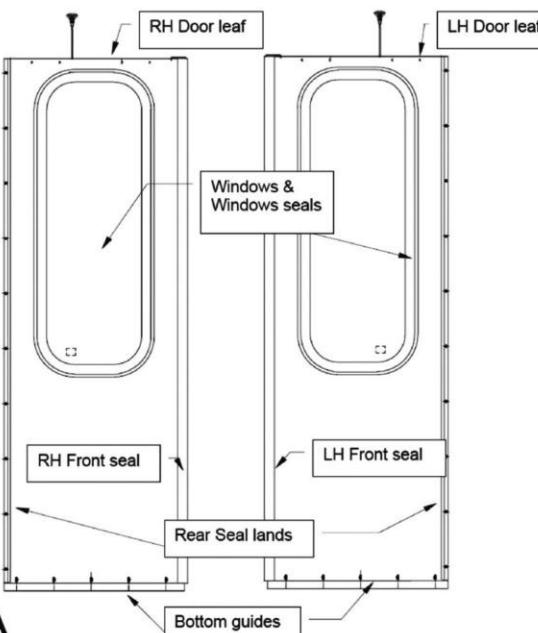
Component:

Man Hours:

0.25

Maintenance Task:

REPLACEMENT**INTENTIONALLY LEFT BLANK**

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-02-00-00/R-00	
System: DOORS	Sheet: 1/4
Subsystem/Assy: THRESHOLD ASSY	Unit:
Component:	Man Hours: 2.75
Maintenance Task: REPLACEMENT	
LOCATION:	
  <p>DETAIL A</p>	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-02-00-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

THRESHOLD ASSY

Unit:

Component:

Man Hours:

2.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

CAUTION :TO AVOID POSSIBLE CAR BODY DEFLECTION IT IS ADVISED DURING ALL INSTALLATION PROCESS TO HAVE THE CAR POSITIONED ON A CALIBRATED HORIZONTAL TRACK WITH BRAKES ON.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Drilling Jig

CONSUMABLES:

NA

SPARE PARTS:

Threshold Assembly

P/N: AA03GY7 (E149420-0101)

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-02-00-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: THRESHOLD ASSY	Unit:		
Component:	Man Hours: 2.75		
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Door Panels according to Sheet R-C-04-05-01-00/R-00. b) Remove the Door Lateral Gaskets. c) Remove the Screws (10) and Washers (11), then remove the Internal Threshold (4) with Shims (5). d) Remove the Screws (8) and Washers (9), then remove the External Threshold (2) with Shims (3). e) Remove the Screws (6) and Washers (7), then remove Threshold Assembly (1). f) Position and secure the new Threshold Assembly by means of 4 screws without tightening them. g) Adjust the distance E = 0.20 inch (5 mm) all along the Threshold. h) Torque the 4 fixing screws. i) Install the Central Guiding Pad by means of the Screws (6) and Washers (7). j) Adjust the distance F = 0.28 inch (7 mm). k) Torque the Screws (6). 			
<p>NOTE: The Threshold and the Guiding Pad will be readjusted after the Door Panels installation.</p> <ul style="list-style-type: none"> l) Install the Door Panels according to Sheet R-C-04-05-01-00/R-00. m) Perform Threshold Final Adjustment according to Sheet R-P-04-05-00-00/I-00 Step 2. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-02-00-00/R-00

System:

DOORS

Subsystem/Assy:

THRESHOLD ASSY

Component:

Unit:

Sheet:

4/4

Maintenance Task:

REPLACEMENT

PROCEDURE:

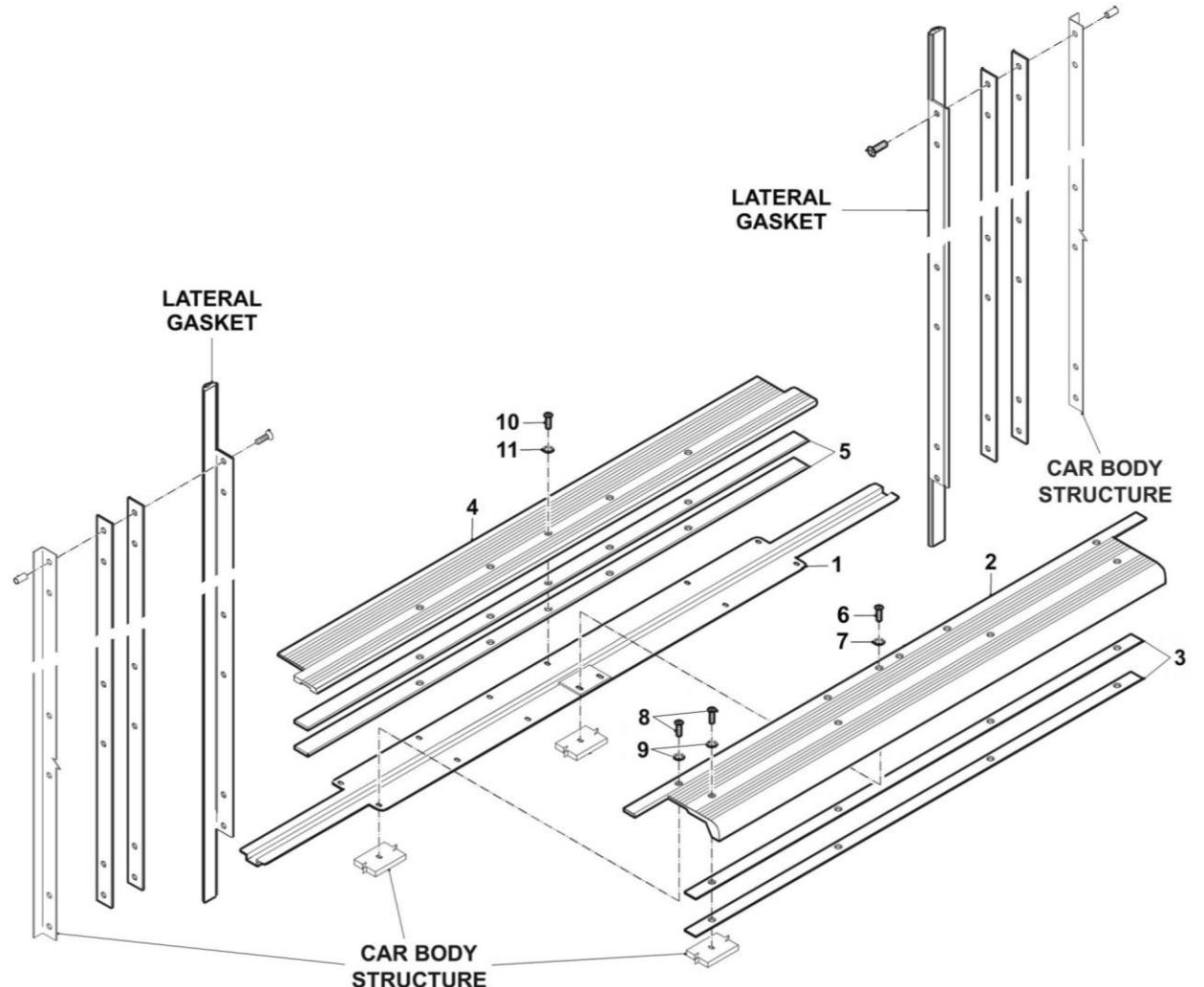


FIGURE 1 - THRESHOLD ASSEMBLY REPLACEMENT

P2550 CORRECTIVE MAINTENANCE SHEET

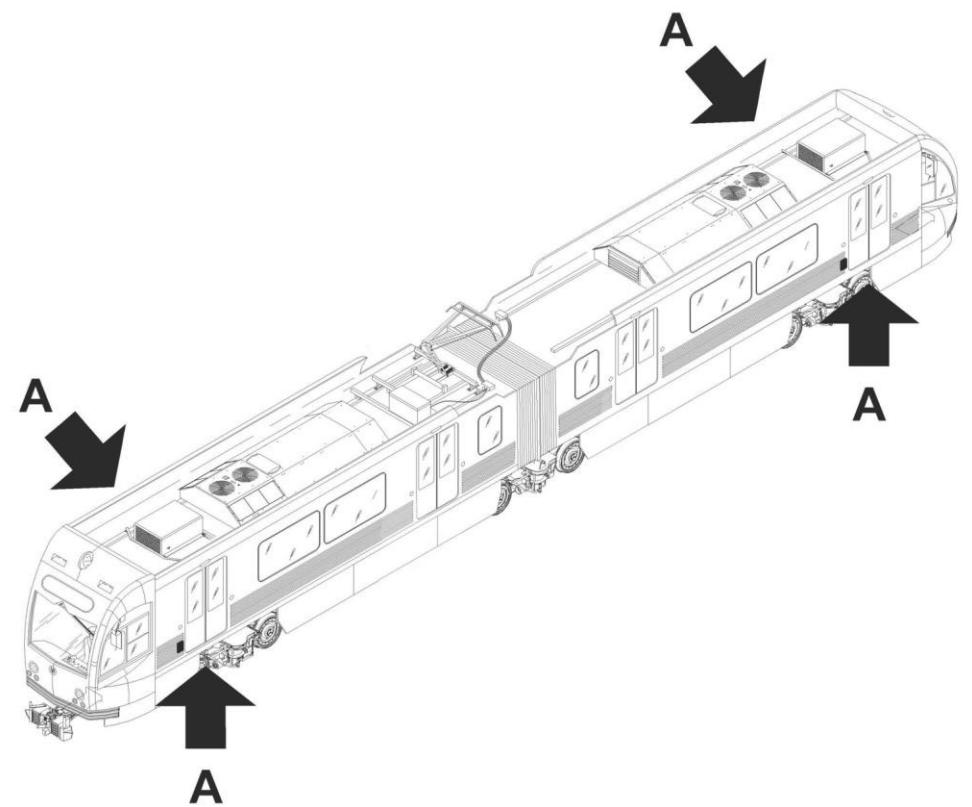
Card Code:

R-C-04-03-00-00/R-00

System: DOORS	Sheet: 1/6
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: EXTERIOR EMERGENCY DEVICE	Man Hours: 0.75

Maintenance Task:
REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-03-00-00/R-00

System:

DOORS

Sheet:

2/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

EXTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 542
Sealant GE-SILPRUF SCS 2009

SPARE PARTS:

EXTERIOR EMERGENCY DEVICE (EED) P/N: AA03GY8 (E149423)

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-03-00-00/R-00			
System: DOORS	Sheet: 3/6		
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY		
Component: EXTERIOR EMERGENCY DEVICE	Man Hours: 0.75		
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
<ul style="list-style-type: none"> a) Remove the Screws (2), Washers (3) and Nut (4) fixing the EED (1). b) Remove the Bowden Cable End Fitting from the EED. c) Disengage the Cable Nipple from the Pulley Groove. d) Remove the EED (1). e) If necessary remove the Screws (6) and Washers (7) fixing the Cover (5). f) Remove the Cover (5). g) Get a new EED. h) If removed, install the Cover (5) with the Screws (6) and Washers (7). <p>NOTE: Mount the Fixing Screws with Loctite 542.</p> <ul style="list-style-type: none"> i) Engage the Cable Nipple into the Pulley Groove. j) Install the Bowden Cable End Fitted on the EED Frame. k) Adjust the Bowden Cable tension by fine-tuning the location of the Bowden Cable End Fitting. (refer to Sheet R-P-04-01-00-00/I-00 Step 4.3 for details). l) Torque the End Fitting Lock Nut. m) Install the EED (1) and its Sealing Gasket with the Screws (2), Washers (3) and Nut (4). <p>NOTE: Mount Fixing Screws with Loctite 542. Apply Sealant GE-SILPRUF SCS 2009 around the perimeter of the Exterior Crew Switch to assure the water tightness.</p> <ul style="list-style-type: none"> n) Check that the Door being closed and locked. o) Pull on the EED Handle. p) Verify that the Door unlocks and can be opened manually. q) Close and lock the Door manually. r) Check that the Door recovers its normal operation mode. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-03-00-00/R-00

System:

DOORS

Sheet:

4/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

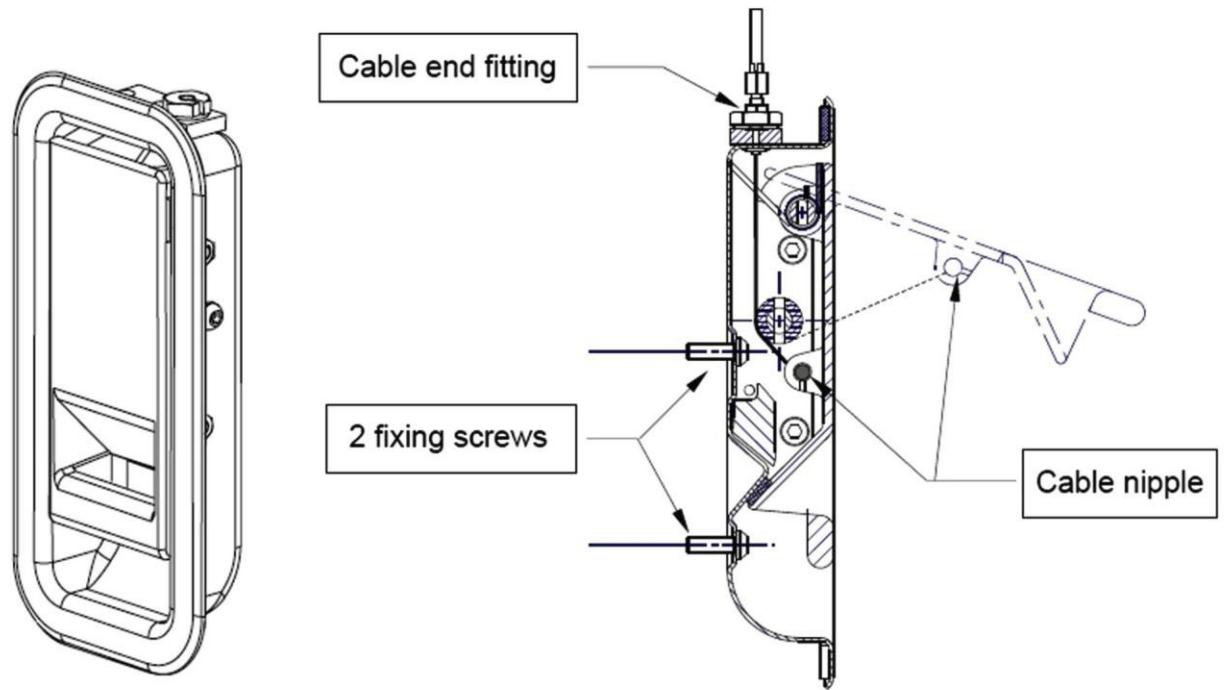
Component:

EXTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT**PROCEDURE:****FIGURE 1 - EXTERIOR EMERGENCY DEVICE REPLACEMENT**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-03-00-00/R-00

System:

DOORS

Sheet:

5/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

EXTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

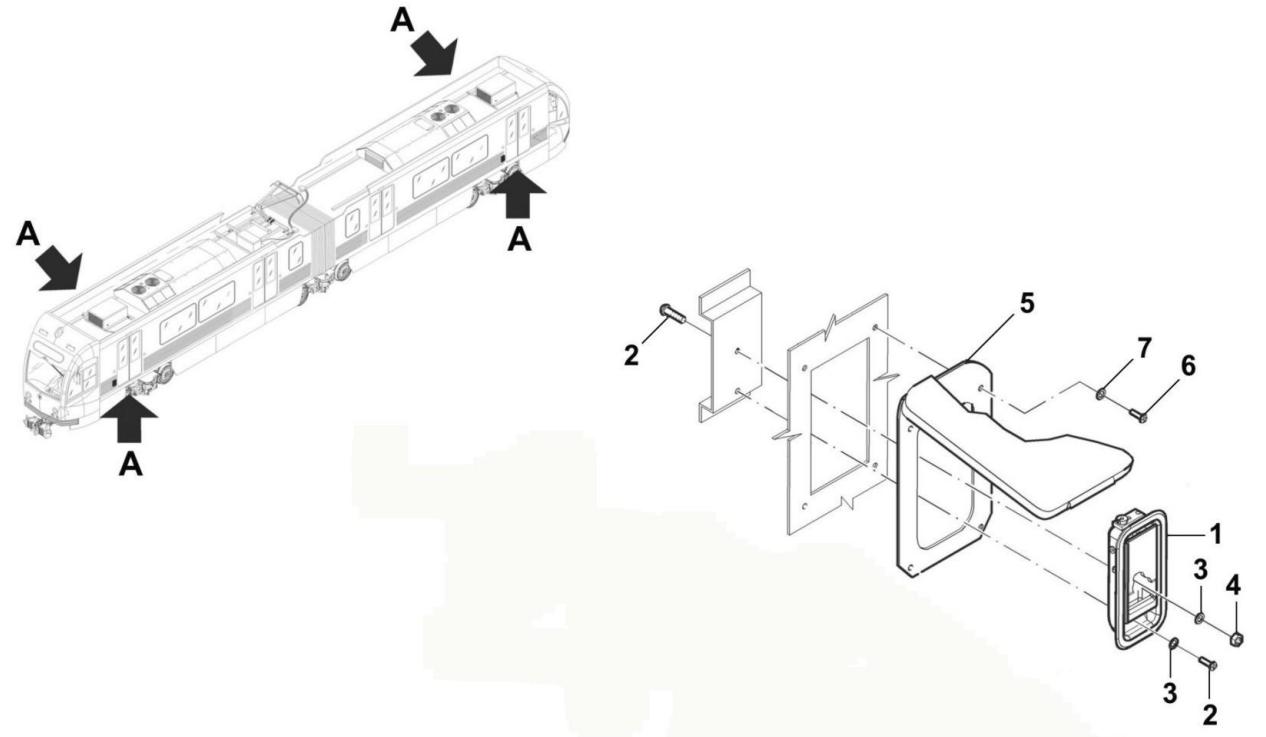


FIGURE 2 - EXTERIOR EMERGENCY DEVICE REPLACEMENT DETAILS

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-03-00-00/R-00

System:

DOORS

Sheet:

6/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

EXTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

FINAL OPERATIONS

- a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- b) Perform EED Test according to Sheet R-P-04-00-00-00/T-00 Step T.5.1.
- c) Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

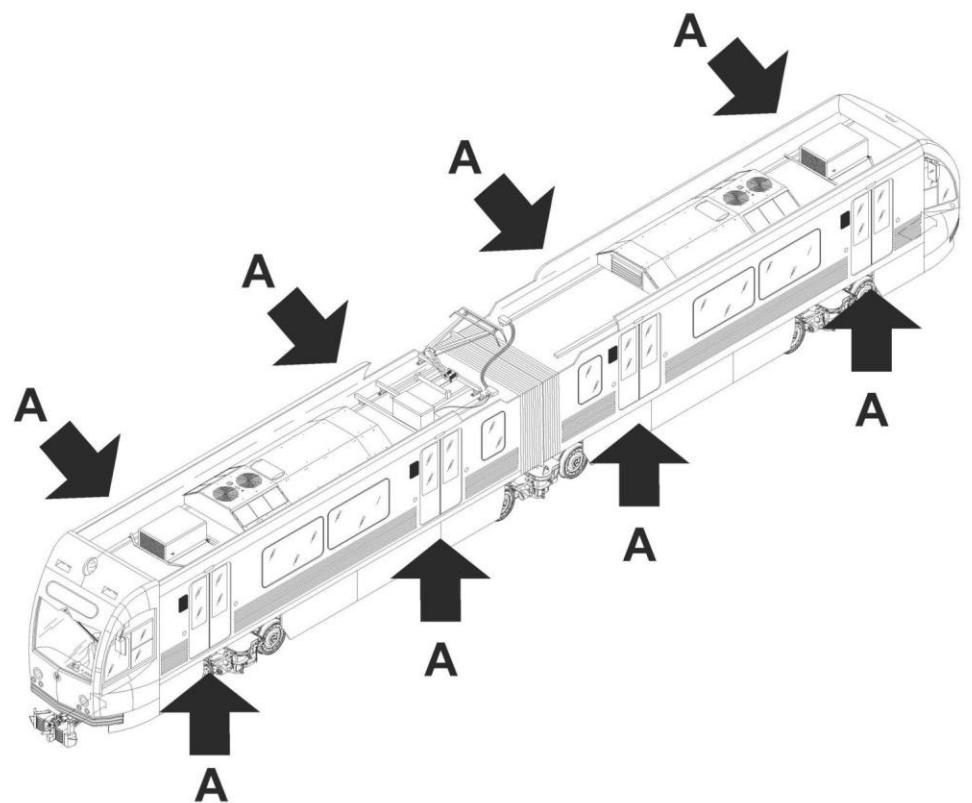
Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion.**"

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-04-00-00/R-00System: **DOORS** Sheet: **1/6**Subsystem/Assy: **DOORS CONTROL** Unit: **LV CIRCUITRY**Component: **INTERIOR EMERGENCY DEVICE** Man Hours: **0.75**Maintenance Task: **REPLACEMENT**

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-04-00-00/R-00

System:

DOORS

Sheet:

2/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

INTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

NA

SPARE PARTS:

INTERIOR EMERGENCY DEVICE (IED)

P/N: AA03GY9 (E149422)

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-04-00-00/R-00

System:

DOORS

Sheet:

3/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

INTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT
PROCEDURE:
PRELIMINARY OPERATIONS

- a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations.
- b) Set the Transfer switch to ON or LOCAL position.
- c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1.

TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION

DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV

REPLACEMENT

- a) Remove the IED fixing screw (2, Figure 2).
- b) Disconnect the Connector (4, Figure 1).
- c) Remove the Bowden Cable End Fittings (1, Figure 1).
- d) Disengage the Bowden Cable Nipples from their pulley (2, Figure 1).
- e) Remove the IED (1, Figure 2).
- f) If necessary remove the Screws (5, Figure 2) fixing the Panel (3).
- g) Remove the Panel (3) with the Internal Crew Switch (4).
- h) Get a new IED.
- i) If removed, install the Panel (3, Figure 2), with the Internal Crew Switch (4), with the Screws (5).
- j) Engage the Bowden Cable Nipples into the IED Pulley Notch (2, Figure 1).
- k) Install the Bowden Cable End Fittings on the IED Frame.
- l) Adjust the End Fittings (1, Figure 1) so that there is no slack in the Bowden Cable.
(refer to Sheet R-P-04-01-00-00/I-00 Step 4.3 for details).
- m) Torque the Bowden Cable End Fittings Lock Nut.
- n) Connect the Connector (4, Figure 1).
- o) Install the new IED (1, Figure 2) on Panel (3) and torque the Fixing Screws (2).
- p) Check that the Door being closed and locked,
- q) Pull the IED Handle.
- r) Verify that the Door unlocks and can be open manually.

NOTE: The Door should be free to be open or closed manually.

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-04-00-00/R-00

System:

DOORS

Sheet:

4/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

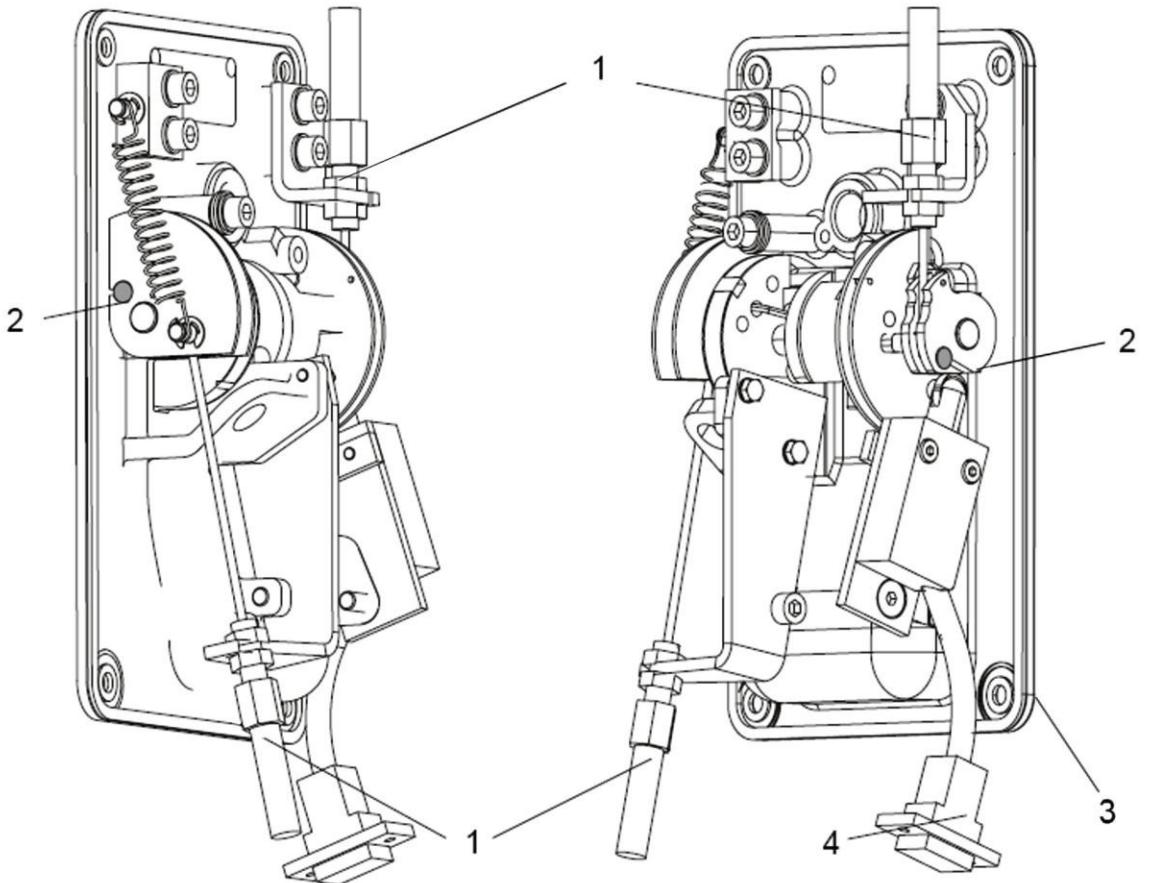
Component:

INTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT**PROCEDURE (CONT'D):****FIGURE 1 - INTERIOR EMERGENCY DEVICE REPLACEMENT**

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-04-00-00/R-00

System:

DOORS

Sheet:

5/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

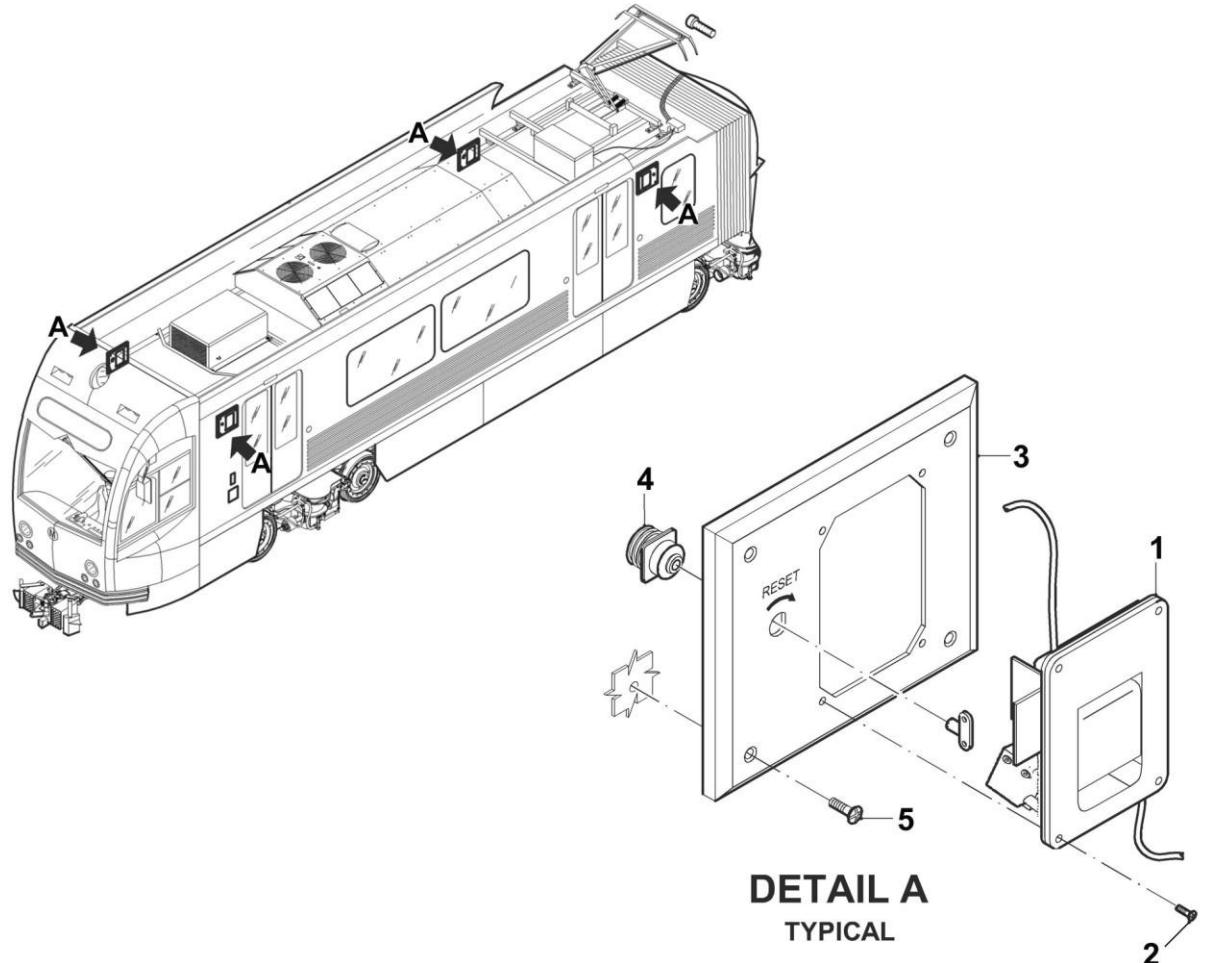
Component:

INTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT
PROCEDURE (CONT'D):

FIGURE 2 - INTERIOR EMERGENCY DEVICE REPLACEMENT-DETAILS

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-04-00-00/R-00

System:

DOORS

Sheet:

6/6

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

INTERIOR EMERGENCY DEVICE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

FINAL OPERATIONS

- a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- b) Perform IED Test according to Sheet R-P-04-00-00-00/T-00 Step T.5.2.
- c) Check that the Doors open and close automatically on demand.
- d) Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-01-00/R-00

System:

DOORS

Sheet:

1/6

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

DOOR LEAF

Component:

1

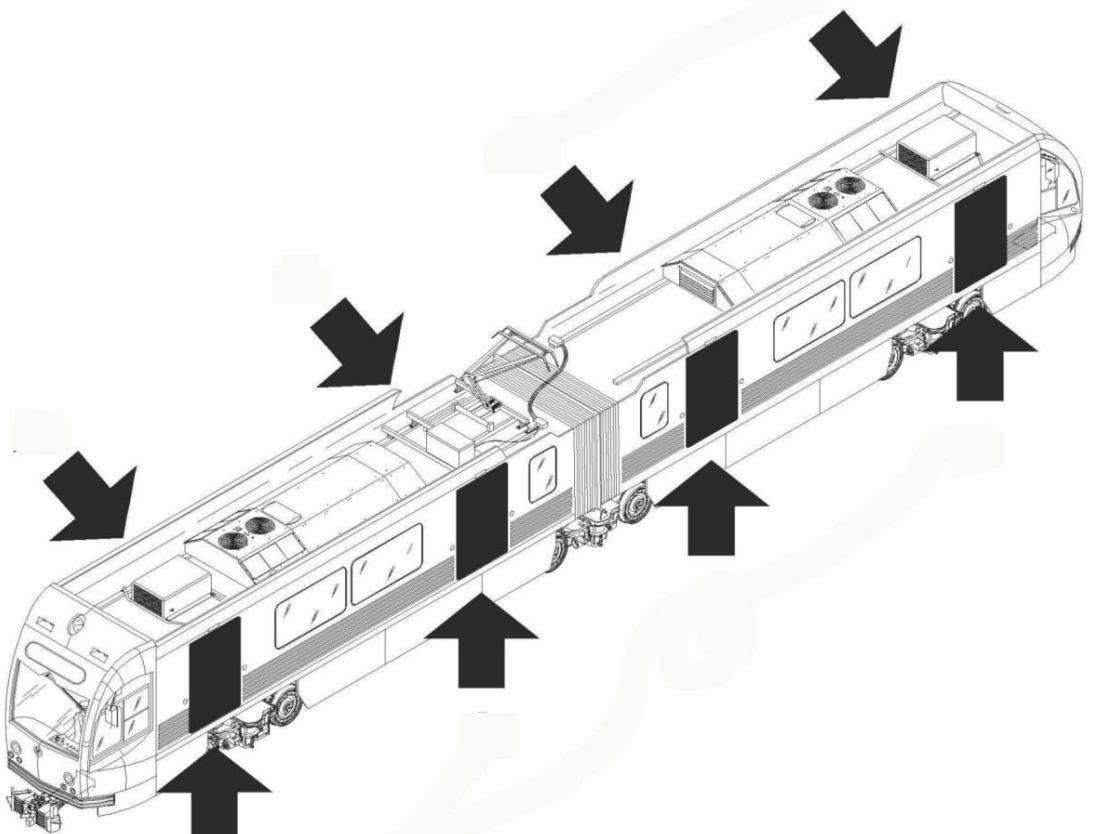
Man Hours:

1

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-01-00/R-00

System:

DOORS

Sheet:

2/6

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

DOOR LEAF

Component:

Man Hours:

1

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 243 P/N: 9510207-000

SPARE PARTS:

LH Door Leaf	P/N: 70025-D1
RH Door Leaf	P/N: 70025-D2

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-05-01-00/R-00			
System: DOORS		Sheet: 3/6	
Subsystem/Assy: DOOR LEAF ASSY	Unit: DOOR LEAF		
Component:		Man Hours: 1	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Unplug the Sensitive Edge Connector from the Wring Chain. b) Remove the 4 Fixing Bolts at Top of Door Panel. c) Disengage the Door Panel from the Threshold Guiding Rail. d) Remove the Door Panel. Make it available for repair. e) Engage the Door Panel into the Threshold Track. f) Install the four Fixing Bolts (at Top of Door Panel) on Door Operator Brackets with Loctite 243. g) Tighten the 4 Fixing Bolts to nominal torque.value. h) Plug in the Sensitive Edge Connector into the Wiring Chain Socket. i) Perform Bottom Guide Adjustment according to Sheet R-P-04-05-00-00/I-00 Step 3. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-01-00/R-00

System:

DOORS

Sheet:

4/6

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

DOOR LEAF

Component:

Man Hours:

1

Maintenance Task:

REPLACEMENT

PROCEDURE:

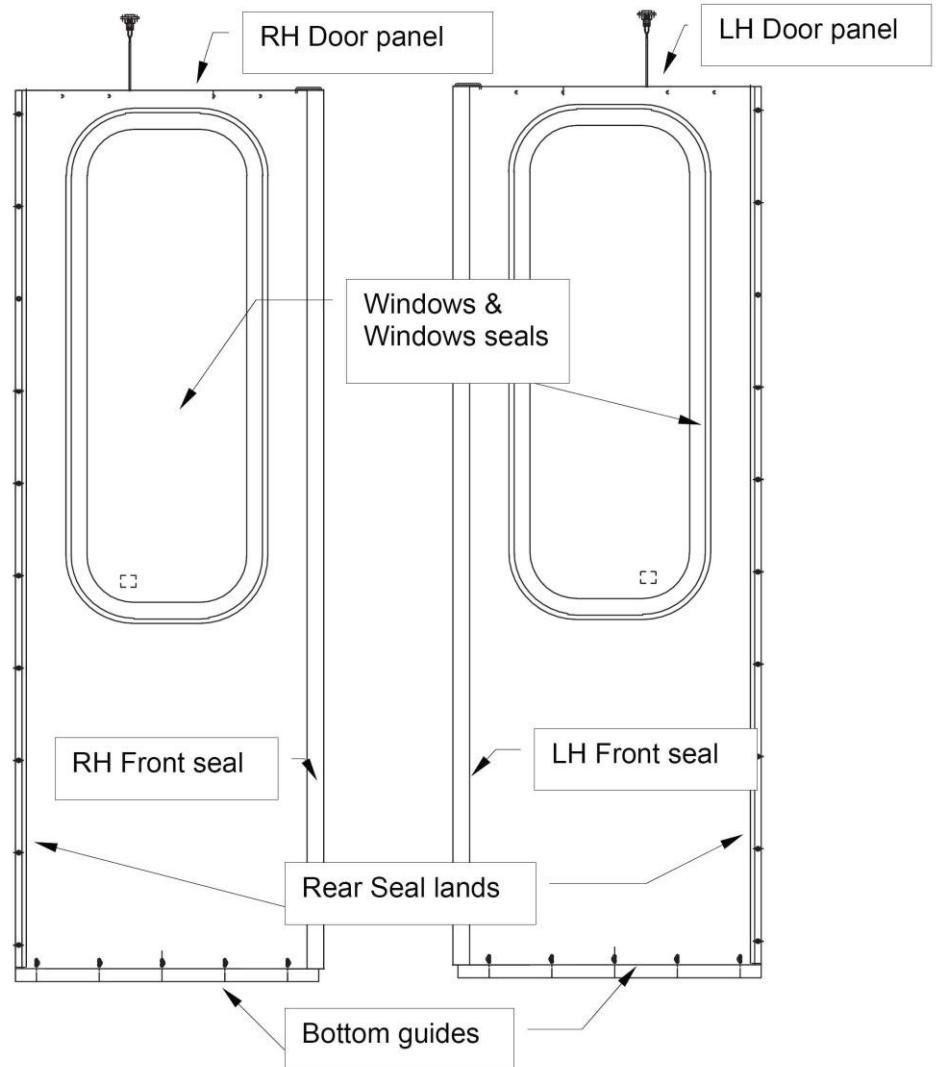


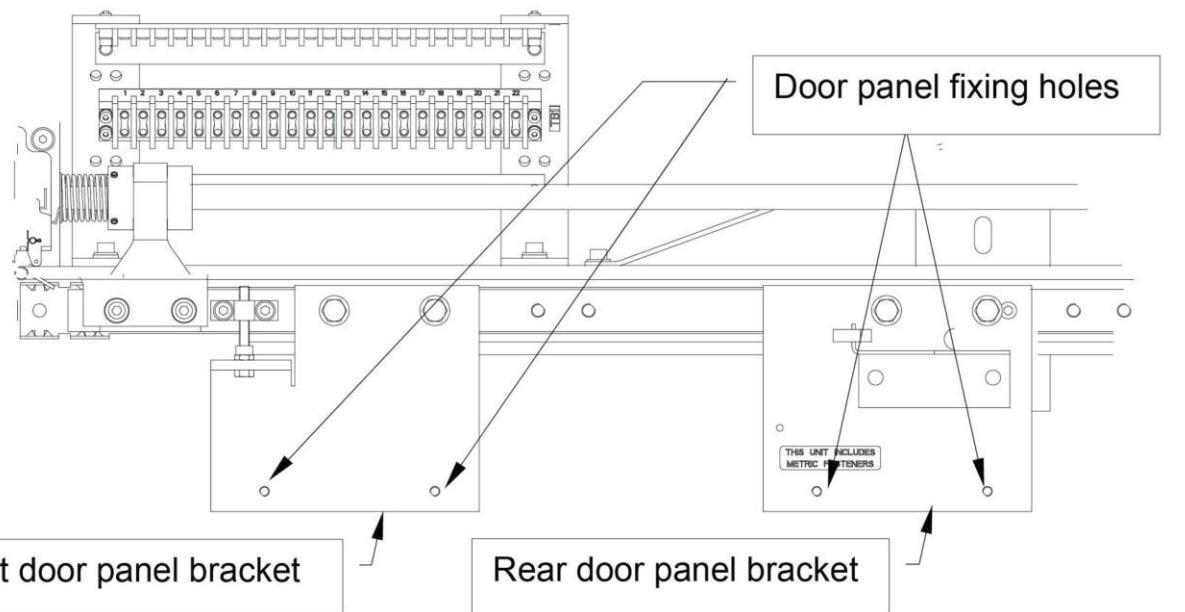
FIGURE 1 - DOOR LEAVES

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-01-00/R-00

System: DOORS	Sheet: 5/6
Subsystem/Assy: DOOR LEAF ASSY	Unit: DOOR LEAF
Component:	Man Hours: 1

 Maintenance Task:
REPLACEMENT
PROCEDURE:

FIGURE 2 - DOOR LEAVES REPLACEMENT
FINAL OPERATIONS

- a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- b) Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion.**"

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-01-00/R-00

System:

DOORS

Sheet:

6/6

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

DOOR LEAF

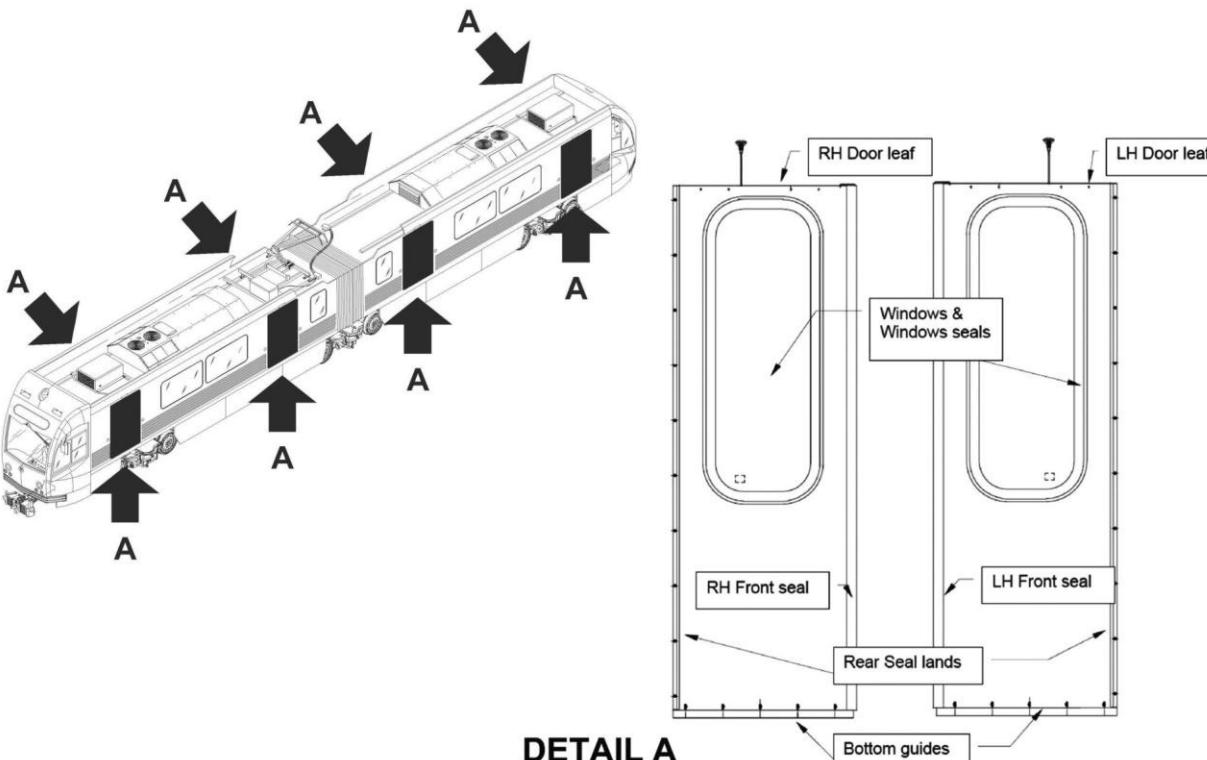
Component:

Man Hours:

1

Maintenance Task:

REPLACEMENT**INTENTIONALLY
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P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-05-03-00/R-00	
System: DOORS	Sheet: 1/4
Subsystem/Assy: DOOR LEAF ASSY	Unit:
Component: FRONT SEAL	Man Hours: 0.75
Maintenance Task: REPLACEMENT	
LOCATION:	
 <p>DETAIL A</p>	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-03-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

Component:

FRONT SEALMan Hours:
0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION : THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

CAUTION: DO NOT HIT THE FRONT SEAL DIRECTLY WITH A HAMMER ON THE SENSITIVE EDGE (SEAL NOSE).

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

MOUNTING PASTE P/N: 9550122-000

SPARE PARTS:

FRONT SEAL W/ SENSITIVE EDGE P/N: 70040 (70041 & 70042)

P2550 CORRECTIVE MAINTENANCE SHEET																																									
Card Code: R-C-04-05-03-00/R-00																																									
System: DOORS		Sheet: 3/4																																							
Subsystem/Assy: DOOR LEAF ASSY	Unit:																																								
Component: FRONT SEAL		Man Hours: 0.75																																							
Maintenance Task: REPLACEMENT																																									
PROCEDURE: <p>PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. <p>TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION</p> <table border="1"> <thead> <tr> <th rowspan="2">DOOR IDENTIFICATION</th> <th rowspan="2">CB IDENTIFICATION</th> <th colspan="2">CB LOCATION</th> </tr> <tr> <th>Section</th> <th>Locker</th> </tr> </thead> <tbody> <tr> <td>(A1/A2)</td> <td>9F05</td> <td>A</td> <td>LV</td> </tr> <tr> <td>(A3/A4)</td> <td>9F07</td> <td>A</td> <td>LV</td> </tr> <tr> <td>(A5/A6)</td> <td>9F06</td> <td>A</td> <td>LV</td> </tr> <tr> <td>(A7/A8)</td> <td>9F04</td> <td>A</td> <td>LV</td> </tr> <tr> <td>(B1/B2)</td> <td>9F05</td> <td>B</td> <td>LV</td> </tr> <tr> <td>(B3/B4)</td> <td>9F07</td> <td>B</td> <td>LV</td> </tr> <tr> <td>(B5/B6)</td> <td>9F06</td> <td>B</td> <td>LV</td> </tr> <tr> <td>(B7/B8)</td> <td>9F04</td> <td>B</td> <td>LV</td> </tr> </tbody> </table> <p>REMOVAL</p> <p>CAUTION: DO NOT HIT THE FRONT SEAL DIRECTLY WITH A HAMMER ON THE SENSITIVE EDGE (SEAL NOSE).</p> <p>NOTE :In cold conditions it might be difficult to install Front Seals (Sensitive Edge). It is then recommended to warm up the seals first by leaving them at room temperature.</p> <ul style="list-style-type: none"> a) Remove the Door Leaf according to Sheet R-C-04-05-01-00/R-00. b) Unplug the Sensitive Edge Wiring. c) Remove the Molded Cable Clamps on Top of the Door Leaf. d) Strip off and discard the Front Seal from one End. e) Smear tire mounting paste on seal anchorage. f) Press the new Front Seal in the Door Panel Front Channel, starting from the Bottom. g) Put the Cable Molded Clamps back on Top of Door Leaf. h) Wipe off the excess of mounting paste. i) Plug in the Sensitive Edge. j) Install the Door Leaf according to Sheet R-C-04-05-01-00/R-00. 				DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION		Section	Locker	(A1/A2)	9F05	A	LV	(A3/A4)	9F07	A	LV	(A5/A6)	9F06	A	LV	(A7/A8)	9F04	A	LV	(B1/B2)	9F05	B	LV	(B3/B4)	9F07	B	LV	(B5/B6)	9F06	B	LV	(B7/B8)	9F04	B	LV
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION																																							
		Section	Locker																																						
(A1/A2)	9F05	A	LV																																						
(A3/A4)	9F07	A	LV																																						
(A5/A6)	9F06	A	LV																																						
(A7/A8)	9F04	A	LV																																						
(B1/B2)	9F05	B	LV																																						
(B3/B4)	9F07	B	LV																																						
(B5/B6)	9F06	B	LV																																						
(B7/B8)	9F04	B	LV																																						

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-03-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

Component:

FRONT SEAL

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE:



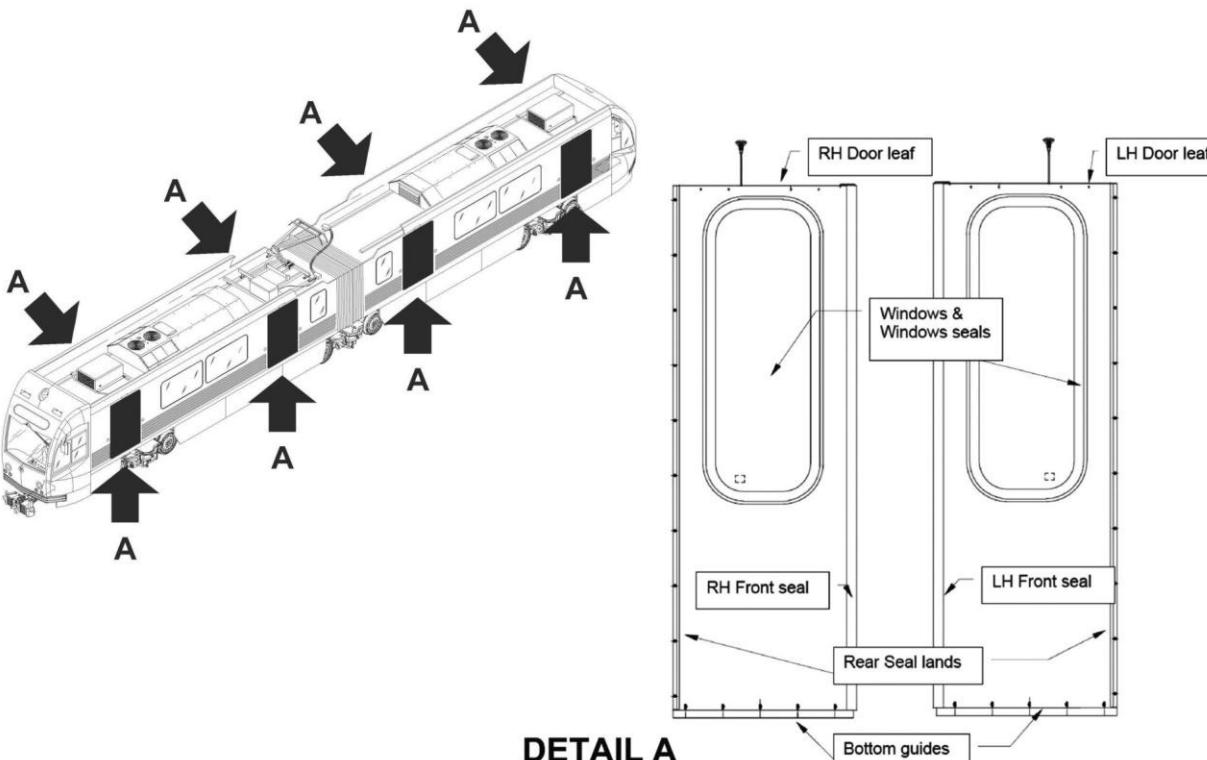
FIGURE 1 - FRONT SEAL REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Check that the Sensitive Edge is working when Door is closing.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "**At every Task Completion.**"

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-05-04-00/R-00	
System: DOORS	Sheet: 1/4
Subsystem/Assy: DOOR LEAF ASSY	Unit:
Component: REAR SEAL LAND	Man Hours: 0.75
Maintenance Task: REPLACEMENT	
LOCATION:  <p>DETAIL A</p>	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-04-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

REAR SEAL LANDMan Hours:
0.75

Component:

REAR SEAL LAND

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING: DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING: FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING: PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

MOUNTING PASTE	P/N: 9550122-000
LOCTITE 243	P/N: 9510207-000
Sealant GE-SILPRUF SCS 2009	

SPARE PARTS:

Rear Seal Land	P/N: 70114
----------------	------------

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-05-04-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR LEAF ASSY	Unit:		
Component: REAR SEAL LAND		Man Hours: 0.75	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1.			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT			
a) Remove the Door Leaf according to Sheet R-C-04-05-01-00/R-00. b) With a Pen mark the position of Rear Seal Land on Door Leaf. c) Remove all Fixing Screws. d) Remove the Seal Land from the Door Leaf. e) Remove traces of remaining sealant on Door Leaf and clean the surface with soft tissue. f) Position the new Rear Seal Land on Door Leaf according to the marks made prior to removal. g) Mount all Fixing Screws with Loctite 243. h) Apply sealant between Rear Seal Land Edge and Door Leaf. i) Install the Door Leaf according to Sheet R-C-04-05-01-00/R-00.			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-04-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

Component:
REAR SEAL LANDMan Hours:
0.75

Maintenance Task:

REPLACEMENT

PROCEDURE:

I



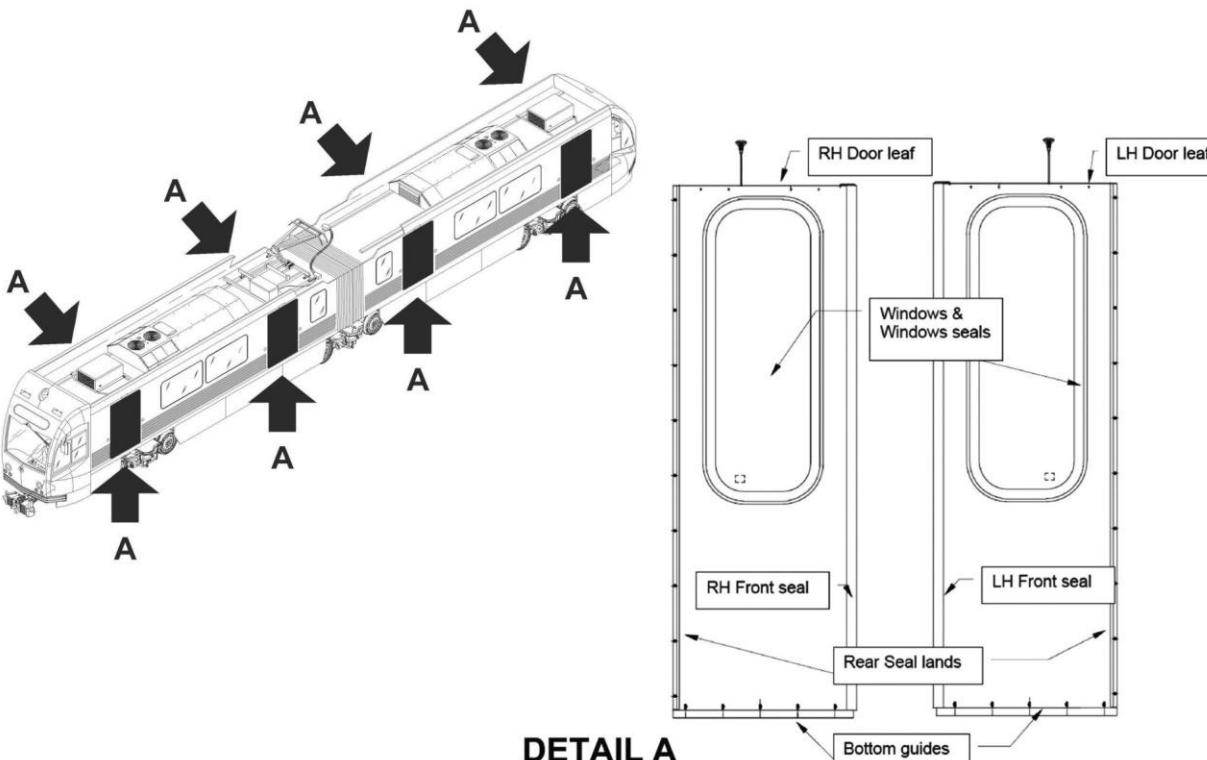
FIGURE 1 - REAR SEAL LAND REPLACEMENT

FINAL OPERATIONS

- a) Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- b) Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-05-05-00/R-00	
System: DOORS	Sheet: 1/4
Subsystem/Assy: DOOR LEAF ASSY	Unit: DOOR WINDOW
Component: WINDOW & WINDOW SEAL	Man Hours: 0.5
Maintenance Task: REPLACEMENT	
LOCATION:	
 <p>DETAIL A</p>	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-05-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

DOOR WINDOW

Component:

WINDOW & WINDOW SEAL

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

Rope

Tapestry Roller

Brush

CONSUMABLES:

Mounting Paste P/N: 9550122-000

SPARE PARTS:

Glazing P/N: 70102

Window Seal P/N: 70037

Filler Strip P/N: 70038

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-05-05-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR LEAF ASSY	Unit: DOOR WINDOW		
Component: WINDOW & WINDOW SEAL		Man Hours: 0.5	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REMOVAL <ul style="list-style-type: none"> a) Remove the Door Leaf according to Sheet R-C-04-05-01-00/R-00. b) Strip off the Filler Strip starting from one End. c) Pop out the Glazing by pressing on one of the Corners from inside and remove the Window Seal. d) Install the new Window Seal on Door Leaf with the Filler Groove on external side. e) Spread Mounting Paste on the Window Seal Groove. f) Use a rope to insert the Glazing, the marking on Glazing should be readable from inside at bottom. g) Install the Filler Strip with the help of a Tapestry Roller starting at bottom middle. h) Cut the Filler Strip extra length so that there is no gap at junction. i) Check that the Window Seal is watertight (next washing operation). j) Install the Door Leaf according to Sheet R-C-04-05-01-00/R-00. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-05-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

DOOR WINDOW

Component:

WINDOW & WINDOW SEAL

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE:

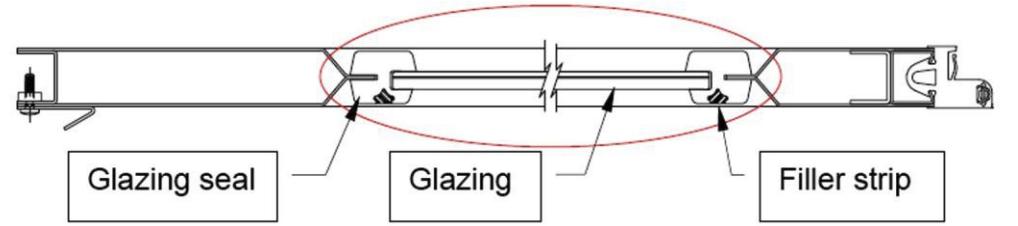


FIGURE 1 - WINDOW & WINDOW SEAL REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

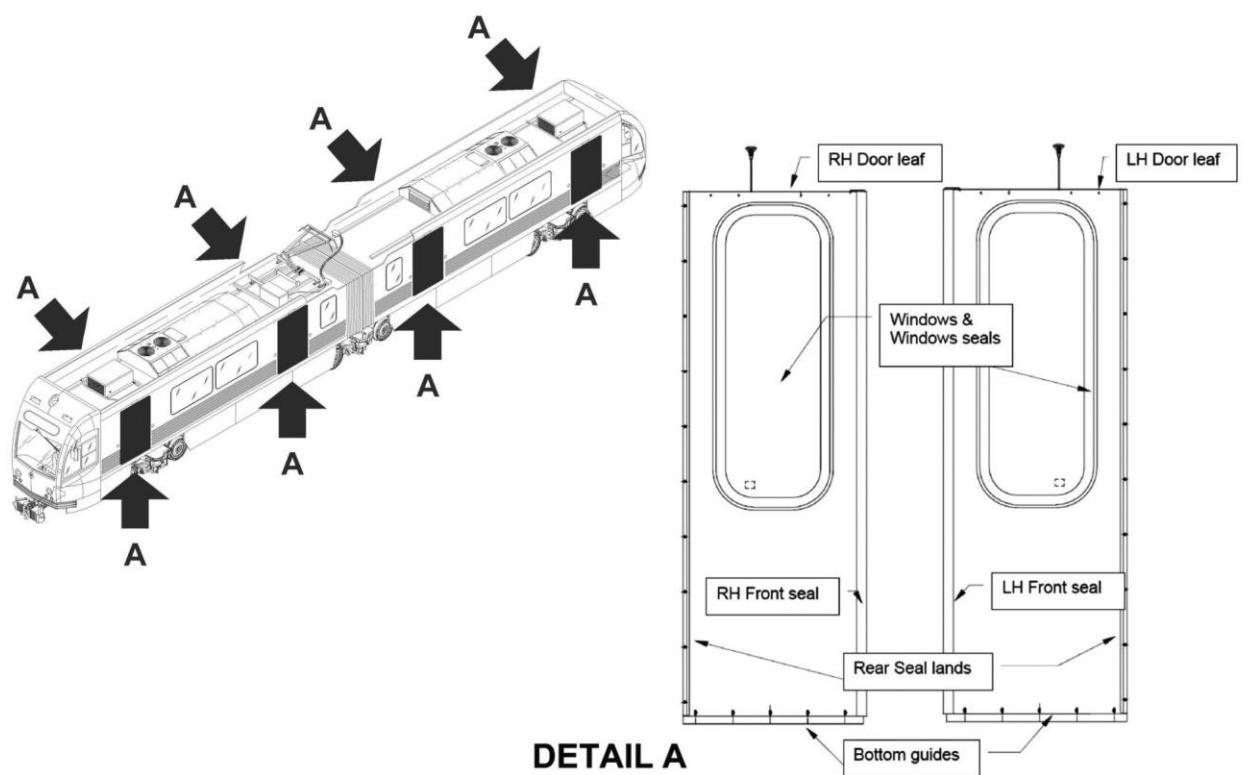
Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-07-00/R-00

System: DOORS	Sheet: 1/4
Subsystem/Assy: DOOR LEAF ASSY	Unit:
Component: LOWER GUIDE	Man Hours: 0.75
Maintenance Task: REPLACEMENT	

LOCATION:

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-07-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

Component:

LOWER GUIDE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 243 P/N: 9510207-000

SPARE PARTS:

Bottom Guide RH	P/N: 70043-A1
Bottom Guide LH	P/N: 70043-A2

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-05-07-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOOR LEAF ASSY	Unit:		
Component: LOWER GUIDE		Man Hours: 0.75	
Maintenance Task: REPLACEMENT			
PROCEDURE:			
PRELIMINARY OPERATIONS			
<ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV

REPLACEMENT

- a) Pull emergency handle in order to open completely door leaf.
- b) Remove the 5 fixing Screws.
- c) Remove the Lower Guide by sliding it out of the Lower Channel.
- d) The Door being open, engage the new Lower Guide into the Door Panel Lower Channel.
- e) Engage the 5 fixing Screws into the Lower Guide.
- f) Perform Lower Guide Adjustment according to Sheet R-P-04-05-00-00/I-00 Step 3.
- g) Close the door manually and re-activate emergency door opening system.

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-05-07-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOOR LEAF ASSY

Unit:

Component:

LOWER GUIDE

Man Hours:

0.75

Maintenance Task:

REPLACEMENT

PROCEDURE:

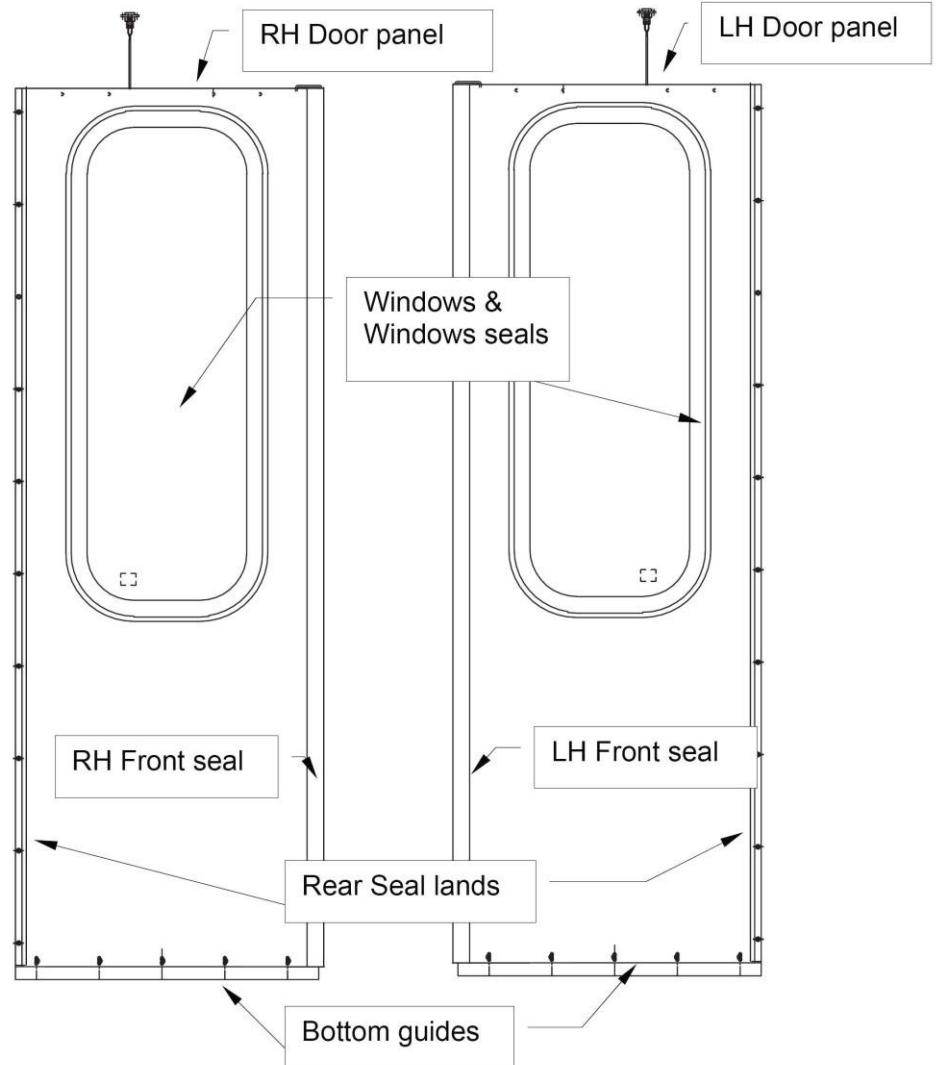


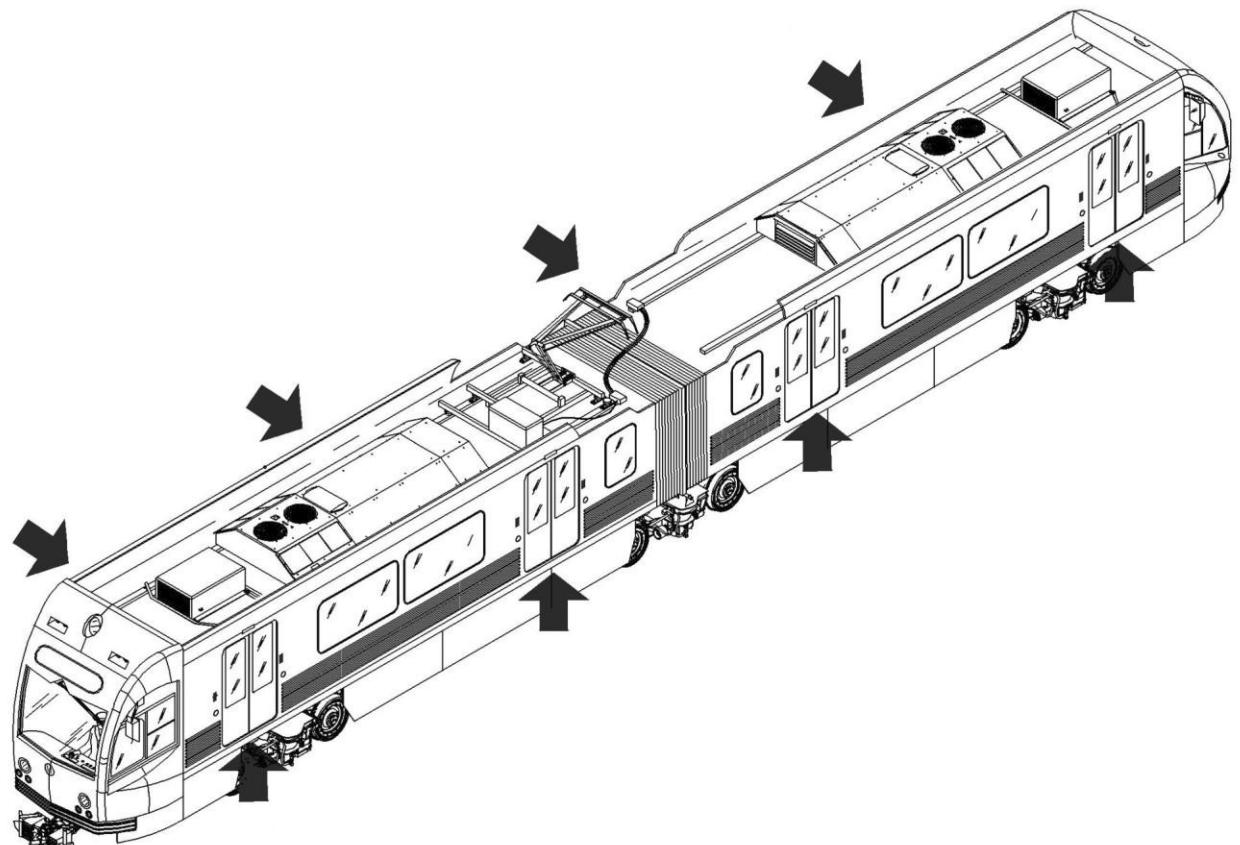
FIGURE 1 - DOOR LEAVES

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-06-00-00/R-00System: **DOORS** Sheet: **1/4**Subsystem/Assy: **DOORS CONTROL** Unit: **LV CIRCUITRY**Component: **EXTERNAL PUSH BUTTON ASSY** Man Hours: **0.5**Maintenance Task: **REPLACEMENT**

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-06-00-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

EXTERNAL PUSH BUTTON ASSY

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

NA

SPARE PARTS:

EXTERNAL PUSHBUTTON & 'DOOR OUT OF SERVICE' SIGN P/N AA03GY6 (F000564.001)

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-06-00-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY		
Component: EXTERNAL PUSH BUTTON ASSY		Man Hours: 0.5	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Remove the Fixing Hardware from the External Pushbutton & 'Door Out of Service' Sign. b) Remove the External Pushbutton & 'Door Out of Service' Sign. c) Disconnect the Wiring Connections of the External Pushbutton & 'Door Out of Service' Sign. d) Connect the Wiring Connections to the new External Pushbutton & 'Door Out of Service' Sign according to the Wiring Schematics Diagram. e) Install and secure the External Pushbutton & 'Door Out of Service' Sign with the Fixing Hardware. 			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-06-00-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

EXTERNAL PUSH BUTTON ASSY

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE:

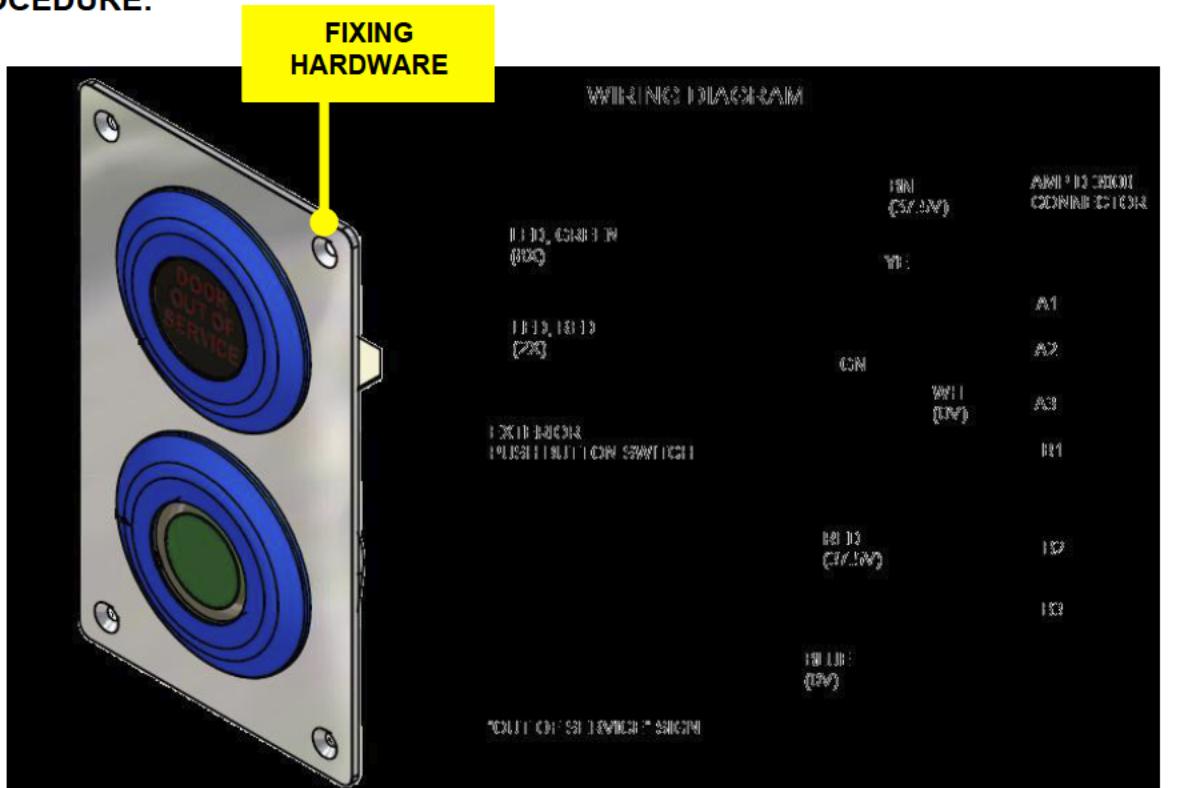


FIGURE 1 - EXTERNAL PUSHBUTTON & 'DOOR OUT OF SERVICE' SIGN REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

P2550 CORRECTIVE MAINTENANCE SHEET

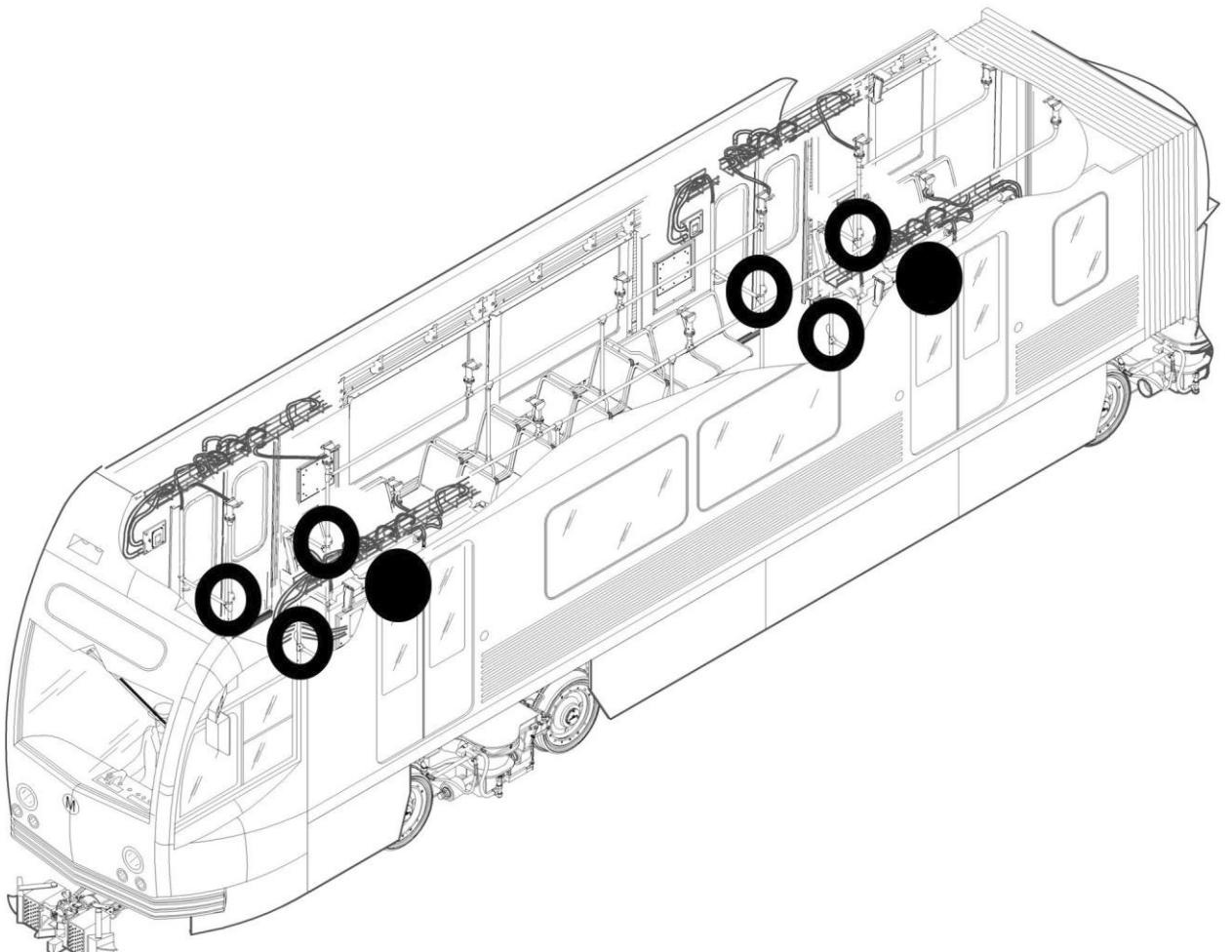
Card Code:

R-C-04-07-00-00/R-00

System: DOORS	Sheet: 1/4
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: INTERNAL PUSH BUTTON ASSY	Man Hours: 0.5

Maintenance Task:
REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-07-00-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

INTERNAL PUSH BUTTON ASSY

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

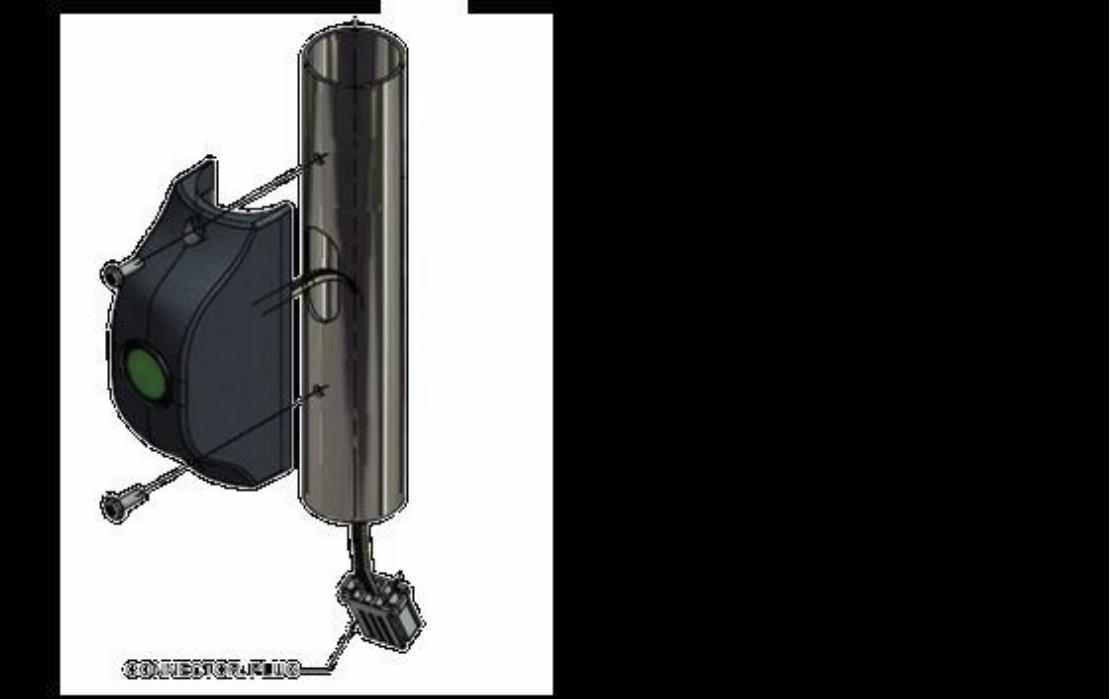
NA

SPARE PARTS:

INTERNAL PUSHBUTTON SWITCH

P/N AA03GYJ (F000566.001)

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-04-07-00-00/R-00	
System: DOORS	Sheet: 3/4
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: INTERNAL PUSH BUTTON ASSY	Man Hours: 0.5
Maintenance Task: REPLACEMENT	
PROCEDURE:	
PRELIMINARY OPERATIONS	
a) Set the vehicle in safety condition in accordance with LACMTA Maintenance Shop regulations. b) Set the Transfer Switch (located on the Operator's Console) to "ON" position.	
REPLACEMENT	
c) Remove the 2 M4 Fixing Screws of the Internal Pushbutton Switch. d) Remove the Internal Pushbutton Switch. e) Disconnect the Pushbutton Switch Connector Plug. f) Connect the new Pushbutton Switch Connector Plug. g) Install the Internal Pushbutton Switch. h) Fix the Pushbutton Switch with the 2 M4 Fixing Screws.	



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-07-00-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

INTERNAL PUSH BUTTON ASSY

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE:

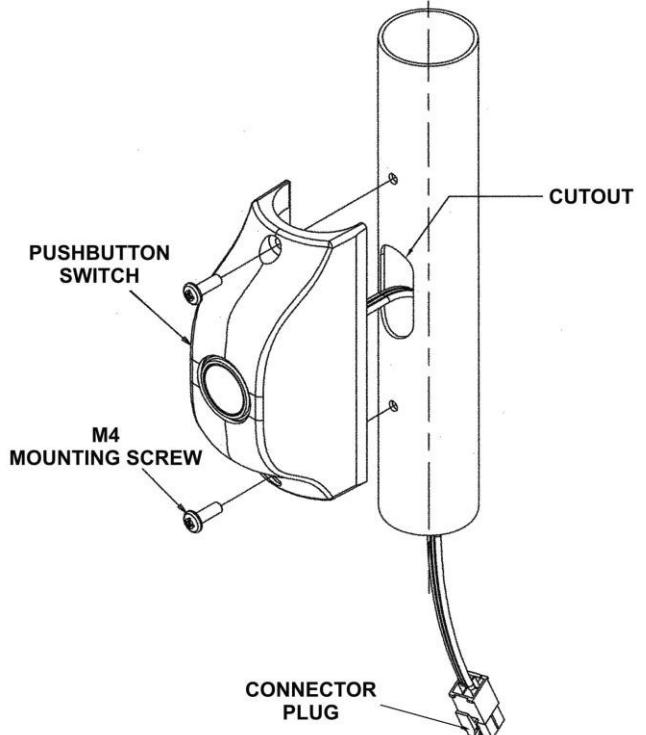


FIGURE 1 - INTERNAL PUSHBUTTON SWITCH REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

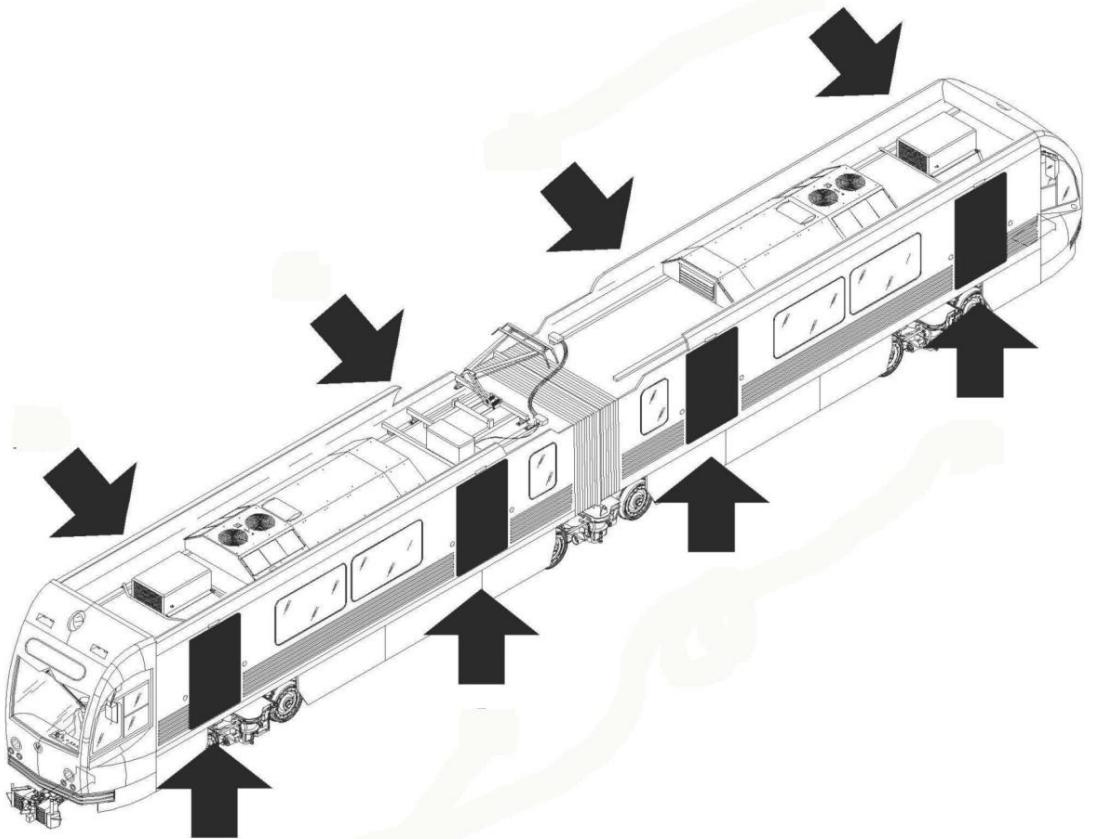
Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion**.”

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-08-00-00/R-00System: **DOORS** Sheet: **1/4**Subsystem/Assy: **DOORS CONTROL** Unit: **LV CIRCUITRY**Component: **DOOR OUT OF SERVICE INDICATOR** Man Hours: **0.5**Maintenance Task: **REPLACEMENT**

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-08-00-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

DOOR OUT OF SERVICE INDICATOR

Man Hours:

0.5

Maintenance Task:

REPLACEMENT**SAFETY PRECAUTIONS:**

LACMTA Safety Rules & Regulations

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

NA

SPARE PARTS:

DOOR OUT OF SERVICE INDICATOR P/N AA03GYH (F0005670001)

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-08-00-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY		
Component: DOOR OUT OF SERVICE INDICATOR		Man Hours: 0.5	
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV

REPLACEMENT

- a) Open the Cover on Top of each Doorway.
- b) Disconnect the Door Out Of Service Indicator Connector Plug.
- c) Remove the Indicator Fixing Hardware.
- d) Remove the Door Out Of Service Indicator.
- e) Install a new Door Out Of Service Indicator.
- f) Fix the Indicator with the relevant f Fixing Hardware.
- g) Re-connect the Door Out Of Service Indicator Connector Plug.
- h) Close the Cover on Top of each Doorway.

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-08-00-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

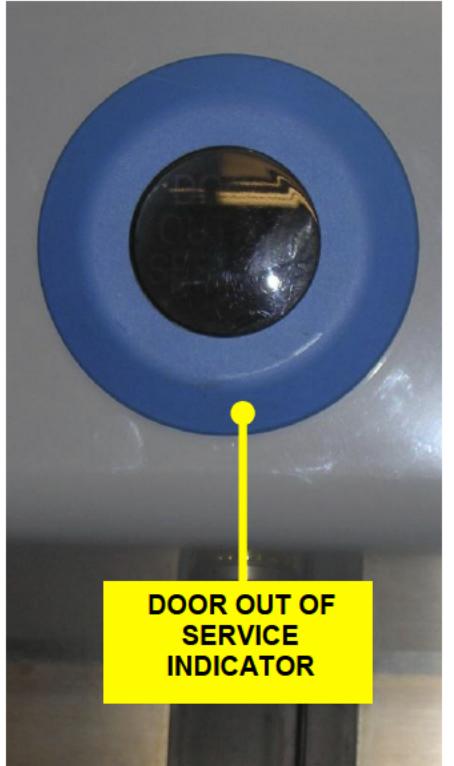
Component:

DOOR OUT OF SERVICE INDICATOR

Man Hours:

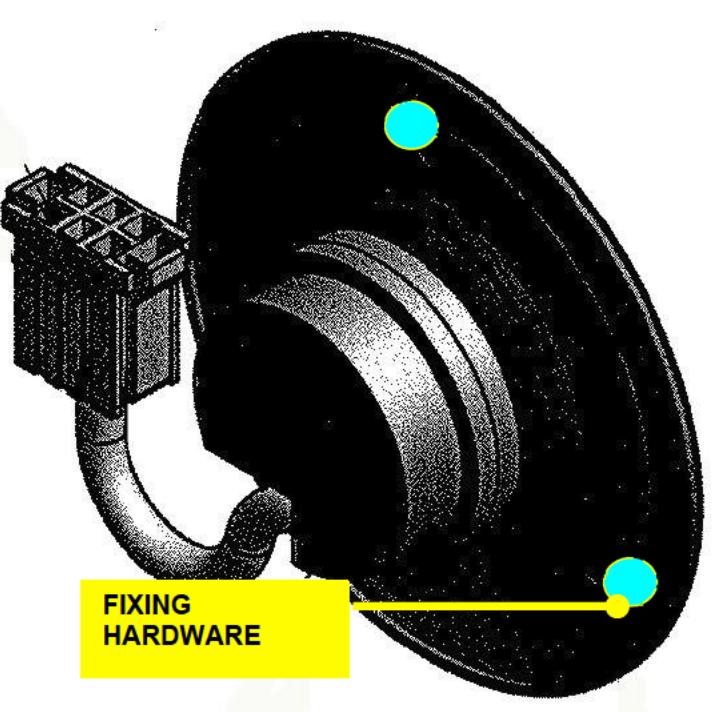
0.5

Maintenance Task:

REPLACEMENT

**DOOR OUT OF
SERVICE
INDICATOR**

FRONT VIEW



**FIXING
HARDWARE**

REAR VIEW

DOOR OUT OF SERVICE INDICATOR

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-09-00-00/R-00

System:

DOORS

Sheet:

1/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CREW SWITCH

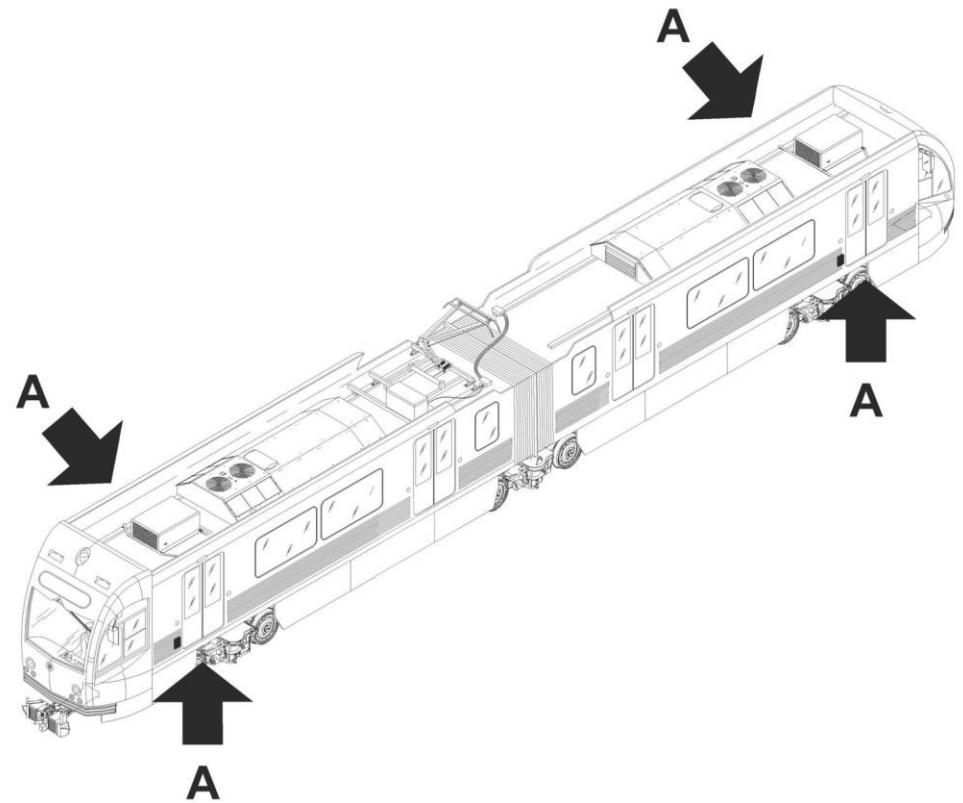
Man Hours:

0.5

Maintenance Task:

REPLACEMENT

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-09-00-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CREW SWITCH

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING :DURING MAINTENANCE OPERATIONS, THE POWER SUPPLY TO THE DOOR SYSTEM MUST BE TURNED OFF. POWER WILL BE TURNED ON ONLY PRIOR TO FINAL VERIFICATIONS.

WARNING :FAILURE TO ISOLATE THE DOOR SYSTEM FROM POWER SUPPLY MAY RESULT IN SERIOUS PHYSICAL INJURY.

WARNING :PRIOR TO ANY MAINTENANCE WORK, THE FOLLOWING RECOMMENDATIONS SHALL BE FOLLOWED:

- THE VEHICLE MUST BE STOPPED, WITH THE BRAKES ON, IN THE MAINTENANCE SHOP.
- REMOVE DOOR POWER SUPPLY BY SWITCHING OFF THE RELEVANT CIRCUIT BREAKERS, LOCATED IN THE LV LOCKERS, BEFORE PERFORMING ANY CORRECTIVE MAINTENANCE TASKS
- IF A VISUAL INSPECTION OF THE DOOR OPERATOR IS REQUIRED, THEN IT IS ADVISED TO OPEN THE DCU CIRCUIT BREAKER. THIS DOES NOT APPLY WHEN TESTING DCU OR EMERGENCY

CAUTION :THE WORK ENVIRONMENT MUST BE CLEAN AND SAFE.

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

LOCTITE 542
Sealant GE-SILPRUF SCS 2009

SPARE PARTS:

CREW SWITCH

P/N AA03GYK (F000561.0001)

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-09-00-00/R-00

System:

DOORS

Sheet:

3/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CREW SWITCH

Man Hours:

0.5

Maintenance Task:

REPLACEMENT
PROCEDURE:
PRELIMINARY OPERATIONS

- a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations.
- b) Set the Transfer switch to ON or LOCAL position.
- c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1.

TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION

DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B7/B8)	9F04	B	LV

REPLACEMENT

- a) Locate the Switch to be replaced.
 - b) Support the Switch with suitable Device.
 - c) Gain access to the rear of the Plate where the Switch is installed on, by unscrewing and removing the relevant Plate attaching Hardware (Screws and Washers).
- NOTE:** It is advised to retain the attaching Hardware for later use.
- d) Note the Switch Body Wiring Identification Codes.
 - e) Disconnect the Switch Body electrical Connections.
 - f) Disengage the Switch Body from its seat.
 - g) Install and engage on its seat the new Switch.
 - h) Connect the Switch Body Electrical Connections according to the previously noted Wiring Identification Codes.
 - i) Position the Plate Assy on which the relevant "new" Switch has been installed.
 - j) Apply Sealant GE-SILPRUF SCS 2009 around the perimeter of the Crew Switch Plate to assure the water tightness.
 - k) Install and torque the Plate Assy attaching Hardware.
- NOTE:** Mount Fixing Screws with Loctite 542.

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-09-00-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

CREW SWITCH

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

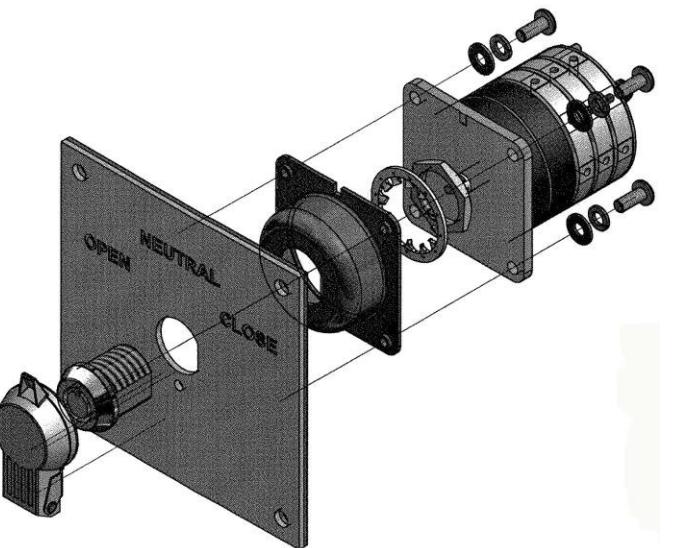


FIGURE 1 - EXTERIOR CREW SWITCH REPLACEMENT

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 “**At every Task Completion.**”

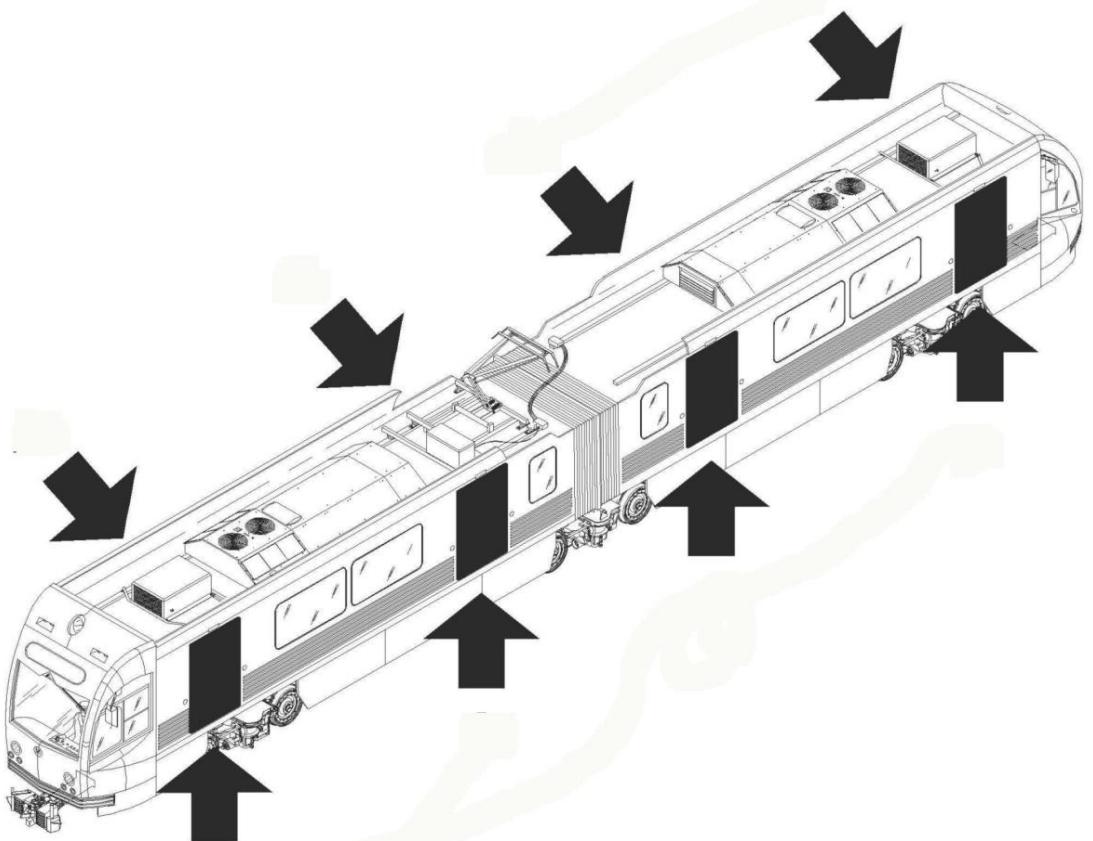
P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-10-00-00/R-00

System: DOORS	Sheet: 1/4
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY
Component: INTERIOR DOOR CLOSING WARNING LIGHT (ADA LAMP)	Man Hours: 0.5
Maintenance Task: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-10-00-00/R-00

System:

DOORS

Sheet:

2/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

INTERIOR DOOR CLOSING WARNING LIGHT (ADA LAMP)

Man Hours:

0.5

Maintenance Task:

REPLACEMENT**SAFETY PRECAUTIONS:**

LACMTA Safety Rules & Regulations

TOOLS:

LACMTA Maintenance Shop Standard Tools Kit

CONSUMABLES:

NA

SPARE PARTS:

INTERIOR DOOR CLOSING WARNING LIGHT (ADA LAMP) P/N AA03GYL (F0005650001)

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-04-10-00-00/R-00			
System: DOORS		Sheet: 3/4	
Subsystem/Assy: DOORS CONTROL	Unit: LV CIRCUITRY		
Component: INTERIOR DOOR CLOSING WARNING LIGHT (ADA LAMP)		Man Hours:	0.5
Maintenance Task: REPLACEMENT			
PROCEDURE: PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in Safety Conditions in accordance with LACMTA Maintenance Shop Regulations. b) Set the Transfer switch to ON or LOCAL position. c) Remove the Power Supply to each Door by switching to OFF the relevant Protection Circuit Breaker as indicated in Table 1. 			
TABLE 1 DOORS & RELEVANT CB IDENTIFICATION & LOCATION			
DOOR IDENTIFICATION	CB IDENTIFICATION	CB LOCATION	
		Section	Locker
(A1/A2)	9F05	A	LV
(A3/A4)	9F07	A	LV
(A5/A6)	9F06	A	LV
(A7/A8)	9F04	A	LV
(B1/B2)	9F05	B	LV
(B3/B4)	9F07	B	LV
(B5/B6)	9F06	B	LV
(B7/B8)	9F04	B	LV
REPLACEMENT <ul style="list-style-type: none"> a) Supporting the Lens, turn the Bezel CCW. b) Remove Bezel and Lens together with the Gasket. c) Rotate the Lamp CCW $\frac{1}{2}$ turn to disengage it from Lamp Holder. d) Discard the Lamp. e) Carefully position the new Lamp into the Lamp Holder. f) Rotate the Lamp CW $\frac{1}{2}$ turn to engage it into the Lamp Holder. g) Check Gasket for damage / deformation. Replace as per check result. h) Assemble Lens, Bezel and Gasket. i) Position the obtained Assy on its seat. j) Rotate the Bezel CW to secure it and to complete the operation. <p>CAUTION : DO NOT EXCEED 40 IN-LB BEZEL MOUNTING TORQUE.</p>			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-04-10-00-00/R-00

System:

DOORS

Sheet:

4/4

Subsystem/Assy:

DOORS CONTROL

Unit:

LV CIRCUITRY

Component:

INTERIOR DOOR CLOSING WARNING LIGHT (ADA LAMP)

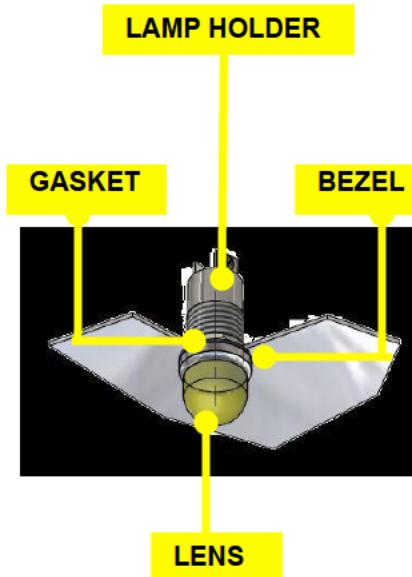
Man Hours:

0.5

Maintenance Task:

REPLACEMENT

TYPICAL INSTALLATION FRONT VIEW



TYPICAL INSTALLATION SECTION VIEW



TYPE OF LAMP INSTALLED

FINAL OPERATIONS

- Restore the Power Supply to the relevant Door by switching to ON the relevant Protection Circuit Breaker as indicated in Table 1.
- Record Task Results on the Defect Report Card for administrative and maintenance planning.

NOTE: At Task Completion it is recommended to check the correct operation and/or functions of the Subsystem to which the maintained Equipment pertains.

Refer to **HOW TO USE THE R-CM SHEETS** (para 04-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

04-III-05 CONSUMABLE MATERIALS LIST (R-CML)

The Consumable Materials needed to accomplish the Doors Running Maintenance are listed, sequenced in alphabetical order, by SUBSYSTEM /ASSY -UNIT / COMPONENT in the following Table 04-III-05.1.

Table 04-III-05.1 Running Maintenance Consumable Materials List (R-CML)

SYSTEM 04	DOORS		
SUBSYSTEM /ASSY - UNIT / COMPONENT	AGENT	PN	MTA PN
DOOR LEAF	Loctite 243	9510207-000	
	Compressed air in aerosol can		
	Knock Down - All Purpose Cleaner		
DOOR LEAF WINDOW & SEALS	Mounting Paste	9550122-000	
	Loctite 243	9510207-000	
	Sealant GE-SILPRUF SCS 2009		
DOOR OPERATOR ASSEMBLY	Contactal Grease	9550123-000	
DOOR OPERATOR - COUPLING	Loctite 243	9510207-000	
DOOR OPERATOR - DRIVE ASSEMBLY	Shell Alvania 2 Grease	149973	
	Loctite 243	9510207-000	
	BARDHAL POLYPLEX or SKF LGEP-2 Grease	9550132-000	
DOOR OPERATOR - DRIVING FORK	Contactal Grease	9550123-000	
DOOR OPERATOR - EDCU	Contactal Grease	9550123-000	
DOOR OPERATOR - MOTORIZATION ASSEMBLY	Compressed air in aerosol can		
	Cleaning Agent: Solvent		
	Grease Shell Alvania 2	149973	
	Loctite 243	9510207-000	
	BARDHAL POLYPLEX or SKF LGEP-2 Grease	9550132-000	
DOOR OPERATOR - RAIL ASSEMBLY	Loctite 243	9510207-000	
	Shell Alvania 2 Grease	149973	
DOOR OPERATOR - WIRING CHAIN	Contactal Grease	9550123-000	
EMERGENCY DEVICE (INTERIOR & EXTERIOR)	Compressed air in aerosol can		
	Cleaning Agent: Solvent		
	Sealant GE-SILPRUF SCS 2009		
CREW SWITCH	Sealant GE-SILPRUF SCS 2009		

04-III-06 TEST EQUIPMENT & SPECIAL TOOLS LIST (R-TESTL)

The Tools and Test Equipment needed to accomplish the Doors Running Maintenance are listed, sequenced in alphabetical order, by SUBSYSTEM /ASSY -UNIT / COMPONENT, in the following Table 04-III-06.1.

Refer to "Tools and Test Equipment Manual" for Special Tools / Test Equipment Description and Maintenance.

Table 04-III-06.1 Running -Test Equipment & Special Tools List (R-TESTL)

SYSTEM 04		DOORS		
SUBSYSTEM /ASSY - UNIT / COMPONENT	LACMTA STANDARD TOOLS KIT	LACMTA WORKSHOP DEVICES	SPECIAL TOOL / TEST EQUIPMENT	PN
DOORS	X	Step Ladder		
			Obstacle Gauge 0.4 x 3 in	
			Obstacle Gauge 0.8 x 1 in	
DOOR CONTROL UNIT	X		PTU with specific SW installed. Refer to Table 00-22.1 for Sw List	
			Load Command Device	
DOOR LEAF (RH & LH)	X			
DOOR LEAF - WINDOW & SEALS	X	Rope		
		Tapestry Roller		
		Brush		
DOOR OPERATOR ASSEMBLY	X			
DOOR OPERATOR - COUPLING	X	Millimeter Rule		
DOOR OPERATOR - DRIVE ASSEMBLY	X	Millimeter Rule		
		Grease Gun		
		Retaining Ring Pliers		
		Notched Nut Spanner		
DOOR OPERATOR - DRIVING FORK	X			
DOOR OPERATOR - EDCU	X			
DOOR OPERATOR - MOTORIZATION ASSEMBLY	X	Grease Gun		
		Cutting Pliers		
		Retaining Ring Pliers		
		Ty-wrap gun		
DOOR OPERATOR - RAIL ASSEMBLY	X			
DOOR OPERATOR - WIRING CHAIN	X	Cutting pliers		
		Ty-wrap gun		
EMERGENCY DEVICE (INTERIOR & EXTERIOR)	X	Grease Gun		
THRESHOLD ASSEMBLY	X	Drilling Jig		