

LOS ANGELES COUNTY

METROPOLITAN TRANSPORTATION AUTHORITY

LIGHT RAIL VEHICLE

P2550

**RUNNING
MAINTENANCE
AND
SERVICE MANUAL**

**SECTION 03
COUPLER**



LOS ANGELES COUNTY

METROPOLITAN TRANSPORTATION AUTHORITY

LIGHT RAIL VEHICLE

P2550



Metro™



RUNNING MAINTENANCE
AND
SERVICE MANUAL

VOLUME M-01
PART I
THEORY OF OPERATION
SECTION 03 - COUPLER

SECTION 03

COUPLER

PART I

THEORY OF OPERATION

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MTA P2550 - LRV
Running Maintenance and Service Manual - Section 03

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SECTION 03

COUPLER

03-I-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

The Part III - Maintenance consists of:

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

03-I-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
AB	AnsaldoBreda
APS	Auxiliary Power Supply
BRK	Brake
CB	Circuit Breaker
CM	Coast Motoring
CSV	Coupling Solenoid Valve
EB	Emergency Brake
FSB	Full Service Brake
GTW	Gateway
HRSB	High Rate Service Brake
HSCB	High Speed Circuit Breaker
HV	High Voltage
HVAC	Heating Ventilation & Air Conditioning
HVDS	High Voltage Distribution System
HW	Hardware
IDU	Integrated Diagnostic Unit
IP	Ingress Protection Rating
ISO	International Standardization Organization
KO	Out of Service
LH	Left Hand Side
LRV	Light Rail Vehicle
LV	Low Voltage
LVDS	Low Voltage Distribution System
LVPD	Low Voltage Power Distribution
LVPS	Low Voltage Power Supply
LVTL	Low Voltage Train Line
M	Motoring
MCSV	Mechanical Coupler Solenoid Valve
MRP	Main Reservoir Pipe
MTA	Metropolitan Transportation Authority
MV	Medium Voltage
MVB	Multifunction Vehicle Bus
MVPD	Medium Voltage Power Distribution

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Abbreviation	Meaning
NC	Normally Closed
NO	Normally Open
OK	Working
PTU	Portable Test Unit
RES	Reservoir
RH	Right Hand Side
SB	Service Brake
SCEB	Slide Controlled Emergency Brake
TBS	To Be Supplied
TCMS	Train Control & Monitoring System
TCN	Train Communication Network
TRK	Track
UCSV	Uncoupling Solenoid Valve
WTB	Wired Train Bus

03-I-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
Front door	The door close to the Operator's Cab

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03-I-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
°C	Celsius degree
°F	Fahrenheit degree
A	Ampere
DC	Direct Current
ft	Foot
gal	Gallon
Hz	Hertz
in	Inch
kg	Kilogram - approx 2.205 pounds
km	Kilometer - approx 0.621 miles
kN	Kilo-Newton - approx 224.809 pounds force
lb	Pound
lb-ft	Pound force
m	Meter - approx 3 28 feet
mm	Millimeter - approx 0.0394 inches
Pa	Pascal
rpm	Revolution per M nute
V	Voltage
W	Watt

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03-I-02 THEORY OF OPERATION

03-I-02.01 General Description of the System

The Del ner Automatic Coupler is designed to enable the P2550 LRVs to couple automatically.

This coupling is carried out at low speed without manual assistance and resulting in a rigid, slack free and fully latched connection.

In addition, with the designed pivot arrangement it allows for both horizontal and vertical track variations and, in addition, the designed pivot arrangement allows for both horizontal and vertical alignment.

Uncoupling of the mechanism head can be accomplished (with service brakes fully applied) either remotely from the operator's console of the active cab or manually at the coupler's using manual release.

Once the rail vehicles have moved apart, the couplers are automatically reset and "ready to couple" again.

Each end of the vehicle is equipped with a self-centering, fully automatic coupler, such that the coupling can be accomplished with no manual assistance.

Upon buffing of two vehicles during the process of coupling, the couplers on both vehicles automatically couple mechanically, pneumatically and electrically without further action.

The P2550 LRV coupler is mechanically and pneumatically compatible with the existing Blue Line vehicles' couplers (P865, P2020 and P2000 vehicles).

The coupler system is capable of withstanding coupling with another vehicle at a speed up to 4 mph (6.4 km/h) without automatic release or permanent deformation.

The draft gear and anchorage have sufficient strength to allow a train of three AW4-loaded cars to push or tow an AW4 loaded, inoperable train of three cars in an emergency over all grades and curves where the vehicle normally operates.

The automatic coupling system is controlled by a coupler control panel located on the Operator's Console (refer to Figure 03-I-02.3).

Refer to Figure 03-I-02.1 for Coupler Command Functional Scheme.

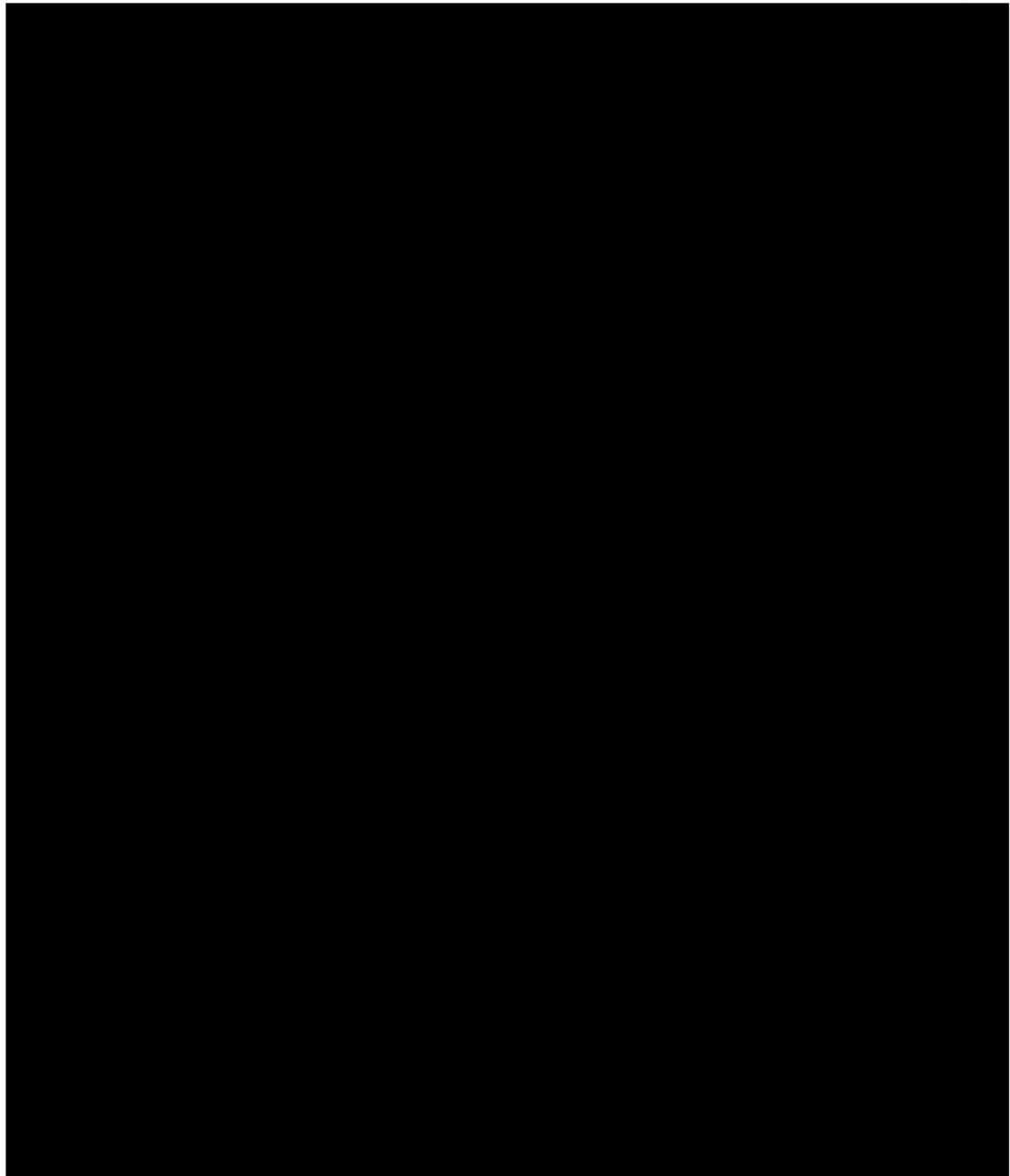
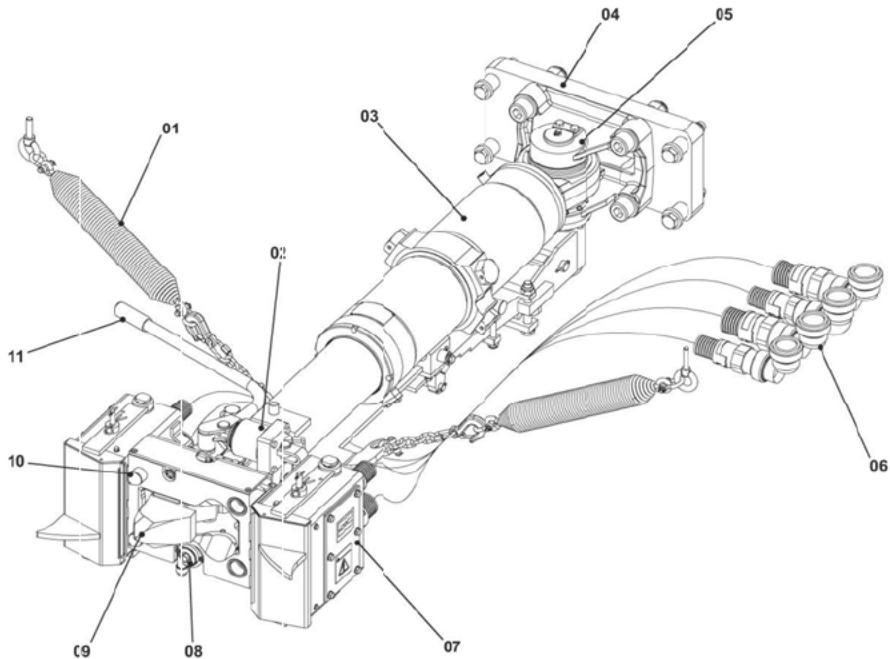


Figure 03-I-02.1 Coupler Command Functional Scheme



01. CENTERING SPRING	02. UNCOUPLING CYLINDER	03. BUFFER
04. MOUNTING KIT	05. BEARING BRACKET	06. ELECTRICAL CONNECTORS
07. ELECTRIC COUPLER HEAD	08. MRP VALVE	09. HOOK
10. GUIDE PIN	11. MANUAL RELEASE HANDLE	

Figure 03-I-02.2 Automatic Coupler

The switches located on the panel and the relevant functions are listed below:

ISOLATE/CONNECT switch (black knob - 2 Momentary Positions +1 Stable Position). It controls the electrical connection of the two electrical coupler heads: in the CONNECT position the electric heads are physically coupled in train-line; in the ISOLATE position, even if the electrical coupler heads are physically coupled, no train-line signal actually flows between the coupled vehicles. During uncoupling operation, it must be held in ISOLATE position for a few seconds before operating the Uncouple switch. UNCOUPLE pushbutton (white - Momentary Position): it is used to uncouple (mechanically) two coupled vehicles.

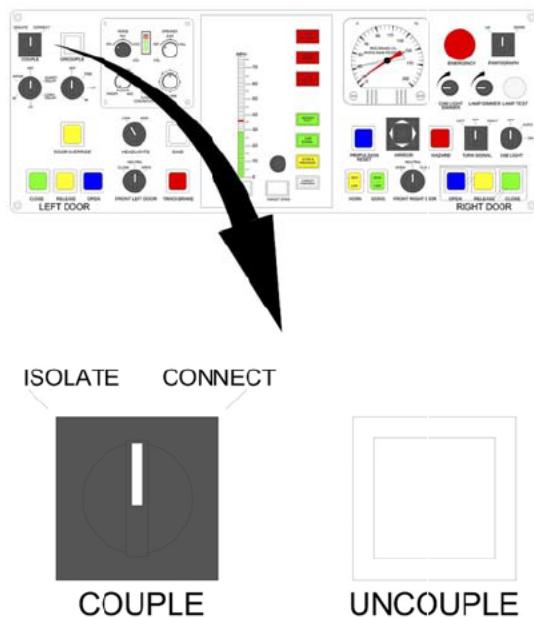


Figure 03-I-02.3 Operator Console - Coupler Control Panel

If the Coupler Control Panel is not working, or for any reason the operation must be carried out manually, the Operator has two handles available for operating the Coupler:

1. The Drum Switch Handle, mounted on the same shaft of the Switch, for electrically isolating/connecting two vehicles. The Handle can be operated either from the outside (refer to Figure 03-I-02.4), or from the inside of the cab, by means of the red handle at the left of the operator seat, behind the hinged panel (refer to Figure 03-I-02.5). The inside handle is connected to the outside one by means of a steel cable.
2. The Manual Release Handle, located on the coupler head for manually uncoupling two mechanically coupled vehicles (refer to Figure 03-I-02.2.11).

NOTE: To be able to uncouple manually, the handles must be pulled while the couplers are buffed by the operator, which disengages the hooks.

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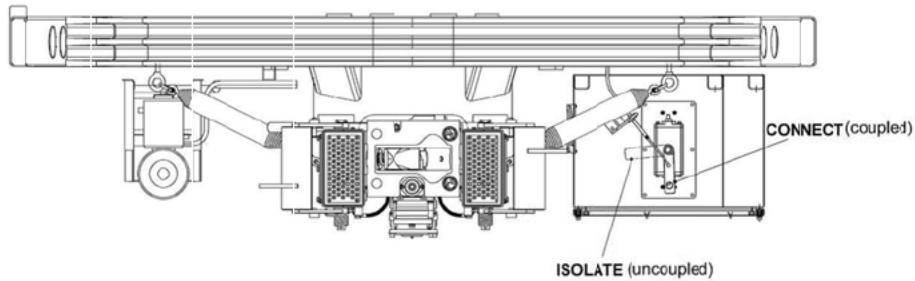


Figure 03-I-02.4 Drum Switch Handle (outside)

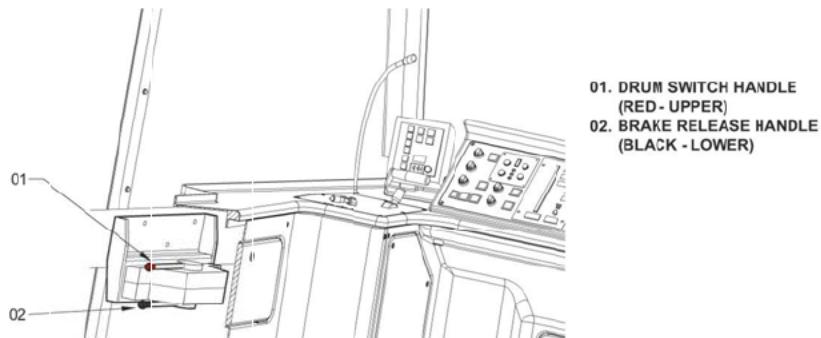


Figure 03-I-02.5 Drum Switch Handle (inside)

03-I-02.01.01 System-Vehicle Relationship

The main function of the Coupler is to mechanically, electrically and pneumatically couple two vehicles and make them operate as a single unit.

Mechanically couple two vehicles with a rigid, slack free and fully latched connection;
Electrically couple two vehicles and allow signals (refer to Section 10 and 18) to be transferred from one vehicle to the other.

Pneumatically couple two vehicles by means of the MRP valve (located on the bottom of the mechanical coupler head). The MRP valve provides for pneumatic coupling of Main Reservoir Pipe air between two coupled vehicles.

In normal conditions, the two functions are carried out automatically. In emergency, or when the manual operation is preferred to the remote one, the coupling/uncoupling operations can be carried out by means of the Manual Release Handle (mechanical) and the Drum Switch Handle (electrical).

03-I-02.01.02 System Performances and Characteristics

03-I-02.01.02.01 Mechanical Characteristics

Table 03-I-02.1 Technical Data

Distance from front of coupler mating face to mounting face in car under-frame	1670 mm
Max. horizontal pivoting angle	± 38°
Max. vertical pivoting and centering angle	± 5°
Total weight	350 kg (771.6 lbs)
Compressive Yield Strength	500 kN
Tensile Yield Strength	445 kN

a) Tightening Torques

When assembling parts and when mounting parts on coupler always use new fasteners, such as screws, nuts, washers, roll pins, securing plates etc.

Make sure - and confirm with the Parts List - that all fasteners are of the same dimension and quality as the ones previously used on the device being replaced, overhauled or mounted on the coupler.

Make sure that there are at least 2 threads from the screw protruding through the nut in screw/ nut applications. Tighten screws to correct torque (if not specified, follow the screw suppliers recommendations).

Recommended tightening torques are listed below. Where possible, test the function of each detail/item before assembly.

In Table 03-I-02.2 the tightening torques ($\pm 5\%$) for lubricated fasteners are listed. Always lubricate with Molykote 1000 or equal unless Loctite should be applied. Zinc plated fasteners tensile strength 8,8 (ISO) grade 5 (SAE). Stainless steel fasteners tensile strength Class 70 and 80. These tightening torques apply to all fasteners unless otherwise specified within the instructions.

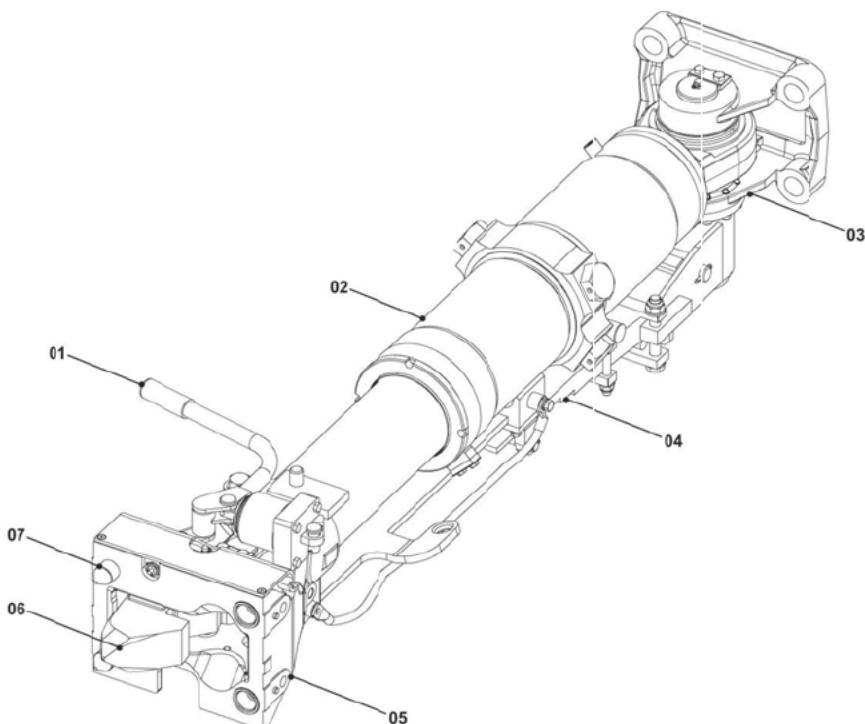
Table 03-I-02.2 Coupler Tightening Torques

Dimensions	8.8 fzb, grade 5 and Class 80	Class 70	8 8 fzb, grade 5 and Class 80	Class 70
Dim UNC	lbft	lbft	Nm	Nm
1/4"	7.5	6	10	8
5/16"	15	12	20	16
3/8"	26	21	35	28
7/16"	41	32	55	43
1/2"	59	49	80	66
9/16"	85	69	115	94
5/8"	118	97	160	131
3/4"	207	170	280	231
7/8"	332	272	450	369
1"	487	408	660	553
M5	3.7	3	4.7	4.1
M6	6	5	8	7
M8	15	12.5	20	17
M10	30	24	40	33
M12	52	42	70	57
M16	125.5	103	170	140
M20	243.5	201	330	273
M24	428	348	580	472
M30	833	686	1130	930

03-I-02.02 The Coupler System Components

03-I-02.02.01 The Mechanical Coupler

The mechanical coupler is the main part of the coupler and consists of the mechanical coupler head (1), buffer (2), bearing bracket (3) and leaf spring (4) (refer to Figure 03-I-02.6)



01. MANUAL RELEASE HANDLE 02. BUFFER 03. BEARING BRACKET
04. LEAF SPRING 05. MECHANICAL COUPLER HEAD 06. HOOK
07. PIN

Figure 03-I-02.6 Mechanical Coupler

03-I-02.02.01.01 The Mechanical Coupler Head

The mechanical coupler head accomplishes the actual coupling of two couplers.

The coupling mechanisms placed inside the coupler head casings interlocks with each other and ensures a rigid slack free connection.

The mechanical coupler is fitted with devices for both automatic and manual uncoupling.

The mechanical coupler head (refer to Figure 03-I-02.6) has its front face arranged with a guide bushing (2) and guide pin (1).

This serves for automatic aligning and centering when they are brought together.

In order for automatic coupling to be affected the uncoupling switch in one of the cabs must be activated.

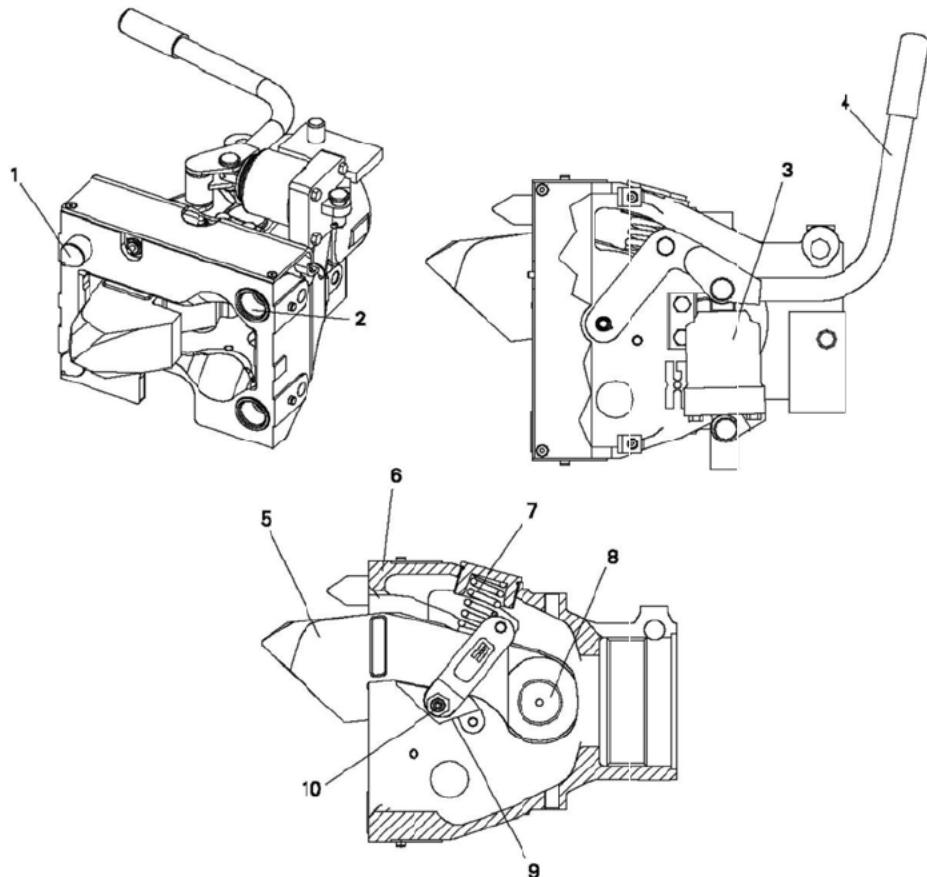
This will cause the operating cylinder (3) to turn the mechanism and uncouple.

This system allows uncoupling under draft load even if it is never recommended.

On its front plate the mechanical coupler head is provided with a broad plane edge for taking up the compressive loads and impacts.

The traction loads are transmitted through the hook (5) to the buffer.

These items are encased when coupled for protection against the environment.



- | | | |
|----------------------|-------------------|-------------------------|
| 01. GUIDE PIN | 02. GUIDE BUSHING | 03. UNCOUPLING CYLINDER |
| 04. UNCOUPLING ARM | 05. HOOK | 06. COUPLER HEAD |
| 07. COIL SPRING | 08. MAIN PIN | 09. UNCOUPLING PIN |
| 10. UNCOUPLING SHAFT | | |

Figure 03-I-02.7 Mechanical Coupler Head

03-I-02.02.01.02 The Mechanical Coupling and Uncoupling

a) The COUPLING operation

Coupling is accomplished automatically as the couplers are brought together.

For automatic coupling to occur the couplers must be within the gathering range.

The Operator of Vehicle 1 (active cab) shall lead the coupling operation.

Before starting the coupling operation, the Operator shall check that:

- Couplers' heads are facing each other
- The white pointer of the double air pressure gauge is between 130 and 150 psi.

Coupling Operation:

1. Press (for at least 2 seconds) the CAR WASH PB on the Indicators and switch Panel.
2. Set the Reverser Switch to Forward.
3. Move the Master Controller handle to min Power. The Vehicle 1, at the predetermined speed of 1.5 mph, moves towards vehicle 2 until the couplers are mechanically locked and the electric couplers are connected (Electric Couplers' covers open and pins get connected).
4. As soon as the vehicles are mechanically coupled, the Operator of Vehicle 1 moves back the MC to FSB and sets the Coupler command Switch to CONNECT position, to assure electrical coupling

Figure 03-I-02.8 shows the mechanical coupler ready to couple. This is the normal condition for an uncoupled coupler.

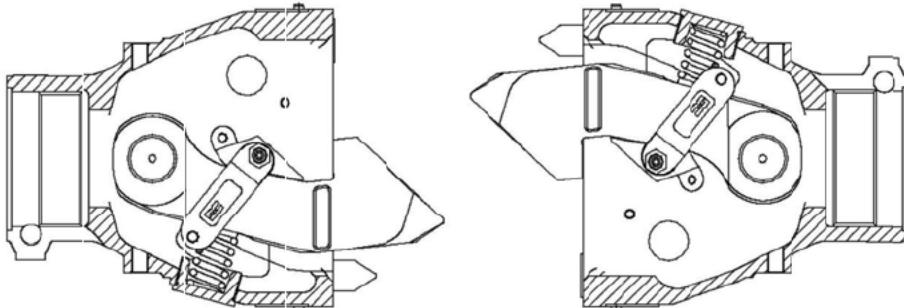


Figure 03-I-02.8 Ready to be coupled

Figure 03-I-02.9 shows the mechanism in coupled position. When the two couplers meet (refer to Figure 03-I-02.6) the hooks (5) engage each other.

With reference to Figure 03-I-02.6, the spring (7) makes the hook (5) push towards the coupled position thereby forcing the hook to maintain its position.

Once coupling has been completed the force is transferred in tension to the main coupler body through the main pin (8).

In this position the two couplers heads form a rigid, slack free and safe connection.

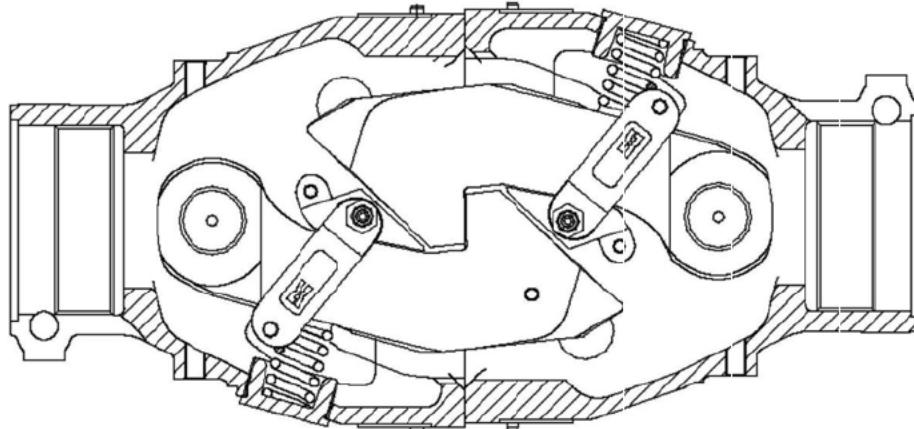


Figure 03-I-02.9 Coupled

b) The UNCOUPLING operation

Mechanical uncoupling can be accomplished in two ways, automatically (remotely) or manually (locally). In either case the function is as follows:

The uncoupling shaft (refer to Figure 03-I-02.10) is turned and thereby the uncoupling cam (Refer to Figure 03-I-02.6, item 9) turns which pushes both hooks to uncoupled position. The vehicles can now be separated.

The couplers are to be relaxed or buffed when uncoupling.

To be able to uncouple the couplers manually the couplers have to be relaxed or buffed, otherwise the force that must be applied to the handle becomes too excessive.

Once the vehicles have moved apart, the couplers automatically reset and are ready to be coupled again.

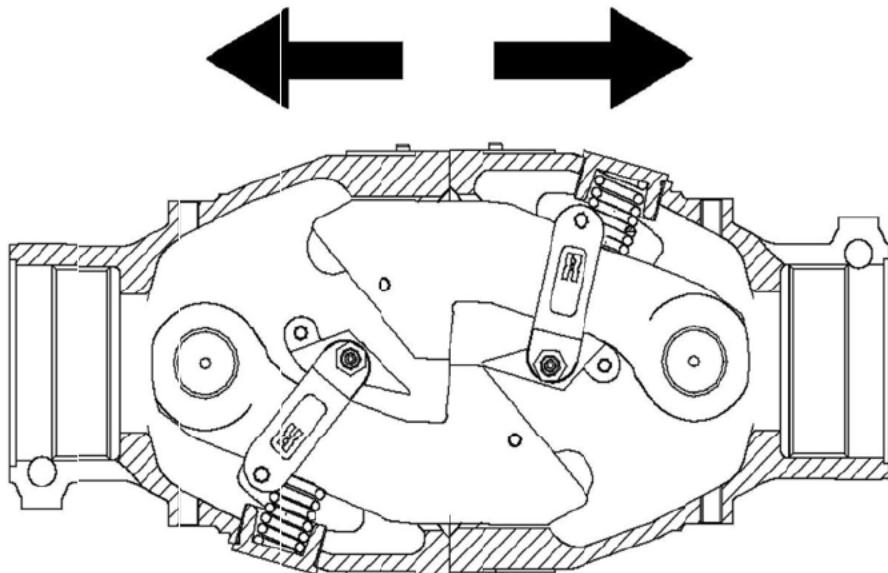


Figure 03-I-02.10 Uncoupled, ready to separate

c) Automatic (Remote) Uncoupling

For automatic uncoupling at least one vehicle must be ACTIVE:

The Operator of Vehicle 1 (active cab) shall lead the uncoupling operation:

Uncoupling Operation

1. Push the CAR WASH Mode PB for 2 seconds and verify that both the Car Wash Mode on the IDU (Blue) and the CAR WASH PB on the Indicator panel are ON.
2. Turn the COUPLER Switch to ISOLATE position in order to electrically isolate the two vehicles.
3. Move the MC handle to POWER to buff the coupler and ease the uncoupling operation.
4. At the same time, press the UNCOUPLE Switch (thus starting the mechanical unhook of the coupler) to separate the vehicles.
5. Immediately after, move the MC to Coast and let the vehicle bump back.

In case of lack of air use the Manual Uncoupling Handle to mechanically uncouple the two couplers.

As soon as the vehicles are uncoupled, Vehicle 1 shall drive off while vehicle 2 shall be set-up for travel.

Automatic uncoupling is initiated by activating the uncoupling cylinder located on the top of the mechanical coupler.

The cylinder piston causes the cam (Refer to Figure 03-I-02.7, item 9) to rotate when activated.

d) Manual (Local) Uncoupling

For manual Uncoupling the Couplers must be buffed to ease the uncoupling operation. Manual uncoupling is performed by using the manual uncoupling handle (Refer to Figure 03-I-02.6, item 4) on the side of the mechanical coupler.

When pulling the uncoupling handle the uncoupling cam (Refer to Figure 03-I-02.6, item 9) is turned.

The uncoupling handle on either coupler must be pulled to rotate the coupling mechanism to uncoupled position.

To complete manual uncoupling, the Drum Switch must also be rotated to the uncoupled position (refer to Figure 03-I-02.24).

Once the vehicles have moved apart, the couplers are automatically reset and ready to be coupled again.

03-I-02.02.01.03 The Buffer

The buffer provides for the primary energy absorption of the coupler. A combination of a hydraulic buffer and a friction spring assembly efficiently absorbs specified buff and draft forces.

The buff and draft loads are transmitted to the vehicle from the mechanical coupler head through (refer to Figure 03-I-02.11) the friction spring (2), hydraulic buffer (1) and spherical rubber bearing (4) to the bearing bracket which is fixed to mounting kit.

The buffer is equipped with shear pins (5), shear ring (6) and an energy absorber (3). If the buff forces should become excessive, i.e. at a collision, the shear pins (5) will shear and the energy absorber (3) will absorb the load. If this should happen the coupler must be overhauled.

a) Buffer - Working Principle

The Hydraulic Buffer (Refer to Figure 03-I-02.11) is a gas-hydraulic shock absorber that absorbs the main buff forces.

The Spherical Rubber Bearing (04) minimizes smaller buff and draft forces and serves to greatly extend the life of the pivot.

The Spherical Rubber Bearing operates over a stroke of $\pm 0.14"$ (3.6 mm) for draft and buff forces.

The Figure 03-I-02.11 shows the Hydraulic Buffer working principle:

- A Buffer at Rest (No Buff or Draft Load)
- B Buffer during Buff
 - Shows the Buffer absorbing the main buff forces and operating over max stroke of 5.11" (130 mm)
- C Buffer during Draft
 - Shows the friction spring absorbing the main draft forces and operating over a stroke of 0.79" (20 mm)
- D Buffer after Sheared Shear Pin
 - Shows the buffer when the buff forces has caused the shear pins to shear.

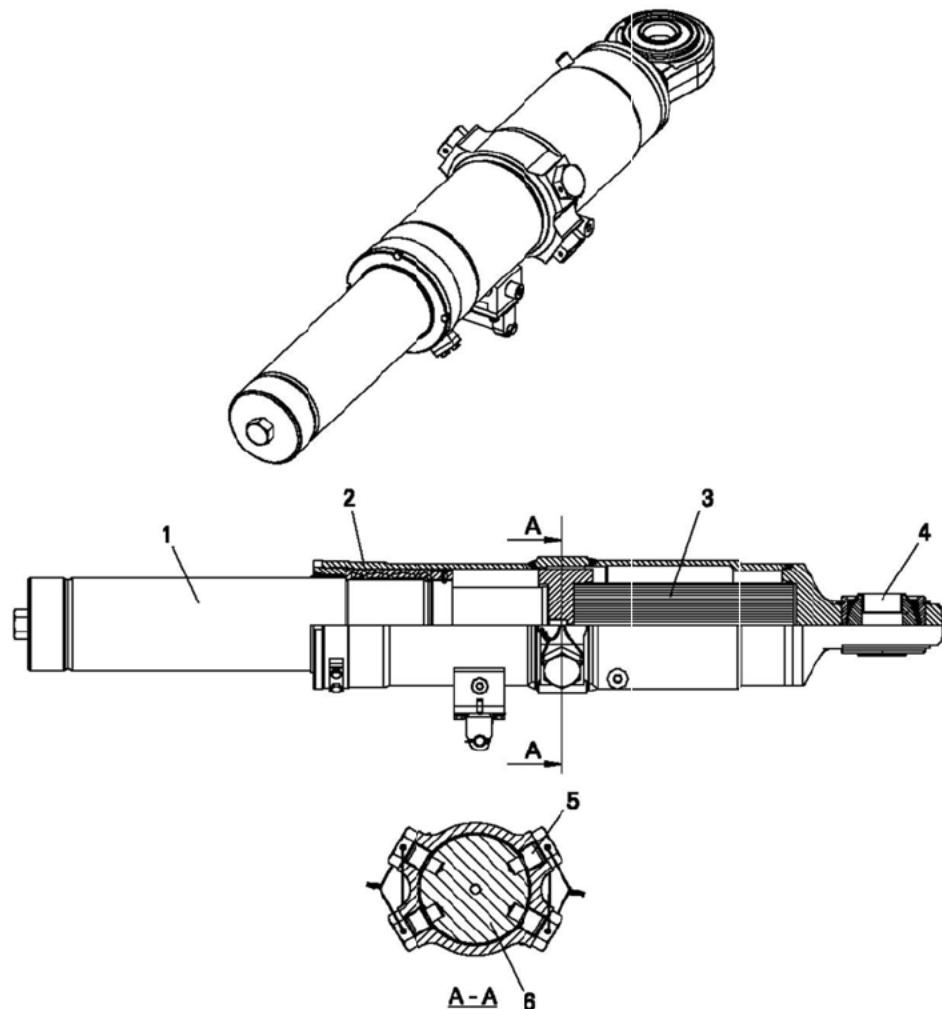
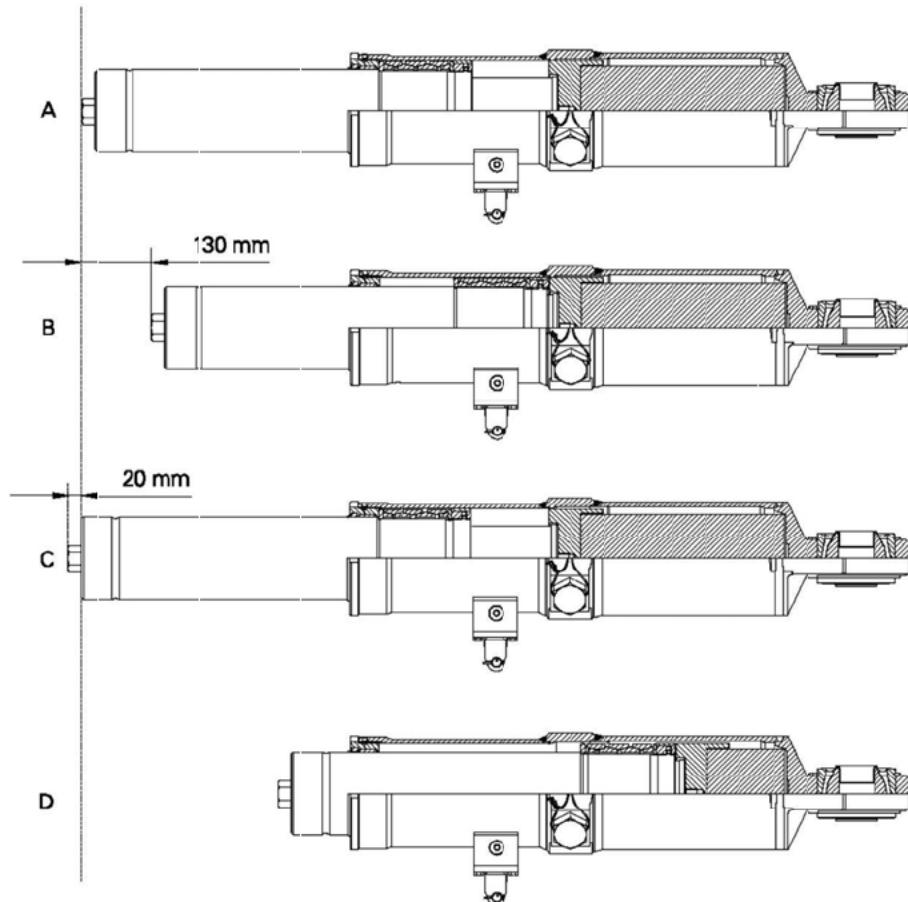


Figure 03-I-02.11 Buffer

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A. BUFFER AT REST NO BUFF- OR DRAFT LOADS

B. BUFFER DURING BUFF (MAX. STROKE)

C. BUFFER DURING DRAFT (MAX. STROKE)

D. BUFFER AFTER SHEARED SHEAR PINS

Figure 03-I-02.12 Buffer Working Principle

03-I-02.01.04 Bearing bracket

The bearing bracket (refer to Figure 03-I-02.13 - 05) enables the mechanical coupler to pivot both vertically and horizontally while transferring buff and draft forces to and from the Coupler Head (refer to Figure 03-I-02.6) and on to the vehicle under-frame.

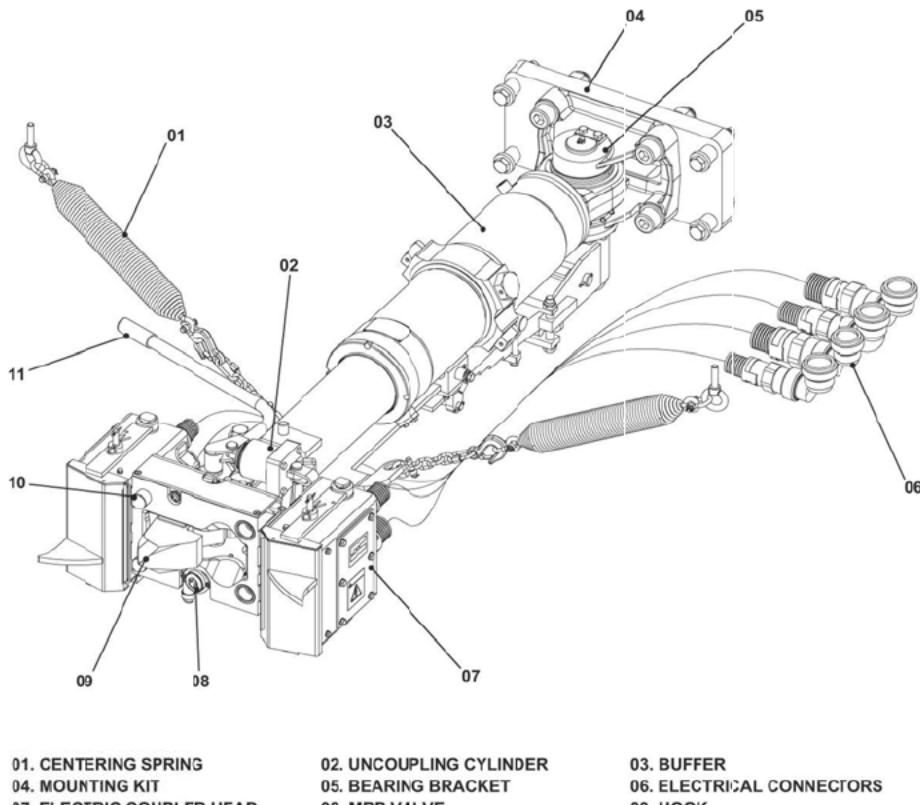


Figure 03-I-02.13 Bearing Bracket

03-I-02.02.01.05 The Mounting Kit

To protect the car body against deformation due to excessive buff forces the coupler is mounted (refer to Figure 03-I-02.13 - 04 and Figure 03-I-02.14) to the car body (3) with an attachment plate (4) incorporating release screws (1).

The release screws are designed to break, when subjected to a force of 445 kN, allowing the couplers to free-drop from the car body.

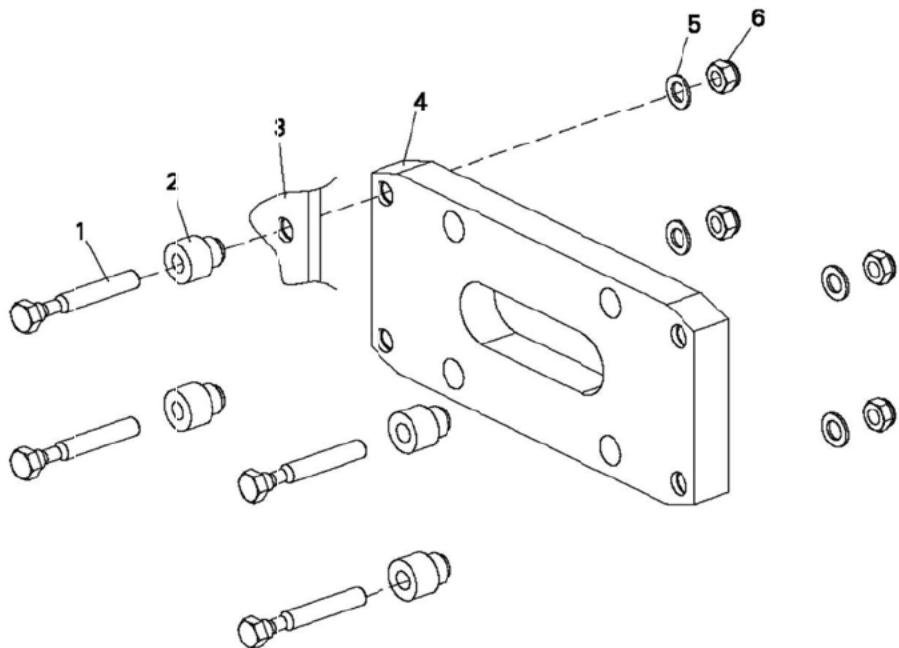


Figure 03-I-02.14 Mounting Kit

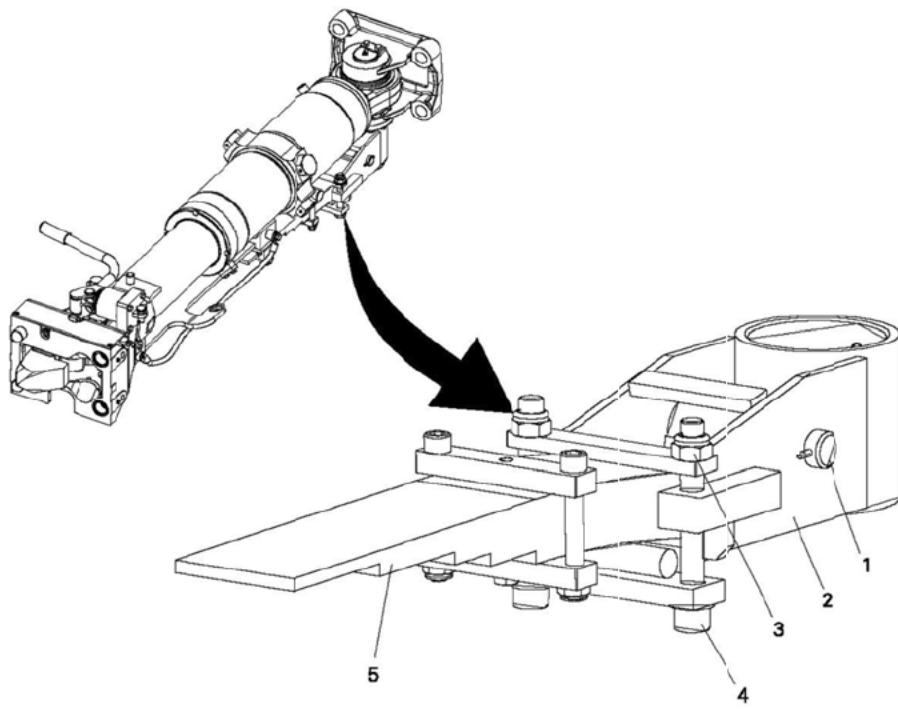
03-I-02.01.06 Support Spring

Figure 03-I-02.15 shows the Support (leaf) spring components.

The leaf spring holder (refer to Figure 03-I-02.15), pin (1) and leaf spring package (5) keeps the mechanical coupler in the right vertical position and brings it back when out of position.

On each side of the spring holder are adjustments nuts (3) and screws (4) provided, which allows vertical adjustment of the automatic coupler.

Independent of adjustment the vertical support will always allow the coupler to articulate within the specified angles of $\pm 5^\circ$.



01. PIN
04. BOLT

02. LEAF SPRING HOLDER
05. LEAF SPRIN PACKAGE

03. NUT

Figure 03-I-02.15 Leaf Spring

03-I-02.02.01.07 Centering Springs

The centering spring (Refer to Figure 03-I-02.16) consists of a shackle (1), chain (2), snap hook (3), spring (4) and an eye bolt (5).

For coupling in misalignment exceeding the gathering range, the coupler can be manually released from the centering springs.

This is made by unhooking the snap hook (3) from the chain (4) and manually moving the coupler.

The two centering springs hold the coupler in its centered position to allow both manual and automatic coupling.

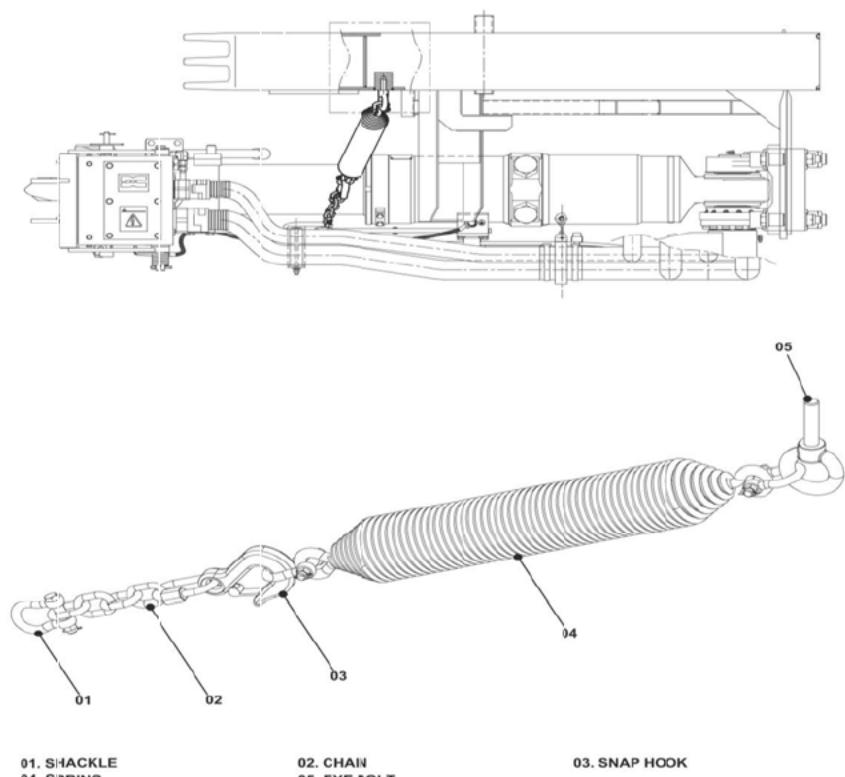


Figure 03-I-02.16 Centering Spring

03-I-02.02.02 Electrical Couplers

The electrical couplers are mounted on both left and right side of the mechanical coupler and provide electrical train-line coupling between two coupled vehicles.

The electrical couplers are connected to the vehicle Low Voltage System and to the vehicle bus through the back connectors (refer to Figure 03-I-02.17), the Junction Box and the Drum Switch (refer to Figure 03-I-02.22).

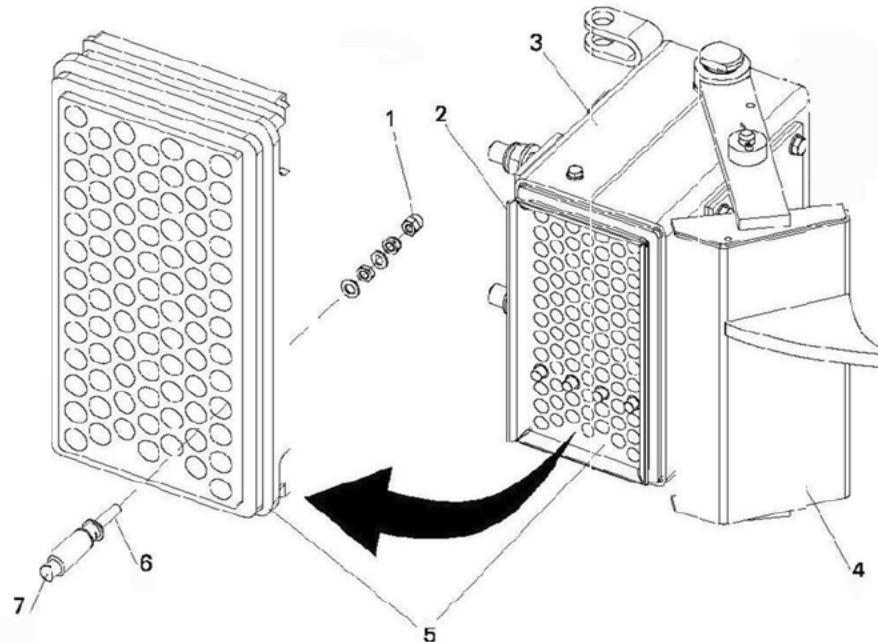
03-I-02.02.02.01 Electrical Coupler Heads

Electrical coupling is completed via the electric coupler heads on each side of the mechanical coupler head. Each electric coupler head (Refer to Figure 03-I-02.17) houses 86 spring contacts (7).

The contacts are held in a non-conductive insulating block (5).

The contact attachment is mounted in a fixed contact housing (3). A front seal (2), around the electrical head, forms a seal between coupled parts.

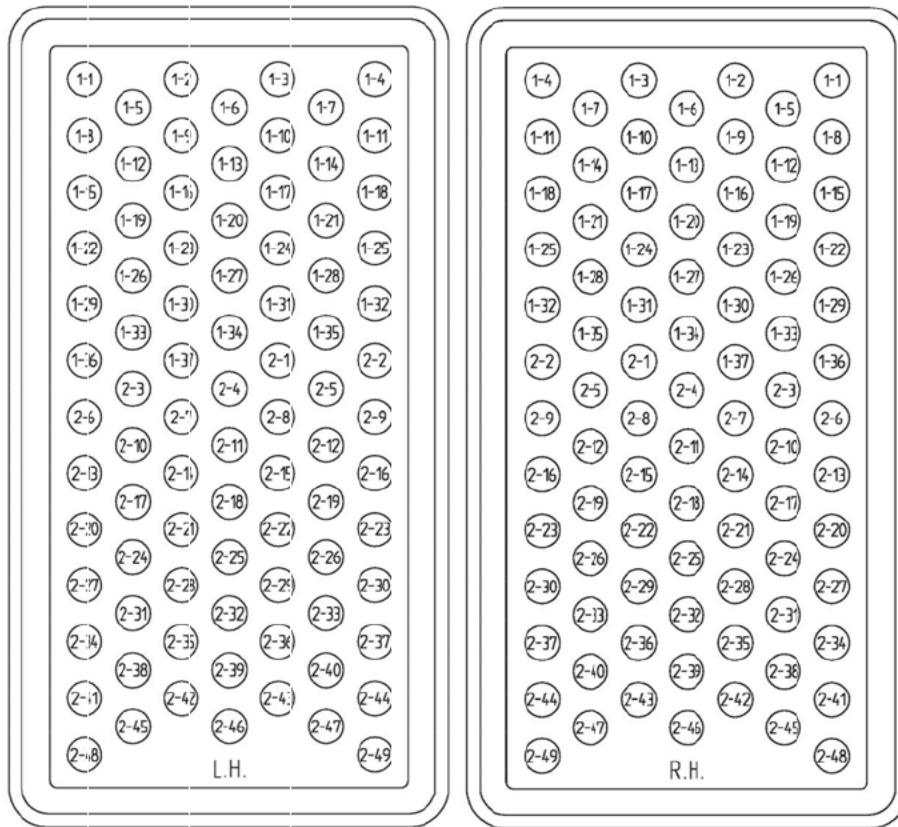
When the coupler is in an uncoupled state the contacts are protected by a cover (4).



01. CONNECTING BOLT
02. FRONT SEAL
04. COVER
05. INSULATING BLOCK
07. SPRNG CONTACT
03. CONTACT HOUSING
06. CONTACT REAR PART

Figure 03-I-02.17 Electric Coupler Heads (LH shown)

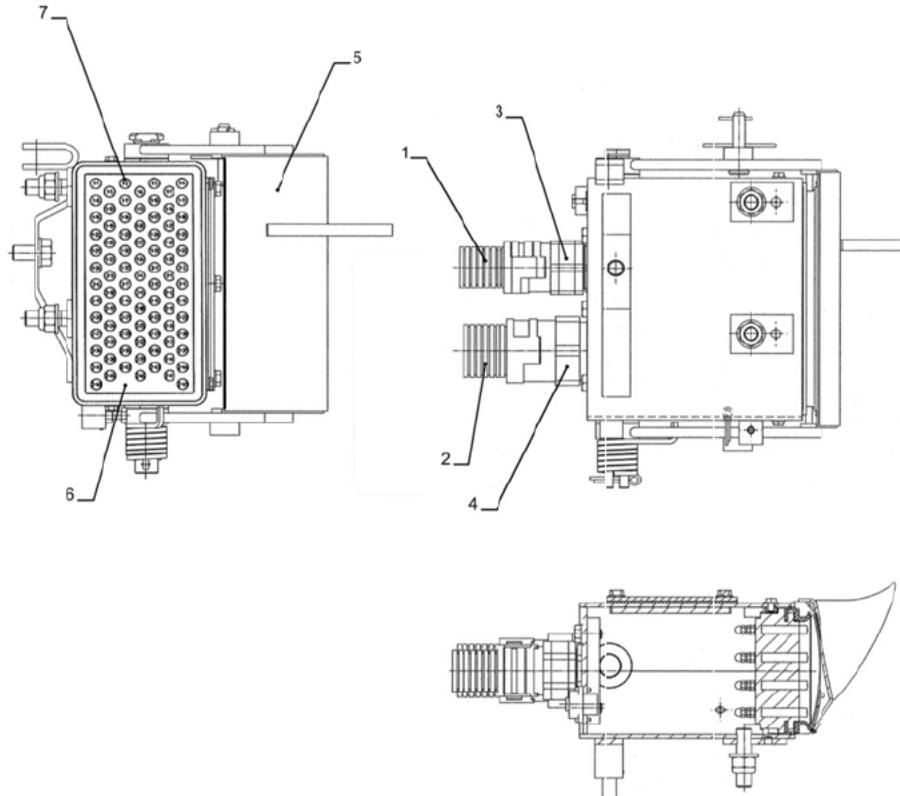
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A VIEW FROM BEHIND, LEFT HEAD MOVING CONTACT
B VIEW FROM BEHIND, RIGHT HEAD MOVINGCONTACT
L1 LEFT CABLE 1
L2 LEFT CABLE 2
R1 RIGHT CABLE 1
R2 RIGHT CABLE 2
F1.1 ELECTRIC COUPLER, RIGHT
F2.1 ELECTRIC COUPLER, LEFT

MC MECHANICAL COUPLER
E1.1 CABLE PLUG, CABLE RIGHT 1
E1.3 CABLE PLUG, CABLE RIGHT 2
E121 CABLE PLUG, CABLE LEFT1
E2.3 CABLE PLUG CABLE LEFT2
X6 TERMINAL BLOCK IN RECEPTACLE
X7 TERMINAL BLOCK IN CABLE-PLUG
S2.1 FRONT SWITCH

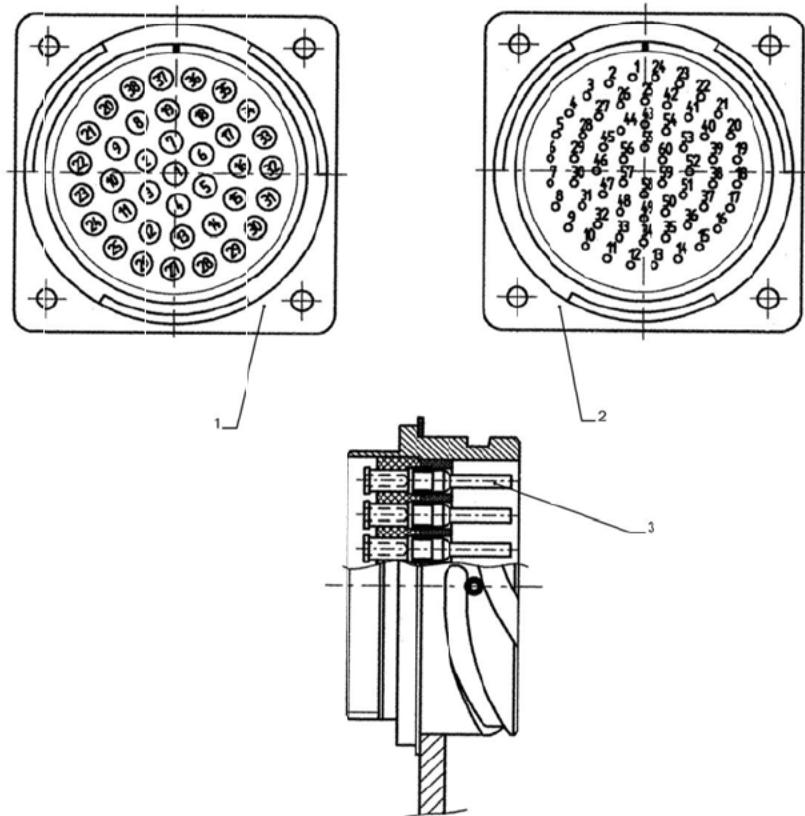
Figure 03-I-02.18 Electric Coupler Heads - Pin Number



1. CABLING L1 4. CABLE PLUG E2.3 7. SPRING CONTACT
2. CABLING L2 5. ELECT. COUPLER HEAD COVER
3. CABLE PLUG E2.1 6. INSULATING BLOCK

Figure 03-I-02.19 Electrical Coupler Head (left) - Views

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1. CABLE PLUG 1 (E1.1, E2.1) 2. CABLEPLUG 2 (E1.3, E2.3) 3. SLEEVE

Figure 03-I-02.20 Drum Switch Box Plug Receptacle Pins

With reference to Figure 03-I-02.17, inside the contact housing (3) the cables are connected to the contact rear part (6) which is fixed to the insulating block (5) with a connection bolt (1). From here the cables (L1, L2, R1 R2), passing straight through four Electric Coupler Back Bushings and collecting all signals coming from the Electrical Coupler Heads, go to the Train-line Junction Box

Left and Right Coupler Head are respectively the left and the right head seen from the Operator's cab.

Every single contact is silver plated in order to provide low electrical resistance and to minimize the effects of oxidation.

When the car is coupled, the rubber gasket mounted on the front part of the head forms a tight seal between the two coupled heads.

The facing covers of two coupling vehicles mechanically force each other to open by design of its external shape.

When the car is uncoupled, the contacts are protected from dirt, dust and water by the spring-loaded cover and a rubber gasket.

The connection between the Electrical Coupler Heads and the vehicle cabling is accomplished by means of the Drum Switch (refer to Figure 03-I-02.24) inside the Train-line Junction Box (refer to Figure 03-I-02.22), a multiple contact switch that can be remotely operated from the Operator's console by means of the Isolate/Connect switch and the rotary actuator.

The Drum Switch can also be manually operated locally with the Drum Switch Handle (refer to Figure 03-I-02.22) or from the Operator's Cab with the red handle to the left of the Operator's seat

The three switches of the Drum Switch inside the Train-line Junction Box (14S01, 14S02 and 14S03, each one divided into two sections - refer to Figure 03-I-02.24) make the electrical connection possible.

R1, R2, L1 and L2 contacts of the Electric Coupler Heads pass through the Electric Coupler Back Bushings E1.1, E1.3, E2.1 and E2.3 respectively. From here the cables (R1, R2, L1 and L2) are connected to the relevant VJ connector of the Junction Box and, from there to the relevant sector of the Drum Switch (refer to Table 03-I-02.3 and Figure 03-I-02.22)

Table 03-I-02.3 Coupler Head - Junction Box Connections

Electric Coupler Head	Electric Coupler Back Bushings	Cable	Junction Box Connector
Right (R1)	E1.1	R1	VJ7
Right (R2)	E1.3	R2	VJ8
Left (L1)	E2.1	L1	VJ5
Left (L2)	E2.3	L2	VJ6

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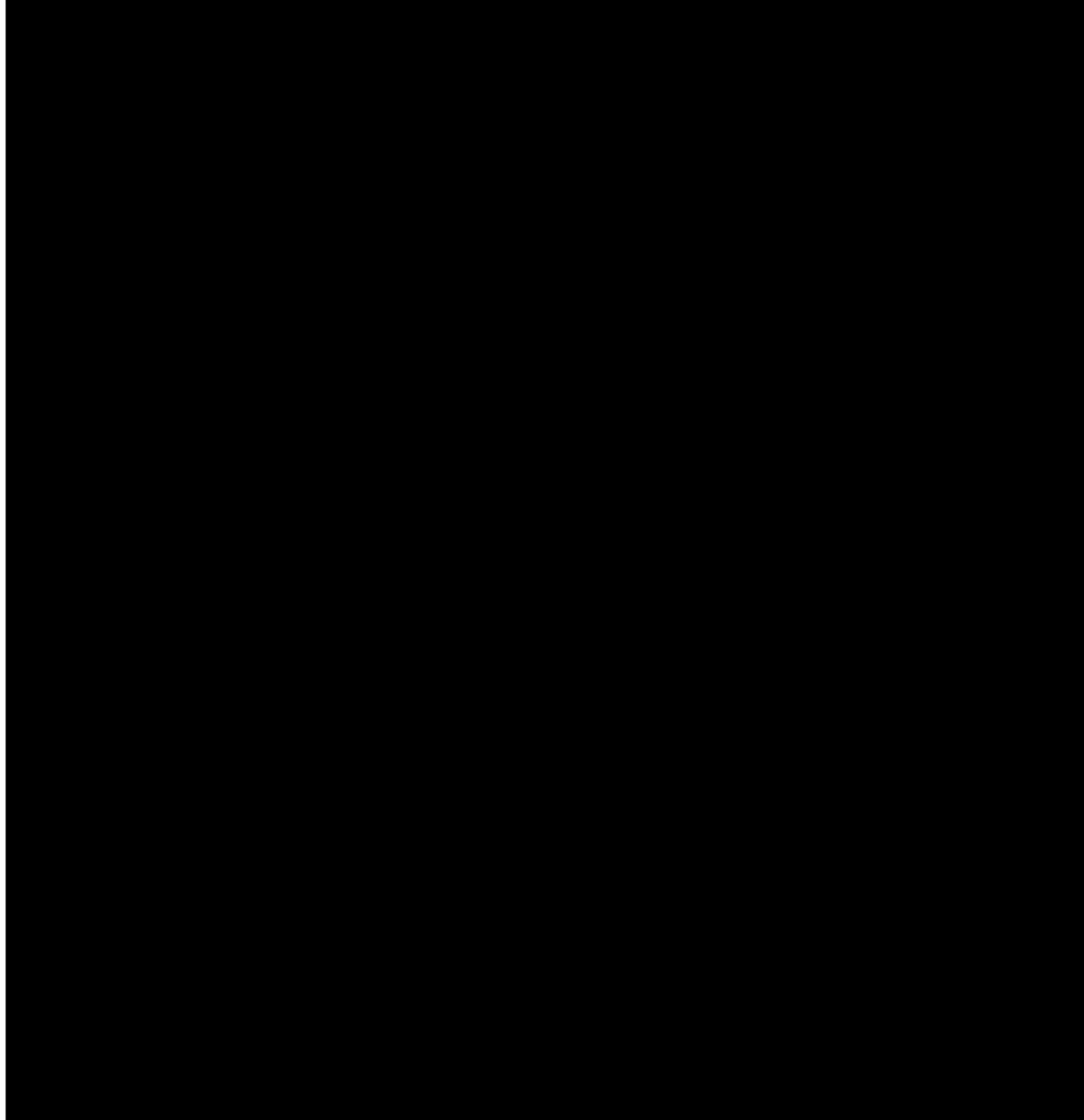


Figure 03-I-02.22 Circuit Diagram - Grounding Map (2 of 2)

03-I-02.02.03 Train-line Junction Box

The Train-line Junction Box (Refer to Figure 03-I-02.22) includes the two position Drum Switch (refer to Figure 03-I-02.24) and the rotary (pneumatic and manual) actuator for connection or disconnection of the train-line circuits.

The Drum Switch is made up of 6 NC and 90 NO contacts.

The Train-line Junction Box is also equipped with four quick disconnect cable plugs (E1.1, E1.3, E2.1, E2.3) respectively for the four electrical coupler cables (R1, R2 - connected to the RIGHT head - L1, L2 - connected to the LEFT head).

The Train-line Junction Box can be operated either remotely, by means of a pneumatic signal from the Coupler control system which operates the rotary actuator (Figure 03-03.20), or by means of a manual handle (refer to Figure 03-I-02.24), on the front of the Train-line Junction Box, which operates the Drum Switch.

In uncoupled position most of the contacts are open and only the loop circuits are closed. As soon as the switch is set to the coupled position the NO contacts close and provide the train line signals to the electrical coupler heads.

The Drum Switch, inside the T/L Junction Box, is made up of three multiple contacts rotary switches, the contacts of each one of them subdivided into two sections: 14S01-1/2; 14S02-1/2; 14S03-1/2.

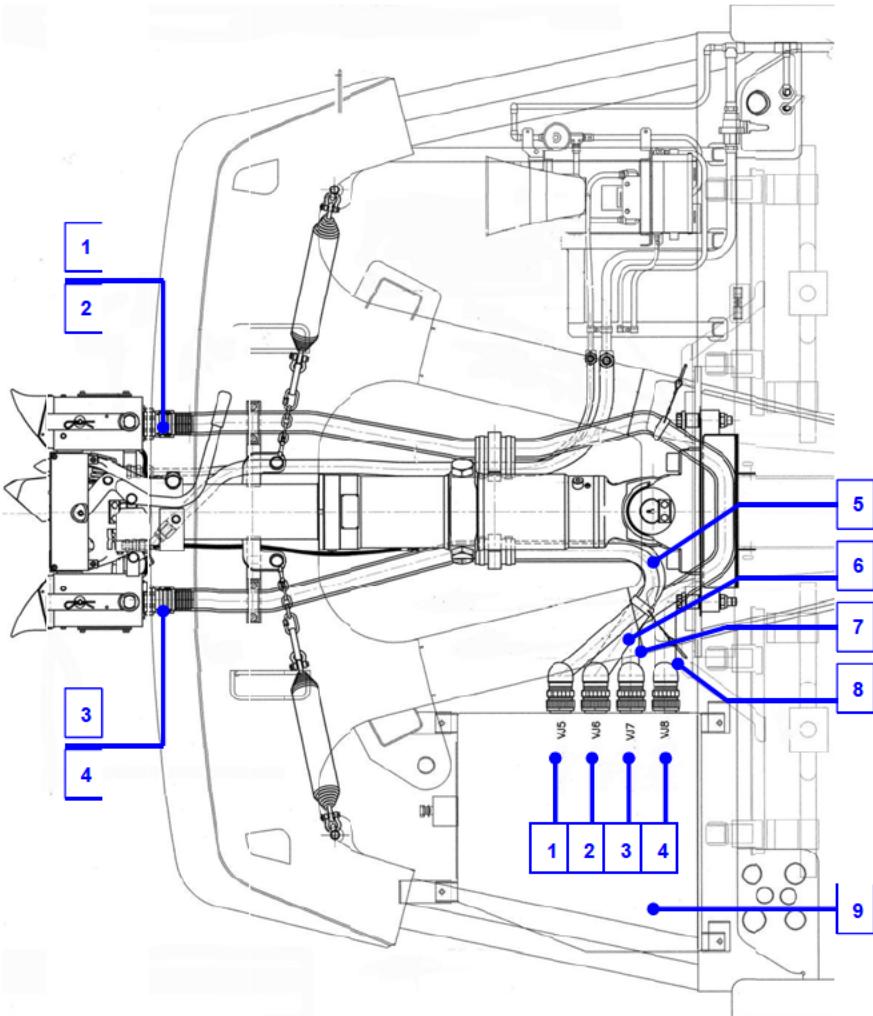
Each one of the contacts is used for connecting a wire coming from the vehicle to one of the contacts of the Electrical Coupler, thus providing a train-lined signal between the two coupled vehicles.

The connections made up by the three switches are listed in the following tables.

NOTE: When reading the tables, pay attention to the car section you are looking at, since the wire numbers of the WTB bus are different (refer to Table 03-I-02.5): the ones of the "A" section are shown in **bold** while the ones of the "B" section are shown in *italics*.

NOTE: The Functional Schematics related to the Coupler System are grouped in the AB document AA03ATW (237VE06965C03), from sheet 125 to sheet 130.

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- | | |
|----------------------------------|--------------------|
| 1. E2.1 CABLE PLUG, CABLE LEFT1 | 5. L1 CABLE LEFT1 |
| 2. E2.3 CABLE PLUG, CABLE LEFT2 | 6. L2 CABLE LEFT2 |
| 3. E1.1 CABLE PLUG, CABLE RIGHT1 | 7. R1 CABLE RIGHT1 |
| 4. E1.3 CABLE PLUG, CABLE RIGHT2 | 8. R2 CABLE RIGHT2 |
| 9. TRAIN-LINE JUNCTION BOX | |

Figure 03-I-02.23 Junction Box, Drum Switch and Electrical Connections

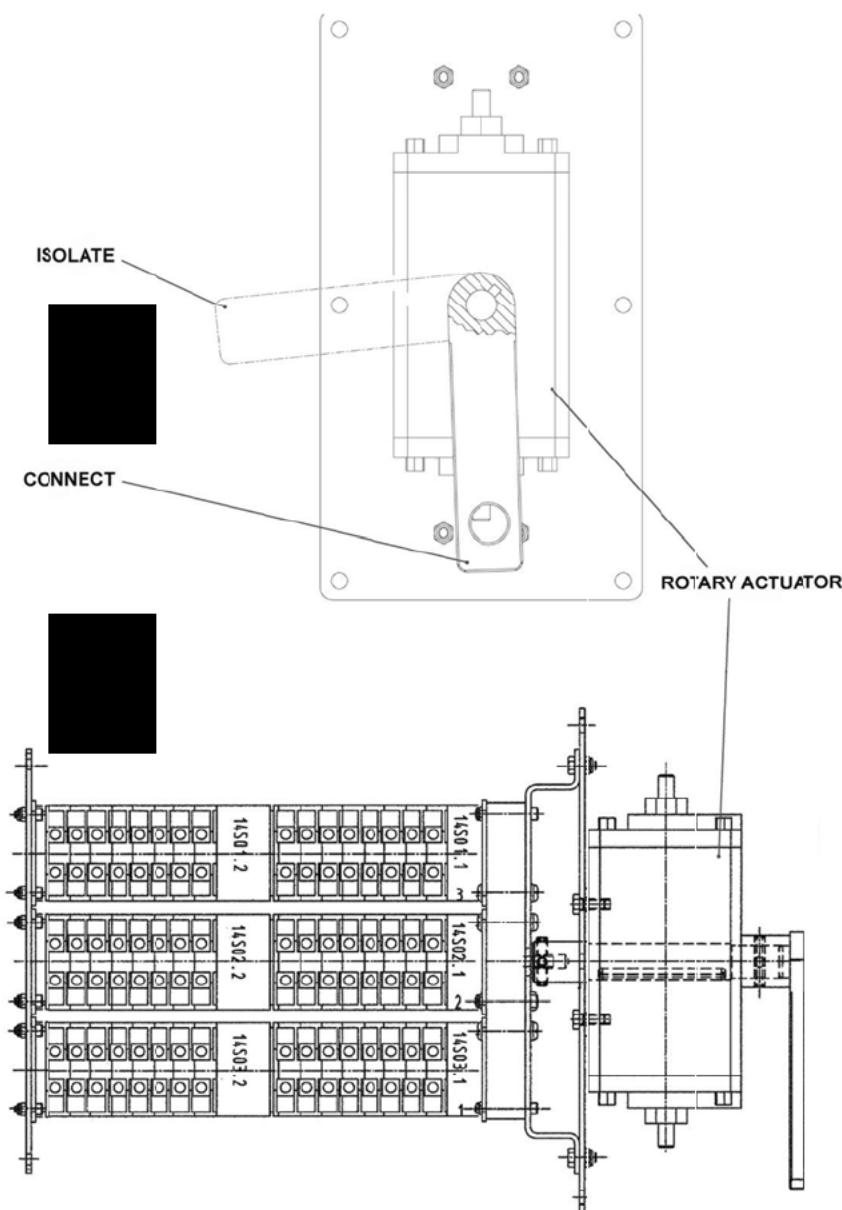


Figure 03-I-02.24 Drum Switch and Actuator

Table 03-I-02.4 Switch 14S01-1 - Electrical Connections

Switch 14S01-1 (Top switch inside the Train-line Junction Box - section close to handle) REFER TO DWG AA03ATW REV 10-SHEET 127 & 129 REV 07					
Car Side			Coupler Side		
Signal	Wire	Switch contact no.	Switch contact no.	Wire	Coupler Head(Pin)
HSBC OPEN	1506	1	2	1506	L1(1.19)
				1506	R1(1.19)
APS FAULT	1507	3	4	1507	L1(1.20)
				1507	R1(1.20)
LVPS FAULT	1508	5	6	1508	L1(1.35)
				1508	R1(1.35)
FB FAULT	1604	7	8	1604	L1(1.17)
				1604	R1(1.17)
PROP FAULT	1605	9	10	1605	L1(1.25)
				1605	R1(1.25)
		11	12		L1(1.29)
					R1(1.29)
R DOOR RELEASED	8403	13	14	8403	L2(2.47)
				8403	R1(2.45)
R DOOR CLOSED	8205	15	16	8205	L1(2.48)
				8205	R1(1.16)
L DOOR RELEASED	8406	17	18	8406	L1(2.45)
				8406	R2(2.47)
L DOOR CLOSED	8206	19	20	8206	L1(1.16)
				8206	R1(2.48)
		21/23/25 27/29/31 Not Connected	22/24/26 28/30/32 Not Connected		

LEGEND: N.C= Not Connected

Table 03-I-02.5 Switch 14S01-2 - Electrical Connections

Switch 14S01-2 (Top switch inside the Train-line Junction Box - section far from handle) REFER TO DWG AA03ATW REV 10-SHEET 127 & 129 REV 07					
Car Side			Coupler Side		
Signal	Wire	Switch contact no.	Switch contact no.	Wire	Coupler Head(Pin)
		1	2		
		3	4		R1(NC)
					L1(NC)
	11826	5	6	11826	R1(1.14)
				11826	L1(1.14)
	11827	7	8	11827	R1(2.37)
				11827	L1(2.37)
		9	10		R1(NC)
					L1(NC)
	11828	11	12	11828	R1(1.28)
				11828	L1(1.28)
	11829	13	14	11829	R1(2.3)
				11829	L1(2.3)
		15	16		R1(2.26)
					L1(2.26)
[RS485]	11824	17	18	11824	R1(2.44)
				11824	L1(2.44)
	11825	19	20	11825	R1(2.16)
				11825	L1(2.16)
		21	22		L1(NC)
WTB	4201 4205	23	24	4201 4205	L1(1.34)
	4201 4205	25	26	4201 4205	L1(1.33)
		27	28		R1(NC)
WTB	4202 4206	29	30	4202 4206	R1(1.34)
	4202 4206	31	32	4202 4206	R1(1.33)
		1/9/15/21/27 Not Connected	2/10/16/22/28 Not Connected		

LEGEND N.C= Not Connected

Table 03-I-02.6 Switch 14S02-1 - Electrical Connections

Switch 14S02-1 (Middle switch inside the Train-line Junction Box - section close to handle) REFER TO DWG AA03ATW REV 10-SHEET 127 & 129 REV 07					
Car Side			Coupler Side		
Signal	Wire	Switch contact no.	Switch contact no.	Wire	Coupler Head(Pin)
SPEED L MIT	2602	1	2	2602	L1 (2.46)
				2602	R1 (2.46)
EB NEG 1	5315	3	4	5315	L2 (2.33)
				5315	R2 (2.33)
FB APPLIED	1808	5	6	1808	L2 (2.34)
				1808	R2 (2.34)
HVAC GRID	11510	7	8	11510	L2 (2.40)
				11510	R2 (2.40)
		9	10		L2 (2.41)
					R2 (2.41)
		11	12		L2 (1.22)
					R2 (1.22)
TRACK BRAKE APPLIED	1905	13	14	1905	L2 (1.23)
				1905	R2 (1.23)
BATTERY SWITCH	2105	15	16	2105	L2 (2.15)
				2105	R2 (2.15)
SPEED L MIT	2606	17	18	2606	L2 (2.22)
				2606	R2 (2.22)
DOOR CLOSE LINE	2803	19	20	2803	L2 (1.36)
				2803	R2 (1.36)
		21	22		
FRICTION BRAKE CUTOUT	5909	23	24	5909	L2 (2.24)
				5909	R2 (2.24)
TRK BRK CMD	6507	25	26	6507	L2 (2.25)
				6507	R2 (2.25)
BY PASS ACTIVE	1607	27	28	1607	L2 (2.14)
				1607	R2 (2.14)
CREW SWITCH LIGHT	7008	29	30	7008	L2 (2.19)
				7008	R2 (2.19)
MAIN RES LOW	5902	31	32	5902	L2 (2.11)
				5902	R2 (2.11)
		9/11/21 Not Connected	10/12/22 Not Connected		

LEGEND: N.C= Not Connected

Table 03-I-02.7 Switch 14S02-2 - Electrical Connections

Switch 14S02-2 (Middle switch inside the Train-line Junction Box - section far from handle) REFER TO DWG AA03ATW REV 10-SHEET 127 & 129 REV 07					
Car Side			Coupler Side		
Signal	Wire	Switch contact no.	Switch contact no.	Wire	Coupler Head(Pin)
REVERSE	3205	1	2	3205	L2 (2.17)
				3205	R2 (1.37)
FORWARD	3204	3	4	3204	L2 (1.37)
				3204	R2 (2.17)
COAST	3202	5	6	3202	L2 (2.1)
				3202	R2 (2.1)
HRSB	3214	7	8	3214	L2 (1.27)
				3214	R2 (1.27)
		9	10		L2 (2.2)
					R2 (2.2)
SANDING COMMAND	6503	11	12	6503	L2 (2.4)
				6503	R2 (2.4)
- SCEB	3226	13	14	3226	L2 (2.5)
				3226	R2 (2.5)
+ SCEB	3203	15	16	3203	L2 (1.31)
				3203	R2 (1.31)
MOTOR	3210	17	18	3210	L2 (2.31)
				3210	R2 (2.31)
FSB	3213	19	20	3213	L2 (1.26)
				3213	R2 (1.26)
		21	22		L2 (2.28)
					R2 (2.28)
EB POS 2	5313	23	24	5313	L2 (2.23)
				5313	R2 (2.23)
EB NEG 2	5314	25	26	5314	L2 (2.6)
				5314	R2 (2.6)
		27	28		
		29	30		R1 (1.13)
					L1 (1.13)
		31	32		R1 (1.24)
					L1 (1.24)
		9/21/27/29/31 Not Connected	10/22/28/30/31 Not Connected		

LEGEND: N.C= Not Connected

Table 03-I-02.8 Switch 14S03-1 - Electrical Connections

Switch 14S03-1 (Bottom switch inside the Train-line Junction Box - section close to handle) REFER TO DWG AA03ATW REV 10-SHEET 127 & 129 REV 07					
Car Side			Coupler Side		
Signal	Wire	Switch contact no.	Switch contact no.	Wire	Coupler Head(Pin)
RIGHT TURN	7310	1	2	7310	L2 (2.8)
				7310	R2 (2.13)
LEFT TURN	7311	3	4	7311	L2 (2.13)
				7311	R2 (2.8)
LEFT DOOR RELEASE	8318	5	6	8318	L2 (1.21)
				8318	R2 (1.32)
RIGHT DOOR RELEASE	8319	7	8	8319	L2 (1.32)
				8319	R2 (1.21)
LEFT DOOR OPEN	8316	9	10	8316	L2 (2.49)
				8316	R2 (1.15)
RIGHT DOOR OPEN	8313	11	12	8313	L2 (1.15)
				8313	R2 (2.49)
LEFT DOOR CLOSED	8317	13	14	8317	L2 (2.18)
				8317	R2 (2.39)
RIGHT DOOR CLOSED	8314	15	16	8314	L2 (2.39)
				8314	R2 (2.18)
CAB ENABLE INTERLOCK	2203	17	18	2203	L2 (2.20)
				2203	R2 (2.20)
HVAC ON/OFF	11508	19	20	11508	L2 (2.21)
				11508	R2 (2.21)
SILENT ALARM	7508	21	22	7508	L2 (2.10)
				7508	R2 (2.10)
		23	24		
		25	26		
		27	28		
		29	30		
EB POS 1	5312	31	32	5312	L2 (2.38)
				5312	R2 (2.38)
		23/25/27/29/31 Not Connected	24/26/28/32 Not Connected		

LEGEND: N.C= Not Connected

Table 03-I-02.9 Switch 14S03-2 - Electrical Connections

Switch 14S03-2 (Bottom switch inside the Train-line Junction Box - section far from handle) REFER TO DWG AA03ATW REV 10-SHEET 127 & 129 REV 07					
Car Side			Coupler Side		
Signal	Wire	Switch contact no.	Switch contact no.	Wire	Coupler Head(Pin)
LVTL CLOSE COMMAND	2116	1	2	2116	L2 (2.32)
				2116	R2 (2.32)
PANTOGRAPH DOWN	4902	3	4	4902	L2 (2.35)
				4902	R2 (2.35)
PANTOGRAPH UP	4903	5	6	4903	L2 (2.36)
				4903	R2 (2.36)
HSCB RESET	4503	9	10	4503	L2 (2.42)
				4503	R2 (2.42)
HSCB HOLD	4502	11	12	4502	L2 (2.43)
				4502	R2 (2.43)
		13	14		
		15	16		
		17	18		
		19	20		
		21	22		
		23	24		
		25	26		
		27	28		
		29	30		
		31	32		

LEGEND: N.C= Not Connected

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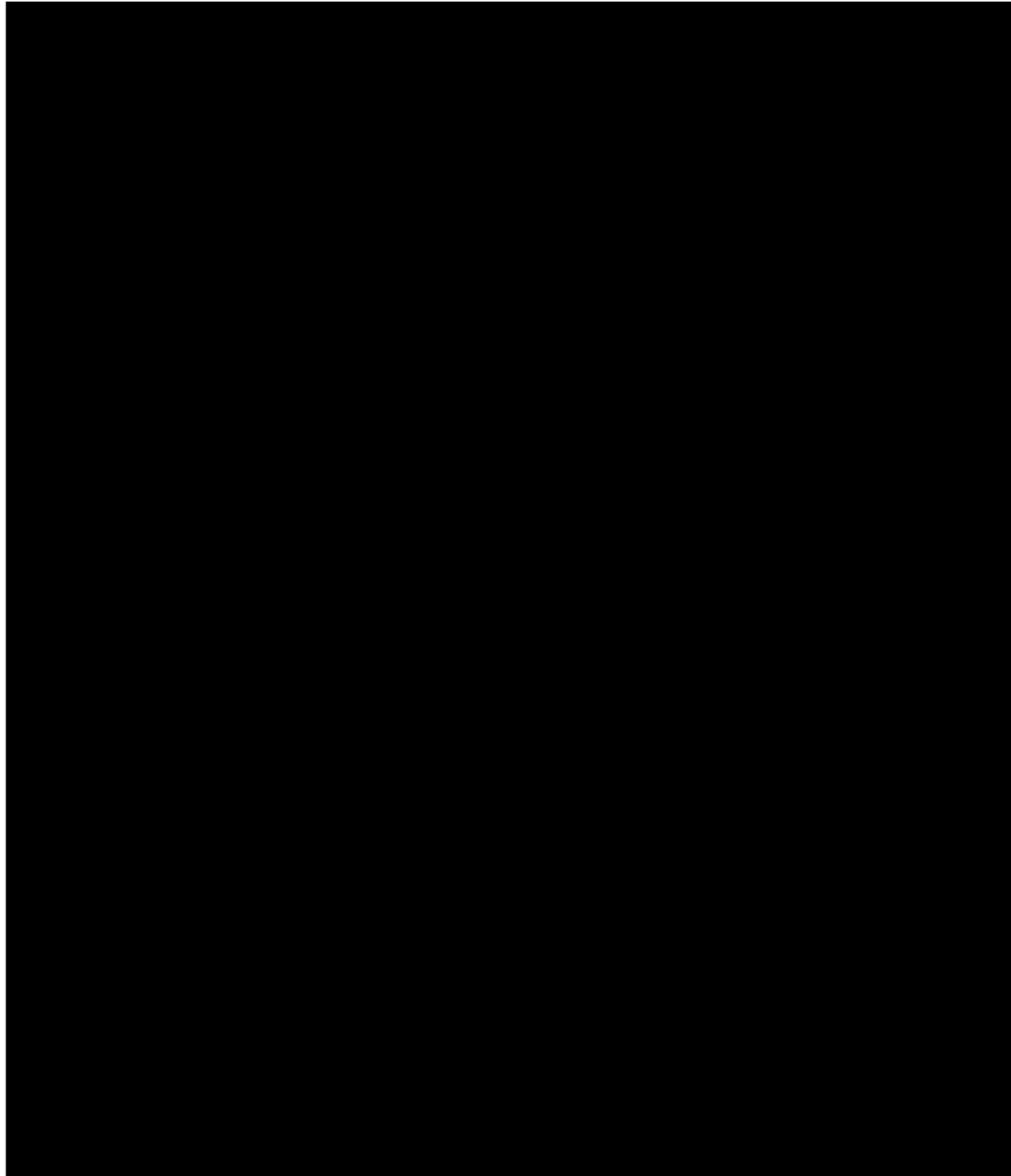


Figure 03-I-02.25 Circuit Diagram - L1 cable (1 of 2)

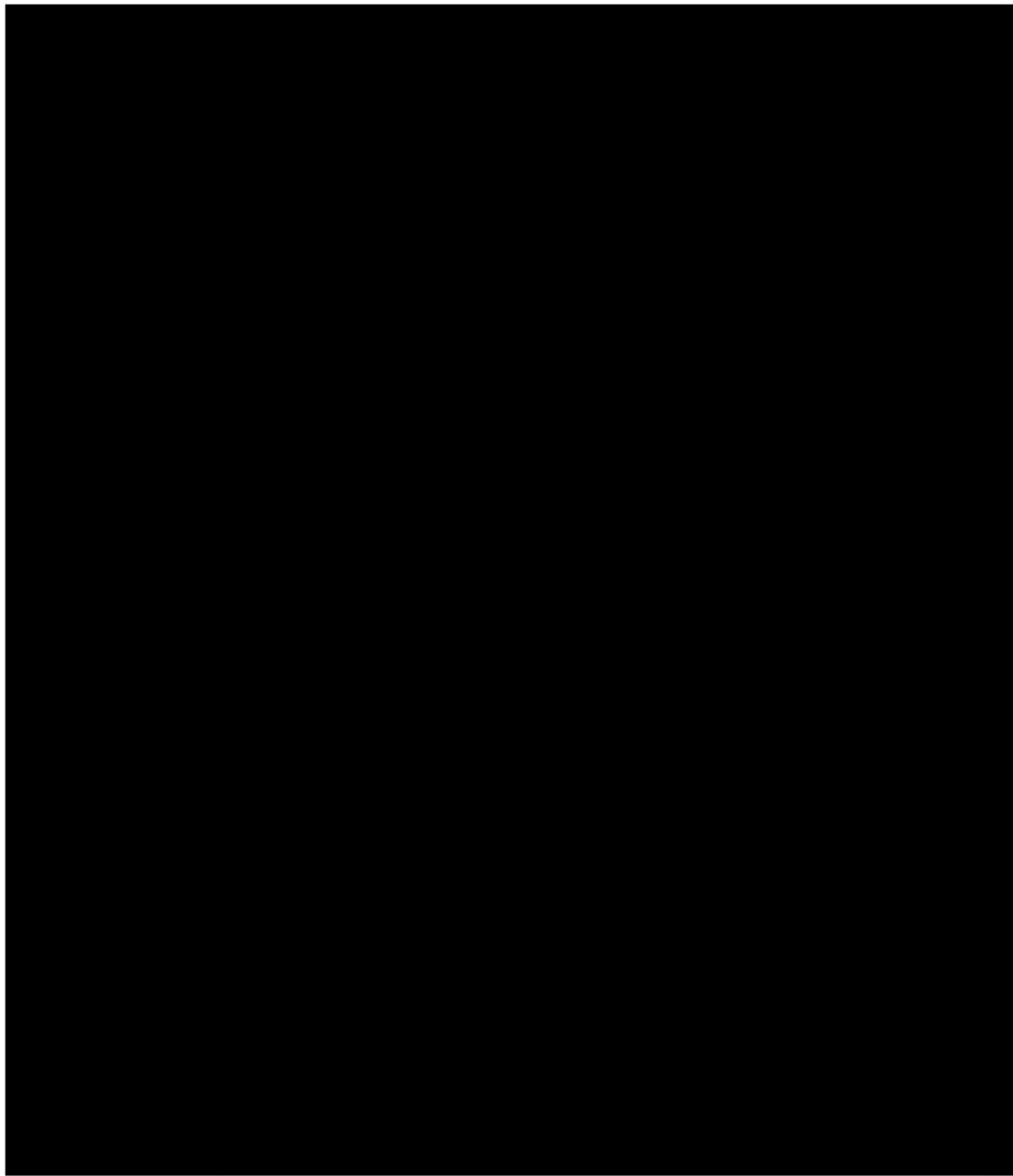
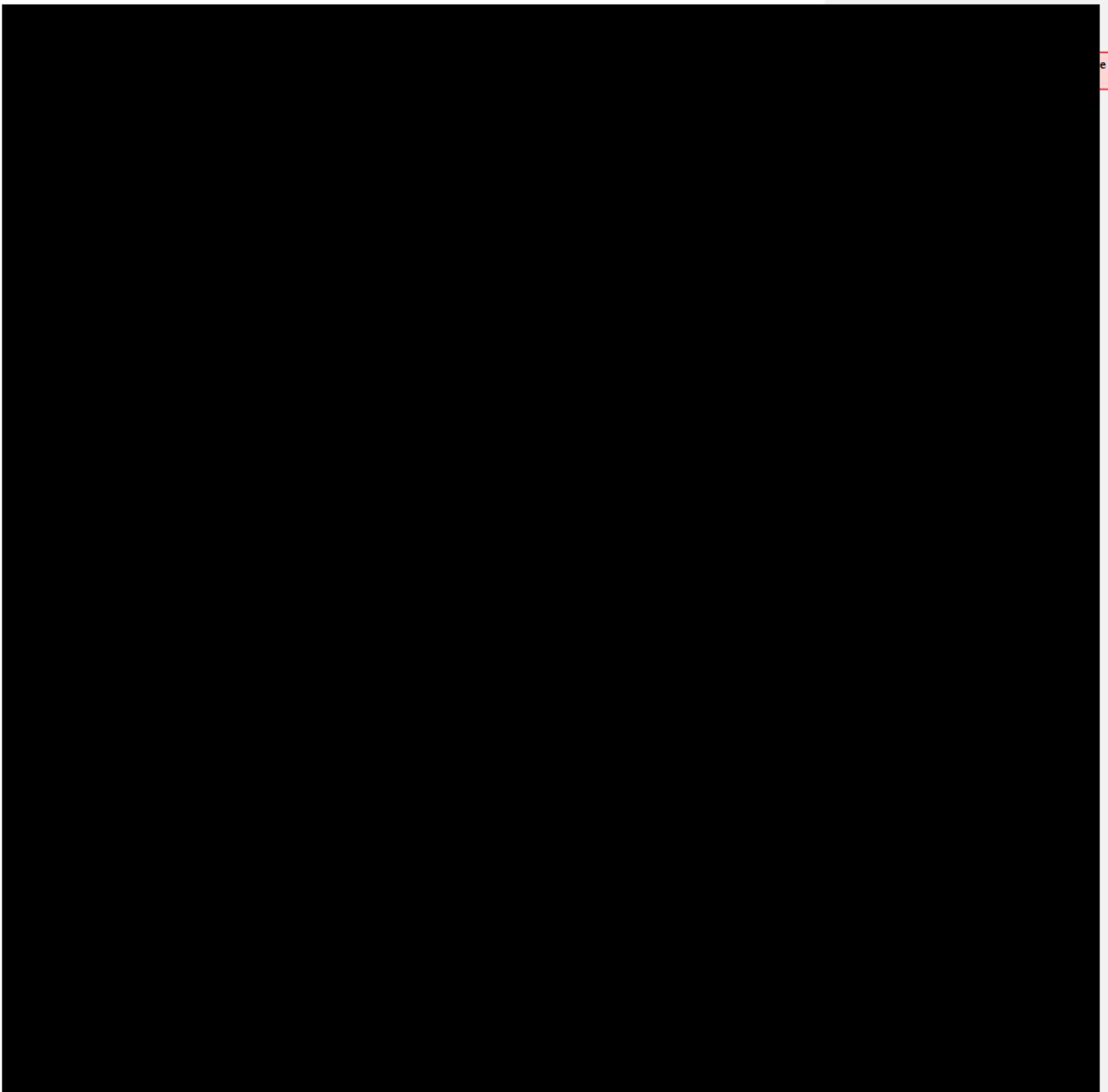


Figure 03-I-02.26 Circuit Diagram - L1 cable (2 of 2)



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Figure 03-I-02.28 Circuit Diagram - L2 cable (2 of 3)

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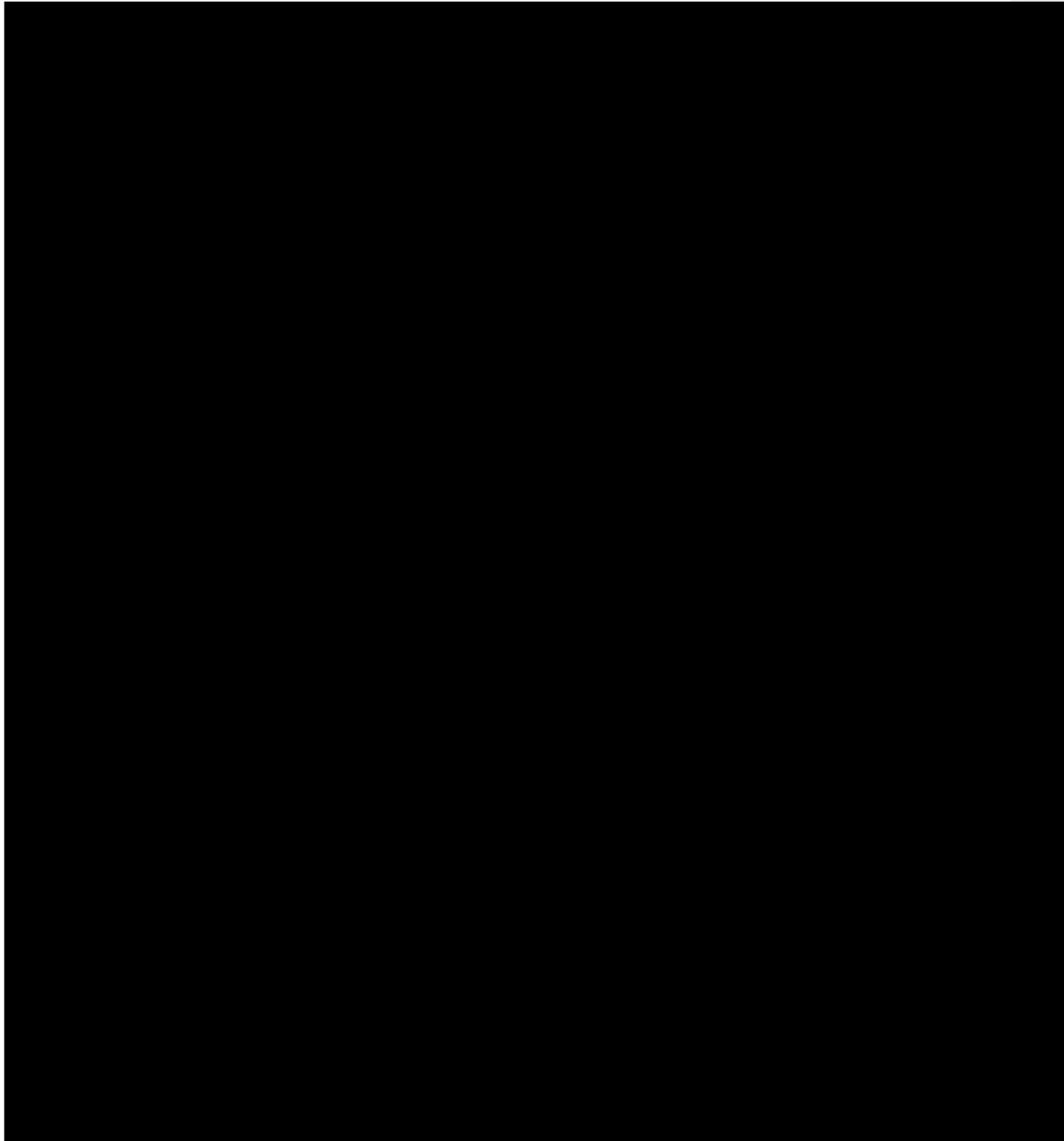


Figure 03-I-02.29 Circuit Diagram - L2 cable (3 of 3)

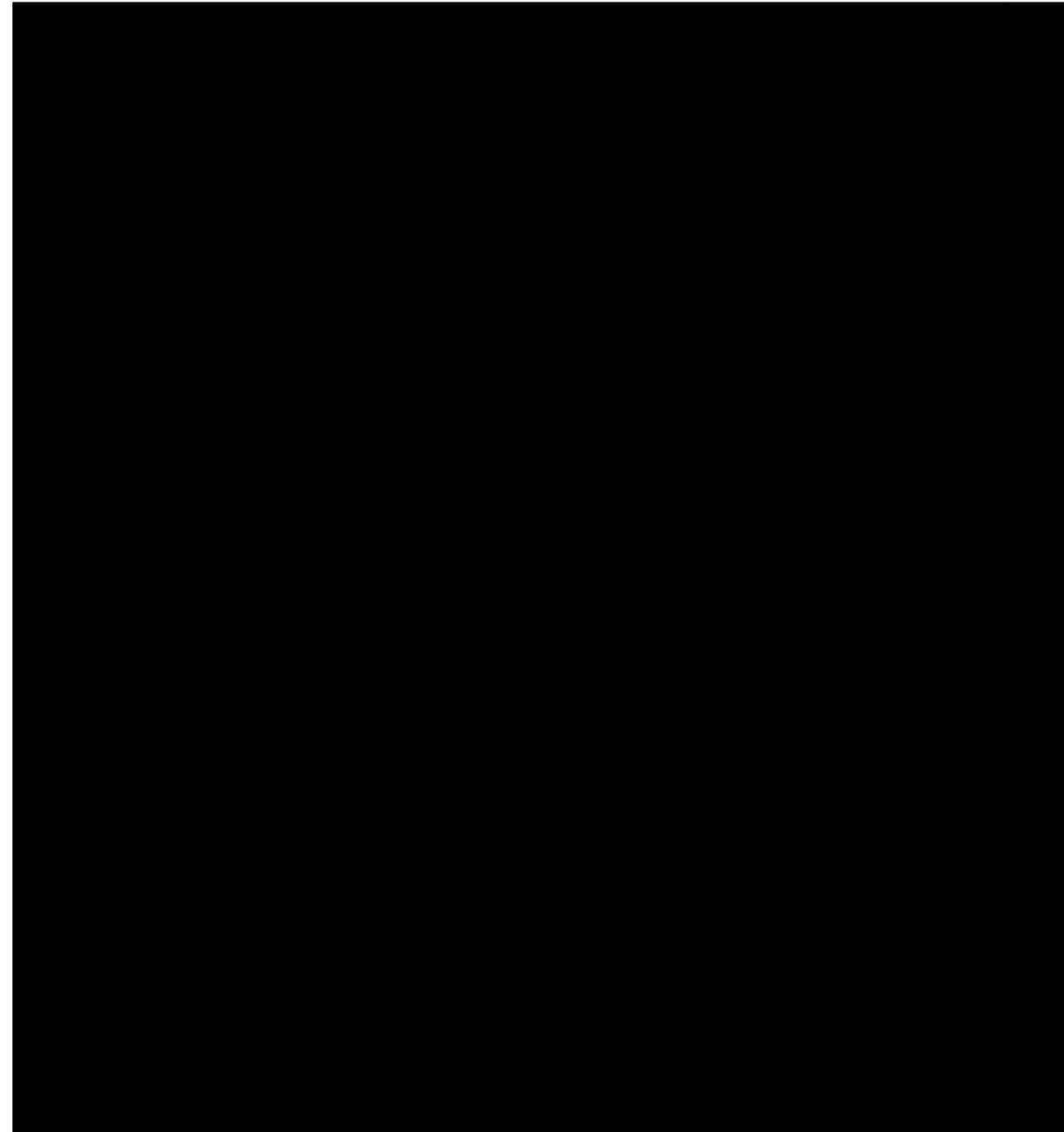


Figure 03-I-02.30 Circuit Diagram - R1 cable (1 of 2)

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Figure 03-I-02.31 Circuit Diagram - R1 cable (2 of 2)



Figure 03-I-02.32 Circuit Diagram - R2 cable (1 of 3)

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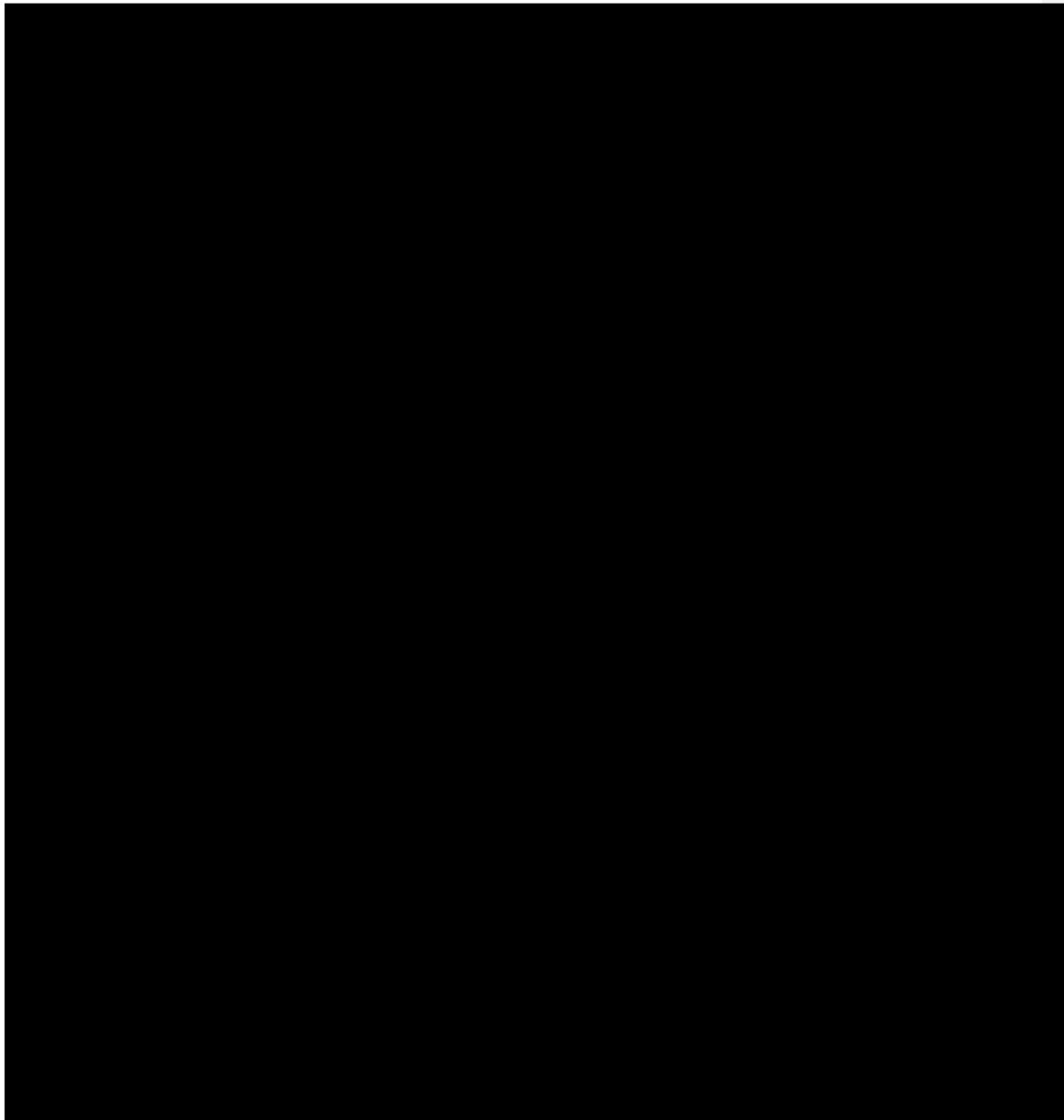


Figure 03-I-02.33 Circuit Diagram - R2 cable (2 of 3)

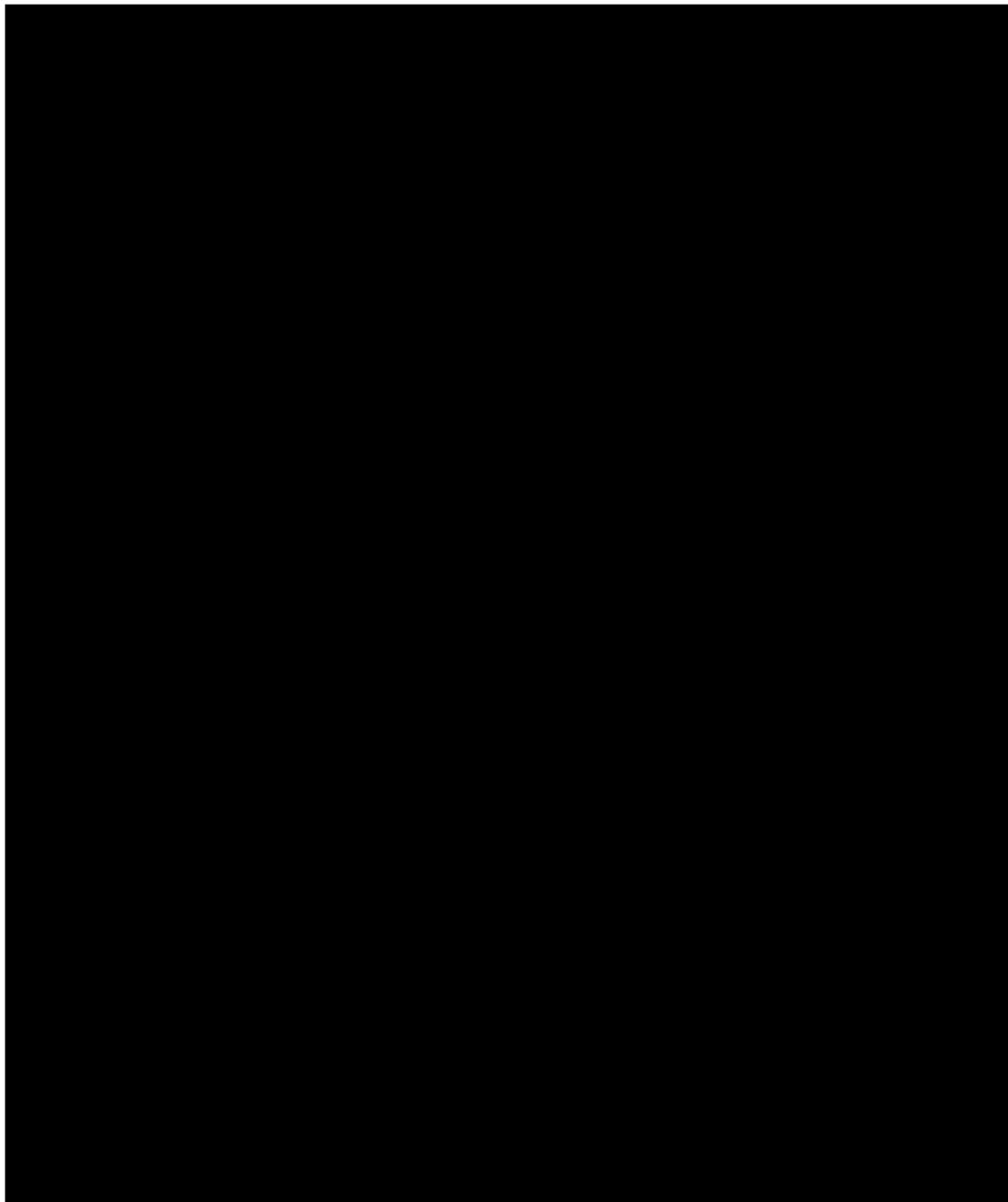


Figure 03-I-02.34 Circuit Diagram - R2 cable (3 of 3)

03-I-02.02.04 Pneumatic System

A small pneumatic system is fitted to the mechanical coupler and controls the functions of the coupler.

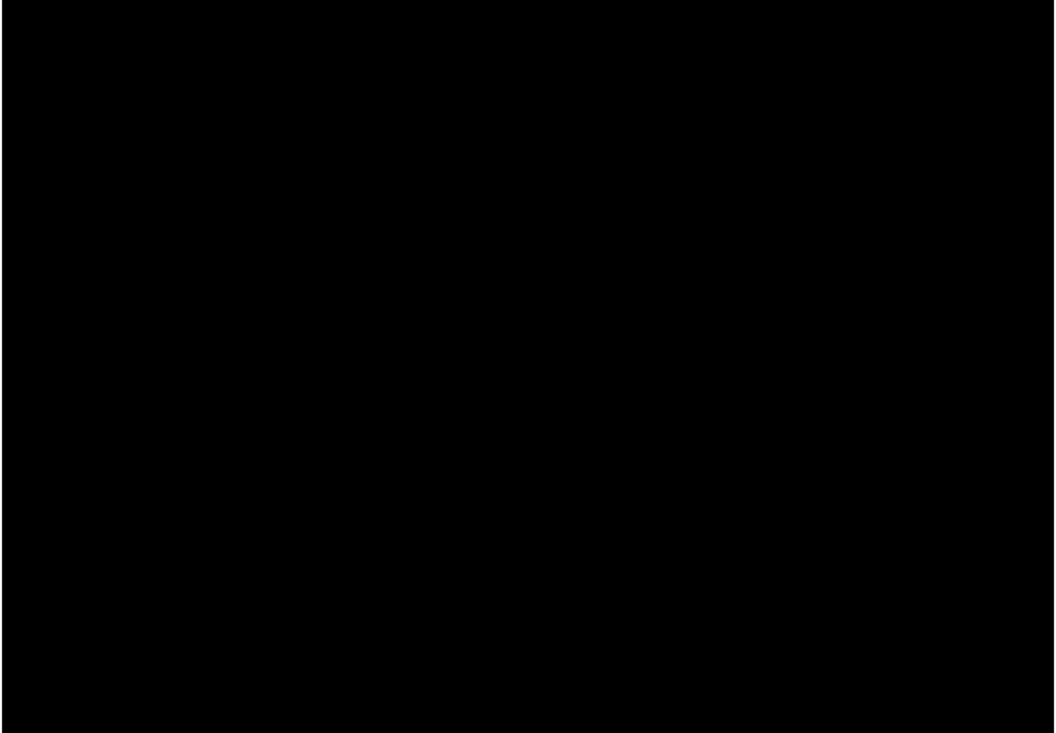
The pneumatic system contains the pneumatic coupler.

The pneumatic system (Refer to Figure 03-I-02.35) includes hoses, two solenoid valves, a single solenoid valve (6), denominated MCSV (Mechanical Coupler Solenoid Valve), for mechanical uncoupling and a duplex solenoid valve for operation of switch (3).

The duplex solenoid valve comprises two single solenoid valves: (1) denominated UCSV (Uncoupling Solenoid Valve) and (7) CSV (Coupling Solenoid Valve).

When valve UCSV is pressurized and CSV is shut off, the drive unit (2) puts the switch (3) in uncoupled state. When CSV is pressurized and UCSV is shut off, the drive unit (2) puts the switch (3) in coupled state.

Figure 03-I-02.35 Coupler Pneumatic Diagram

A large black rectangular redaction box covers the area where the pneumatic diagram would normally be located.

The MCSV (6) is operated at uncoupling, causing the uncoupling cylinder (4) to move and the tappet valve (5) in the pneumatic valve on the operated car to close. In addition, it keeps the tappet valve on the car that is left, open to be vented.

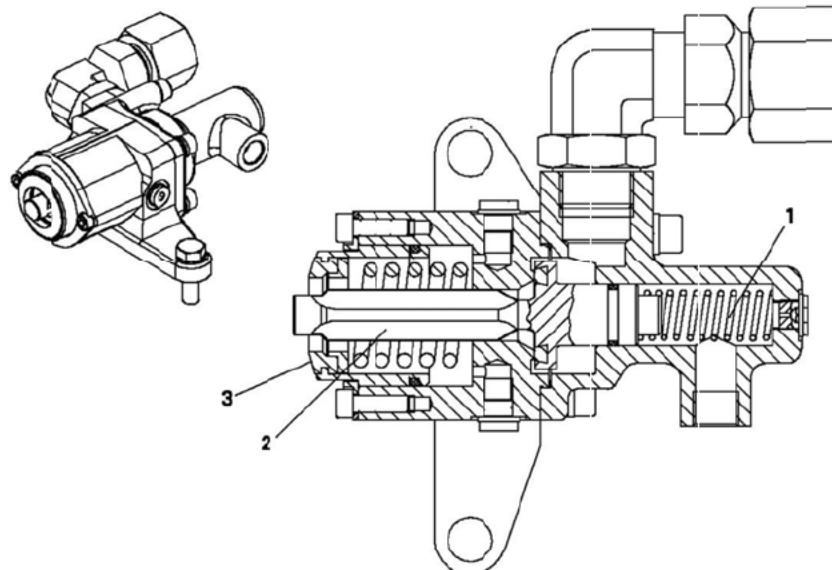
03-I-02.02.04.01 MRP Valve

The valve, MRP provides for pneumatic coupling of Main Reservoir Pipe air between two coupled vehicles.

The pneumatic coupler valve, Main Reservoir Pipe (MRP), is located on the bottom of the mechanical coupler head and provides for connection of the trains pneumatic system when coupled.

When two vehicles (Refer to Figure 03-I-02.36) are coupled the valve rod (2) is pressed back thus opening the air flow through the valve. The seal (3) provides for an airtight connection between the couplers.

When uncoupling the vehicles the spring (1) pushes the valve rod (2) and closes the air flow.



01. SPRING
03. SEAL

02. VALVE ROD

Figure 03-I-02.36 MRP Valve

LOS ANGELES COUNTY

METROPOLITAN TRANSPORTATION AUTHORITY

LIGHT RAIL VEHICLE

P2550



RUNNING MAINTENANCE
AND
SERVICE MANUAL



VOLUME M-01
PART II
TROUBLESHOOTING
SECTION 03 - COUPLER

SECTION 03

COUPLER

PART II

TROUBLESHOOTING

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SECTION 03

COUPLER

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 overlook 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, each one of which is supplied with the relevant Maintenance Sheets and Job Cards:

- Preventive Maintenance
- Corrective Maintenance

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
AB	AnsaldoBreda
APS.....	Auxiliary Power Supply
BRK	Brake
CB.....	Circuit Breaker
CEHT	Coupler Electrical Head Tester
CM	Coast Motoring
CSV	Coupling Solenoid Valve
EB.....	Emergency Brake
FSB.....	Full Service Brake
GTW	Gateway
HRSB.....	High Rate Service Brake
HSCB.....	High Speed Circuit Breaker
HV.....	High Voltage
HVAC.....	Heating Ventilation & Air Conditioning
HVDS.....	High Voltage Distribution System
HW.....	Hardware
IDU.....	Integrated Diagnostic Unit
IP	Ingress Protection Rating
ISO.....	International Standardization Organization
KO.....	Out of Service
LH	Left Hand Side
LRV.....	Light Rail Vehicle
LV	Low Voltage
LVDS	Low Voltage Distribution System
LPD	Low Voltage Power Distribution
LVPS.....	Low Voltage Power Supply
LVTL.....	Low Voltage Train Line
M.....	Motoring
MCSV	Mechanical Coupler Solenoid Valve
MRP.....	Main Reservoir Pipe
MTA	Metropolitan Transportation Authority
MV	Medium Voltage

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Abbreviation	Meaning
MVB	Multifunction Vehicle Bus
MVPD.....	Medium Voltage Power Distribution
NC.....	Normally Closed
NO.....	Normally Open
OK.....	Working
PTU.....	Portable Test Unit
RES.....	Reservoir
RH.....	Right Hand Side
SB	Serv ce Brake
SCEB	Slide Controlled Emergency Brake
TBS	To Be Supplied
TCMS.....	Train Control & Monitoring System
TCN.....	Train Communication Network
TRK.....	Track
UCSV.....	Uncoupling So enoid Valve
WTB.....	Wired Train Bus

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
Front door	The door close to the Operator's Cab

MTA P2550 - LRV
Running Maintenance and Service Manual - Section 03

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
°C	Celsius degree
°F	Fahrenheit degree
A.....	Ampere
dc.....	Direct Current
ft.....	Foot
gal	Gallon
Hz.....	Hertz
in	Inch
kg	Kilogram - approx 2.205 pounds
km	Kilometer - approx 0.621 miles
kN.....	Kilo-Newton - approx 224.809 pounds force
lb	Pound
lb-ft.....	Pound force
m.....	Meter - approx 3.28 feet
mm.....	Millimeter - approx 0.0394 inches
Pa.....	Pascal
rpm.....	Revo ution per Minute
V.....	Voltage
W.....	Watt

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04-II-02 TROUBLESHOOTING

04-II-02.01 General

Two tools are at the disposal of the Maintenance personnel for troubleshooting the Coupler system:

- The Fault Isolation/Repair Table (refer to Table 04-II-02.1)
- The Portable Test Unit (PTU - refer to Figure 03-II-02.2)

The Coupler system is not interfaced by the TCMS. Therefore, the IDU cannot be used for troubleshooting the Coupler system.

The only signals sent from the Coupler to the IDU are related to the coupling history, which lists the vehicles that have been coupled to the reference vehicle.

The list is ordered by date, starting from the oldest one and includes date, time, vehicles involved, and, for each vehicle, identification and orientation.

The TCMS application of the IDU A creates a file named CoupHist.dat, to save the vehicle couplings.

Every three seconds, the application checks whether the train configuration has changed. If the new configuration remains unchanged for 40 cycles (120 seconds), the IDU A saves the configuration.

The Coupling History is displayed by the IDU A only, in the INFO screen of the MAINTENANCE MENU (refer to Figure 03-II-02.1).

The TCMS application of the IDU A creates a file, named CouplHist.dat, to record the train couplings.

Every 3s the application check if the train configuration changes.

If this happens for 40 continuous times, the actual configuration is recorded.

The CoupHist.dat file size is 1MB and it can contain approximately 18000 couplings.

The file is managed with the FIFO (first in first out) logic, so when the limit size is reached the new couplings overwrite the older ones.

The IDU shows just the lasts 500 couplings, in order to protect the performances.

NOTE: A configuration is be recorded only if all the information are available.



Figure 04-II-02.1 IDU A - Coupling History

04-II-02.02 Fault Isolation / Repair Tables

This section contains information for performing systematic diagnosis and repair of the Coupler components.

Table 04-II-02.1 Fault Isolation/Repair Table

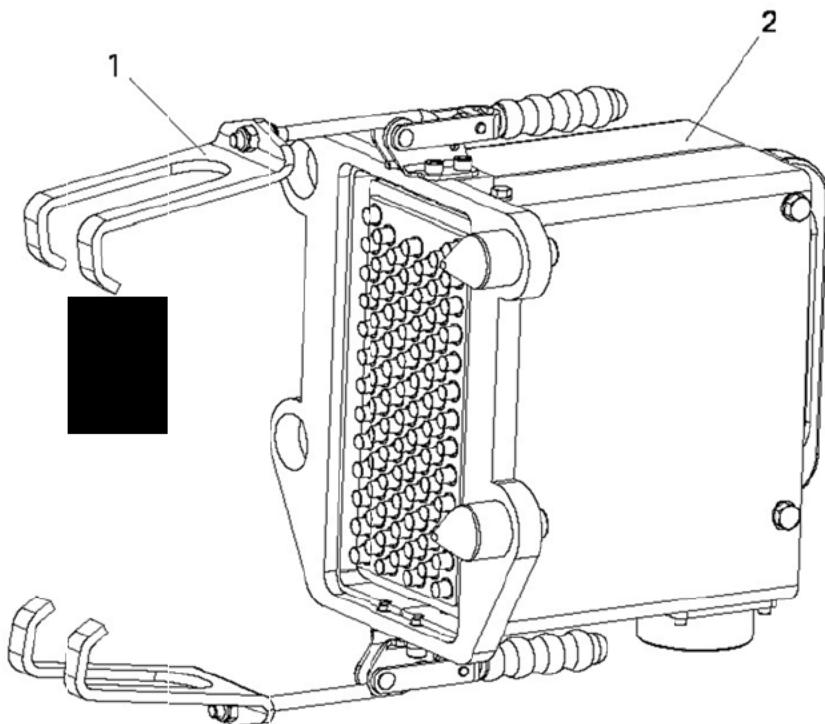
Device	Fault	Cause	Remedy
1. Automatic Coupler	1. Couplers does not meet properly in order to couple	1. Automatic coupler not properly centered vertically and/or horizontally	1. Adjust centering of coupler according to D4-91050, Preventive Maintenance Manual.
	2. Couplers will not uncouple.	1. Car under draft load.	1. Buff cars to release the draft load.
2. Mechanical Coupler	1. Will not couple	1. Coupler not centered.	1. Unhook centering springs and manually align coupler. Adjust centering of coupler.
		2. Foreign material in coupling mechanism	1. Remove foreign material.
		3. Uncoupling cylinder pressurized or stuck in extended position	1. Check for air line obstruction. Replace items as required.
		4. Hook(s) jammed.	1. Remove dirt from the coupler face. Properly lubricate the main pin and cam. See D4-91050 Preventive Maintenance Manual.
		5. Hooks worn out.	1. Check with "GO" and "NO-GO" gauges. If out of tolerance, send for overhaul.
		6. Electrical coupler protection cover(s) does not open.	1. Check the electrical coupler for damaged parts. Replace parts as required.
2. Mechanical Coupler (cont'd)	1. Will not uncouple	1. Uncoupling cylinder not pressurized or jammed in retracted position.	1. Verify air supply from vehicle. Check coupler pneumatic system. Replace items as required.

Table 04-II-02.1 Fault Isolation/Repair Table

Device	Fault	Cause	Remedy
		2. Worn or broken parts in the uncoupling mechanism.	1. Check the uncoupling mechanism for damaged parts. Replace parts as required.
3. Buffer	1. Buffer remains in extended position.	1. Exhaustion of the friction spring unit as a result of repeated over loading.	1. Send buffer for overhaul.
	2. Buffer cannot absorb buff oads.	1. The shear pins have been sheared off due to over load.	1. Send buffer for overhaul.
	3. Buffer can not absorb the draft- and buff oads.	1. Loss of the absorption ability i.e. leakage in the hydraulic buffer.	1. Send buffer for overhaul.
4. Pneumatic coupler	1. Will not open after uncoupling.	1. Foreign material in valve housing.	1. Cut air supply to the automatic coupler and remove foreign material.
	2. Remains open after uncoupling.	1. Foreign material in valve housing.	1. Cut air supply to the automatic coupler and remove foreign material.
	3. No connection of air supply between couplers when coupled.	1. Insufficient or missing air supply to the coupler.	1. Verify air supply from vehicle. If present, there is a possible fault in the coupler pneumatic system.

04-II-02.03 Coupler Electrical Head Tester (CEHT)

The Coupler Electrical Head Tester (CEHT) is used to test the coupler Electric Heads. Fit the CEHT to the Electric Coupler Head to be tested by installing and tightening the locking device



1 Locking device

2 Coupler Electrical Head Tester (CEHT))

Figure 04-II-02.2 Coupler Electrical Head Tester (CEHT))

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METROPOLITAN TRANSPORTATION AUTHORITY

LIGHT RAIL VEHICLE
P2550



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



SECTION 03

COUPLER

PART III

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COUPLER

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SECTION 03

COUPLER

03-III-01 INTRODUCTION

The Coupler Part III - Maintenance consists of:

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

03-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
APS	Auxiliary Power Supply
ASSY	Assembly
BRK	Brake
CB	Circuit Breaker
CM	Coast Motoring
CSV	Coupling Solenoid Valve
EB	Emergency Brake
ELE	Electronic
EMI	Electro Magnetic Interference
FSB	Full Service Brake
GTW	Gateway
H-CML	Heavy Consumable Material List
H-CMS	Heavy Corrective Maintenance Sheet
HRSB	High Rate Service Brake
HSCB	High Speed Circuit Breaker
HV	High Voltage
HVAC	Heating Ventilation & Air Conditioning
HVDS	High Voltage Distribution System
HW	Hardware
IDU	Integrated Diagnostic Unit
IP	Ingress Protection Rating
IPC	Illustrated Parts Catalog
ISO	International Standardization Organization
KO	Out of Service
LH.	Left Hand Side
LRV	Light Railway Vehicle
LV	Low Voltage
LVDC	Low Voltage Direct Current
LVDS	Low Voltage Distribution System
LVPD	Low Voltage Power Distribution
LVPS	Low Voltage Power Supply
LVTL	Low Voltage Train Line

(cont'd)

(cont'd)

Abbreviation	Meaning
M	Motoring
MCSV	Mechanical Coupler Solenoid Valve
MPR	Main Reservoir Pipe
MTA	Metropolitan Transportation Authority
MV	Medium Voltage
MVB	Multifunction Vehicle Bus
MVPD	Medium Voltage Power Distribution
NC	Normally Closed
NO	Normally Open
OK	Working
PS	Power Supply
PTU	Portable Test Unit
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
RES	Reservoir
RH	Right Hand Side
SB	Service Brake
SCEB	Slide Controlled Emergency Brake
SCPM	Safety Critical Preventive Maintenance
SYS	System
TBD	To Be Defined
TBS	To Be Supplied
TCMS	Train Communication & Monitoring System
TCN	Train Communication Network
TOC	Table Of Content
TTEM	Tools & Test Equipment Manual
TRK	Track
UCSV	Uncoupling Solenoid Valve
VAC	Voltage Alternate Current
VDC	Voltage Direct Current
W/	With
W/O	Without

03-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

03-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)
.	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)
mphs	Mile Per Hour Per Second (Acceleration)

03-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
<i>MANUAL ARRANGEMENT</i>	00-03
<i>MANUAL APPLICABILITY</i>	00-04
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03-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

03-III-03 RUNNING -PREVENTIVE MAINTENANCE

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

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

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

- **R-PMM Component Based**

It lists the Coupler 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 Coupler 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.

03-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.

03-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

The marker “●” in the INSPECTIONS INTERVAL column, indicates the periodicity of the corresponding Task.

03-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.

03-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 03-III-03.03.01 for Running- Preventive Maintenance Sheet (R-PMS) Form for detailed explanation.

03-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 03-III-03.1 for Running - Preventive Maintenance Matrix (R-PMM)
(Component Based)
- Table 03-III-03.2 for Running - Preventive Maintenance Matrix (R-PMM)
(Mileage Based)

03-III-03.01.06 Running Preventive Maintenance Matrix (Component Based)
Table 03-III-03.1 Running Preventive Maintenance Matrix (Component Based)

SYSTEM 03			COUPLER					
SUBSYSTEM ASSY/UNIT/COMPONENT	TASK	SCPM	INSPECTION INTERVAL MILES			SHEET CODE		
			Daily	10K	30K	60K	120K	
AUTOMATIC COUPLER ASSEMBLY								
-AUTOMATIC COUPLER ASSEMBLY	LUBRICATION				●			R-P-03-01-00-00/L-00
-AUTOMATIC COUPLER ASSEMBLY	INSPECTION	✓			●			R-P-03-01-00-00/I-00
-AUTOMATIC COUPLER ASSEMBLY	LUBRICATION						●	R-P-03-01-00-00/L-01
MECHANICAL COUPLER ASSEMBLY								
--SUPPORT SPRING ASSEMBLY	INSPECTION	✓					●	R-P-03-01-01-04/I-00
ELECTRICAL COUPLER								
--ELECTRICAL COUPLER	INSPECTION				●			R-P-03-01-03-00/I-00
--ELECTRICAL COUPLER	INSPECTION						●	R-P-03-01-03-00/I-01
PNEUMATIC COUPLER								
--PNEUMATIC COUPLER MRP	INSPECTION	✓			●			R-P-03-01-04-00/I-00
--PNEUMATIC COUPLER MRP	INSPECTION						●	R-P-03-01-04-00/I-01
VEHICLE MOUNTED EQUIPMENT								
--DRUM SWITCH	INSPECTION				●			R-P-03-02-02-00/I-00

03-III-03.01.07 Running Preventive Maintenance Matrix (Mileage Based)
Table 03-III-03.2 Running Preventive Maintenance Matrix (Mileage Based)

SYSTEM 03		COUPLER		
SUBSYSTEM	TASK	SCPM	PERSON HOURS	SHEET CODE
30,000 MILES				
AUTOMATIC COUPLER ASSEMBLY				
-AUTOMATIC COUPLER ASSEMBLY	LUBRICATION		0.3	R-P-03-01-00-00/L-00
-AUTOMATIC COUPLER ASSEMBLY	INSPECTION	<input checked="" type="checkbox"/>	0.7	R-P-03-01-00-00/I-00
ELECTRICAL COUPLER				
--ELECTRICAL COUPLER	INSPECTION		0.2	R-P-03-01-03-00/I-00
PNEUMATIC COUPLER				
--PNEUMATIC COUPLER MRP	INSPECTION	<input checked="" type="checkbox"/>	0.3	R-P-03-01-04-00/I-00
VEHICLE MOUNTED EQUIPMENT				
--DRUM SWITCH	INSPECTION		0.1	R-P-03-02-02-00/I-00
120,000 MILES				
AUTOMATIC COUPLER ASSEMBLY				
-AUTOMATIC COUPLER ASSEMBLY	LUBRICATION		0.4	R-P-03-01-00-00/L-01
MECHANICAL COUPLER ASSEMBLY				
--SUPPORT SPRING ASSEMBLY	INSPECTION	<input checked="" type="checkbox"/>	0.1	R-P-03-01-01-04/I-00
ELECTRICAL COUPLER				
--ELECTRICAL COUPLER	INSPECTION		0.2	R-P-03-01-03-00/I-01
PNEUMATIC COUPLER				
--PNEUMATIC COUPLER MRP	INSPECTION		0.1	R-P-03-01-04-00/I-01

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

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

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

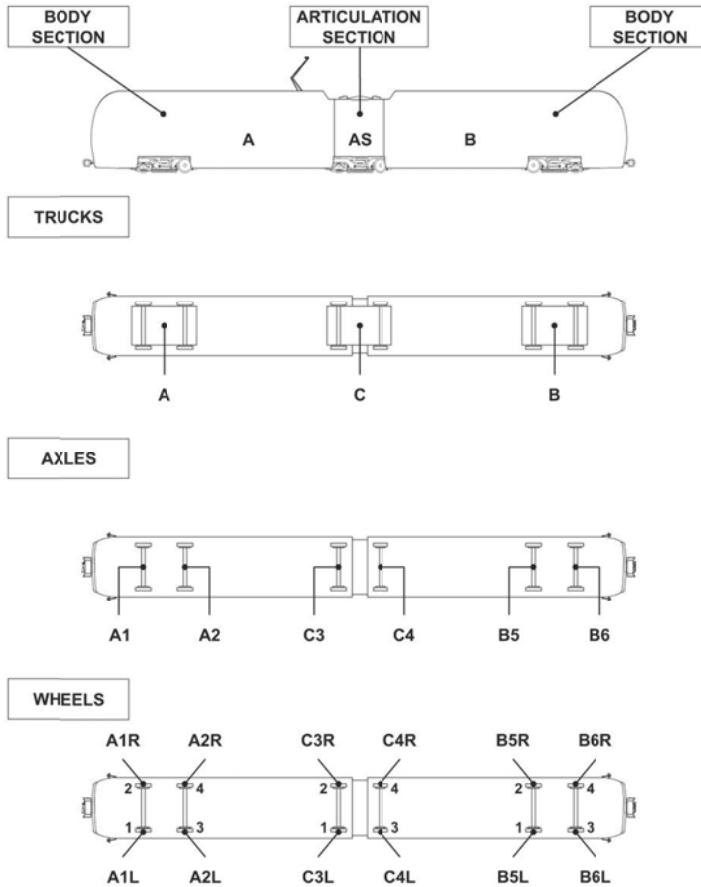
The R-PMR/JOB CARDS are broken down into two main topics:

Specific Data and R-PM Data

Refer to Figure 03-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. The R-PM Maintenance Intervals are the following: 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 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: Exterior - Interior - Roof - Truck - Undercar - Vehicle (Vehicle as a whole)</p>

RUNNING PREVENTIVE MAINTENANCE REPORTS (R-PMR/JOB CARDS) FORM (cont'd)
SPECIFIC DATA TO BE FILLED IN BY THE MAINTAINER

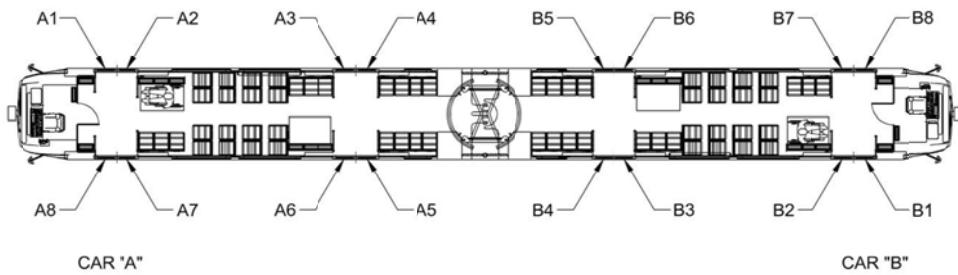
ITEM #	TITLE	EXPLANATORY NOTE
C	ITEM	This column lists the Subsystem/Assembly, Unit, Component to be maintained
D	TASK	<p>This column lists the R-PM tasks to be performed for each Assembly/Unit/Component (i.e., Cleaning, Inspection, Test)</p> <p>The R-PM Tasks are the following:</p> <ul style="list-style-type: 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>  <p>BODY SECTION</p> <p>ARTICULATION SECTION</p> <p>BODY SECTION</p> <p>TRUCKS</p> <p>AXLES</p> <p>WHEELS</p>

RUNNING PREVENTIVE MAINTENANCE REPORTS (R-PMR/JOB CARDS) FORM (cont'd)

SPECIFIC DATA TO BE FILLED IN BY THE MAINTAINER

ITEM #	TITLE
E (cont'd)	LOCATION (cont'd)

EXPLANATORY NOTE



Door Numbering

ITEM #	TITLE	EXPLANATORY NOTE
F	PM SHEET CODE	This column lists the reference to Running-Preventive Maintenance Sheet where the Procedure to be performed is described and illustrated. Refer to Running-Preventive Maintenance Sheet (R-PMS) Form for detailed explanation.
G	SHEETOF.....	This field indicates the progressive sheet page number of each R-PMR/JOB CARD

Figure 03-III-03.1 R-PMR/Job Card Form -Example

03-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

03-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

03-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.

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

COUPLER

Running - Preventive Maintenance Reports

R-PMR/JOB CARDS

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**COUPLER
RUNNING PREVENTIVE MAINTENANCE REPORT
30,000 MILES JOB CARD**

COUPLER
RUNNING PREVENTIVE MAINTENANCE REPORT
30,000 MILES JOB CARD

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	A'LE	SIDE	
UNDERCAR	COUPLER	AUTOMATIC COUPLER ASSY	INSPECTION	A				R-P-03-01-00-00/I-00
		AUTOMATIC COUPLER ASSY	LUBRICATION	A				R-P-03-01-00-00/L-00
		DRUM SWITCH	INSPECTION	A				R-P-03-02-02-00/I-00
		ELECTRICAL COUPLER -	INSPECTION	A				R-P-03-01-03-00/I-00
		PNEUMATIC COUPLER MRP	INSPECTION	A				R-P-03-01-04-00/I-00
		AUTOMATIC COUPLER ASSY	INSPECTION	B				R-P-03-01-00-00/I-00
		AUTOMATIC COUPLER ASSY	LUBRICATION	B				R-P-03-01-00-00/L-00
		DRUM SWITCH	INSPECTION	B				R-P-03-02-02-00/I-00
		ELECTRICAL COUPLER	INSPECTION	B				R-P-03-01-03-00/I-00
		PNEUMATIC COUPLER MRP	INSPECTION	B				R-P-03-01-04-00/I-00

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COUPLER RUNNING PREVENTIVE MAINTEN NCE REPORT 30,000 MILES JOB CARD

VEHICLE #		DATE		RUNNING HOURS		MILES		SHEET 2 OF 2
-----------	--	------	--	---------------	--	-------	--	--------------

DEFECT FOUND / COMMENTS

COUPLER
RUNNING PREVENTIVE MAINTENANCE REPORT
120,000 MILES JOB CARD

VEHICLE #		DATE		RUNNING HOURS		MILES		SHEET 1 OF 2
-----------	--	------	--	---------------	--	-------	--	--------------

WORK AREA	SYSTEM	ITEM	TASK	LOCATION				PM SHEET CODE
				BODY SECT	TRUCK	AXLE	SIDE	
UNDERCAR	COUPLER	AUTOMATIC COUPLER ASSY	INSPECTION	A				R-P-03-01-00-00/I-00
		AUTOMATIC COUPLER ASSY	LUBRICATION	A				R-P-03-01-00-00/L-00
		AUTOMATIC COUPLER ASSY	LUBRICATION	A				R-P-03-01-00-00/L-01
		DRUM SWITCH	INSPECTION	A				R-P-03-02-02-00/I-00
		ELECTRICAL COUPLER	INSPECTION	A				R-P-03-01-03-00/I-00
		ELECTRICAL COUPLER -	INSPECTION	A				R-P-03-01-03-00/I-01
		PNEUMATIC COUPLER MRP	INSPECTION	A				R-P-03-01-04-00/I-00
		PNEUMATIC COUPLER MRP	INSPECTION	A				R-P-03-01-04-00/I-01
		SUPPORT SPRING ASSY	INSPECTION	A				R-P-03-01-01-04/I-00
		AUTOMATIC COUPLER ASSY	INSPECTION	B				R-P-03-01-00-00/I-00
		AUTOMATIC COUPLER ASSY	LUBRICATION	B				R-P-03-01-00-00/L-00
		AUTOMATIC COUPLER ASSY	LUBRICATION	B				R-P-03-01-00-00/L-01
		DRUM SWITCH	INSPECTION	B				R-P-03-02-02-00/I-00
		ELECTRICAL COUPLER -	INSPECTION	B				R-P-03-01-03-00/I-00
		ELECTRICAL COUPLER	INSPECTION	B				R-P-03-01-03-00/I-01
		PNEUMATIC COUPLER MRP	INSPECTION	B				R-P-03-01-04-00/I-00
		SUPPORT SPRING ASSY	INSPECTION	B				R-P-03-01-01-04/I-00

DEFECT FOUND / COMMENTS	

COUPLER RUNNING PREVENTIVE MAINTENANCE REPORT 120,000 MILES JOB CARD

VEHICLE #		DATE		RUNNING HOURS		MILES		SHEET 2 OF 2
-----------	--	------	--	---------------	--	-------	--	--------------

DEFECT FOUND / COMMENTS

03-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.

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

The R-PMS Form (refer to Figure 03-III-03.2) consists of several fields containing the following Data / information:

RUNNING -PREVENTIVE MAINTENANCE SHEET (RPMS) 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: C=Cleaning I=Inspection L=Lubrication R=Replacement S=Service T=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 (RPMS) 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	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 
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	This field indicates the System/Manual Section number to which the Sheet pertains. It may vary from 01 to 19
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	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.
19	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.
20	SPARE PARTS	Text	This field lists the Description and PN of Spare Parts (consistent with Illustrated Parts Catalog) needed to accomplish the Maintenance Task.
21	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.

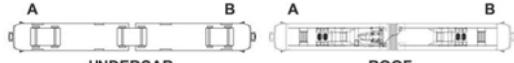
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P2550 PREVENTIVE MAINTENANCE SHEET

System:		Card Code: R-P-nn-mm-zz-ww/Y-kk	
Subsystem/Assy:		Sheet:	x/z
Component:		Man Hours:	
Maintenance Task:		Interval/Miles:	
LOCATION:			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

B 
EXTERIOR

A 
UNDERCARR

A 
ROOF

A 
INTERIOR

M_{Metro}

Page 011 Draft

**Figure 03-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:	Subsystem/Assy:	Unit:				
Component:	Man Hours:					
Maintenance Task:	Interval/Miles:					
SAFETY PRECAUTIONS:						
17.						
18.						
19.						
20.						
21.						
TOOLS:						
CONSUMABLES:						
SPARE PARTS:						
PROCEDURE:						
PRELIMINARY OPERATIONS						
Page 01-2 Draft						
		<table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>R</td><td>P</td><td>nn</td><td>rr</td></tr></table>	R	P	nn	rr
R	P	nn	rr			

Figure 03-III-03.2 R-PMS Form
(Sheet 2 of 2)

03-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) Follow carefully 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 from 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”**)

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

The Coupler 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 03-III-03.3 Running Preventive Maintenance Sheets List

SYSTEM 03		COUPLER			
SUBSYSTEM/ ASSY	ASSY /UNIT/ COMPONENT	SCPM	TASK	MAINTEN. INTERVAL (MILES)	SHEET CODE
AUTOMATIC COUPLER ASSEMBLY	AUTOMATIC COUPLER ASSEMBLY	<input checked="" type="checkbox"/>	NSPECTION	30,000	R-P-03-01-00-00/I-00
AUTOMATIC COUPLER ASSEMBLY	AUTOMATIC COUPLER ASSEMBLY		LUBRICATION	30,000	R-P-03-01-00-00/L-00
AUTOMATIC COUPLER ASSEMBLY	ELECTRICAL COUPLER		NSPECTION	30,000	R-P-03-01-03-00/I-00
AUTOMATIC COUPLER ASSEMBLY	PNEUMATIC COUPLER MRP	<input checked="" type="checkbox"/>	NSPECTION	30,000	R-P-03-01-04-00/I-00
AUTOMATIC COUPLER ASSEMBLY	AUTOMATIC COUPLER ASSEMBLY		LUBRICATION	120,000	R-P-03-01-00-00/L-01
AUTOMATIC COUPLER ASSEMBLY	SUPPORT SPR NG ASSEMBLY	<input checked="" type="checkbox"/>	NSPECTION	120,000	R-P-03-01-01-04/I-00
AUTOMATIC COUPLER ASSEMBLY	ELECTRICAL COUPLER		NSPECTION	120,000	R-P-03-01-03-00/I-01
AUTOMATIC COUPLER ASSEMBLY	PNEUMATIC COUPLER MRP		NSPECTION	120,000	R-P-03-01-04-00/I-01
VEHICLE MOUNTED EQUIPMENT	DRUM SWITCH		NSPECTION	30,000	R-P-03-02-02-00/I-00

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MTA P2550 - LRV
Running Maintenance and Service Manual - Section 03

03-III-03.03.04 Running- Preventive Maintenance Sheets (R-PMS)

COUPLER

Running - Preventive Maintenance Sheets

R-PMS

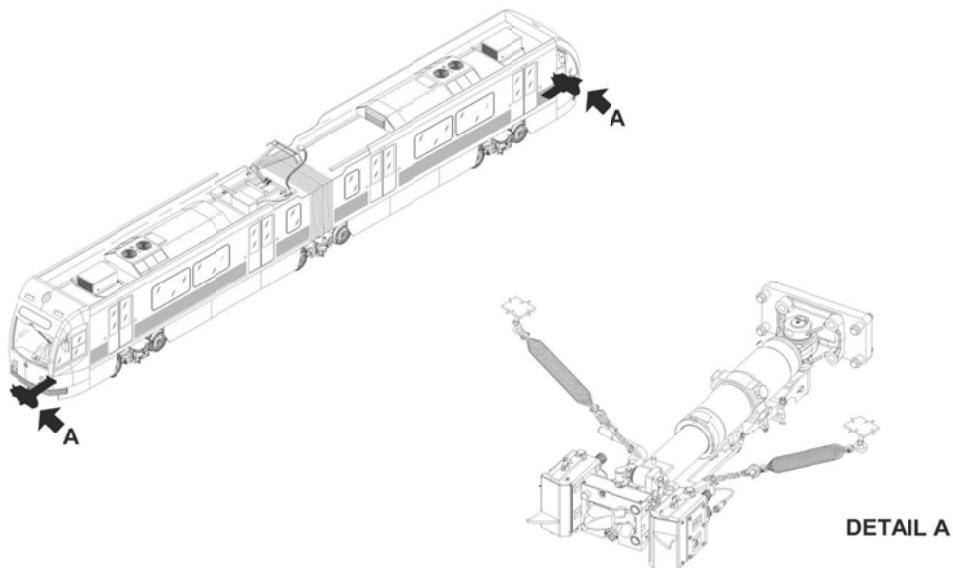
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P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-00-00/I-00

System: COUPLER	Sheet: 1/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit:
Component:	Man Hours: 0.7
Maintenance Task: INSPECTION	Interval/Miles: 30,000

LOCATION:

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-00-00/I-00

System:

COUPLER

Sheet:

2/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

Component:

Man Hours:

0.7

Maintenance Task:

INSPECTION

Interval/Miles:

30,000

SAFETY PRECAUTIONS:

WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED

TOOLS:

Standard Tool Kit

Non metallic Cleaning Pad

CONSUMABLES:

Rust Preventive Agent CTP D 350, P/N 5694000003

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-03-01-00-00/I-00	
System: COUPLER	Sheet: 3/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit:
Component:	Man Hours: 0.7
Maintenance Task: INSPECTION	Interval/Miles: 30,000
PROCEDURE (CONT'D):	
INSPECTION <ul style="list-style-type: none"> a. Visually inspect the complete Automatic Coupler. Check for signs of deformation, rust or other damages. b. Rusty untreated parts have to be cleaned and rust protect with a thin layer of Rust Preventive Agent CTP D 350. c. With regards to stress of the material, repairs of deformations should not be allowed, replace as needed d. Wipe off the Coupler Head Front Face and inspect the Coupler Head for signs of deformation, rust or other damages. e. Rust has to be removed and the surface repainted f. Cover the Tappet Valve to protect the rubber seal before applying Molycote to the Coupler Face g. Perform Manual Uncoupling by pulling the Manual Uncoupling Handle (see Figure 1, item 1) to check the function of the Coupling Mechanism. Check for signs of slack or jamming. h. Inspect the Clamp Bolt (2) to Buffer (3) for properly aligned Torque Marks/Torque Seal i. Inspect the Guide Rail (9) for signs of damage to either the Guide Rail (9) or the Indicator. Damaged or missing Indicator may be a result of sheared shear pins in the Buffer. (3) j. Inspect the Buffer (3) to ensure there is no slack or movement. The Buffer is designed so that no axial or radial slack is possible if the Coupler is in good condition. Any slack or oil leaks require overhaul to be performed on the Buffer k. Inspect the four Coupler Mounting Plate Bolts (4) and the four Mechanical Coupler Assembly Mounting Bolts (5) for signs of damage and misaligned Torque Marks/Torque Seal. l. Inspect the Leaf Spring Holder (6) and Leaf Spring (8) for signs of damage, cracks or deformation. m. Inspect the Centering Springs (7) for signs of damage, cracks or deformation. n. Check that the Centering Springs center the Coupler. Push the Coupler out of center and verify that the Coupler returns to its previous position. 	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-00-00/I-00

System:

COUPLER

Sheet:

4/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

Component:

Man Hours:

0.7

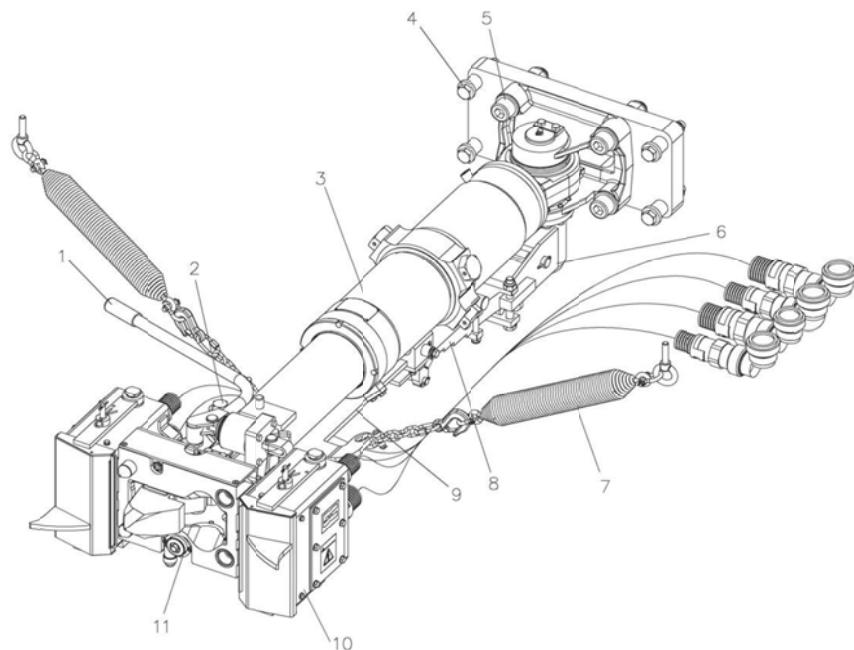
Maintenance Task:

INSPECTION

Interval/Miles:

30,000

PROCEDURE (CONT'D):



- | | |
|-----------------------------|---------------------------|
| 1. Manual Uncoupling Handle | 2. Clamp Bolt |
| 3. Buffer | 4. Bolt |
| 5. Bolt | 6. Leaf Spring Holder |
| 7. Centering Spring | 8. Leaf Spring |
| 9. Guide Rail | 10. Electric Coupler Head |
| 11. Pneumatic Coupler | |

FIGURE 1 - AUTOMATIC COUPLER ASSEMBLY

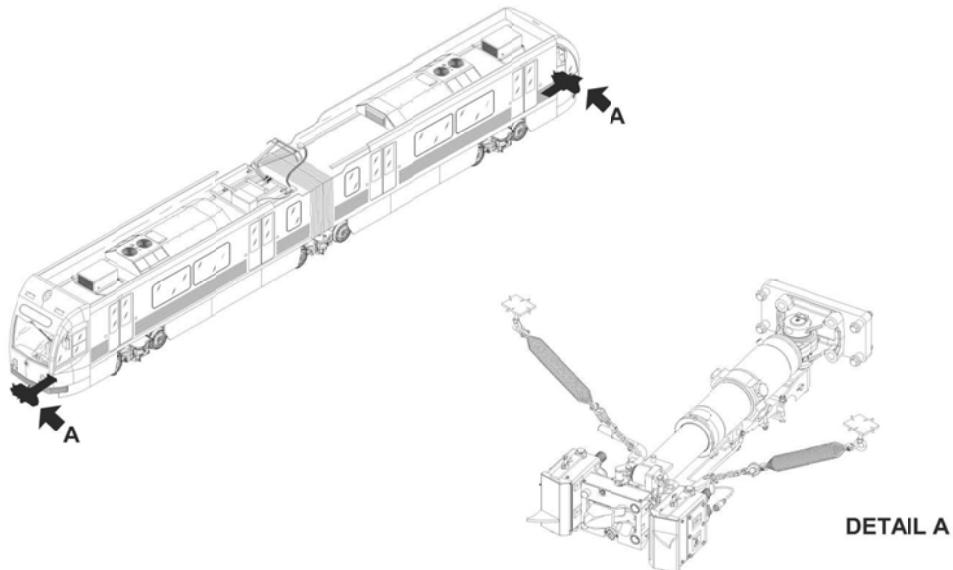
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

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

System: COUPLER	Sheet: 1/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit:
Component:	Man Hours: 0.3
Maintenance Task: LUBRICATION	Interval/Miles: 30,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-00-00/L-00System:
COUPLER

Sheet:

2/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

Component:

Man Hours:

0.3

Maintenance Task:

LUBRICATION

Interval/Miles:

30,000**SAFETY PRECAUTIONS:**

WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED

TOOLS:

Brush or similar Grease Gun.
 Clean lint free cloth

CONSUMABLES:

Grease	Gleitmo/Fuchs Lagermeister 3000+ or equivalent
Rust Preventive Agent	CTP D 350, P/N 5694000003 or equivalent
Oil	Shell Rimula X. or equivalent
Cleaner	Low Aromatic White Spirit or equivalent or equivalent

SPARE PARTS:

N/A



MTA P2550 - LRV
Running Maintenance and Service Manual - Section 03

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

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

System: COUPLER	Sheet: 3/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit:
Component:	Man Hours: 0.3
Maintenance Task: LUBRICATION	Interval/Miles: 30,000

PROCEDURE:

1. CLEANING

- a. Remove any excess of grease, dirt or debris.

2. LUBRICATION

See Figure 1 for Lubrication Chart.

- a. Perform internal greasing with Gleitmo/Fuchs Lagermeister 3000+ or equivalent through Grease Fittings.
- b. Perform external greasing with Gleitmo/Fuchs Lagermeister 3000+.or equivalent Use a brush or similar to apply the grease.
- c. Lubricate the Moving Parts of the Electric Coupler with Shell Rimula X oil or equivalent. Use a oil-applicator to apply the oil.
- d. Apply a very thin layer of Rust Preventive Agent, CTP D 350 or equivalent to the Coupler Front Face. The agent is sprayed onto the surface.

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:		
R-P-03-01-00-00/L-00		
System: COUPLER	Sheet:	4/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit:	
Component:	Man Hours:	0.3
Maintenance Task: LUBRICATION	Interval/Miles:	30,000

PROCEDURE (CONT'D):

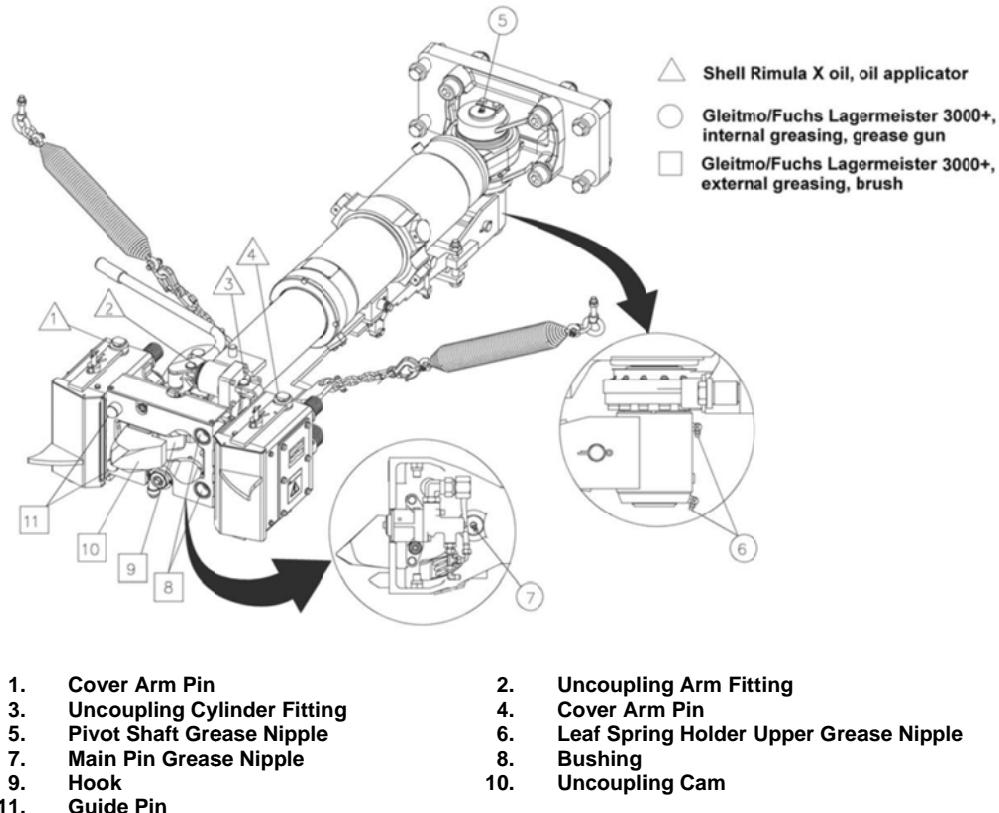


FIGURE 1 - COUPLER - LUBRICATION CHART

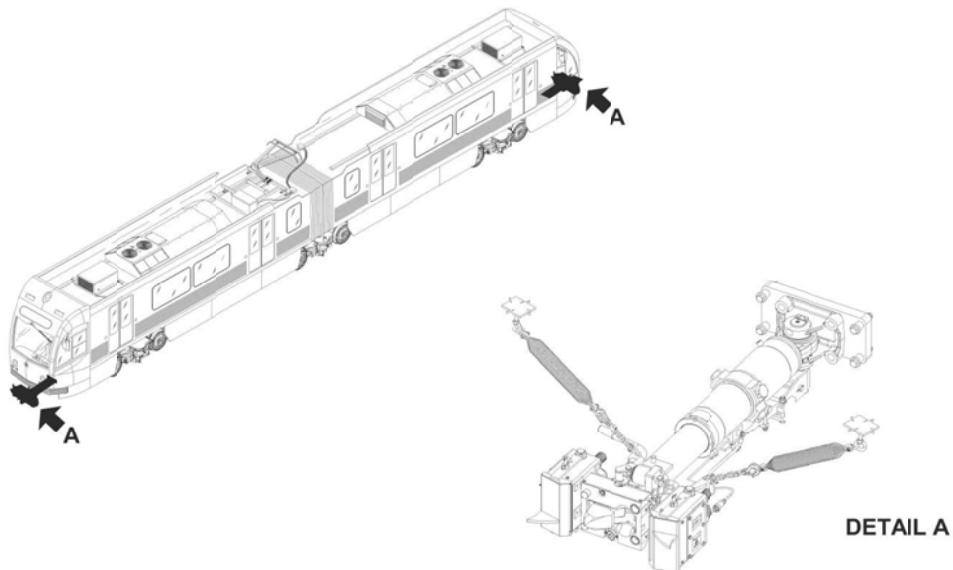
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-03-00/I-00

System: COUPLER	Sheet: 1/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: ELECTRICAL COUPLER
Component:	Man Hours: 0.2
Maintenance Task: INSPECTION	Interval/Miles: 30,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-03-00/I-00

System:

COUPLER

Sheet:

2/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

ELECTRICAL COUPLER

Component:

Man Hours:

0.2

Maintenance Task:

INSPECTION

Interval/Miles:

30,000

SAFETY PRECAUTIONS:

WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED

TOOLS:

Standard Tool Kit

Non metallic Cleaning Pad

CONSUMABLES:

Contact Cleaner CRC (2-26) or equivalent

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-03-00/I-00

System: COUPLER	Sheet: 3/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: ELECTRICAL COUPLER
Component:	Man Hours: 0.2
Maintenance Task: INSPECTION	Interval/Miles: 30,000

PROCEDURE (CONT'D):
1. PRELIMINARY OPERATIONS

- a. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations.
- b. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position.

2. INSPECTION

- a. Inspect the Electrical Coupler Heads for physical damage to Coupler Case Structure, Seals, Connectors, Cover Springs and general condition.
- b. Check the movement of the Covers.
- c. Inspect Contacts. If there are missing or damaged Contacts, the relevant Electrical Coupler should be replaced.
- d. Check the Contacts for oxidation and wear.
- e. Clean oxidized contacts with a non-metallic cleaning pad / contact cleaner.
- f. Check the contacts movement. If contacts are stiff, repair as necessary.


ELECTRICAL COUPLER HEAD

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-03-00/I-00System:
COUPLER

Sheet:

4/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

ELECTRICAL COUPLER

Component:

Man Hours:

0.2

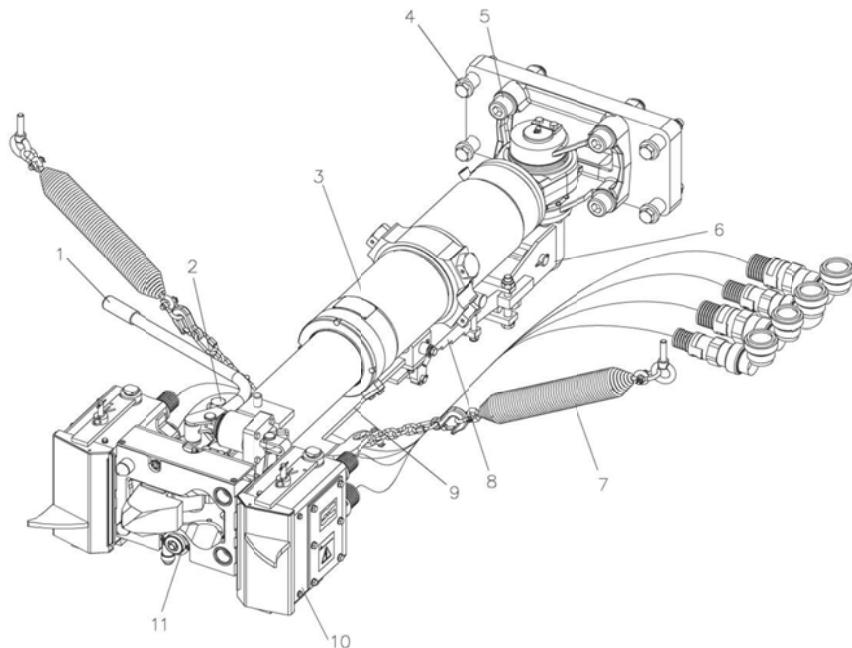
Maintenance Task:

INSPECTION

Interval/Miles:

30,000

PROCEDURE (CONT'D):



- | | |
|-----------------------------|-----------------------------|
| 1. Manual Uncoupling Handle | 2. Clamp Bolt |
| 3. Buffer | 4. Bolt |
| 5. Bolt | 6. Leaf Spring Holder |
| 7. Centering Spring | 8. Leaf Spring |
| 9. Guide Rail | 10. Electrical Coupler Head |
| 11. Pneumatic Coupler | |

FIGURE 1 - AUTOMATIC COUPLER ASSEMBLY

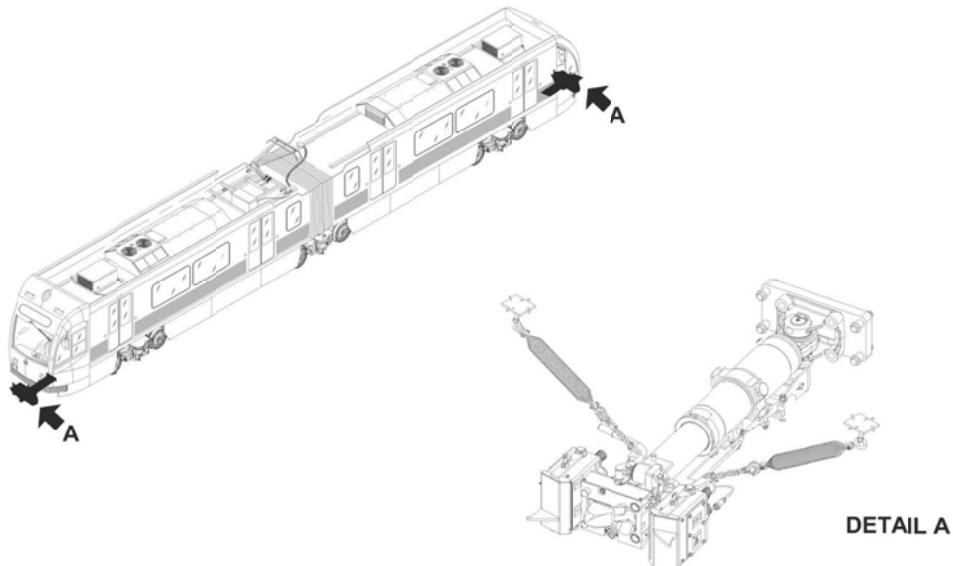
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

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

System: COUPLER	Sheet: 1/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: PNEUMATIC COUPLER MRP
Component:	Man Hours: 0.3
Maintenance Task: INSPECTION	Interval/Miles: 30,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-04-00/I-00System:
COUPLER

Sheet:

2/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

PNEUMATIC COUPLER MRP

Component:

Man Hours:

0.3

Maintenance Task:

INSPECTION

Interval/Miles:

30,000**SAFETY PRECAUTIONS:**

WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED

TOOLS:

Standard Tool Kit

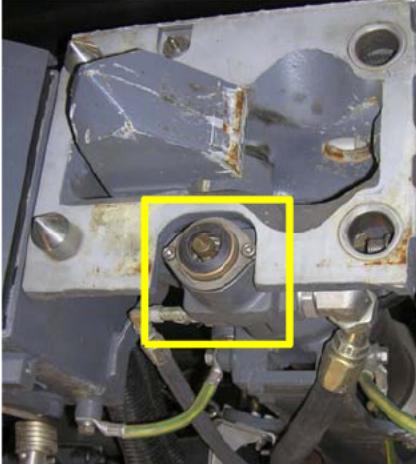
Non metallic Cleaning Pad

CONSUMABLES:

N/A

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-03-01-04-00/I-00	
System: COUPLER	Sheet: 3/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: PNEUMATIC COUPLER MRP
Component:	Man Hours: 0.3
Maintenance Task: INSPECTION	Interval/Miles: 30,000
PROCEDURE (CONT'D):	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. <p>2. INSPECTION</p> <ul style="list-style-type: none"> a. Inspect the Pneumatic Coupler MRP Valve for signs of leaks, damage, loose or missing parts. b. Check for leakage from the MRP Valve or Hose Connections. c. Verify that there is a right slack in all Hoses, in all Coupler positions. d. Check to see if the front seal is moving correctly by pushing it, the seal holder should align with the coupler front face when pushed back. e. Operate Uncoupling Mechanism and Drum Switch by normal controls. 	
 PNEUMATIC COUPLER MRP VALVE	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Power to the Coupler. 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-PM SHEETS (para 03-III-03-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion".</p>	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-04-00/I-00System:
COUPLER

Sheet:

4/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

PNEUMATIC COUPLER MRP

Component:

Man Hours:

0.3

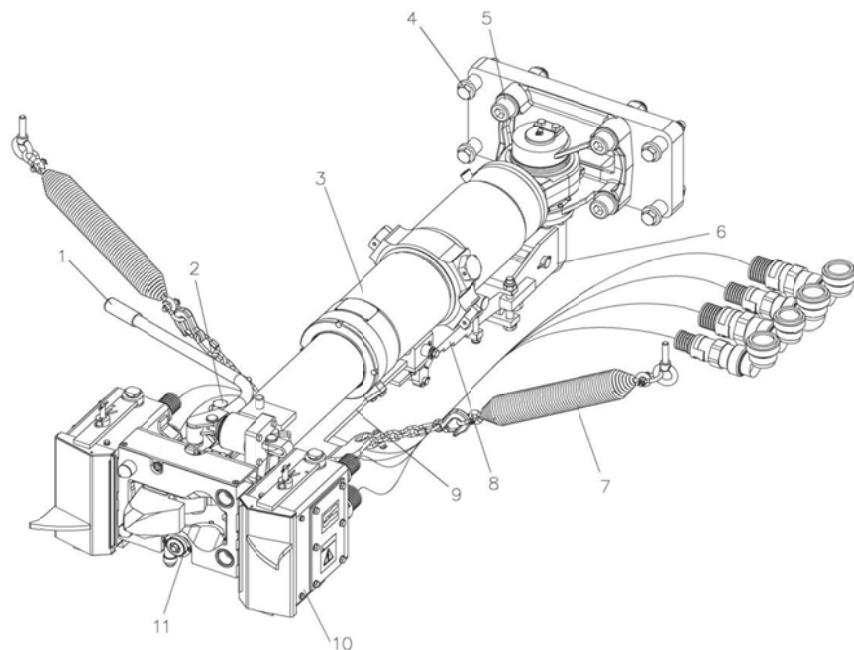
Maintenance Task:

INSPECTION

Interval/Miles:

30,000

PROCEDURE (CONT'D):



- | | |
|-----------------------------|---------------------------|
| 1. Manual Uncoupling Handle | 2. Clamp Bolt |
| 3. Buffer | 4. Bolt |
| 5. Bolt | 6. Leaf Spring Holder |
| 7. Centering Spring | 8. Leaf Spring |
| 9. Guide Rail | 10. Electric Coupler Head |
| 11. Pneumatic Coupler | |

FIGURE 1 - AUTOMATIC COUPLER ASSEMBLY

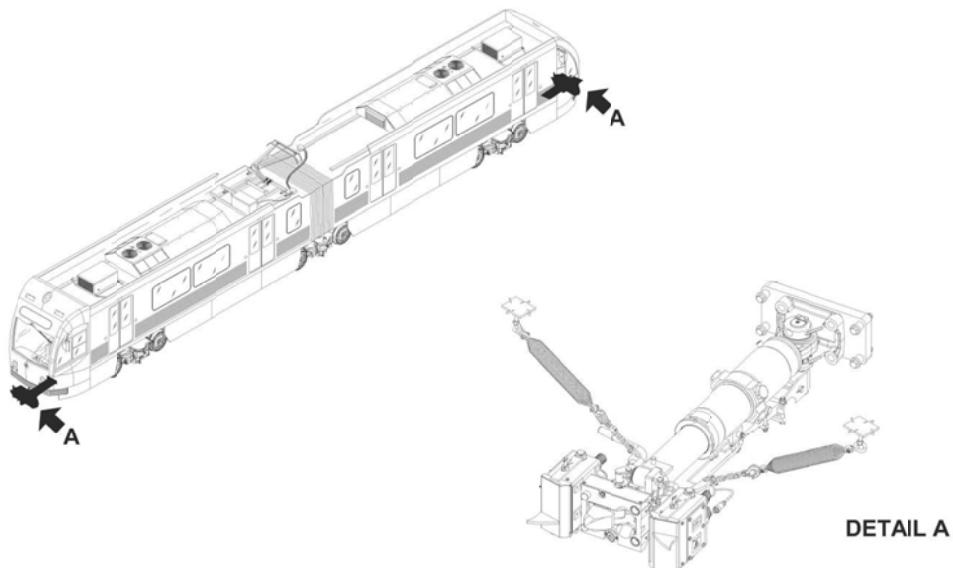
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

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

System: COUPLER	Sheet: 1/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit:
Component:	Man Hours: 0.4
Maintenance Task: LUBRICATION	Interval/Miles: 120,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-00-00/L-01System:
COUPLER

Sheet:

2/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

Component:

Man Hours:
0.4

Maintenance Task:

LUBRICATION

Interval/Miles:

120,000**SAFETY PRECAUTIONS:**

WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED

TOOLS:

Brush or similar

Grease Gun.

Clean lint free cloth

CONSUMABLES:

Grease Gleitmo/Fuchs Lagermeister 3000+ or equivalent

Rust Preventive Agent CTP D 350, P/N 5694000003 or equivalent

Oil Shell Rimula X. or equivalent

Cleaner Low Aromatic White Spirit or equivalent or equivalent

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-03-01-00-00/L-01	
System: COUPLER	Sheet: 3/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit:
Component:	Man Hours: 0.4
Maintenance Task: LUBRICATION	Interval/Miles: 120,000
PROCEDURE:	
1. CLEANING a. Remove any excess of grease, dirt or debris.	
2. LUBRICATION See Figure 1 for Lubrication Chart. a. Perform internal greasing with Gleitmo/Fuchs Lagermeister 3000+ or equivalent through Grease Fittings. b. Perform external greasing with Gleitmo/Fuchs Lagermeister 3000+.or equivalent Use a brush or similar to apply the grease. c. Lubricate the Moving Parts of the Electric Coupler with Shell Rimula X oil or equivalent. Use a oil-applicator to apply the oil. d. Apply a very thin layer of Rust Preventive Agent, CTP D 350 or equivalent to the Coupler Front Face. The agent is sprayed onto the surface.	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:		
R-P-03-01-00-00/L-01		
System: COUPLER	Sheet:	4/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit:	
Component:	Man Hours:	0.4
Maintenance Task: LUBRICATION	Interval/Miles:	120,000

PROCEDURE (CONT'D):

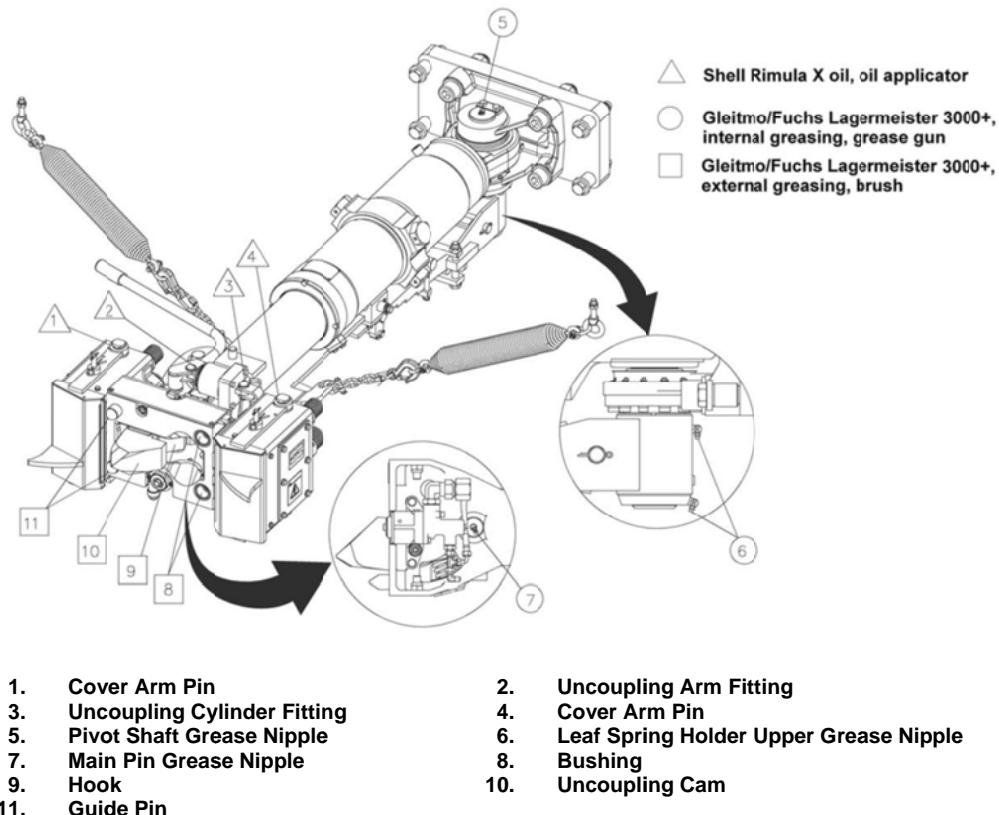


Figure 1 - COUPLER - LUBRICATION CHART

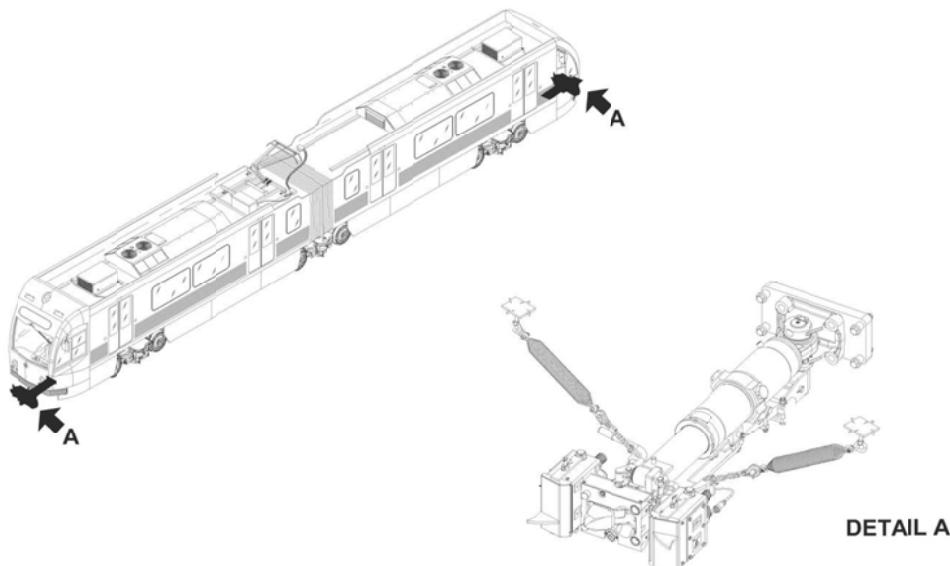
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

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

System: COUPLER	Sheet: 1/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: MECHANICAL COUPLER ASSEMBLY
Component: SUPPORT SPRING ASSEMBLY	Man Hours: 0.1
Maintenance Task: INSPECTION	Interval/Miles: 120,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code: R-P-03-01-01-04/I-00	
System: COUPLER	Sheet: 2/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: MECHANICAL COUPLER ASSEMBLY
Component: SUPPORT SPRING ASSEMBLY	Man Hours: 0.1
Maintenance Task: INSPECTION	Interval/Miles: 120,000
SAFETY PRECAUTIONS:	
WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED	
TOOLS: Standard Tool Kit Water or spirit Level	
CONSUMABLES: Molykote 1000	
SPARE PARTS: N/A	

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-03-01-01-04/I-00	
System: COUPLER	Sheet: 3/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: MECHANICAL COUPLER ASSEMBLY
Component: SUPPORT SPRING ASSEMBLY	Man Hours: 0.1
Maintenance Task: INSPECTION	Interval/Miles: 120,000
PROCEDURE (CONT'D): <ol style="list-style-type: none"> 1. VERTICAL & HORIZONTAL POSITION INSPECTION <ol style="list-style-type: none"> a. Check the vertical position of the Coupler by placing a level against a flat surface on the coupler (e.g. the Mechanical Coupler Front Face). b. Adjust the vertical position (by adjusting the Leaf Spring) as needed. c. Check Coupler Height from T.o.R.adjust as needed. .NOTE: The Normal Coupler Height (Centerline) from the T.o.R is 20.1 in (510 mm). d. Check the horizontal position of the coupler by visual inspection. For proper horizontal position the centerline of the coupler should correspond with the centerline of the vehicle. 2. CENTERING (see Figure 1): <ol style="list-style-type: none"> a. To raise the Coupler, loosen the Nuts (1) a couple of threads and turning the Screws (2) clockwise holding the Nuts (1) with a Socket Wrench. To lower the Coupler, loosen the Nuts (1) a couple of threads and turn the Screws (2). counter clockwise holding the Nuts (1) with a Socket Wrench. b. Turn both Screws the same number of turns. c. Torque the Nuts (1) to 20 lb ft (27 Nm). d. Verify that the Centering Device centers the Coupler by swinging it vertically outside the centering range. Coupler should return to the center. 	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-01-04/I-00System:
COUPLER

Sheet:

4/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

**MECHANICAL COUPLER
ASSEMBLY**

Component:

SUPPORT SPRING ASSEMBLY

Man Hours:

0.1

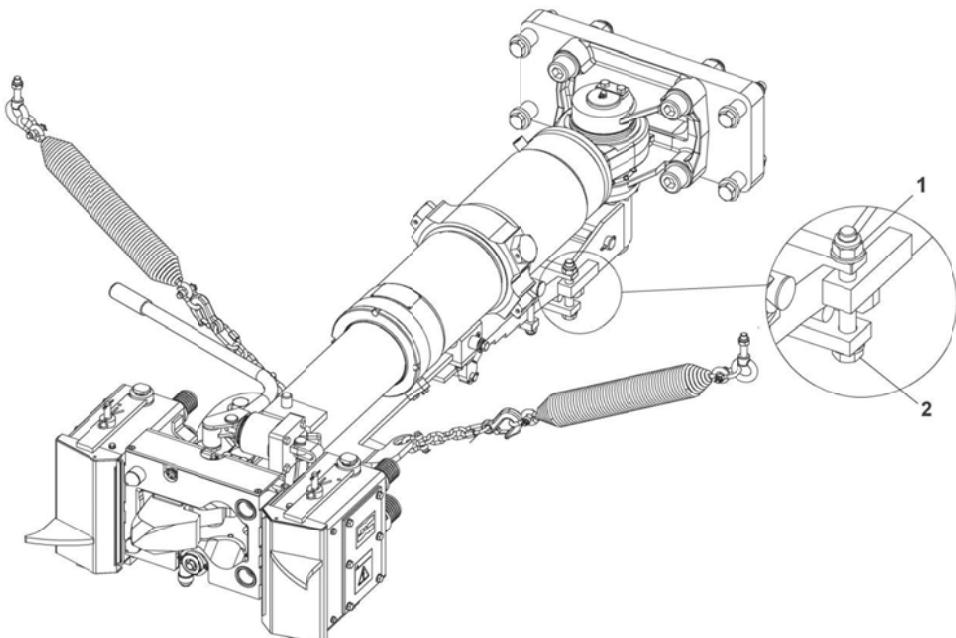
Maintenance Task:

INSPECTION

Interval/Miles:

120,000

PROCEDURE (CONT'D):



1. Nut, M16

2. Screw, M16

FIGURE 1 - COUPLER CENTERING

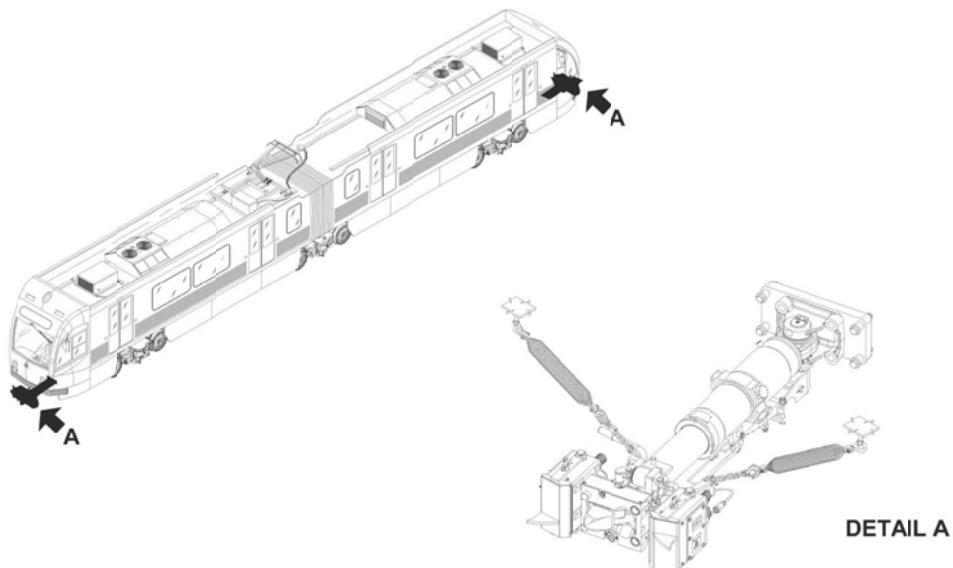
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-03-00/I-01

System: COUPLER	Sheet: 1/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: ELECTRICAL COUPLER
Component:	Man Hours: 0.2
Maintenance Task: INSPECTION	Interval/Miles: 120,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-01-03-00/I-01

System: COUPLER	Sheet: 2/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: ELECTRICAL COUPLER
Component:	Man Hours: 0.2
Maintenance Task: INSPECTION	Interval/Miles: 120,000

SAFETY PRECAUTIONS:

WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED

TOOLS:

Standard Tool Kit

Non-metallic Cleaning Pad/

CONSUMABLES:

CRC 2000 Contact Cleaner

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-03-01-03-00/I-01	
System: COUPLER	Sheet: 3/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: ELECTRICAL COUPLER
Component:	Man Hours: 0.2
Maintenance Task: INSPECTION	Interval/Miles: 120,000
PROCEDURE (CONT'D):	
1. PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. b. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. 	
2. INSPECTION <ul style="list-style-type: none"> a. Inspect the Coupler Electrical Head mounting hardware. b. Check exterior Cases and Cables for damage. Replace components as necessary. c. Open LH and RH hinged doors with the Manual Lever. d. Clean Drain Hole. e. Check Cover Tension Spring. Replace Spring as necessary. f. Check front Seals for visible damage or deterioration. Replace Seals as necessary. g. Check Insulation Block for damage or deterioration. Replace Insulation Block if Contact Holes are worn or if the Block is cracked. h. Check for missing or damaged Contacts. Replace Contacts if Springs are weak or if Tip is damaged, using the Contact Wrench. i. Close the LH and RH Hinged Doors. 	
3. CLEANING <ul style="list-style-type: none"> a. Clean oxidized contacts with a non-metallic cleaning pad / contact cleaner. b. Check the contacts movement. If contacts are stiff, repair as necessary. 	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:		
R-P-03-01-03-00/I-01		
System: COUPLER	Sheet:	4/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: ELECTRICAL COUPLER	
Component:	Man Hours:	
	0.2	
Maintenance Task: INSPECTION	Interval/Miles:	120,000

PROCEDURE (CONT'D):

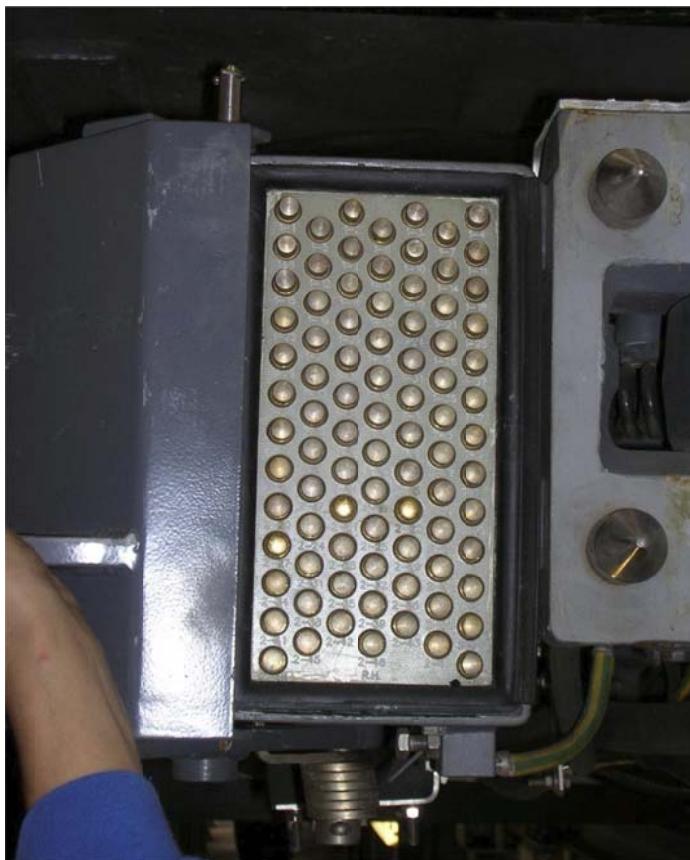


FIG 1 ELECTRICAL COUPLER INSPECTION

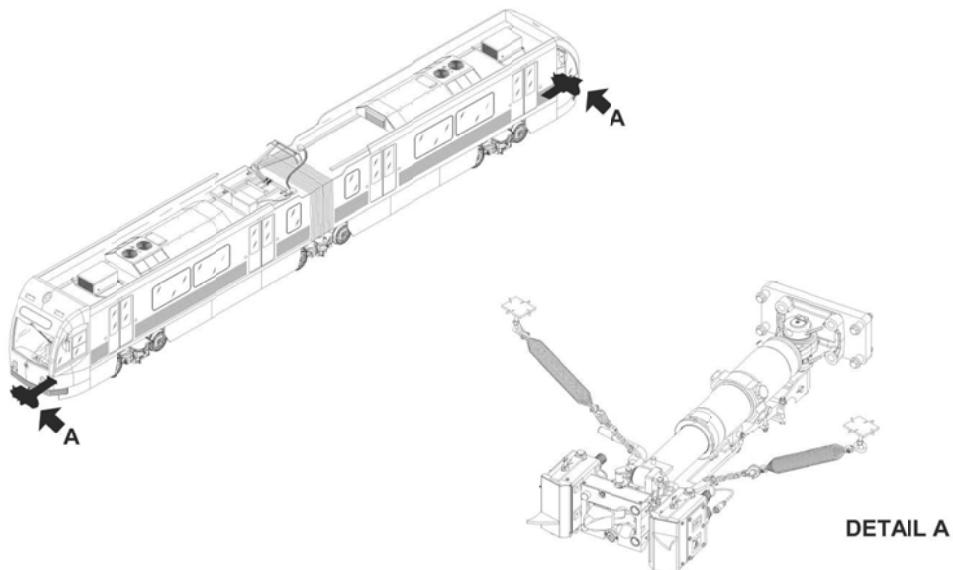
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

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

System: COUPLER	Sheet: 1/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: PNEUMATIC COUPLER MRP
Component:	Man Hours: 0.1
Maintenance Task: INSPECTION	Interval/Miles: 120,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code: R-P-03-01-04-00/I-01	
System: COUPLER	Sheet: 2/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: PNEUMATIC COUPLER MRP
Component:	Man Hours: 0.1
Maintenance Task: INSPECTION	Interval/Miles: 120,000
SAFETY PRECAUTIONS:	
WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED	
TOOLS: Standard Tool Kit Non-metallic Cleaning Pad	
CONSUMABLES: N/A	
SPARE PARTS: - Seal Complete P/N 184173	

P2550 PREVENTIVE MAINTENANCE SHEET	
Card Code: R-P-03-01-04-00/I-01	
System: COUPLER	Sheet: 3/4
Subsystem/Assy: AUTOMATIC COUPLER ASSEMBLY	Unit: PNEUMATIC COUPLER MRP
Component:	Man Hours: 0.1
Maintenance Task: INSPECTION	Interval/Miles: 120,000
PROCEDURE (CONT'D): 1. INSPECTION <ul style="list-style-type: none"> a. Check the Uncoupling Device including Uncoupling Cylinder for damage, air leakage and general condition. b. Inspect the front seal of the pneumatic coupler MRP Valve for deterioration. If necessary replace the Seal as follows: (see Figure 1) c. Remove the Securing Washer (5) by removing the two Screws (7). d. Pull out the Seal Holder (4) and Spring (2). e. Remove and discard the Front Seal (6) from the Seal Holder (4) and fit the new Front Seal to the Seal Holder. f. Fit the Seal Holder and Spring (2) into the Pneumatic Coupler (1) and mount the Securing Washer (5) with the Screws (7).  PNEUMATIC COUPLER MRP VALVE	
2. FINAL OPERATIONS <ul style="list-style-type: none"> a. Perform Coupling to verify correct function and tightness. b. Check for air leaks. c. Test the uncoupling solenoid. 	

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

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

System:

COUPLER

Sheet:

4/4

Subsystem/Assy:

AUTOMATIC COUPLER ASSEMBLY

Unit:

PNEUMATIC COUPLER MRP

Component:

Man Hours:

0.1

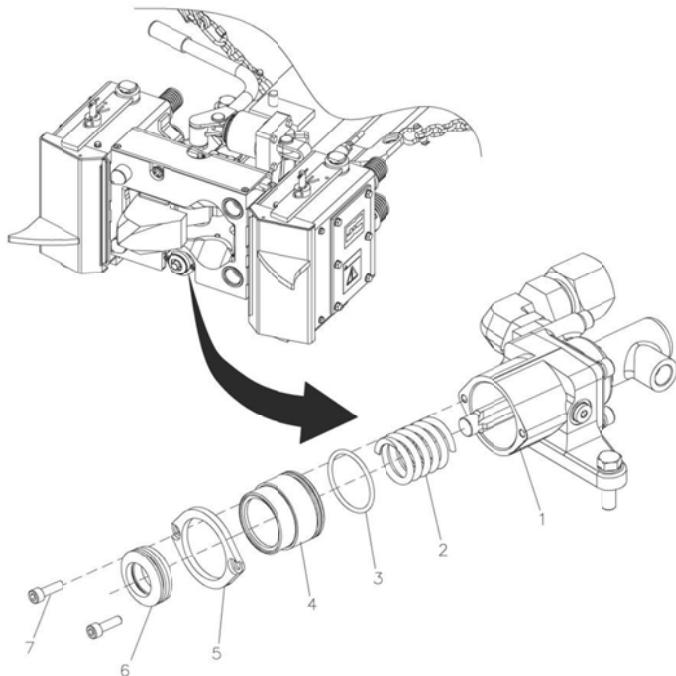
Maintenance Task:

INSPECTION

Interval/Miles:

120,000

PROCEDURE (CONT'D):



- | | |
|----------------------|----------------|
| 1. Pneumatic Coupler | 2. Spring |
| 3. O-Ring | 4. Seal Holder |
| 5. Securing Washer | 6. Front Seal |
| 7. Screw, M6 | |

FIGURE 1 - PNEUMATIC COUPLER MRP VALVE FRONT SEAL REPLACEMENT

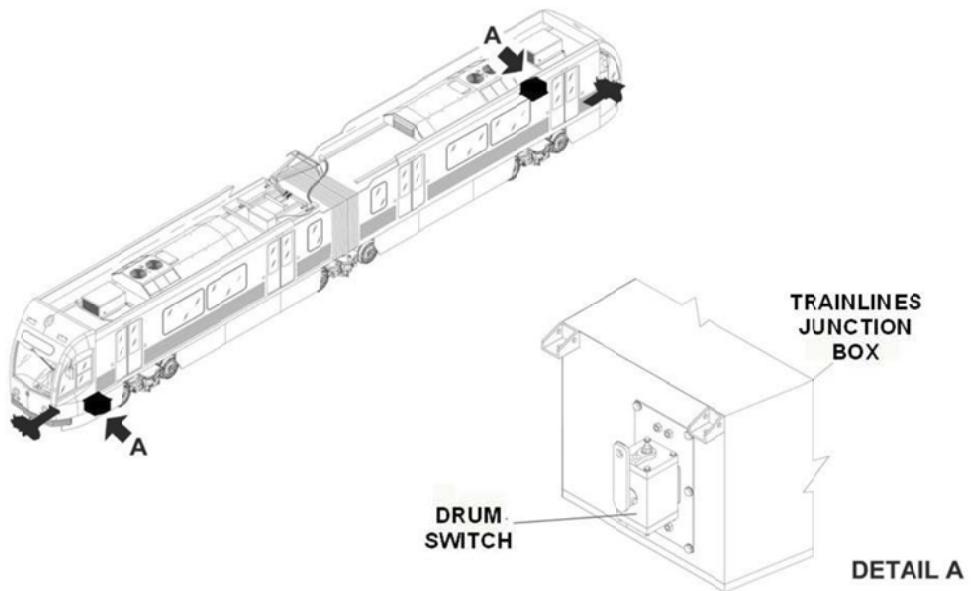
P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-02-02-00/I-00

System: COUPLER	Sheet: 1/4
Subsystem/Assy: VEHICLE MOUNTED EQUIPMENT	Unit: DRUM SWITCH
Component:	Man Hours: 0.1
Maintenance Task: INSPECTION	Interval/Miles: 30,000

LOCATION:



P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:

R-P-03-02-02-00/I-00System:
COUPLER

Sheet:

2/4

Subsystem/Assy:

VEHICLE MOUNTED EQUIPMENT

Unit:

DRUM SWITCH

Component:

Man Hours:

0.1

Maintenance Task:

INSPECTION

Interval/Miles:

30,000**SAFETY PRECAUTIONS:**

WARNING: USE THE IDU TO VERIFY THAT THE SERVICE AND PARKING BRAKES ARE APPLIED

TOOLS:

MTA Standard Tools Kit

CONSUMABLES:

N/A

SPARE PARTS:

N/A

P2550 PREVENTIVE MAINTENANCE SHEET

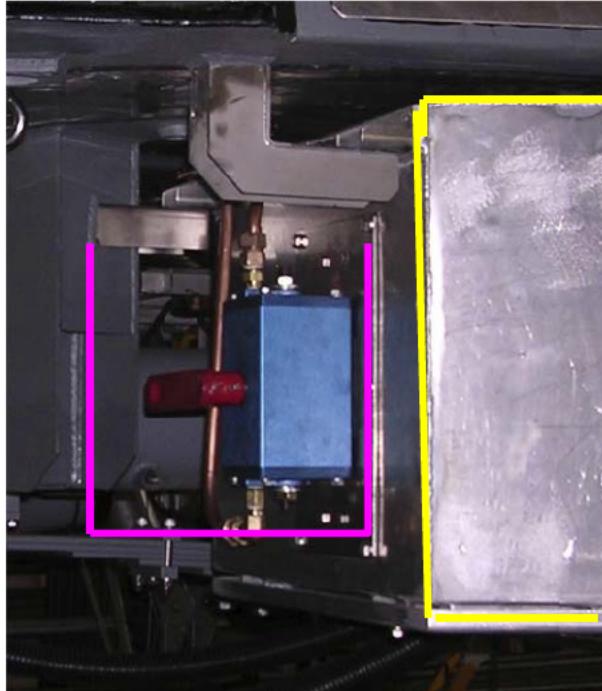
 Card Code:
R-P-03-02-02-00/I-00

System: COUPLER	Sheet: 3/4
Subsystem/Assy: VEHICLE MOUNTED EQUIPMENT	Unit: DRUM SWITCH
Component:	Man Hours: 0.1
Maintenance Task: INSPECTION	Interval/Miles: 30,000

PROCEDURE:
1. PRELIMINARY OPERATIONS

- a. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations.
- b. INSPECTION

- a. Inspect the Drum Switch Box for damage, loose / missing Hardware.
- b. Check that all wire terminals (lugs) are tightened.
- c. Inspect all contacts, wiring, relays and the ISOLATE/CONNECT Switch circuit breakers (inside the Drum Switch Box)for any signs of damage, overheating or missing /loose hardware
- d. Operate manually the (outside) Drum Switch Handle and verify that it moves freely between the two positions(ISOLATE / CONNECT)
- e. Check Drum Switch for proper operation with the Red Handle at the left of the Operator Seat.


DRUM SWITCH & DRUM SWITCH BOX

P2550 PREVENTIVE MAINTENANCE SHEET

Card Code:		
R-P-03-02-02-00/I-00		
System:	Sheet:	4/4
COUPLER		
Subsystem/Assy:	Unit:	
VEHICLE MOUNTED EQUIPMENT	DRUM SWITCH	
Component:	Man Hours:	
	0.1	
Maintenance Task:	Interval/Miles:	
INSPECTION	30,000	

PROCEDURE (CONT'D):

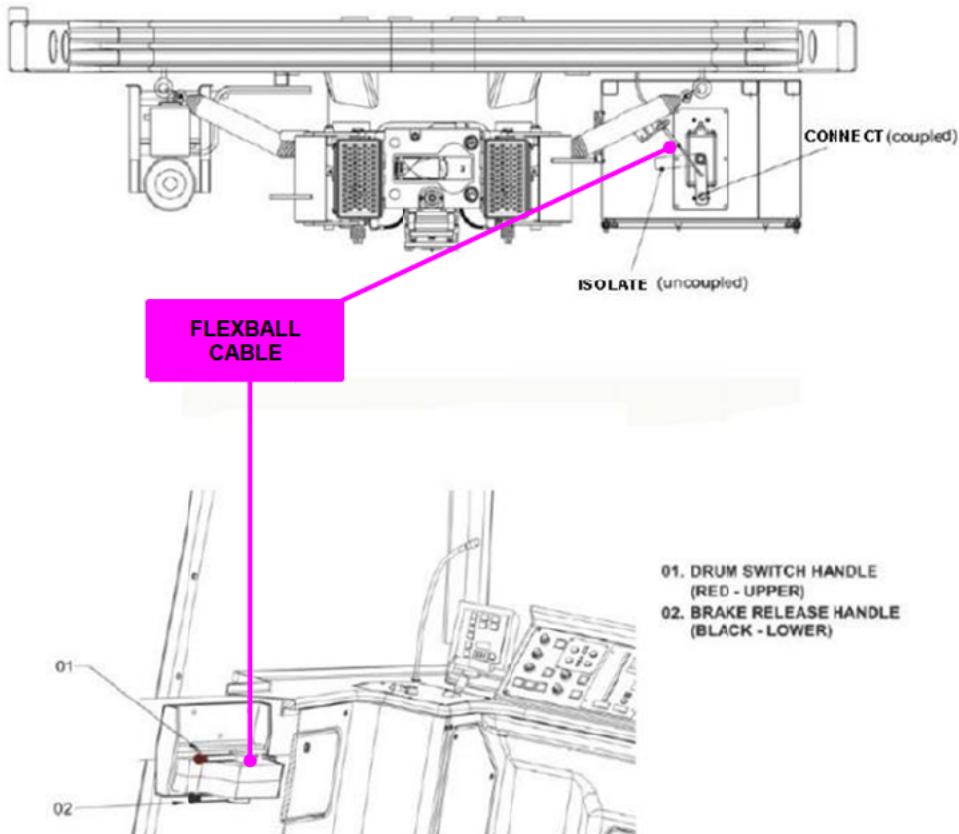


FIGURE 1 - DRUM SWITCH

03-III-04 RUNNING -CORRECTIVE MAINTENANCE**03-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.

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

The R-CMS Form (refer to Figure 03-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-Profilng</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.

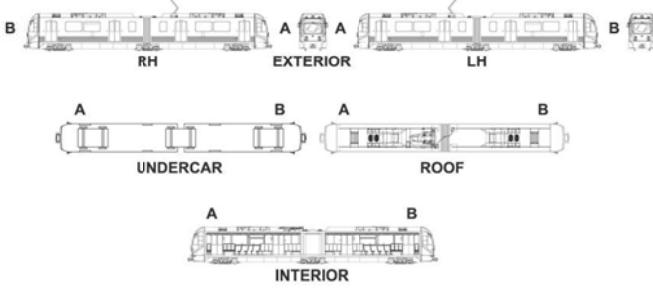
RUNNING -CORRECTIVE MAINTENANCE SHEET (R-CMS) Form (cont'd)			
ITEM #	TITLE	CONTENT	EXPLANATORY NOTES
8	Sheet	Pages numbering	This field indicates the progressive R-CMS sheet page number.
9	LOCATION	Illustration	This field indicates the On Board Location of the Equipment to be maintained The following 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

System:	Sheet:	Card Code:
SubSystem/Assy:	Unit:	x/z
Component:	Man Hours:	
Maintenance Task:		

LOCATION:



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

1 8 4 7

2 3 5 6 9

10 11 12 13 14 15

M_{Metro}

Page 011 Draft

**Figure 03-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:	Subsystem/Assy:	Unit:
Component:	Min Hours:	
Maintenance Task		
SAFETY PRECAUTIONS:		
TOOLS:		
CONSUMABLES:		
SPARE PARTS:		
PROCEDURE:		
PRELIMINARY OPERATIONS		
16		•
17		•
18		•
19		•
20		•
Page 01-2 Draft		 Metro
		R C nn rr

**Figure 03-III-04.1 R-CMS Form
(Sheet 2 of 2)**

03-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"**).

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

The Coupler Running- Corrective Maintenance Sheets (R-CMS) List is provided in the following Table 03-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 03-III-04.1 Running Corrective Maintenance Sheets List

SYSTEM 03 COUPLER				
SUBSYSTEM / ASSY	UNIT	COMPONENT	TASK	SHEET CODE
COUPLER ELECTRICAL PLANT		CIRCUIT BREAKER TYPE S281 (TYPICAL)	REPLACEMENT	R-C-03-00-00-01/R-01
COUPLER ELECTRICAL PLANT		SWITCH (TYPICAL)	REPLACEMENT	R-C-03-00-00-01/R-02
AUTOMATIC COUPLER	MECHANICAL COUPLER	COUPLER HEAD SECURING PLATE	REPLACEMENT	R-C-03-01-01-01/R-01
AUTOMATIC COUPLER	MECHANICAL COUPLER	COUPLER HEAD GUIDE PIN	REPLACEMENT	R-C-03-01-01-01/R-02
AUTOMATIC COUPLER	MECHANICAL COUPLER	COUPLER HEAD GUDE BUSHING	REPLACEMENT	R-C-03-01-01-01/R-03
AUTOMATIC COUPLER	MECHANICAL COUPLER	COUPLER HEAD SPRNG SUPPORT	INSPECTION	R-C-03-01-01-01/I-00
AUTOMATIC COUPLER	MECHANICAL COUPLER	COUPLER HEAD UNCOUPLING ARM	REPLACEMENT	R-C-03-01-01-01/R-05
AUTOMATIC COUPLER	MECHANICAL COUPLER	COUPLER HEAD UNCOUPLING CYLINDER	REPLACEMENT	R-C-03-01-01-01/R-06
AUTOMATIC COUPLER	MECHANICAL COUPLER	COUPLER HEAD PARALLEL PIN	REPLACEMENT	R-C-03-01-01-01/R-07
AUTOMATIC COUPLER	MECHANICAL COUPLER	COUPLER HEAD SWITCH	REPLACEMENT	R-C-03-01-01-01/R-08
AUTOMATIC COUPLER	MECHANICAL COUPLER	MOUNT NG PLATE RELEASE SCREW	REPLACEMENT	R-C-03-01-01-02/R-01
AUTOMATIC COUPLER	MECHANICAL COUPLER	DRAFT GEAR ATTACHMENT GUIDE RAL	REPLACEMENT	R-C-03-01-01-02/R-02
AUTOMATIC COUPLER	MECHANICAL COUPLER	BUFFER PIN	REPLACEMENT	R-C-03-01-01-03/R-01
AUTOMATIC COUPLER	MECHANICAL COUPLER	BUFFER CAP SCREW	REPLACEMENT	R-C-03-01-01-03/R-02
AUTOMATIC COUPLER	MECHANICAL COUPLER	BUFFER SHEAR P N	REPLACEMENT	R-C-03-01-01-03/R-03
AUTOMATIC COUPLER	MECHANICAL COUPLER	SUPPORT SPR NG ASSEMBLY P N	REPLACEMENT	R-C-03-01-01-04/R-01
AUTOMATIC COUPLER	MECHANICAL COUPLER	SUPPORT SPR NG ASSY LOCK NUT	REPLACEMENT	R-C-03-01-01-04/R-02
AUTOMATIC COUPLER	MECHANICAL COUPLER	SUPPORT SPR NG ASSY SPR NG SUPPORT	REPLACEMENT	R-C-03-01-01-04/R-03
AUTOMATIC COUPLER	MECHANICAL COUPLER	SUPPORT SPR NG ASSY HOLDER	REPLACEMENT	R-C-03-01-01-04/R-04
AUTOMATIC COUPLER	MECHANICAL COUPLER	SUPPORT SPR NG ASSY HEX HEAD SCREW	REPLACEMENT	R-C-03-01-01-04/R-05
AUTOMATIC COUPLER	CENTERING SPR NGS ASSY	CENTERING SPRINGS	REPLACEMENT	R-C-03-01-02-01/R-00
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL HEAD (LEFT)	REPLACEMENT	R-C-03-01-03-01/R-00
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL HEADS CONTACTS	REPLACEMENT	R-C-03-01-03-01/R-01
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL HEADS FRONT SEAL	REPLACEMENT	R-C-03-01-03-01/R-07
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL HEADS PROTECTING COVER	REPLACEMENT	R-C-03-01-03-01/R-08
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL HEADS SIDE SEAL	REPLACEMENT	R-C-03-01-03-01/R-09

(cont'd)

Table 03-III-04.1 Running Corrective Maintenance Sheets List (cont'd)

SYSTEM	03	COUPLER	(cont'd)	
SUBSYSTEM / ASSY	UNIT	COMPONENT	TASK	SHEET CODE
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL HEADS SIDE COVER	REPLACEMENT	R-C-03-01-03-01/R-10
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL HEADS TORSION SPR NG	REPLACEMENT	R-C-03-01-03-01/R-12
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL (LEFT) HEAD CONNECTOR	REPLACEMENT	R-C-03-01-03-01/R-13
AUTOMATIC COUPLER	ELECTRICAL COUPLER	ELECTRICAL HEAD (RIGHT)	REPLACEMENT	R-C-03-01-03-02/R-00
AUTOMATIC COUPLER	PNEUMATIC COUPLER	MAIN RESERVO R PIPE (MRP) VALVE	REPLACEMENT	R-C-03-01-04-01/R-00
AUTOMATIC COUPLER	PNEUMATIC COUPLER	MRP VALVE SEAL HOLDER	REPLACEMENT	R-C-03-01-04-01/R-01
AUTOMATIC COUPLER	PNEUMATIC COUPLER	MRP VALVE FRONT SEAL	REPLACEMENT	R-C-03-01-04-01/R-02
AUTOMATIC COUPLER	PNEUMATIC COUPLER	MRP VALVE SPRING	REPLACEMENT	R-C-03-01-04-01/R-03
AUTOMATIC COUPLER	PNEUMATIC COUPLER	MRP VALVE SECURING WASHER	REPLACEMENT	R-C-03-01-04-01/R-04
AUTOMATIC COUPLER	PNEUMATIC COUPLER	MRP VALVE SEAL HOLDER SCREWS	REPLACEMENT	R-C-03-01-04-01/R-06
VEHICLE MOUNTED EQUIPMENT	PNEUMATIC CONTROLS	SINGLE SOLENOID VALVE	REPLACEMENT	R-C-03-02-01-01/R-00
VEHICLE MOUNTED EQUIPMENT	PNEUMATIC CONTROLS	DUPLEX SOLENO D VALVE	REPLACEMENT	R-C-03-02-01-02/R-00
VEHICLE MOUNTED EQUIPMENT	TRAINLINES JUNCTION BOX	TRA NLINES JUNCTION BOX	REPLACEMENT	R-C-03-02-02-01/R-00
VEHICLE MOUNTED EQUIPMENT	TRAINLINES JUNCTION BOX	DRUM SWITCH	REPLACEMENT	R-C-03-02-02-01/R-00
VEHICLE MOUNTED EQUIPMENT	DRUM SWITCH	HANDLE	REPLACEMENT	R-C-03-02-02-01/R-01



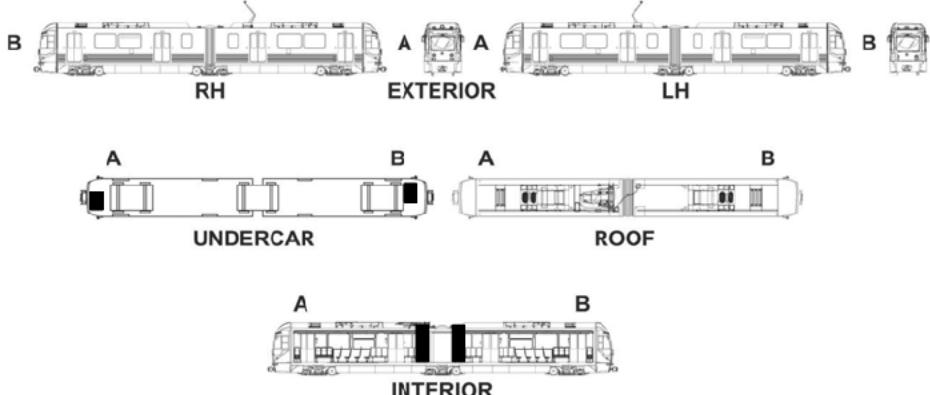
03-III-04.01.04 Running- Corrective Maintenance Sheets (R-CMS)

COUPLER

Running - Corrective Maintenance Sheets

R-CMS

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P2550 CORRECTIVE MAINTENANCE SHEET							
						Card Code:	
R-C-03-00-00-00/R-00							
SYSTEM: COUPLER						SHEET: 1/12	
SUBSYSTEM/ASSY: COUPLER ELECTRICAL PLANT						UNIT:	
Component: CIRCUIT BREAKER TYPE S281						Man Hours: 0.5	
Maintenance Task: REPLACEMENT							
LOCATION:							
							
APPLICABILITY:							
This Replacement procedure is applicable to the following Equipment :							
TABLE 1 CIRCUIT BREAKERS IDENTIFICATION & LOCATION							
LABEL	DESCRIPTION	TYPE	P/N	CAR	LOCATION	FUNCTIONAL DIAGRAMS	
						SCHEMATICS	SHEET#
14F01	COUPLER PROTECTION	S281 C6A	211EK22984B01	A - B	LV LOCKER	LV	125
14F02	COUPLER PROTECTION	S281 C63A	211EK22984B010	A - B	TRAINLINES JUNCTION BOX	LV	128
14F03	COUPLER PROTECTION	S281 C63A	211EK22984B010	A - B	TRAINLINES JUNCTION BOX	LV	128
14F04	COUPLER PROTECTION	S281 C63A	211EK22984B010	A - B	TRAINLINES JUNCTION BOX	LV	128
14F05	COUPLER PROTECTION	S281 C63A	211EK22984B010	A - B	TRAINLINES JUNCTION BOX	LV	128
14F061	COUPLER PROTECTION	S281 C63A	211EK22984B010	A - B	TRAINLINES JUNCTION BOX	LV	128
14F07	COUPLER PROTECTION	S281 C63A	211EK22984B010	A - B	TRAINLINES JUNCTION BOX	LV	128
14F08	COUPLER PROTECTION	S281 K 1A	211EK22984B12	A - B	LV LOCKER	LV	125

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

SYSTEM:

COUPLER

SHEET:

2/12

SUBSYSTEM/ASSY:

COUPLER ELECTRICAL PLANT

UNIT:

Component:

CIRCUIT BREAKER TYPE S281

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

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 Maintenance Shop Standard Tools Kit

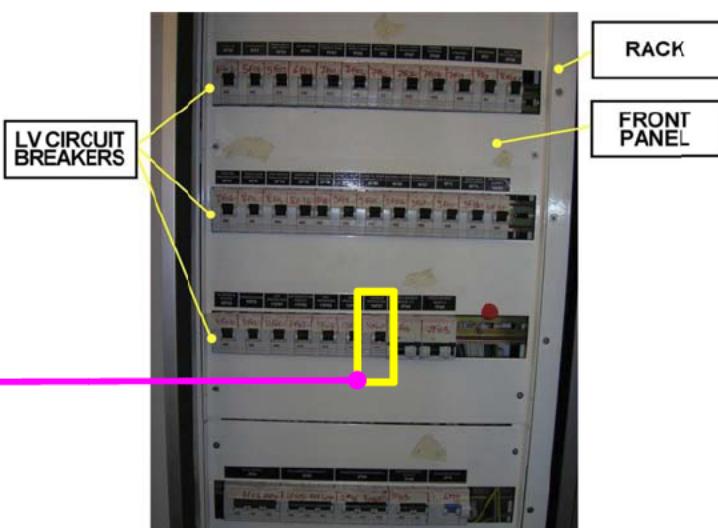
MULTIMETER (FLUKE 87 V/E) PN 4EB19

CONSUMABLES:

CRC 2000 Contact Cleaner

SPARE PARTS:

Refer to previous Table 1 for Circuit Breakers Identification

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-03-00-00-00/R-00	
SYSTEM: COUPLER	SHEET: 3/12
SUBSYSTEM/ASSY: COUPLER ELECTRICAL PLANT	UNIT:
Component: CIRCUIT BREAKER TYPE S281	Man Hours: 0.5
Maintenance Task: REPLACEMENT	
PROCEDURE: 1. PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Switch to OFF the 3F01 CB (Battery Box) <p>CAUTION : SWITCH OFF THE 3F01 CB (BATTERY BOX) BEFORE STARTING TO PERFORM THE REPLACEMENT OF ANY CB LISTED IN THE PREVIOUS TABLE 1</p>	
2 REPLACEMENT <p>2.1 REPLACEMENT OF THE CIRCUIT BREAKERS INSTALLED IN THE "A" & "B" LV LOCKERS</p> <p>a. Gain access to the Circuit Breakers Rack installed in the "A" & "B" LV Lockers, by opening the relevant LV Locker Door using Maintenance Key.</p> <p>b. Locate the Circuit Breaker to be replaced</p> 	
FIGURE 1 - LV LOCKER -CIRCUIT BREAKERS RACK	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

SYSTEM:

COUPLER

SUBSYSTEM/ASSY:

COUPLER ELECTRICAL PLANT

Component:

CIRCUIT BREAKER TYPE S281

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

2.1 REPLACEMENT OF THE CIRCUIT BREAKERS INSTALLED IN THE "A" & "B" LV LOCKERS (CONT'D)

- c. Remove the Circuit Breakers Front Panel by loosening relevant Fixing Screws.
Retain hardware for later use.

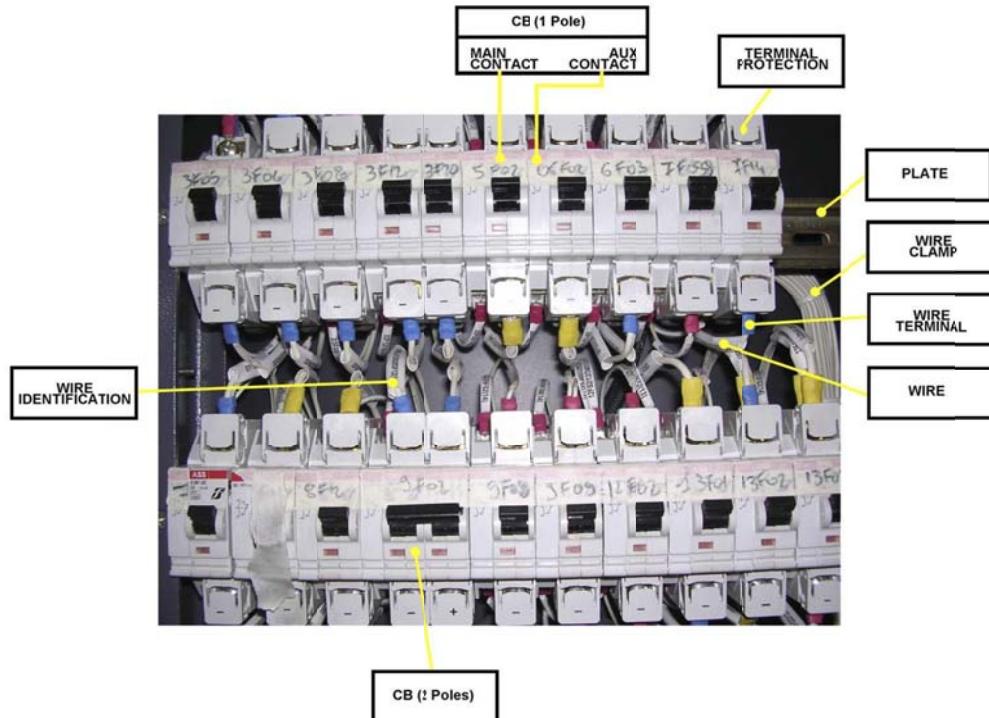


FIGURE 2 - LV LOCKER -CIRCUIT BREAKERS FRONT PANEL REMOVED

P2550 CORRECTIVE MAINTENANCE SHEET

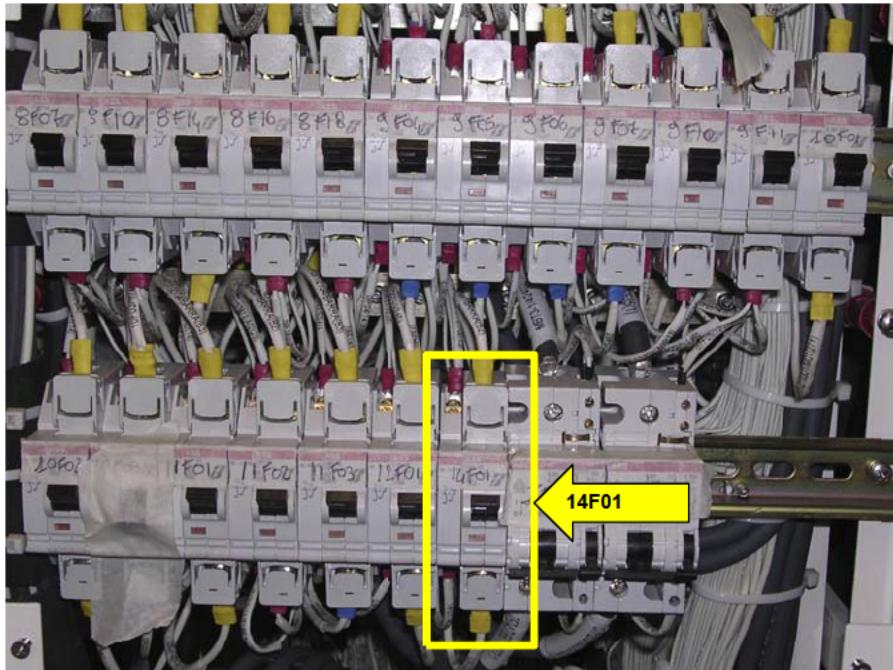
Card Code:

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

SYSTEM: COUPLER	SHEET: 5/12
SUBSYSTEM/ASSY: COUPLER ELECTRICAL PLANT	UNIT:
Component: CIRCUIT BREAKER TYPE S281	Man Hours: 0.5
Maintenance Task: REPLACEMENT	

PROCEDURE (CONT'D):
**2.1 REPLACEMENT OF THE CIRCUIT BREAKERS INSTALLED IN THE "A" & "B" LV LOCKERS
(CONT'D)**

- d. Locate the Circuit Breaker to be replaced.


FIGURE 3 - LV LOCKER -CB 14F01 LOCATION

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:		
R-C-03-00-00-00/R-00		
SYSTEM: COUPLER	SHEET: 6/12	
SUBSYSTEM/ASSY: COUPLER ELECTRICAL PLANT	UNIT:	
Component: CIRCUIT BREAKER TYPE S281	Man Hours: 0.5	

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

2.1 REPLACEMENT OF THE CIRCUIT BREAKERS INSTALLED IN THE "A" & "B" LV LOCKERS (CONT'D)

- e. Remove and discard the Circuit Breaker according to the Instructions provided in the following figure 4.

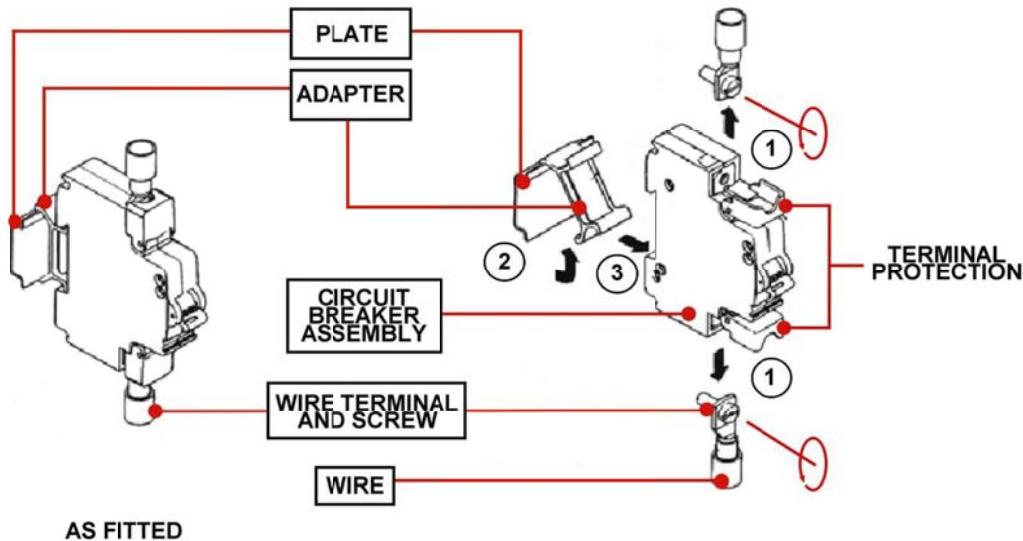


FIGURE 4 - LV LOCKER -14F01 CB REMOVAL

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

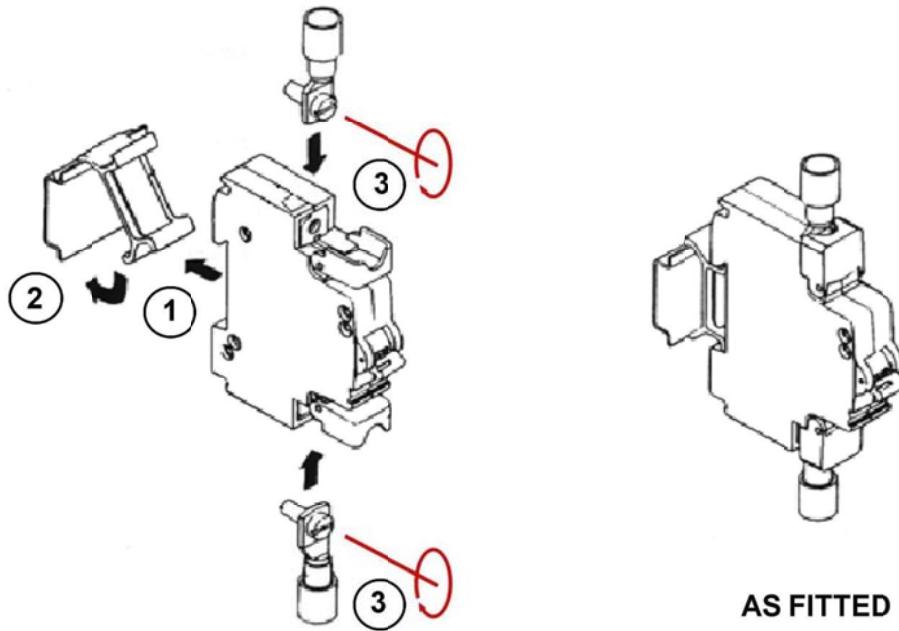
R-C-03-00-00-00/R-00

SYSTEM: COUPLER	SHEET: 7/12
SUBSYSTEM/ASSY: COUPLER ELECTRICAL PLANT	UNIT:
Component: CIRCUIT BREAKER TYPE S281	Man Hours: 0.5

Maintenance Task:

REPLACEMENT
PROCEDURE (CONT'D):
**2.1 REPLACEMENT OF THE CIRCUIT BREAKERS INSTALLED IN THE "A" & "B" LV LOCKERS
(CONT'D)**

- f. Install the Circuit Breaker according to the instructions provided in the following figure 5.


Figure 5 - LV LOCKER -10F02 CB INSTALLATION

- g. Install the Circuit Breakers Front Panel and secure it by installing and torqueing the relevant Fixing Screws.
h. Close and secure the LV Locker Door using Maintenance Key.

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

SYSTEM:

COUPLER

SHEET:

8/12

SUBSYSTEM/ASSY:

COUPLER ELECTRICAL PLANT

UNIT:

Component:

CIRCUIT BREAKER TYPE S281

Man Hours:

0.5

Maintenance Task:

REPLACEMENT



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P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

SYSTEM:

COUPLER

SHEET:

9/12

SUBSYSTEM/ASSY:

COUPLER ELECTRICAL PLANT

UNIT:

Component:

CIRCUIT BREAKER TYPE S281

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

SYSTEM:

COUPLER

SHEET:

10/12

SUBSYSTEM/ASSY:

COUPLER ELECTRICAL PLANT

UNIT:

Component:

CIRCUIT BREAKER TYPE S281

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

2.2 REPLACEMENT OF THE CIRCUIT BREAKERS INSTALLED IN THE TRAINLINES JUNCTION BOXES (CONT'D)

- f. Remove and discard the Circuit Breaker according to the Instructions provided in the following Figure 8.

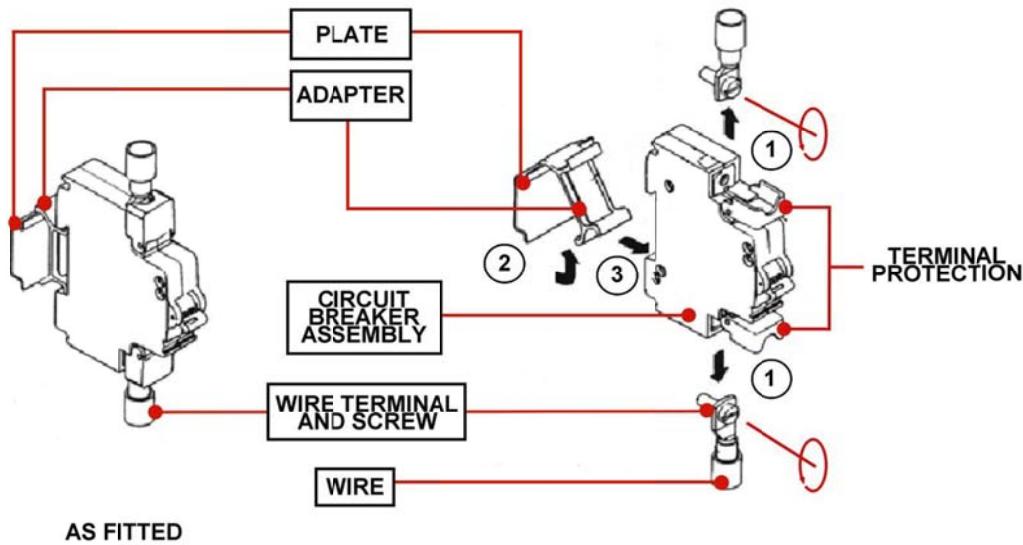


FIGURE 8 - TRAINLINES JUNCTION BOX CB REMOVAL

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

SYSTEM: COUPLER	SHEET: 11/12
SUBSYSTEM/ASSY: COUPLER ELECTRICAL PLANT	UNIT:
Component: CIRCUIT BREAKER TYPE S281	Man Hours: 0.5

Maintenance Task:

REPLACEMENT
PROCEDURE (CONT'D):
2.2 REPLACEMENT OF THE CIRCUIT BREAKERS INSTALLED IN THE TRAINLINES JUNCTION BOXES (CONT'D)

- g. Install the Circuit Breaker according to the instructions provided in the following Figure 9.

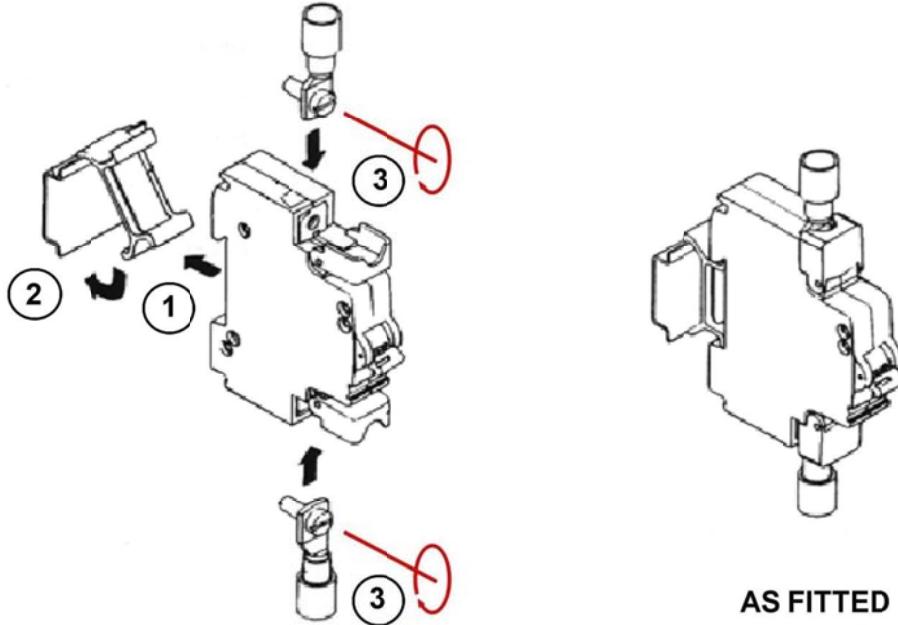


Figure 9 - TRAINLINES JUNCTION BOX CB INSTALLATION

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

SYSTEM:

COUPLER

SHEET:

12/12

SUBSYSTEM/ASSY:

COUPLER ELECTRICAL PLANT

UNIT:

Component:

CIRCUIT BREAKER TYPE S281

Man Hours:

0.5

Maintenance Task:

REPLACEMENT

PROCEDURE (CONT'D):

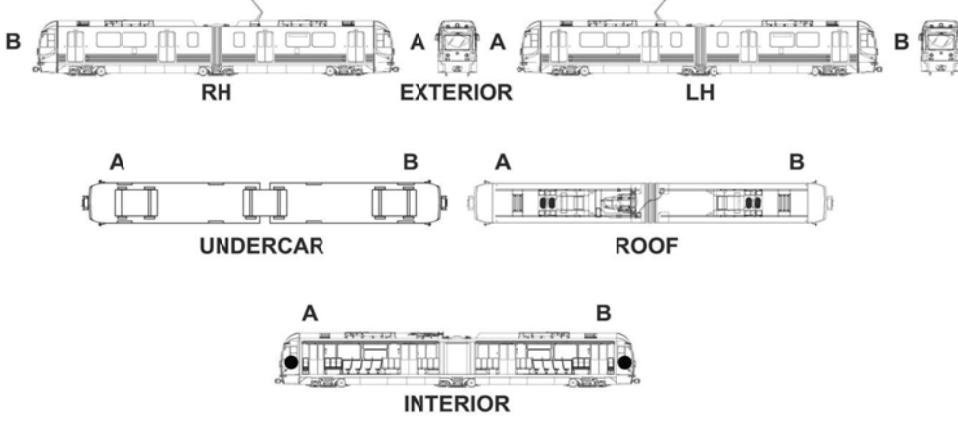
2.2 REPLACEMENT OF THE CIRCUIT BREAKERS INSTALLED IN THE TRAINLINES JUNCTION BOXES (CONT'D)

- h.** Reconnect the Wires to the relevant Circuit Breaker Electrical Connections according to the Wiring Color Codes previously noted.
- i.** Carefully clean the Seat of the Gasket on the Trainlines Junction Box Cover using recommended agent.
- j.** Install the new (adhesive) Gasket onto the Trainlines Junction Box Cover.
- k.** Supporting the Junction Box Cover in position, install and torque the relevant Fixing Hardware.

3. FINAL OPERATIONS

- a.** Restore Electrical Power to the Coupler.
- b.** Check Drum Switch for proper functions by operating the Switch either from the outside or from the inside of the Cab, by means of the Red Handle at the left of the Operator Seat, behind the Hinged Panel since the Inside Handle is connected to the Outside One by means of the Flexball Cable
- c.** Perform Coupling-Uncoupling to verify correct function.
- 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 03-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-03-00-00-00/R-01							
System: COUPLER	Sheet: 1/6						
Subsystem/Assy: COUPLER ELECTRICAL PLANT	Unit:						
Component: SWITCH	Man Hours: 0.5						
Maintenance Task: REPLACEMENT (TYPICAL)							
LOCATION:							
							
APPLICABILITY:							
This Replacement procedure is applicable to the following Equipment :							
TABLE 1 SWITCHES IDENTIFICATION & LOCATION							
LABEL	DESCRIPTION	TYPE	P/N	CAR	LOCATION	FUNCTIONAL DIAGRAMS	
						SCHEMATICS	SHEET#
14S04	COUPLER SWITCH	TBD	TBD	A - B	CAB CONSOLE	LV	125
14S05	UNCOUPLE SWITCH	TBD	TBD	A - B	CAB CONSOLE	LV	125

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code: R-C-03-00-00-00/R-01	
System: COUPLER	Sheet: 2/6
Subsystem/Assy: COUPLER ELECTRICAL PLANT	Unit:
Component: SWITCH	Man Hours: 0.5
Maintenance Task: REPLACEMENT (TYPICAL)	
SAFETY PRECAUTIONS: LACMTA Maintenance Shop Safety Rules & Regulations	
TOOLS: LACMTA Maintenance Shop Standard Tools Kit MULTIMETER (FLUKE 87 V/E) PN 4EB19	
CONSUMABLES: N/A	
SPARE PARTS: 14S04 Coupler Switch 14S05 Uncouple Switch 14S05 Uncouple Switch Lamp Type/PN MB400-NFW28H-BP	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System: MISCELLANEOUS	Sheet: 3/6
System: COUPLER	Unit:
Subsystem/Assy: COUPLER ELECTRICAL PLANT	Man Hours: 0.5
Maintenance Task: REPLACEMENT (TYPICAL)	

PROCEDURE:


FIG 1 CONSOLE



FIG 2 14S04 COUPLER SWITCH

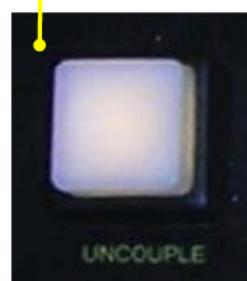


FIG 3 14S05-UNCOPPLE SWITCH

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code: R-C-03-00-00-00/R-01	
System: COUPLER	Sheet: 4/6
Subsystem/Assy: COUPLER ELECTRICAL PLANT	Unit:
Component: SWITCH	Man Hours: 0.5
Maintenance Task: REPLACEMENT (TYPICAL)	
PROCEDURE (CONT'D):	
1. PRELIMINARY OPERATIONS <ul style="list-style-type: none"> a) Set the Vehicle in safety conditions in accordance with LACMTA Maintenance Shop Regulations: b) Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF 	
2. REPLACEMENT To perform the Switch Replacement proceed as follows (Refer to Figures 1 through 4):	
2. Removal <ul style="list-style-type: none"> a) Gain access to the rear of the Operator Console Panel Assy by unscrewing and removing the relevant attaching hardware (Screws and Washers) <p>NOTE: It is advised to retain the attaching Hardware for later use</p> <ul style="list-style-type: none"> b) On the rear of the Operator Console Panel, locate the Switch Body to be replaced and its Electrical Connections. c) Note the Switch Body Wiring Identification Codes d) Disconnect the Switch Body electrical Connections e) Disengage the Switch Assy from its seat f) Remove the Switch Assy by pushing it from the rear toward the front of the Operator Console Panel. 	
3. Installation <ul style="list-style-type: none"> a) Install and engage on its seat the Switch Assy to be installed b) Connect the Switch Body Electrical Connections according to the previously noted Wiring Identification Codes (Refer to Figure 4.) c) Position the Operator Console Panel Assy d) Install and torque the Operator Console Panel Assy attaching Hardware e) Key on the Vehicle and check that the "new" Switch work properly f) Record Task results on the Defect Report Card for administrative and maintenance planning 	
3. FINAL OPERATIONS <ul style="list-style-type: none"> a) Restore Electrical Power to the Coupler 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 03-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion".</p>	



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P2550 CORRECTIVE MAINTENANCE SHEET	
	Card Code:
	R-C-03-00-00-00/R-01
System: MISCELLANEOUS	Sheet: 5/6
System: COUPLER	Unit:
Subsystem/Assy: COUPLER ELECTRICAL PLANT	Man Hours: 0.5
Maintenance Task: REPLACEMENT(TYPICAL)	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System:

COUPLER

Sheet:

6/6

Subsystem/Assy:

COUPLER ELECTRICAL PLANT

Unit:

Component:

SWITCH

Man Hours:

0.5

Maintenance Task:

REPLACEMENT (TYPICAL)

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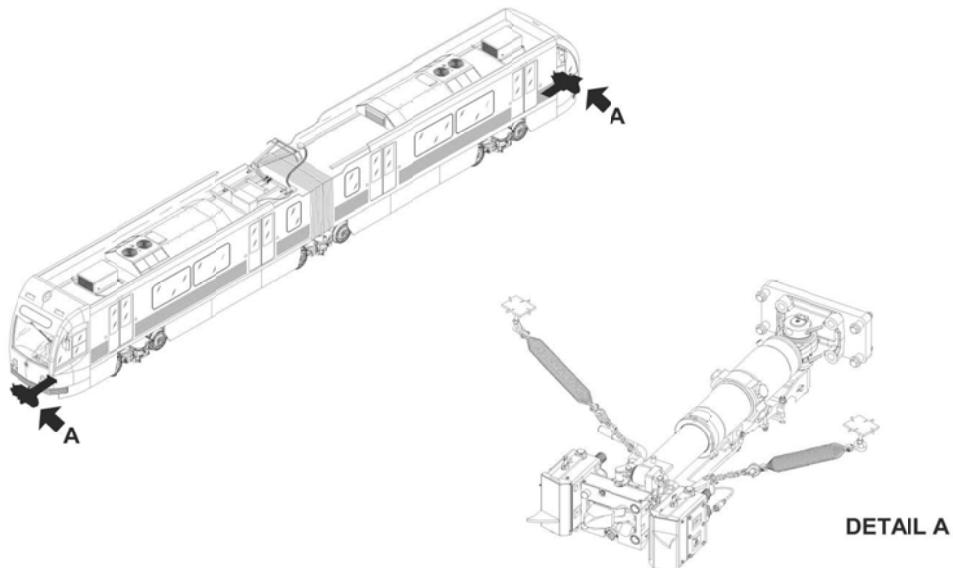
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-01/R-01

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD SECURING PLATE	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:	R-C-03-01-01-01/R-01			
SYSTEM:	COUPLER	SHEET: 2/4		
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER		
COMPONENT:	COUPLER HEAD SECURING PLATE	MAN HOURS: 1.00		
MAINTENANCE TASK:	REPLACEMENT			
SAFETY PRECAUTIONS:				
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY STOP BLOCKS TO THE WHEELS OF THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>				
TOOLS:				
Standard Tool Kit				
CONSUMABLES:				
SPARE PARTS:				
Securing Plate	P/N 170333			
Securing Washer	P/N 170007			

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-01/R-01	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD SECURING PLATE	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2 REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Securing Plate (3) by removing the two Screws (1) and Securing Washer (2). Retain Hardware for later use. b. Fit the Securing Plate (3) and mount the Securing Washer (2) and two Screws (1). 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-01/R-01	
SYSTEM:	COUPLER	SHEET: 4/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT:	COUPLER HEAD SECURING PLATE	MAN HOURS 1.00
MAINTENANCE TASK:	REPLACEMENT	

PROCEDURE:

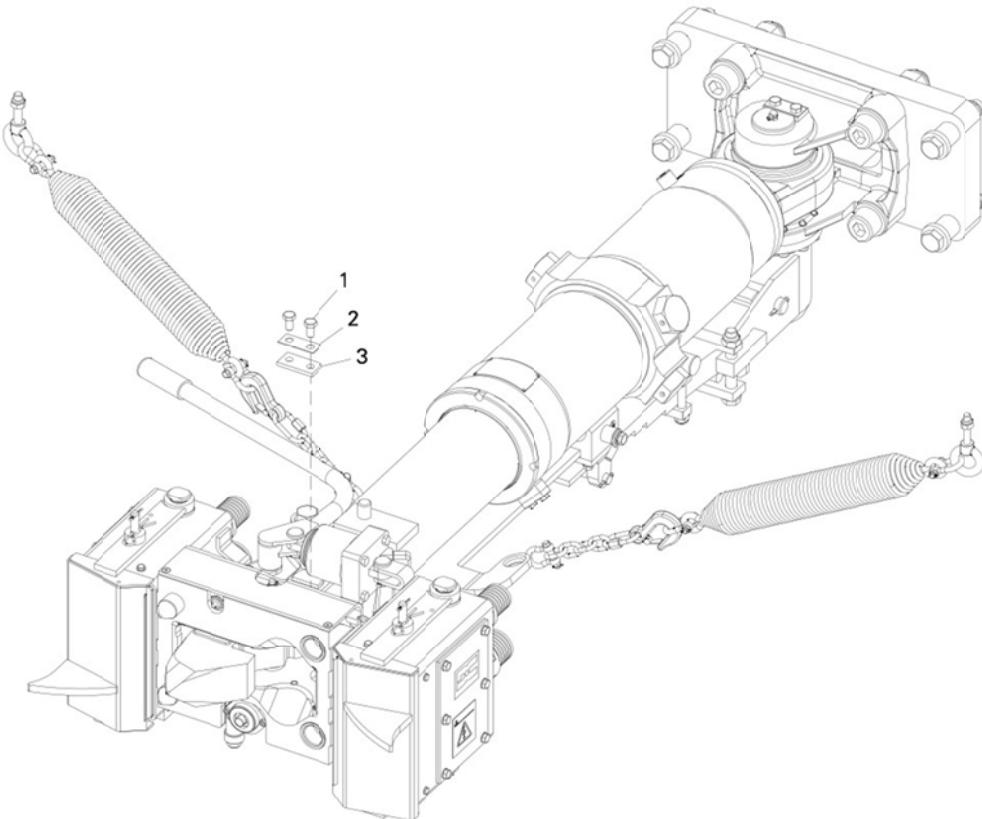


FIGURE 1 - COUPLER HEAD SECURING PLATE REPLACEMENT

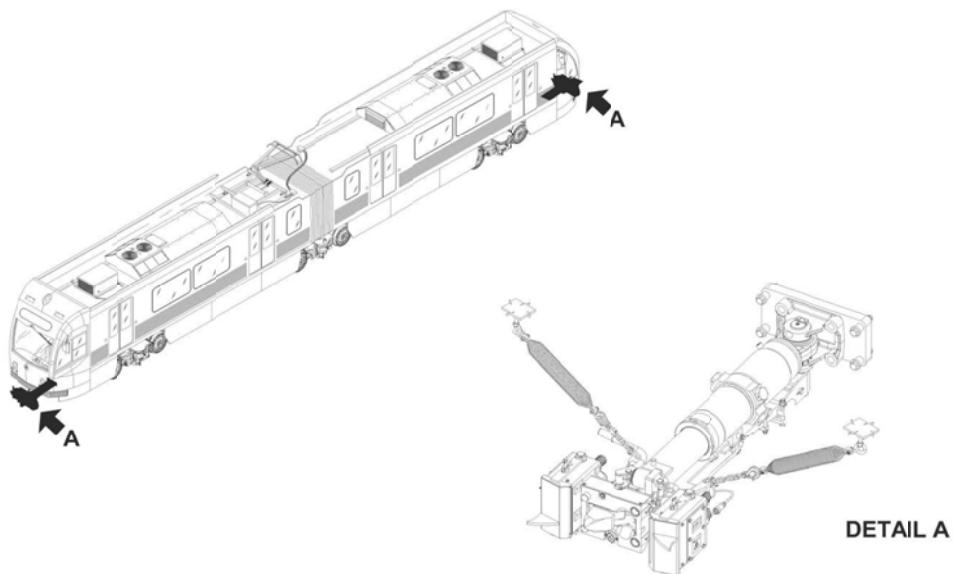
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD GUIDE PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:

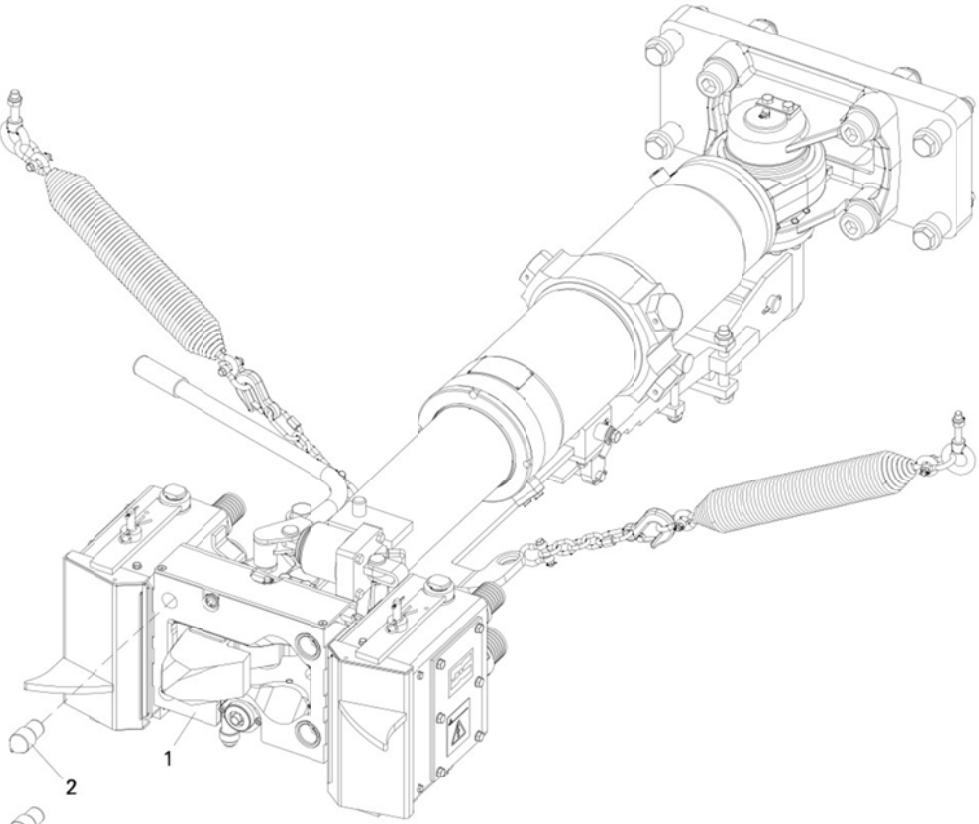


P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:	R-C-03-01-01-01/R-02	
SYSTEM:	COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT:	COUPLER HEAD GUIDE PIN	MAN HOURS: 1.00
MAINTENANCE TASK:		
REPLACEMENT		
SAFETY PRECAUTIONS:		
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>		
TOOLS:		
Standard Tool Kit		
CONSUMABLES:		
Loctite 243.		
SPARE PARTS:		
Guide Pin P/N 169995		

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-01/R-02	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD GUIDE PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19) <p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Guide Pin (2) from the Mechanical Coupler Head Front Face (1). b. Apply Loctite 243 to the threads on the new Guide Pin. c. Fit the Guide Pin to the Mechanical Coupler Head Front Face. <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-01/R-02	
SYSTEM:	COUPLER	SHEET: 4/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT:	COUPLER HEAD GUIDE PIN	MAN HOURS 1.00
MAINTENANCE TASK:	REPLACEMENT	
PROCEDURE:	 <p>The diagram illustrates the mechanical coupling system between two train cars. It shows a central cylindrical coupling body connected to a frame. Two coiled air hoses are attached to the coupling. Numbered callouts point to specific parts: '1' points to a component on the side of the coupling body, and '2' points to a smaller part near the bottom left.</p>	
<p>FIGURE 1 - COUPLER HEAD GUIDE PIN REPLACEMENT</p>		

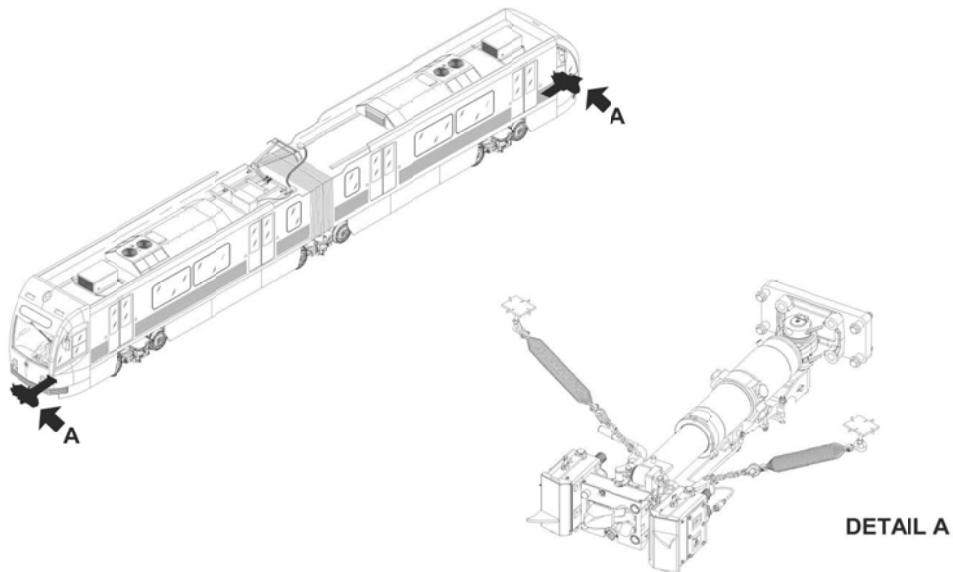
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-01/R-03

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD GUIDE BUSHING	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-01/R-03	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD GUIDE BUSHING	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Toolkit	
CONSUMABLES:	
SPARE PARTS: Guide Bushing P/N 169996	

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-03-01-01-01/R-03	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD GUIDE BUSHING	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2 REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Guide Bushing (2) by from the Mechanical Coupler Head Front Face.(1) b. Fit the new Guide Bushing into the Mechanical Coupler Head Front Face. 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler b. Restore Electrical Power to the Coupler c. 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 03-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-03-01-01-01/R-03	
SYSTEM:	COUPLER	SHEET: 4/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT:	COUPLER HEAD GUIDE BUSHING	MAN HOURS: 1.00
MAINTENANCE TASK:	REPLACEMENT	

PROCEDURE:

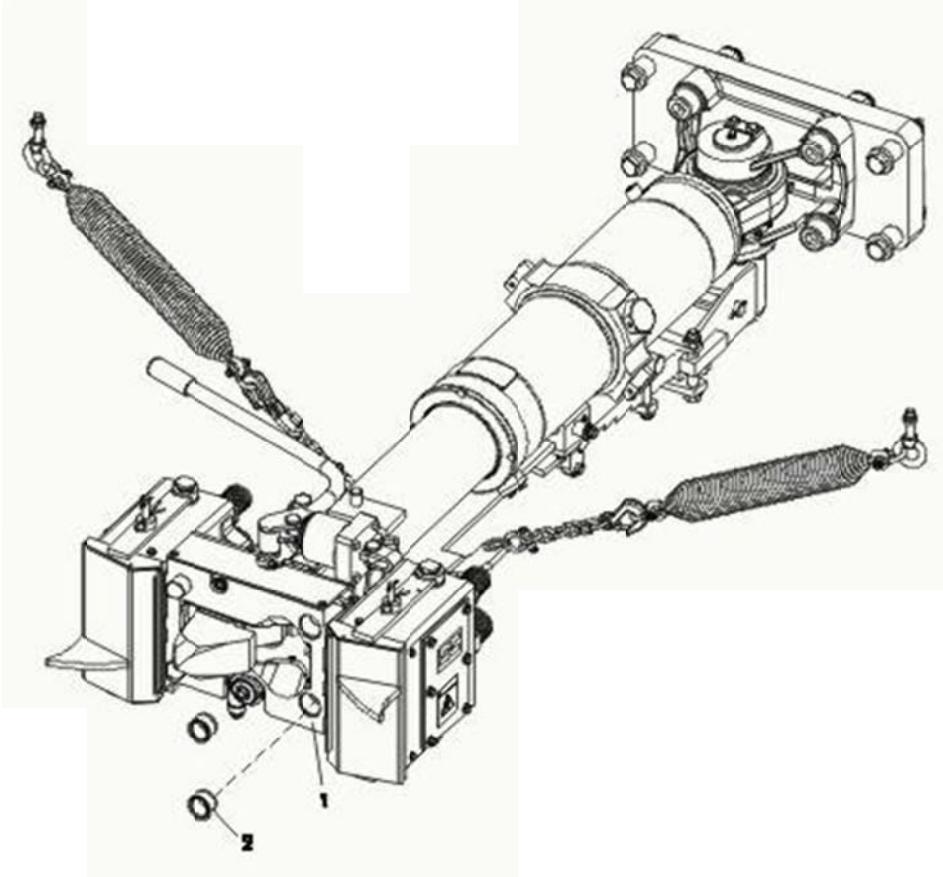


FIGURE 1 - COUPLER HEAD GUIDE BUSHING REPLACEMENT

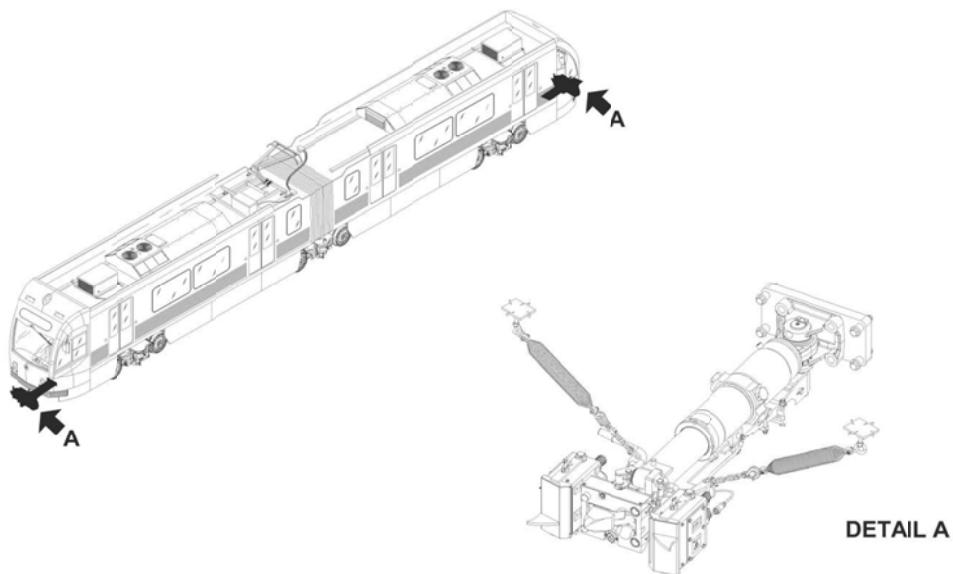
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-01/I-00

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD SPRING SUPPORT	MAN HOURS: 1.00
MAINTENANCE TASK: INSPECTION	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-01/I-00	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD SPRING SUPPORT	MAN HOURS: 1.00
MAINTENANCE TASK: INSPECTION	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:</p> <ol style="list-style-type: none"> 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION. 	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:</p> <ol style="list-style-type: none"> 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER. 	
TOOLS:	
Standard Toolkit	
CONSUMABLES:	
SPARE PARTS:	
Spring Support	PN 158978

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-03-01-01-01/I-00	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD SPRING SUPPORT	MAN HOURS: 1.00
MAINTENANCE TASK: INSPECTION	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). <p>2. INSPECTION</p> <ul style="list-style-type: none"> a. Inspect the Spring Support (1) and Coil Spring (2) with regards to damages, cracks or deformation. b. Check Spring Support (1) for tightening. c. Note any area requiring corrective maintenance. <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-01/I-00

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

COUPLER HEAD SPRING SUPPORT

MAN HOURS:

1.00

MAINTENANCE TASK:

INSPECTION

PROCEDURE:

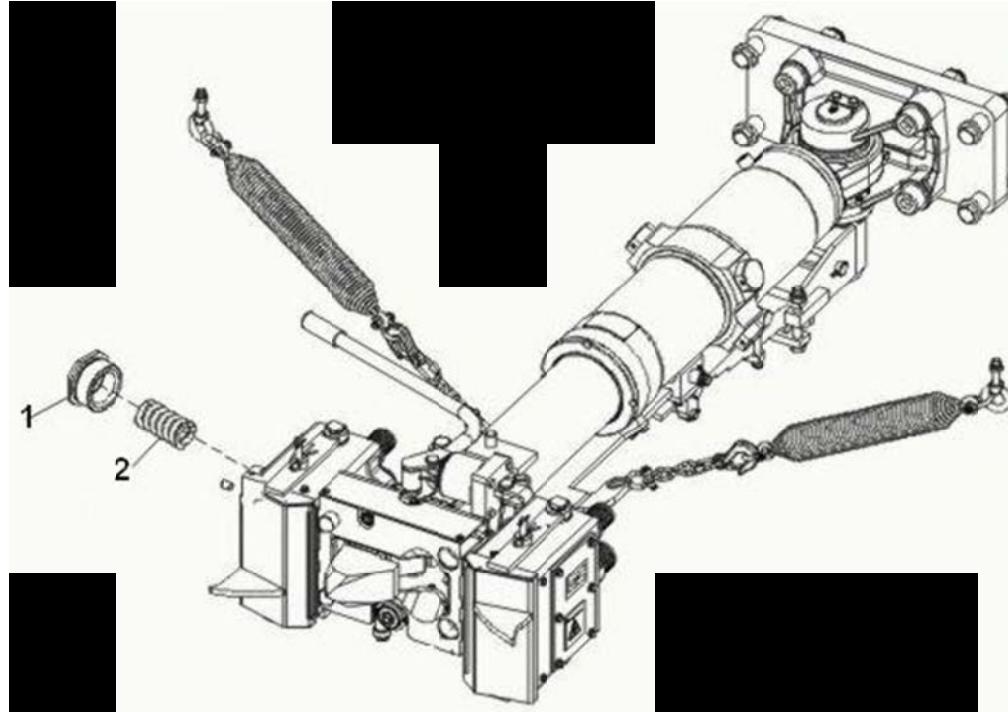


FIGURE 1 - COUPLER HEAD SPRING SUPPORT INSPECTION

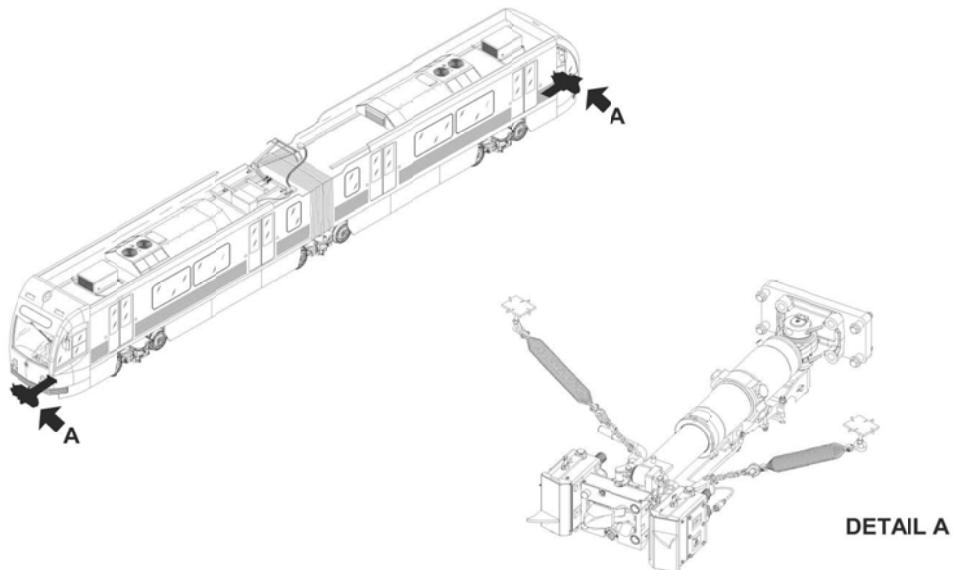
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD UNCOUPLING ARM	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-01/R-05	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD UNCOUPLING ARM	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS:	
Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS:	
Uncoupling Arm	P/N 1009448

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-01/R-05	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD UNCOUPLING ARM	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). <p>1. REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Plate (4) by removing the four Screws (3). b. Remove the Screw (2) and Washer (1). c. Remove the Uncoupling Arm (6) from Uncoupling Cylinder (9) by removing the Split Pin (7), Pin (5) and the Washer (8). d. Fit the new Uncoupling Arm (6) to the Uncoupling Shaft (10). e. Fit the Uncoupling Arm (6) to the Uncoupling Cylinder (9) and mount the Pin (5), Washer (8) and Split Pin (7). f. Mount the Washer (1) and Screw (2). g. Fit Plate (4) and mount the four Screws (3). <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Perform manual uncoupling to verify proper function of the Uncoupling Arm. b. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. c. Restore Electrical Power to the Coupler. d. 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 03-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-03-01-01-01/R-05		
SYSTEM: COUPLER	SHEET: 4/4	
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER	
COMPONENT: COUPLER HEAD UNCOUPLING ARM	MAN HOURS: 1.00	
MAINTENANCE TASK: REPLACEMENT		

PROCEDURE:

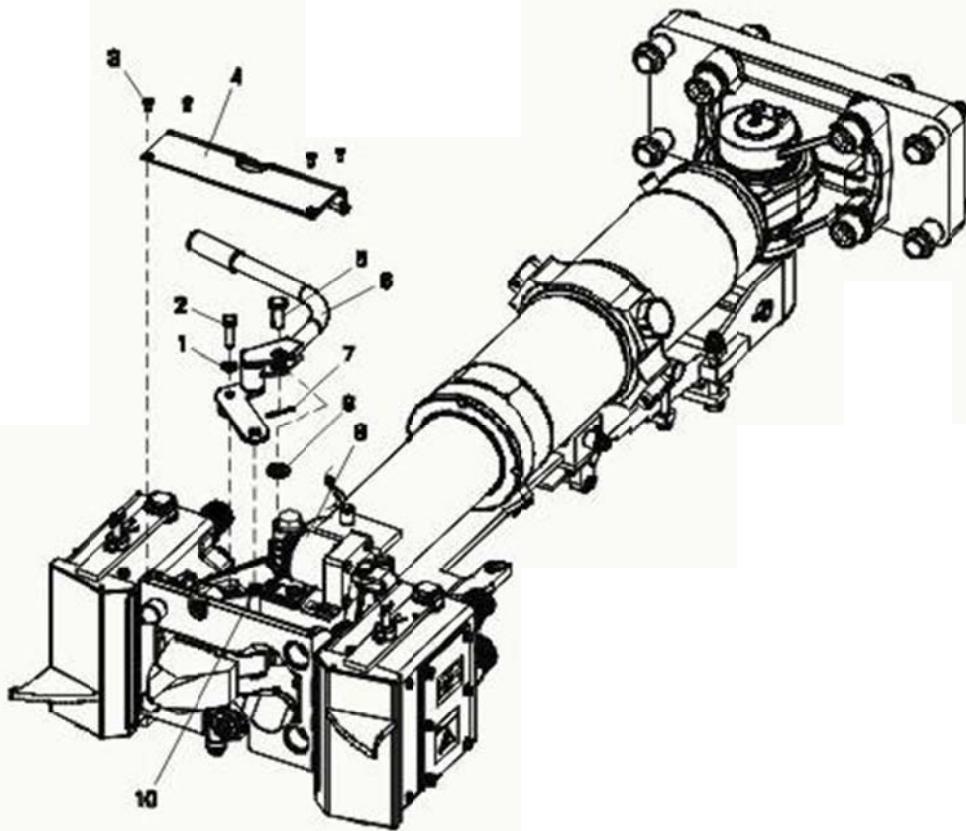


FIGURE 1 - COUPLER HEAD UNCOUPLING ARM REPLACEMENT

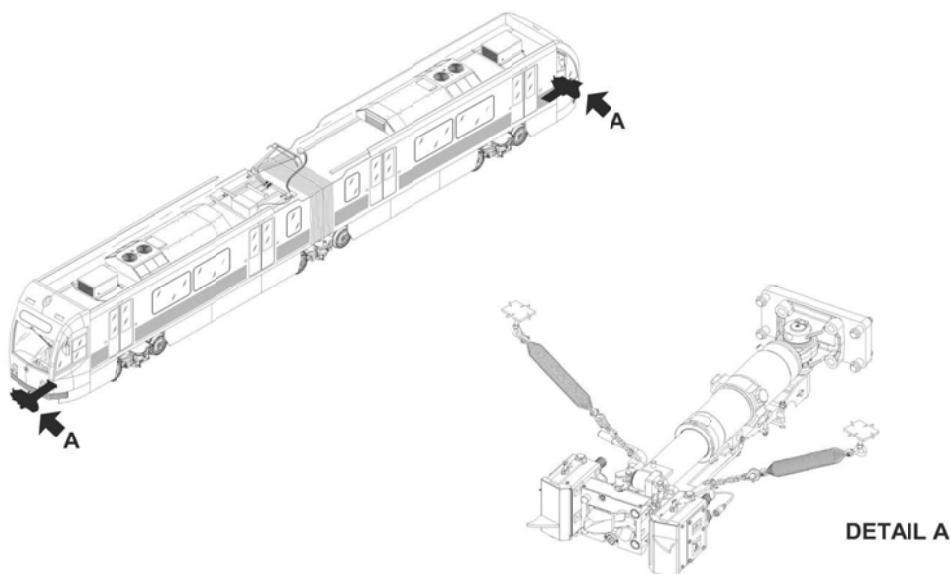
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-01/R-06

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD UNCOUPLING CYLINDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-01/R-06	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD UNCOUPLING CYLINDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS:	
Uncoupling Cylinder	P/N 169978
Pin	P/N 1013112
Split Pin	P/N 5582040032

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-01/R-06	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD UNCOUPLING CYLINDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). <p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Disconnect the Pneumatic Connection from the Uncoupling Cylinder (5). b. Remove the Uncoupling Cylinder (5) by removing the two Split Pins (2), the Washer (3) and Pins (4). c. Fit the new Uncoupling Cylinder (5) to the attachment on the Left Electrical Coupler (1) and mount the Pin (4) and Split Pin (2). d. Fit the Uncoupling Cylinder (5) and Washer (3) to the attachment on the Uncoupling Arm (1) and mount the Pin (4) and Split Pin (2). e. Connect the Pneumatic Connection to the Uncoupling Cylinder (5). <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Perform uncoupling procedure to verify proper functioning of the Uncoupling Cylinder. d. 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 03-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-03-01-01-01/R-06SYSTEM:
COUPLERSHEET:
4/4SUBSYSTEM/ASSY:
AUTOMATIC COUPLERUNIT:
MECHANICAL COUPLERCOMPONENT:
COUPLER HEAD UNCOUPLING CYLINDERMAN HOURS
1.00

MAINTENANCE TASK:

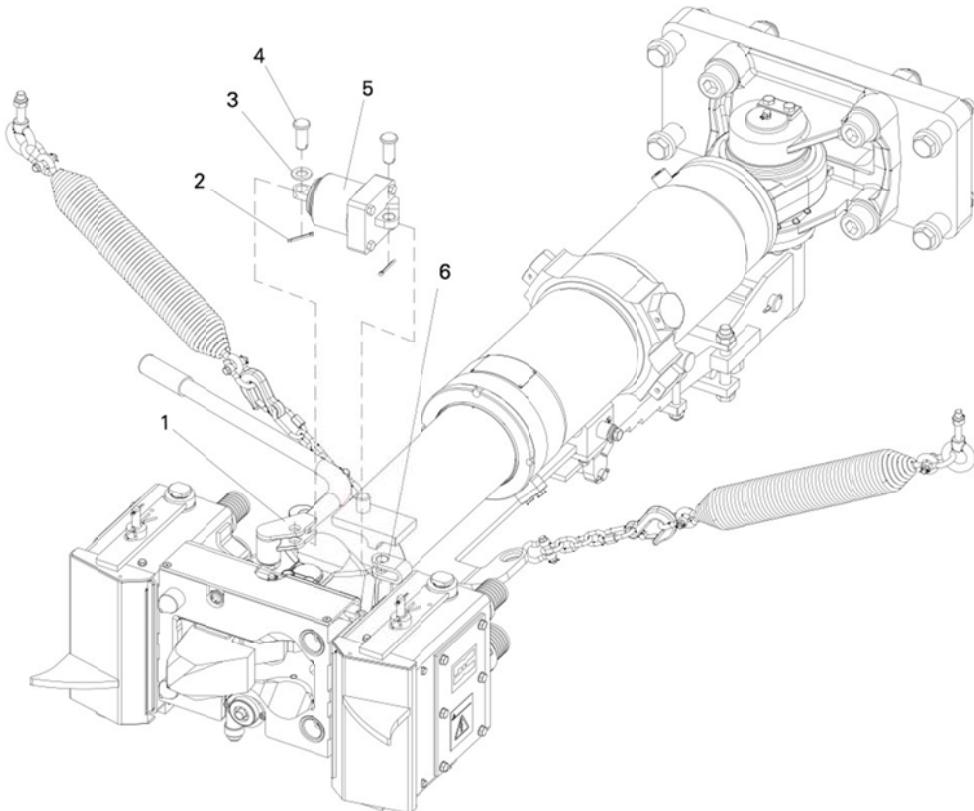
REPLACEMENT**PROCEDURE:**

FIGURE 1 - COUPLER HEAD UNCOUPLING CYLINDER REPLACEMENT

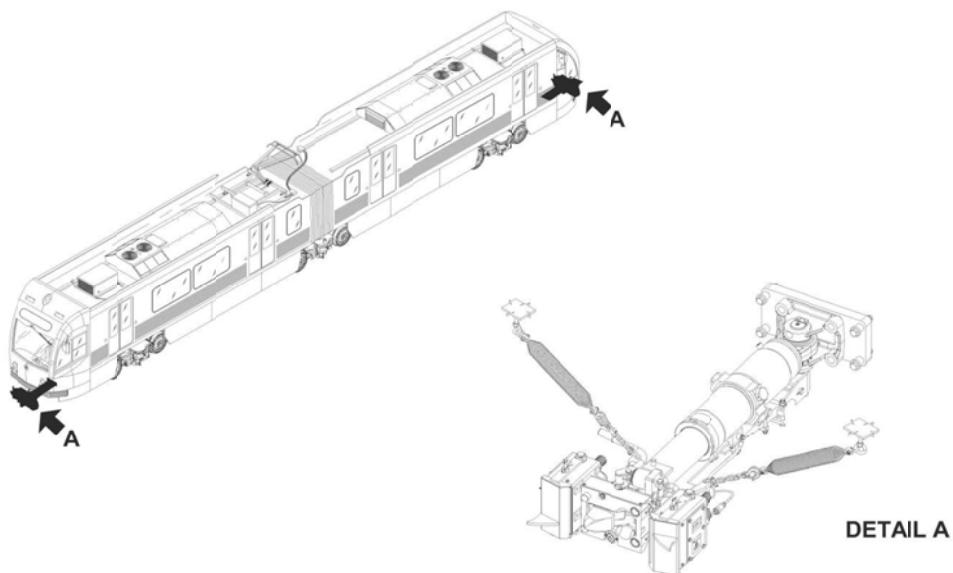
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-01/R-07

SYSTEM: COUPLER	SHEET: 1/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD PARALLEL PIN	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-01/R-07	
SYSTEM: COUPLER	SHEET: 2/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD PARALLEL PIN	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS: Parallel Pin PN 5566008016	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-01/R-07	
SYSTEM: COUPLER	SHEET: 3/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD PARALLEL PIN	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2 REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Electrical Coupler <ul style="list-style-type: none"> • Left Head according to Sheet R-C-03-01-03-01 / R-00 • Right Head according to Sheet R-C-03-01-03-01 / R-00 b. Remove and discard the two Parallel Pins <ul style="list-style-type: none"> • (LH, item 17 Fig 1) • (RH, item 10 Fig 2) c. Install both the new Parallel Pins d. Install the Electrical Coupler <ul style="list-style-type: none"> • Left Head according to Sheet R-C-03-01-03-01 / R-00 • Right Head according to Sheet R-C-03-01-03-01 / R-00 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler b. Restore Electrical Power to the Coupler c. 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 03-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-03-01-01-01/R-07		
SYSTEM: COUPLER	SHEET:	4/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT:	MECHANICAL COUPLER
COMPONENT: COUPLER HEAD PARALLEL PIN	MAN HOURS	
		1
MAINTENANCE TASK: REPLACEMENT		

PROCEDURE:

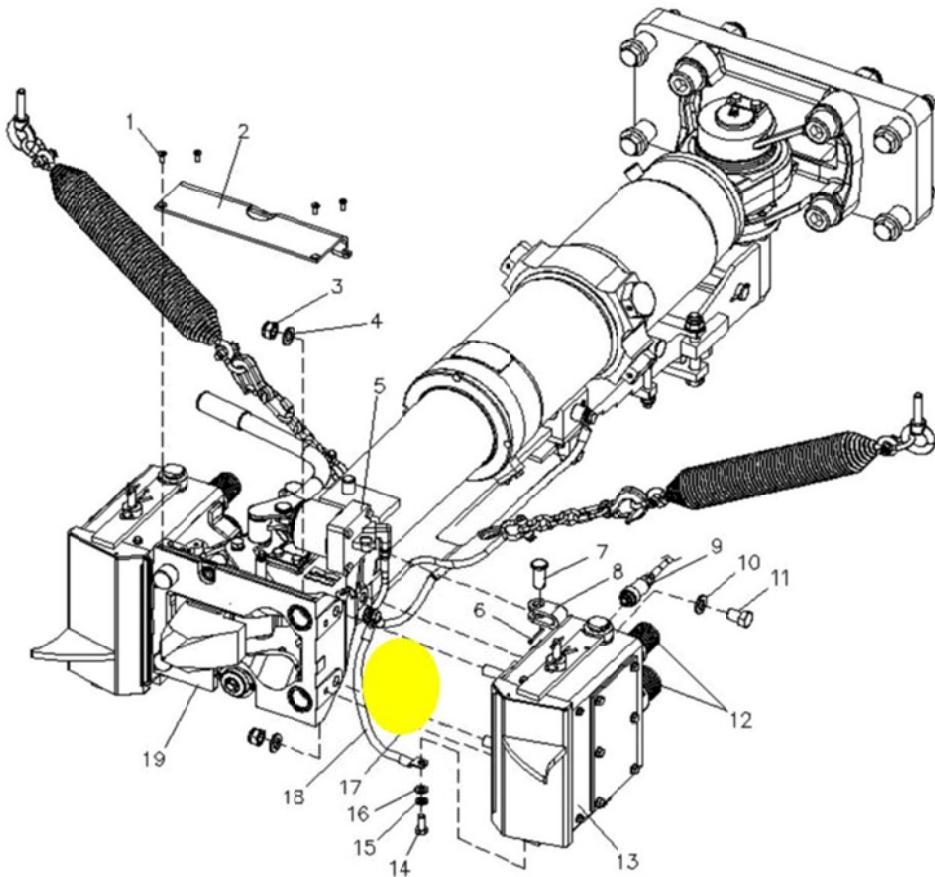
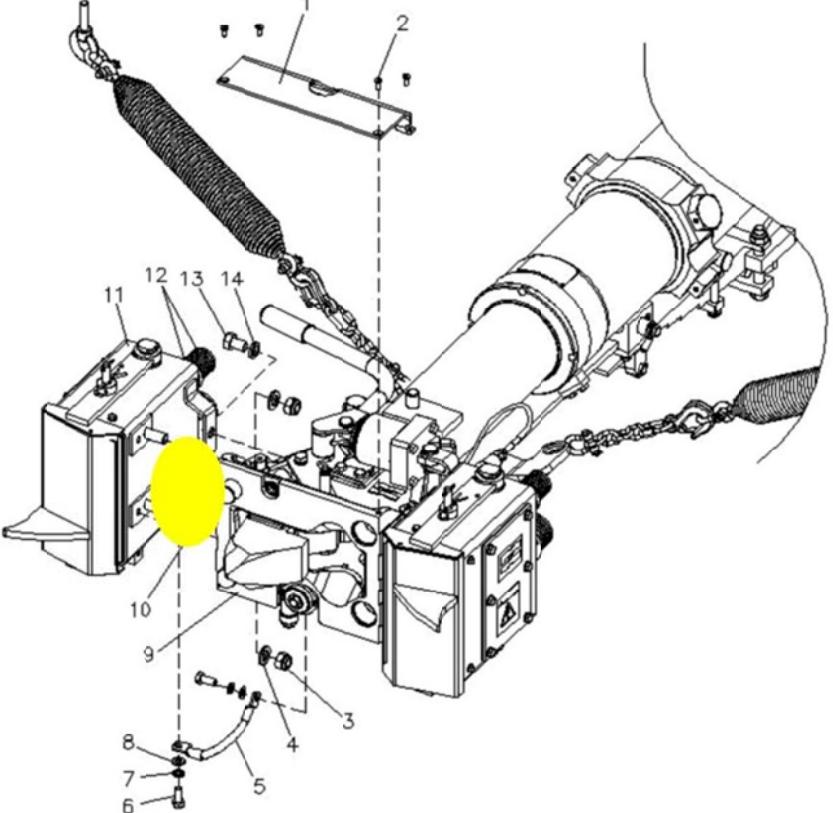


FIGURE 1 - LH ELECTRICAL COUPLER HEAD PARALLEL PIN REPLACEMENT

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-01/R-07	
SYSTEM: COUPLER	SHEET: 5/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD PARALLEL PIN	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
	
FIGURE 2 - RH ELECTRICAL COUPLER HEAD PARALLEL PIN REPLACEMENT	

P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-01/R-07

SYSTEM:

COUPLER

SHEET:

6/6

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

COUPLER HEAD PARALLEL PIN

MAN HOURS:

1

MAINTENANCE TASK:

REPLACEMENT**INTENTIONALLY
LEFT BLANK**

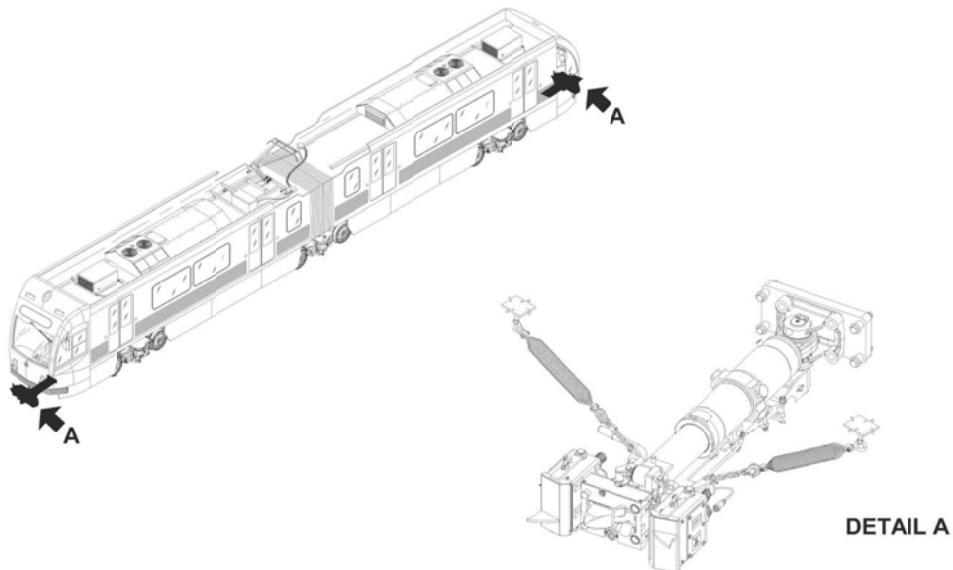
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-01/R-08

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD SWITCH	MAN HOURS: 1.50
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-01/R-08	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD SWITCH	MAN HOURS: 1.50
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS:	
Switch S2.1	P/N 1003375-XXX
Cable Tie	P/N 152651
Locking Wire	P/N 5645005200.

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-01/R-08	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: COUPLER HEAD SWITCH	MAN HOURS: 1.50
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Disconnect the Switch Cable Contact (4) from the back Left Electric Coupler (5). NOTE: Remove the Cable Tie holding the Switch Cable to the bracket for the Left Electric Coupler (5). b. Remove the Plate (2) by removing the four Screws (1). c. Remove the Switch (3) by first removing the Locking Wire and then the front Nut (6). d. Pull the Switch (3) out from the back of the Coupler Head Front Face (7). e. Fit the Rear Nut (6) to the Switch (3). f. Fit the Switch (3) to the Coupler Head Front Face (7) from the back. g. Mount the Front Nut (6) to the Switch (3). h. Adjust the Front and Rear Nuts (6) so that the Switch (3) protrudes 0.197±0.012 inches (5±0.3 mm) from the Coupler Head Front Face. i. Lock the Nuts (6) in position by mounting the Locking Wire. j. Fit the Plate (2) to Coupler Head (7) and mount the four Screws (1). k. Connect the Switch Cable Contact (4) to the back of the Left Electrical Coupler (5). NOTE: Fasten the Switch Cable to the bracket for the Electrical Coupler with Cable Tie. 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler b. Restore Electrical Power to the Coupler c. 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 03-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-03-01-01-01/R-08

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

COUPLER HEAD SWITCH

MAN HOURS

1.50

MAINTENANCE TASK:

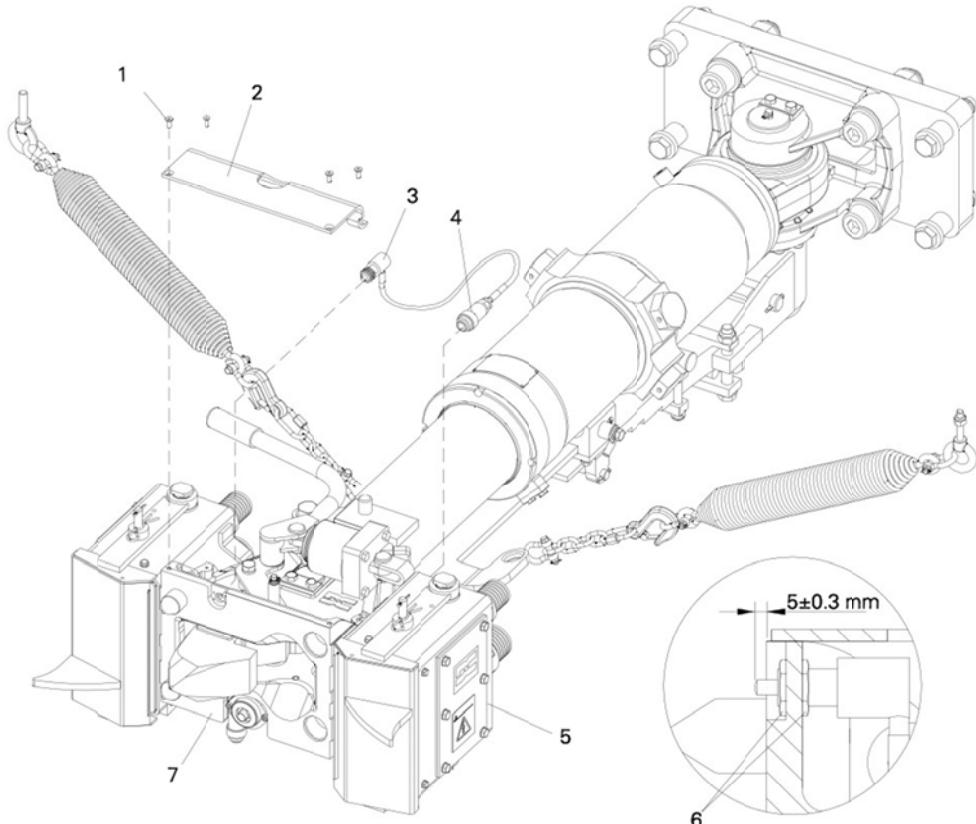
REPLACEMENT**PROCEDURE:**

FIGURE 1 - COUPLER HEAD SWITCH REPLACEMENT

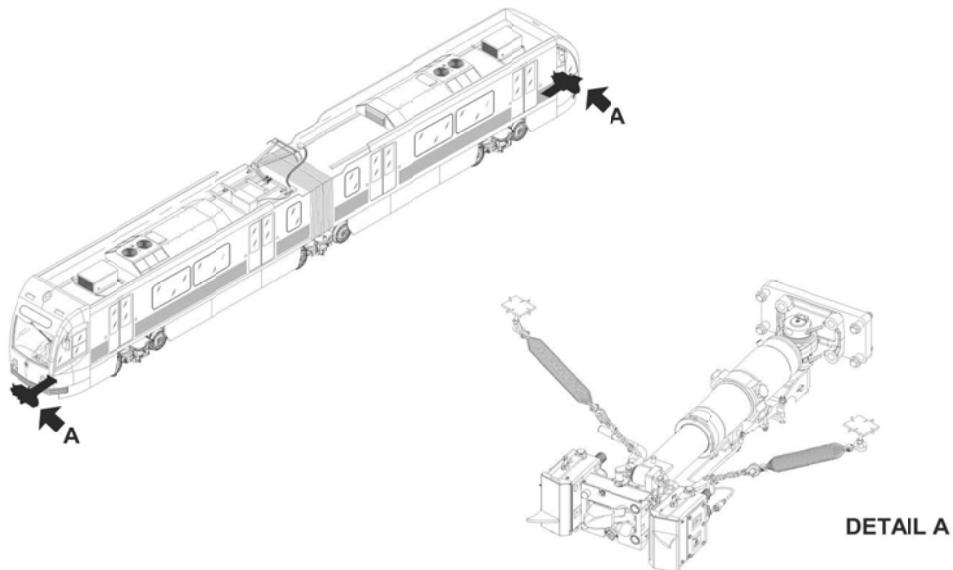
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: MOUNTING PLATE RELEASE SCREW	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-02/R-01	
SYSTEM: COUPLER	SHEET: 2/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: MOUNTING PLATE RELEASE SCREW	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:</p> <ol style="list-style-type: none"> 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. <p>THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:</p> <ol style="list-style-type: none"> 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER. <p>CAUTION : THIS INSTRUCTION IS FOR MOUNTING THE MOUNTING KIT FOR THE NEW COUPLER TO THE VEHICLE UNDERFRAME. THE RELEASE SCREWS IN THE MOUNTING KIT ARE DESIGNED TO RELEASE AND BREAK AT A SPECIFIED DRAFT LOAD, THEREFORE IT IS OF THE HIGHEST IMPORTANCE THAT THE SCREWS AND NUTS ARE CORRECTLY MOUNTED AND TIGHTENED.</p>	
TOOLS:	
<ul style="list-style-type: none"> • Standard Tool Kit • Mechanical Dynamometric Torque Wrench (calibrated for max. $\pm 10\%$ spread) • Suitable Lifting Device 	
CONSUMABLES:	
<ul style="list-style-type: none"> • Dinitrol Liquid Type ML/33B • Molykote 1000 • Red Torque Seal 	
SPARE PARTS:	
<ul style="list-style-type: none"> • Release Screw PN 1009442 	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-02/R-01	
SYSTEM: COUPLER	SHEET: 3/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: MOUNTING PLATE RELEASE SCREW	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
1. PRELIMINARY OPERATIONS	
<ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
CAUTION : THIS INSTRUCTION IS FOR MOUNTING THE MOUNTING KIT FOR THE NEW COUPLER TO THE VEHICLE UNDERFRAME. THE RELEASE SCREWS IN THE MOUNTING KIT ARE DESIGNED TO RELEASE AND BREAK AT A SPECIFIED DRAFT LOAD, THEREFORE IT IS OF THE HIGHEST IMPORTANCE THAT THE SCREWS AND NUTS ARE CORRECTLY MOUNTED AND TIGHTENED.	
NOTE : It is assumed that the Automatic Coupler have been previously removed from Vehicle	
2. REPLACEMENT	
<ul style="list-style-type: none"> a. Support the Mounting Plate (3) and ensure it will not fall when removed from the Vehicle Underframe. 	
CAUTION: THE MOUNTING PLATE IS HEAVY (20 KG) AND CAN CAUSE PERSONAL INJURIES. PROTECT THE PLATE FROM FALLING DOWN.	
<ul style="list-style-type: none"> b. Remove the Mounting Plate (3) by removing the four Release Screws (5), Nuts (1), Bushings (4) and Washers (2). Lift the Mounting Plate away from the Vehicle and place it on a bench for easy access. c. Replace all Fasteners and Rubber Parts if applicable. 	
CAUTION: RELEASE SCREWS (5), BUSHINGS (4) AND LOCK NUTS (1) MAY NEVER BE REUSED, IN ANY APPLICATION, ONCE SUBJECTED TO FINAL TORQUE. WASHERS (2) MAY BE REUSED IF FREE FROM DAMAGES THAT HAVE CHANGED THEIR FRICTION CAPACITIES.	
<ul style="list-style-type: none"> d. Clean all corresponding mounting surfaces, including the Vehicle Underframe, and check that there are not damages, burrs or other irregularities. e. Apply a thin layer of Dinitrol Liquid Type ML/33B or equal on all fitting and mating surfaces. f. Mount the Bushings (4) and then the Mounting Plate (3). Protect the Plate from falling down. 	

P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-02/R-01	
SYSTEM: COUPLER	SHEET: 4/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: MOUNTING PLATE RELEASE SCREW	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
REPLACEMENT (CONT'D)	
<p>g. Apply Molykote 1000 to the Release Screws (2) and the Nuts (1) to achieve a controlled friction during the torqueing procedure. NOTE: Both the <u>thread</u> and the <u>surfaces</u> under the <u>Screw Head</u> and under the <u>Nut</u> shall be Greased.</p> <p>h. Mount the Release Screws (5), Washers (2) and Nuts (1) on all positions and torque to a firm contact between the surfaces.</p> <p>i. Torque the Release Screws (5) diagonally to an Initial Torque Value of 88 lb.ft (119 Nm), first and then torque the Release Screws (5) diagonally to the Final Torque Value of 125 lb.ft (170 Nm).</p> <p>j. Remove the grease from a spot of the Nut and the Bolt Ends and apply Red Torque Seal to the Screws (5) (see item 6) as an identification for correct torque and as a warning for unauthorized handling.</p> <p>NOTE: Re-torqueing is not allowed unless steps e. - f. are repeated.</p>	
<p>3. FINAL OPERATIONS</p> <p>a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler.</p> <p>b. Restore Electrical Power to the Coupler.</p> <p>c. Record Task Results on the Defect Report Card for administrative and maintenance planning.</p> <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 03-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-03-01-01-02/R-01

SYSTEM: COUPLER	SHEET: 5/6
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SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
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COMPONENT: MOUNTING PLATE RELEASE SCREW	MAN HOURS: 1.00
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MAINTENANCE TASK:
REPLACEMENT

PROCEDURE:

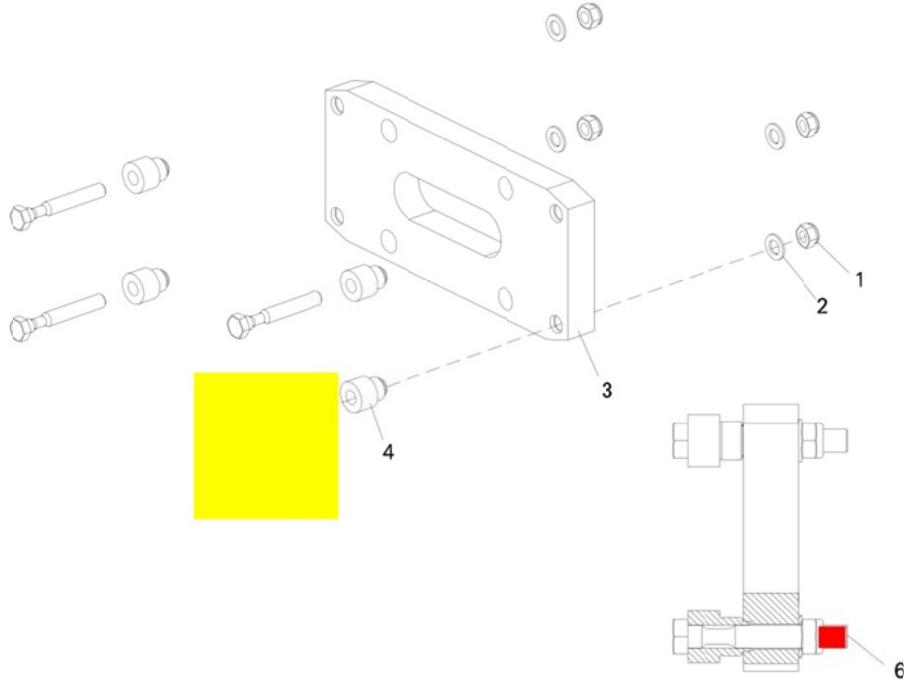
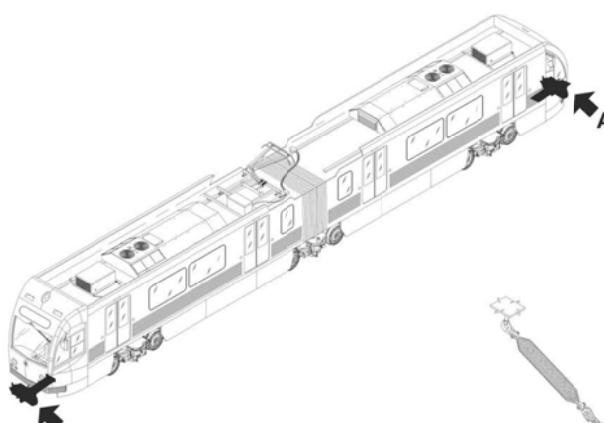
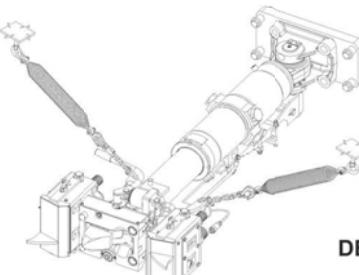


FIGURE 1 MOUNTING PLATE RELEASE SCREW

P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:		
R-C-03-01-01-02/R-01		
SYSTEM: COUPLER	SHEET: 6/6	
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER	
COMPONENT: MOUNTING PLATE RELEASE SCREW	MAN HOURS: 1.00	
MAINTENANCE TASK: REPLACEMENT		

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P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-02/R-02	
SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: GUIDE RAIL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
LOCATION:	
  DETAIL A	

P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-02/R-02	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: GUIDE RAIL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS:	
Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS:	
Guide Rail	P/N 1001703
Plastic Rivet	P/N 1003277
Securing Plate	P/N 170812

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-02/R-02	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: GUIDE RAIL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Support the Coupler properly and ensure it cannot fall. b. Open the Shackle and disconnect the Centering Springs (1) from the Guide Rail (2). c. Remove the Securing Plates (5) by removing the Screws (6). d. Remove the Guide Rail (2) from the Coupler. e. Fit the two Washers (3) and the Plastic Rivets (4) to the Guide Rail (2). 	
<p>NOTE: Chamfer on Washers (3) towards the Guide Rail (2).</p> <ul style="list-style-type: none"> f. Fit the Guide Rail (2) to the Coupler and mount the two Securing Plates (5) and Screws (6) locking the Guide Rail (2) to the Coupler Head (7). g. Bend two corners of the Securing Plates up against the Screw Heads to secure the Screws. h. Mount the Centering Springs (1) to the Coupler with the Shackles. 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-02/R-02

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

GUIDE RAIL

MAN HOURS

1.00

MAINTENANCE TASK:

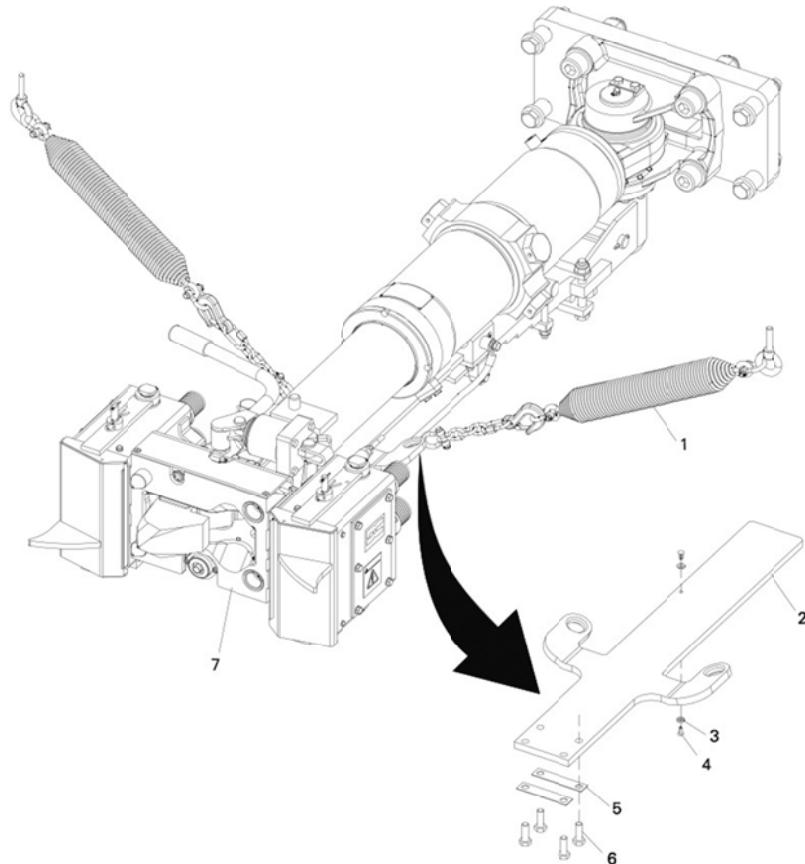
REPLACEMENT**PROCEDURE:**

FIGURE 1 - GUIDE RAIL REPLACEMENT

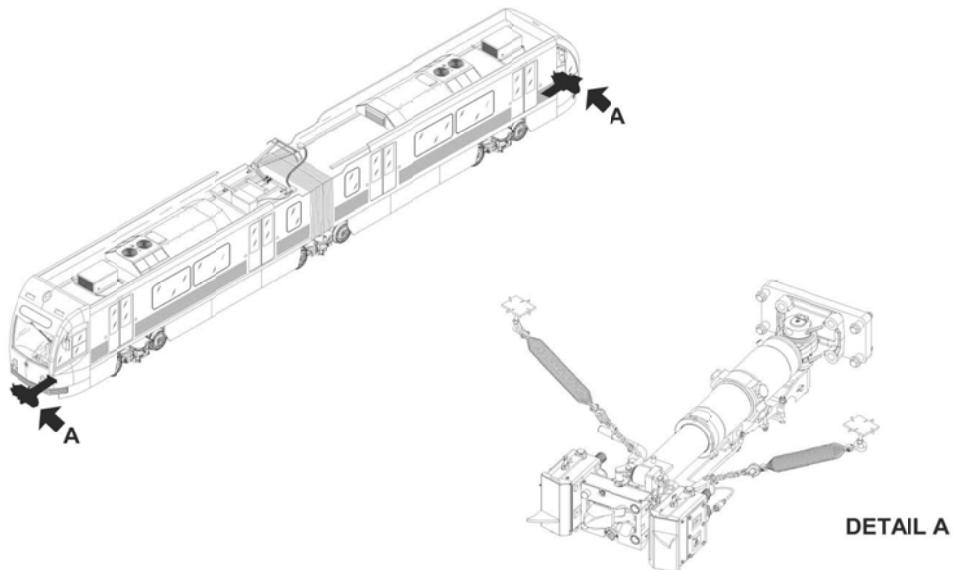
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-03/R-01

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: BUFFER PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-03/R-01	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: BUFFER PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS:	
Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS:	
Pin	P/N 176568
Split pin	P/N 5582040025

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-03/R-01	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: BUFFER PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19) <p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Split Pin (2) and pull out the Pin (1). b. Fit the new Pin (1) to the Spring Holder (3) on Buffer. c. Secure the Pin (1) in position by mounting the two Split Pins (2). <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler b. Restore Electrical Power to the Coupler c. 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 03-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-03-01-01-03/R-01

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

BUFFER PIN

MAN HOURS

1.00

MAINTENANCE TASK:

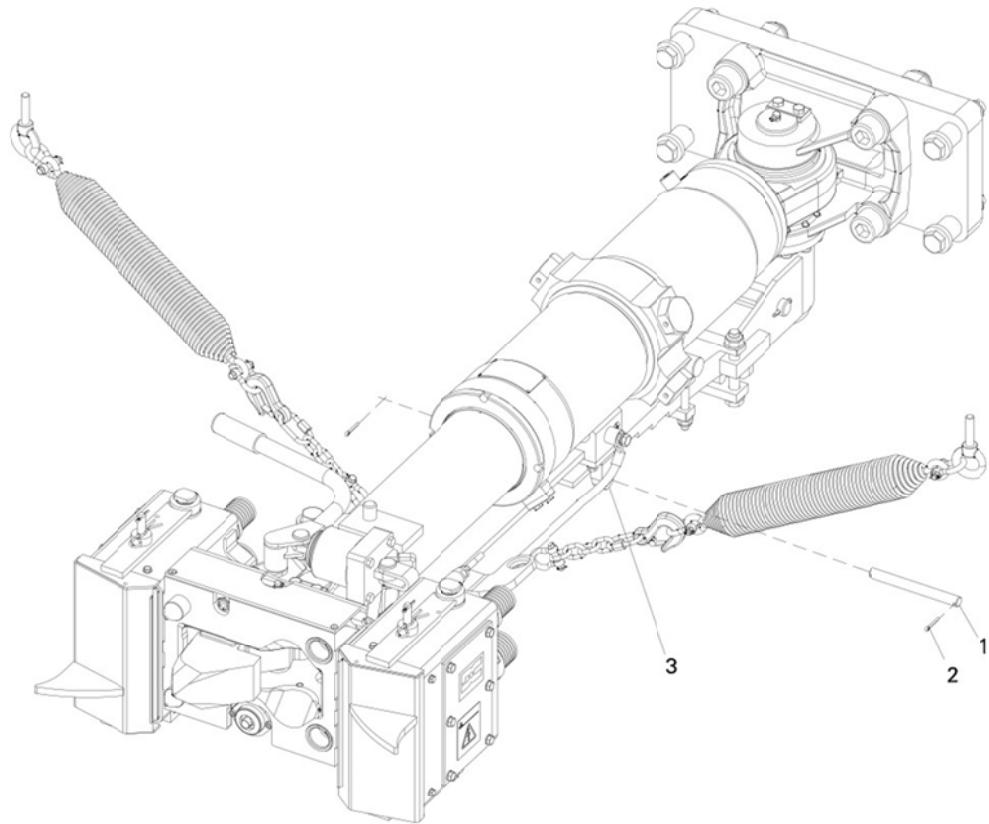
REPLACEMENT**PROCEDURE:**

FIGURE 1 - BUFFER PIN REPLACEMENT

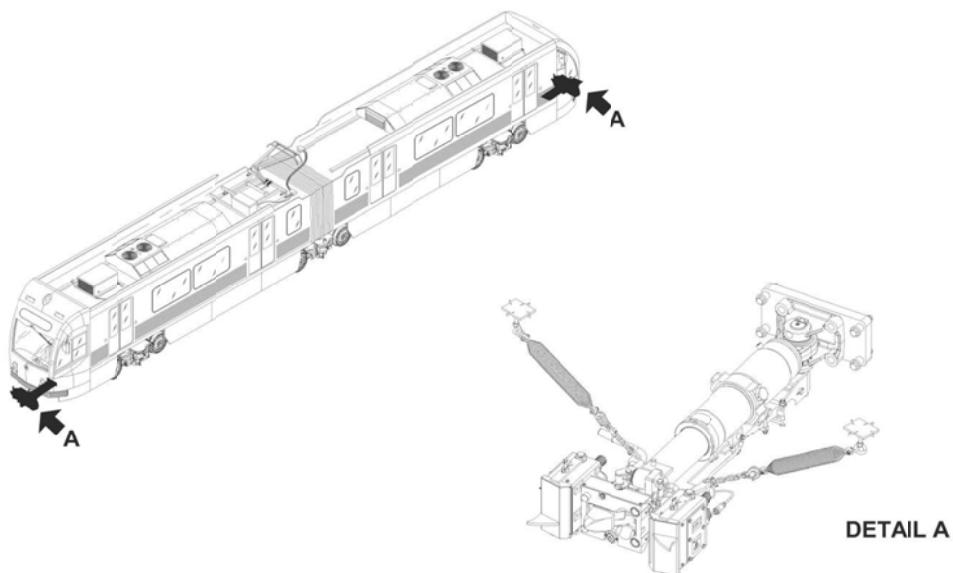
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLERS	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: BUFFER CAP SCREW	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:	R-C-03-01-01-03/R-02	
SYSTEM:	COUPLERS	SHEET: 2/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT:	BUFFER CAP SCREW	MAN HOURS: 1.00
MAINTENANCE TASK:		
REPLACEMENT		
SAFETY PRECAUTIONS:		
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>		
TOOLS:		
Standard Tool Kit "Milbar" Locking Wire Tool or equal.		
CONSUMABLES:		
SPARE PARTS:		
Cap Screw P/N 166577 Locking Wire P/N 167576		

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-03/R-02	
SYSTEM: COUPLERS	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: BUFFER CAP SCREW	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE: <ol style="list-style-type: none"> 1. PRELIMINARY OPERATIONS <ol style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 2. REPLACEMENT <p>CAUTION: REPLACE THE CAP SCREWS ONE AT A TIME TO PREVENT THE SHEAR RING FROM MOVING OUT OF POSITION.</p> <ol style="list-style-type: none"> a. Remove the Locking Wire from the Cap Screws (1) first and then remove the Cap Screw (1) b. Mount the new Cap Screw (1) to the Buffer (2). c. Torque the Cap Screw to 296 lb-ft (400 Nm). d. Orient new Locking Wire through the Cap Screws in the way that the pulling in the Wires is torching on the Screw. <p>CAUTION: NEVER REUSE OLD WIRES</p> <p>NOTE : This can be done by assembling the Wires on the exit of the Hole at a Right Threaded Screw. Do not slack or torque the Cap Screws (1) to reach a better position for the wire. See detail in Figure 1.</p> e. Locate both the Wires between the Jaws, press the Jaws with one hand and pull the Locking Device with the other hand. <p>NOTE : The Wire can now be wrapped by pulling the Knob backwards and the Milbar is free to twist.</p> f. Repeat the operation until the Wire is well tightened without braking. g. Check carefully that the wire do not slide from the Cap. h. Finalize the wrapping with a spiral, 6 - 12 times the thickness of the Wire (at least four turns). 3. FINAL OPERATIONS <ol style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-03/R-02

SYSTEM:

COUPLERS

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

BUFFER CAP SCREW

MAN HOURS

1.00

MAINTENANCE TASK:

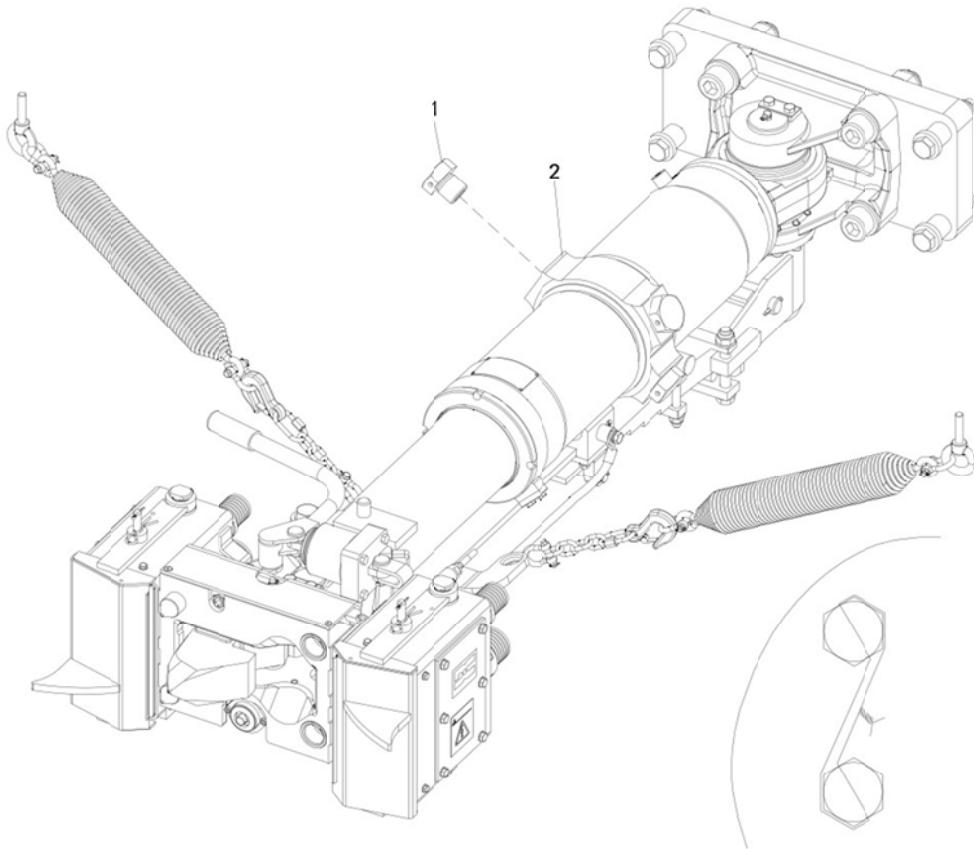
REPLACEMENT**PROCEDURE:**

FIGURE 1 - BUFFER CAP SCREW REPLACEMENT

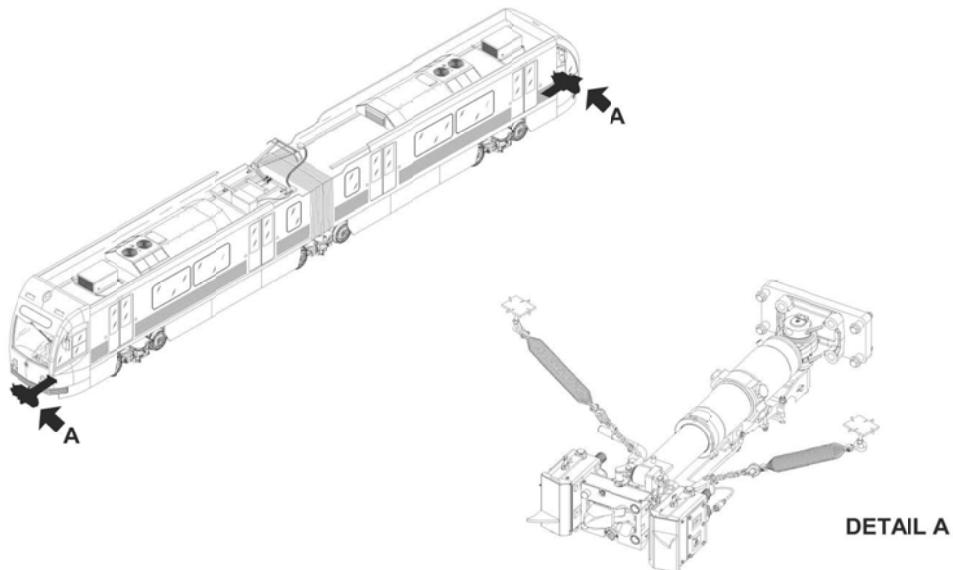
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-01-03/R-03

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: BUFFER SHEAR PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-03/R-03	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: BUFFER SHEAR PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit "Milbar" Locking Wire Tool or equal.	
CONSUMABLES:	
SPARE PARTS:	
Shear Pin P/N 1008874 Locking Wire P/N 167576	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-03/R-03	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: BUFFER SHEAR PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <p>NOTE: Replace the Shear Pins one at a time to prevent the Shear Ring from moving out of position.</p> <ul style="list-style-type: none"> a. Remove the Locking Wire from the Cap Screws (1). b. Remove the Cap Screw (1) and pull up the Shear Pin (2). c. Fit the new Shear Pin (2) to the Buffer (3) and mount the Cap Screw (1). d. Torque the Cap Screw to 296 lb-ft (400 Nm). e. Orient new Locking Wire through the Cap Screws in the way that the pulling in the Wires is torching on the Screw. <p>CAUTION: NEVER REUSE OLD WIRES</p> <p>NOTE :This can be done by assembling the Wires on the exit of the Hole at a Right Threaded Screw. Do not slack or torque the Cap Screws (1) to reach a better position for the wire. See detail in Figure 1.</p> <p>f. Locate both the Wires between the Jaws, press the Jaws with one hand and pull the Locking Device with the other hand.</p> <p>NOTE :The Wire can now be wrapped by pulling the Knob backwards and the Milbar is free to twist.</p> <ul style="list-style-type: none"> g. Repeat the operation until the Wire is well tightened without braking. h. Check carefully that the wire do not slide from the Cap. i. Finalize the wrapping with a spiral, 6 - 12 times the thickness of the Wire (at least four turns). 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-03/R-03

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

BUFFER SHEAR PIN

MAN HOURS

1.00

MAINTENANCE TASK:

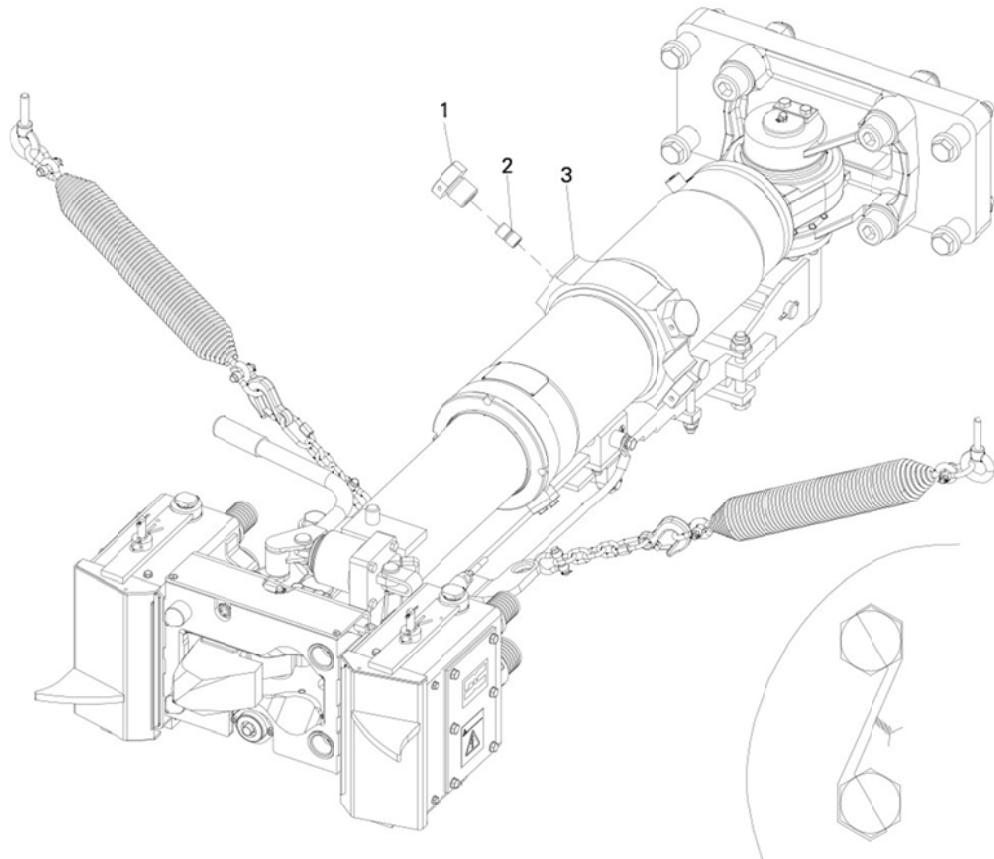
REPLACEMENT**PROCEDURE:**

FIGURE 1 - BUFFER SHEAR PIN REPLACEMENT

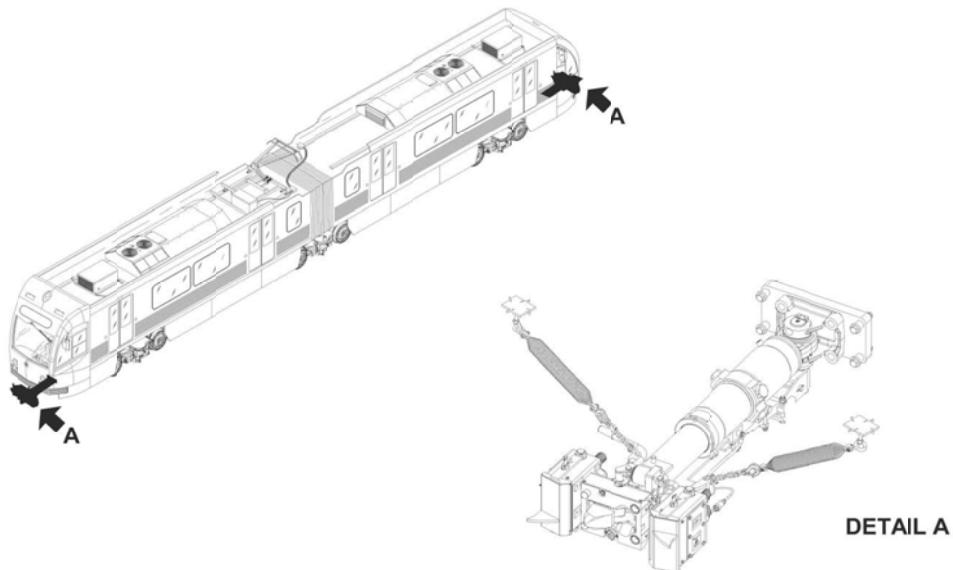
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:	R-C-03-01-01-04/R-01	
SYSTEM:	COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT:	SUPPORT SPRING ASSEMBLY PIN	MAN HOURS: 1.00
MAINTENANCE TASK:		
REPLACEMENT		
SAFETY PRECAUTIONS:		
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>		
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>		
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>		
<p>WARNING: THE COUPLER AND ITS INCLUDED PARTS ARE VERY HEAVY. IF THESE ARE NOT SUPPORTED OR LIFTED PROPERLY IT COULD RESULT IN SEVERE PERSONAL OR EQUIPMENT DAMAGE. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. USE A SUITABLE LIFTING DEVICE WHEN REMOVING OR INSTALLING HEAVY PARTS. 2. MAKE SURE THE COUPLER IS SUPPORTED ONLY IN SOLID AREAS.</p>		
TOOLS:		
Water Level Standard Tool Kit		
CONSUMABLES:		
Molykote 1000		
SPARE PARTS:		
Pin	P/N 158977	
Split Pin	P/N 5582050036	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-04/R-01	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY PIN	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Support the Coupler with suitable Support Device. <p>WARNING: MAKE SURE THE LEAF SPRING TENSION IS RELEASED. SUPPORT COUPLER, ONLY IN SOLID AREAS, TO PREVENT IT FROM FALLING WHEN THE TENSION IS RELEASED.</p> <ul style="list-style-type: none"> b. Adjust the Leaf Spring (5) until the Coupler rests on the Support by loosen the Nuts (3) and turning the Screws (4) counterclockwise holding the Nuts (3) with a Socket Wrench. Turn both screws the same number of turns. c. Remove the Split Pin (1) and pull out the Pin (2). d. Fit the new Pin (2) through the Leaf Spring (5) and mount the new Split Pin (1). e. Adjust the Leaf Spring (5) by turning the Screws (4) clockwise holding the Nuts (3) with a Socket Wrench. f. Torque the Screws (4) to 20 lb-ft (27 Nm). g. Remove the Coupler Support Device. h. Check the Couplers vertical position with a Water Level according to Sheet R-P-03-01-01-04/I-00. The Coupler should be horizontal or parallel with the rail. i. Push the Coupler and verify that it returns to its vertical position. If not, adjust the Coupler according to Sheet R-P-03-01-01-04/I-00. 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-04/R-01

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

SUPPORT SPRING ASSEMBLY PIN

MAN HOURS

1.00

MAINTENANCE TASK:

REPLACEMENT

PROCEDURE:

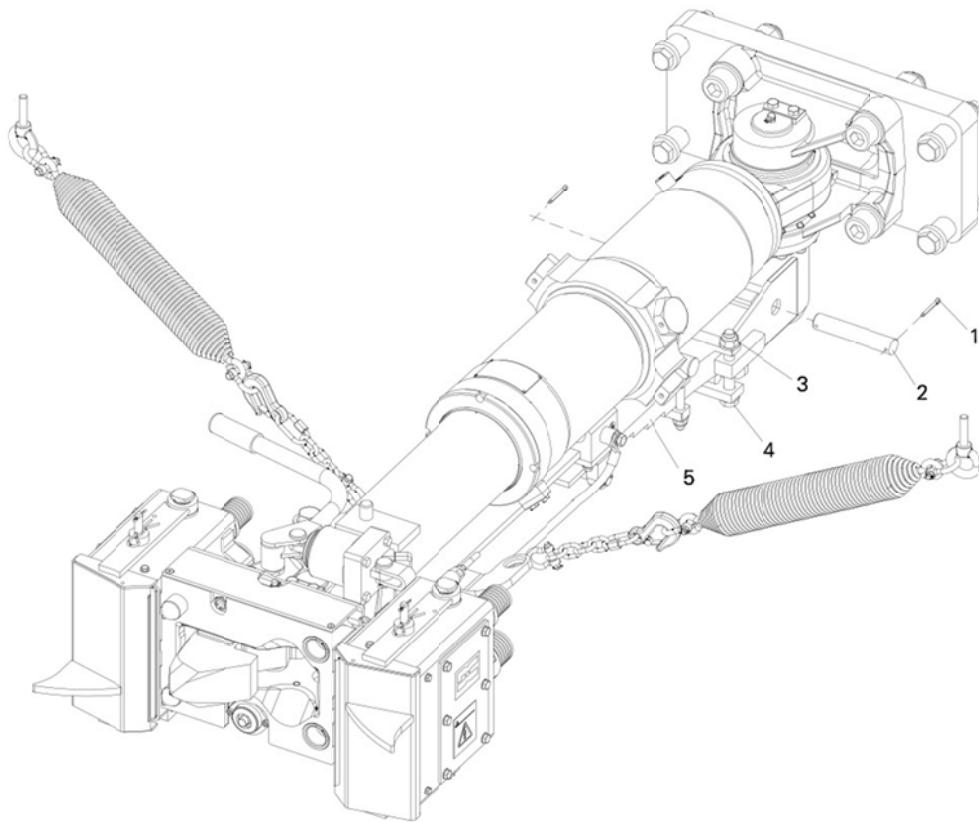


FIGURE 1 - SUPPORT SPRING ASSEMBLY PIN REPLACEMENT

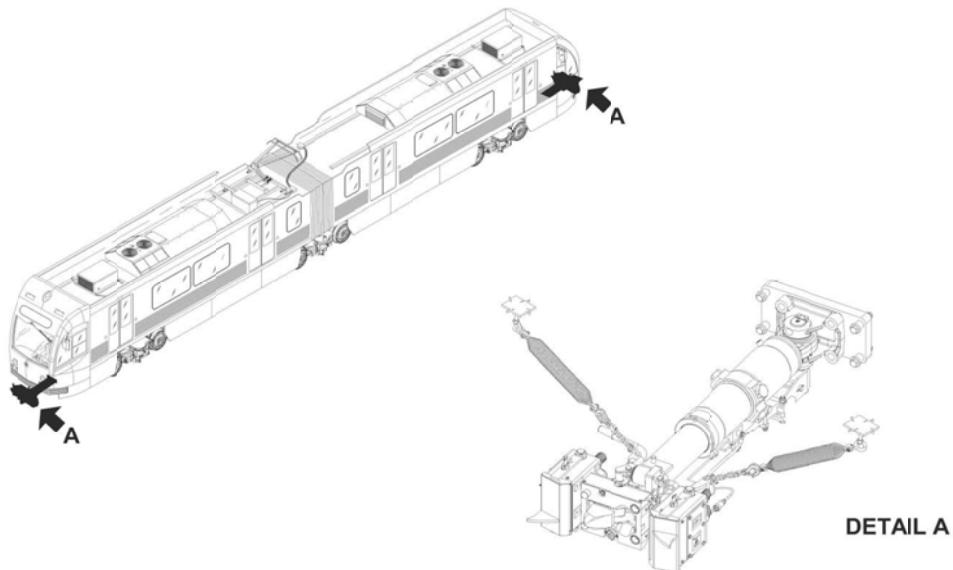
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY LOCK NUT	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-04/R-02	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY LOCK NUT	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
<p>WARNING: THE COUPLER AND ITS INCLUDED PARTS ARE VERY HEAVY. IF THESE ARE NOT SUPPORTED OR LIFTED PROPERLY IT COULD RESULT IN SEVERE PERSONAL OR EQUIPMENT DAMAGE. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. USE A SUITABLE LIFTING DEVICE WHEN REMOVING OR INSTALLING HEAVY PARTS. 2. MAKE SURE THE COUPLER IS SUPPORTED ONLY IN SOLID AREAS.</p>	
TOOLS:	
Standard Tool Kit	
CONSUMABLES:	
Gleitmo/Fuchs Lagermeister 3000+ Molykote 1000	
SPARE PARTS:	
Lock Nut	PN 5345012000 A4-80, DIN 985 M12

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-04/R-02	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY LOCK NUT	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). <p>2. REPLACEMENT</p> <p>The Lock Nut (3) replacement is included in the Spring Support Replacement procedure. Refer to Sheet R-C-03-01-01-04 /R-03.</p> <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-04/R-02SYSTEM:
COUPLERSUBSYSTEM/ASSY:
AUTOMATIC COUPLERCOMPONENT:
SUPPORT SPRING ASSEMBLY LOCK NUT

SHEET:

4/4UNIT:
MECHANICAL COUPLERMAN HOURS
1.00

MAINTENANCE TASK:

REPLACEMENT

PROCEDURE:

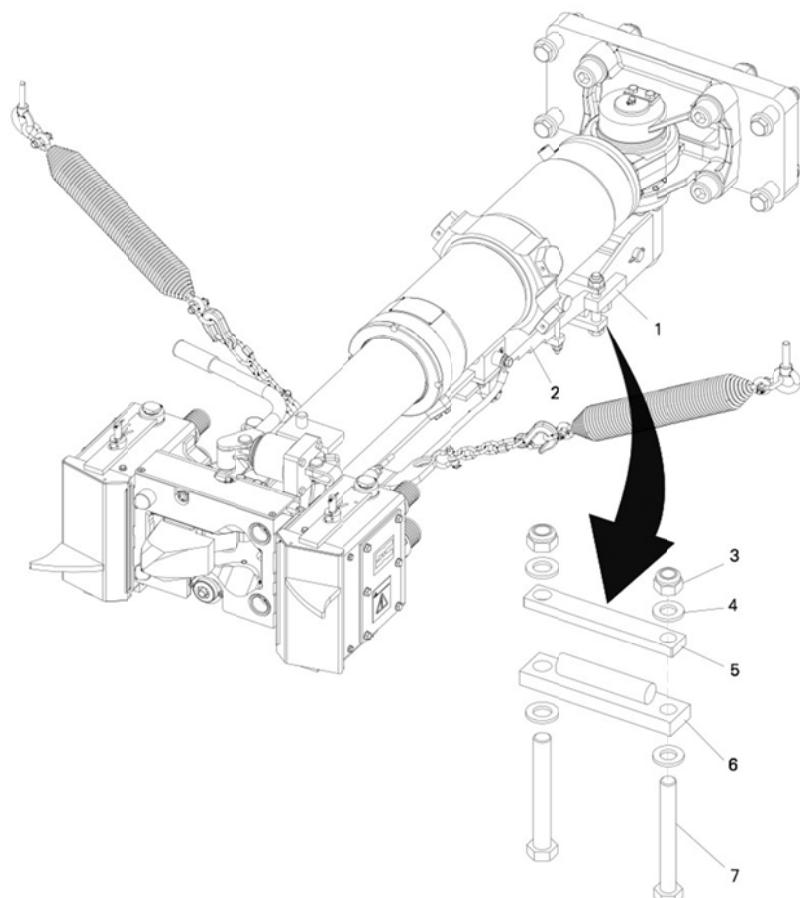


FIG 1 SUPPORT SPRING ASSEMBLY LOCK NUT REPLACEMENT

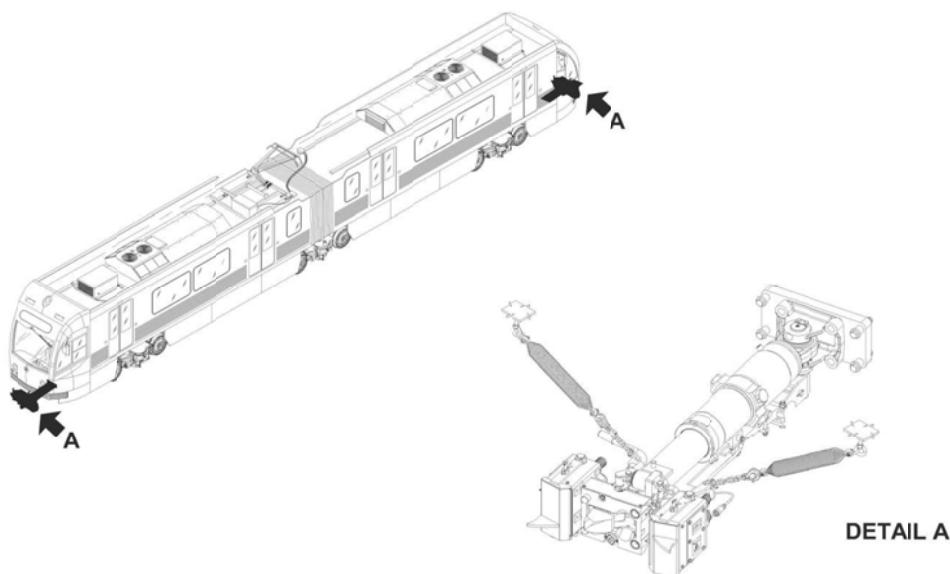
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY SPRING SUPPORT	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-04/R-03	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY SPRING SUPPORT	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.	
WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.	
WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.	
WARNING: THE COUPLER AND ITS INCLUDED PARTS ARE VERY HEAVY. IF THESE ARE NOT SUPPORTED OR LIFTED PROPERLY IT COULD RESULT IN SEVERE PERSONAL OR EQUIPMENT DAMAGE. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. USE A SUITABLE LIFTING DEVICE WHEN REMOVING OR INSTALLING HEAVY PARTS. 2. MAKE SURE THE COUPLER IS SUPPORTED ONLY IN SOLID AREAS.	
TOOLS:	
Water Level	Standard Tool Kit
CONSUMABLES:	
Gleitmo/Fuchs Lagermeister 3000+	Molykote 1000
SPARE PARTS:	
Spring Support	P/N 158978
Washer	PN 5477170000 , A4, ISO 7089 17X30X3
Hex. Head Screw Fully Thr	PN 5018016120 , A4-80, ISO 4014 M16x12

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-01-04/R-03	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY SPRING SUPPORT	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
1. PRELIMINARY OPERATIONS	
<ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
2. REPLACEMENT	
<ul style="list-style-type: none"> a. Support the Coupler with suitable Support Device <p>WARNING: MAKE SURE THE LEAF SPRING TENSION IS RELEASED. SUPPORT COUPLER, ONLY IN SOLID AREAS, TO PREVENT IT FROM FALLING WHEN THE TENSION IS RELEASED.</p> <ul style="list-style-type: none"> b. Remove the Spring Support (6) by unscrewing and removing the Lock Nuts (3), the Screws (7), the Holder (5) and Washers (4). c. Discard the Spring Support (6), Lock Nuts (3), the Screws (7) and the Washers (4). d. Fit the new Screws (7) and the new Washers (4) to the new Spring Support (6). e. Grease the Screws (7) with Gleitmo/Fuchs Lagermeister 3000+ (or equal) and mount the Screws to the Leaf Spring Bracket (1). f. Fit the Holder (5), the new Washers (4) and mount the new Nuts (3). g. Adjust the Leaf Spring (2) by turning the Screws (7) clockwise holding the Nuts (3) with a Socket Wrench. h. Torque the Screws (7) to 20 lb-ft (27 Nm). i. Remove the Coupler Support Device. 	
3. FINAL OPERATIONS	
<ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-04/R-03SYSTEM:
COUPLERSHEET:
4/4SUBSYSTEM/ASSY:
AUTOMATIC COUPLERUNIT:
MECHANICAL COUPLERCOMPONENT:
SUPPORT SPRING ASSEMBLY SPRING SUPPORT MAN HOURS
1.00

MAINTENANCE TASK:

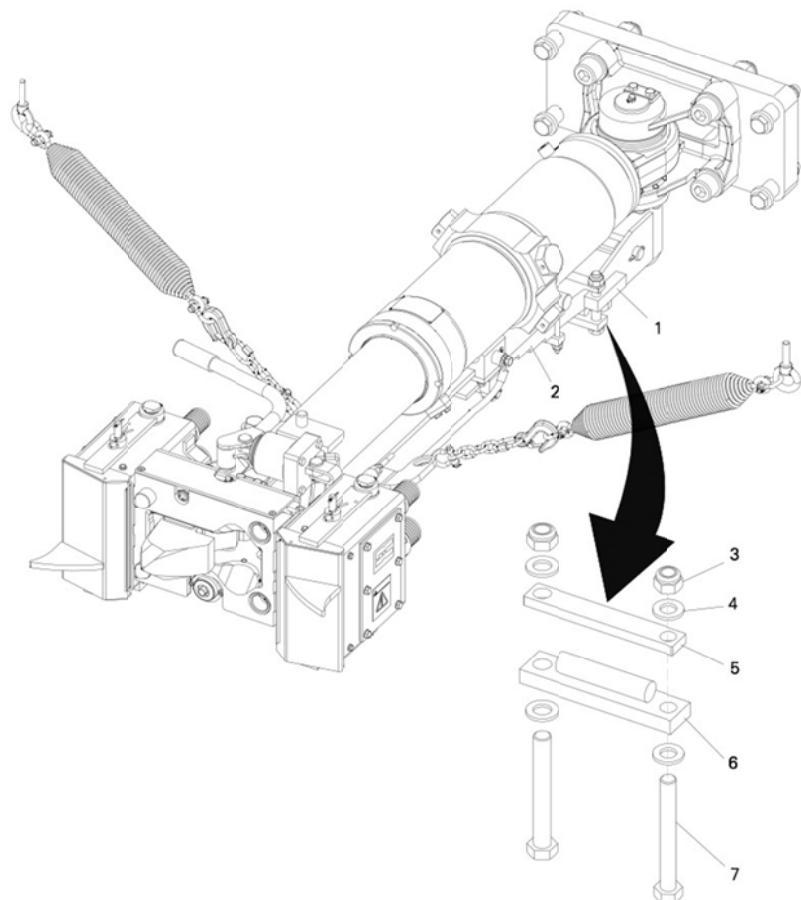
REPLACEMENT**PROCEDURE:**

FIGURE 1 - SUPPORT SPRING ASSEMBLY SPRING SUPPORT REPLACEMENT

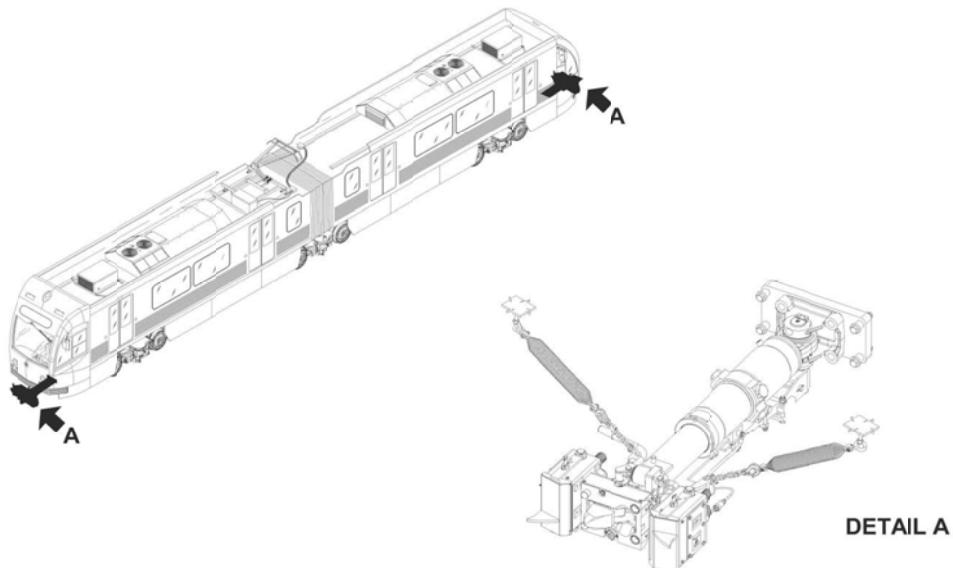
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY HOLDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-01-04/R-04	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY HOLDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
<p>WARNING: THE COUPLER AND ITS INCLUDED PARTS ARE VERY HEAVY. IF THESE ARE NOT SUPPORTED OR LIFTED PROPERLY IT COULD RESULT IN SEVERE PERSONAL OR EQUIPMENT DAMAGE. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. USE A SUITABLE LIFTING DEVICE WHEN REMOVING OR INSTALLING HEAVY PARTS. 2. MAKE SURE THE COUPLER IS SUPPORTED ONLY IN SOLID AREAS.</p>	
TOOLS:	
Water Level Standard Tool Kit	
CONSUMABLES:	
Gleitmo/Fuchs Lagermeister 3000+ Molykote 1000	
SPARE PARTS:	
Holder P/N 158981	

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-03-01-01-04/R-04	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY HOLDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>REPLACEMENT</p> <ul style="list-style-type: none"> a. Support the Coupler WITH SUITABLE Support Device. <p>WARNING: MAKE SURE THE LEAF SPRING TENSION IS RELEASED. SUPPORT COUPLER, ONLY IN SOLID AREAS, TO PREVENT IT FROM FALLING WHEN THE TENSION IS RELEASED.</p> <ul style="list-style-type: none"> b. Remove the Spring Support (6) by unscrewing Nuts (3), Screws (7). c. Remove the Holder (5) and Washers (4). d. Fit the Screws (7) and Washers (4) to the Spring Support (6). e. Grease the Screws (7) with Gleitmo/Fuchs Lagermeister 3000+. (or equal) and mount the Screws to the Leaf Spring Bracket (1). f. Fit the new Holder (5), Washers (4) and mount the Nuts (3). g. Adjust the Leaf Spring (2) by turning the Screws (7) clockwise holding the Nuts (3) with a socket wrench. h. Torque the Screws (7) to 20 lb-ft (27 Nm). i. Remove the Coupler Support Device. 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-04/R-04

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

SUPPORT SPRING ASSEMBLY HOLDER

MAN HOURS

1.00

MAINTENANCE TASK:

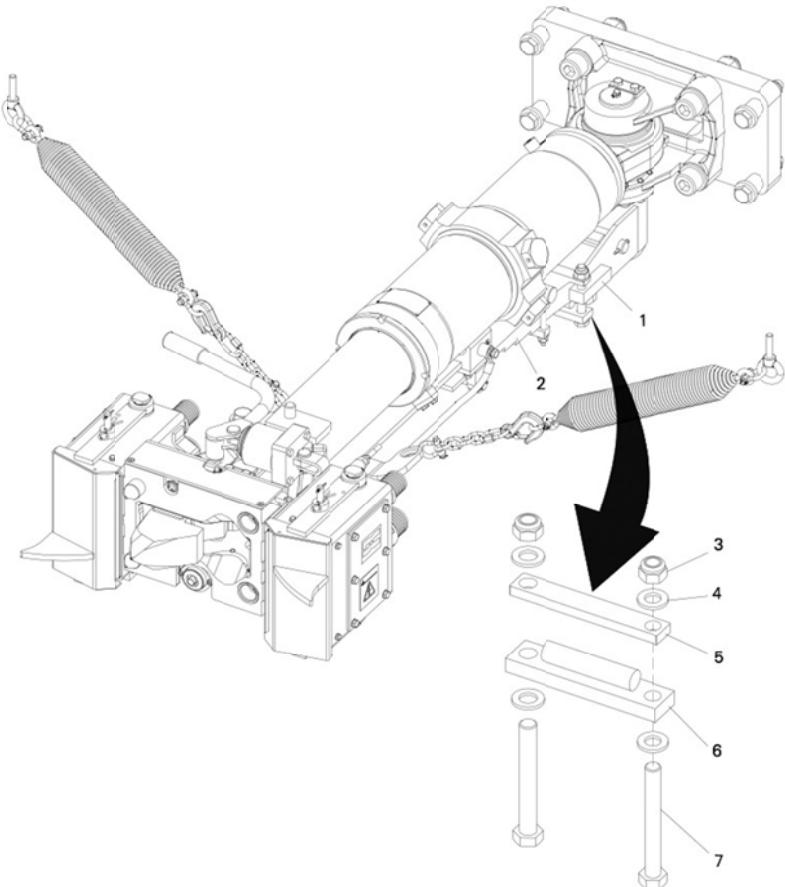
REPLACEMENT**PROCEDURE:**

FIGURE 1 - SUPPORT SPRING ASSEMBLY HOLDER REPLACEMENT

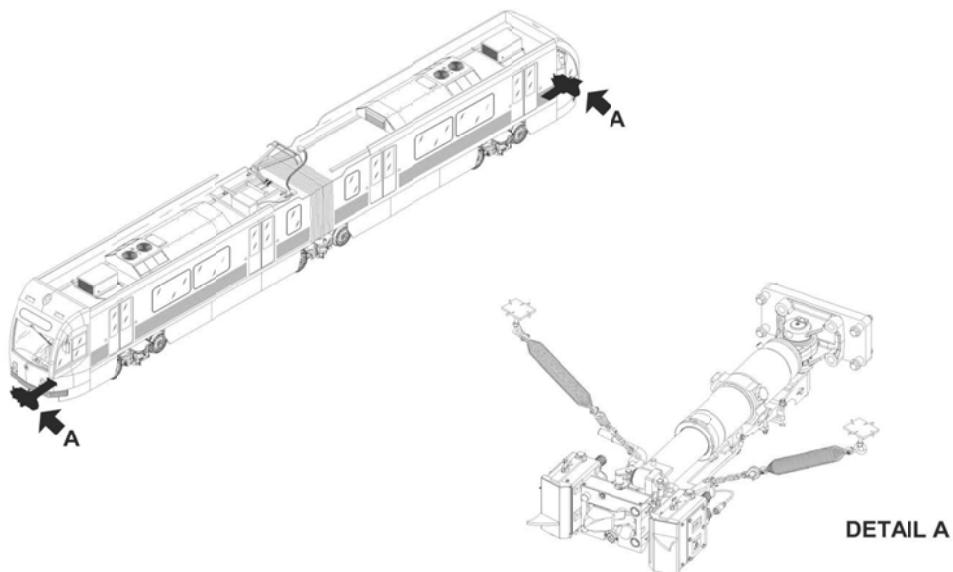
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY HEX HEAD SCREW	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET			
CARD CODE: R-C-03-01-01-04/R-05			
SYSTEM: COUPLER		SHEET: 2/4	
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER		
COMPONENT: SUPPORT SPRING ASSEMBLY HEX HEAD SCREW	MAN HOURS: 1.00		
MAINTENANCE TASK: REPLACEMENT			
SAFETY PRECAUTIONS:			
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p> <p>WARNING: THE COUPLER AND ITS INCLUDED PARTS ARE VERY HEAVY. IF THESE ARE NOT SUPPORTED OR LIFTED PROPERLY IT COULD RESULT IN SEVERE PERSONAL OR EQUIPMENT DAMAGE. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. USE A SUITABLE LIFTING DEVICE WHEN REMOVING OR INSTALLING HEAVY PARTS. 2. MAKE SURE THE COUPLER IS SUPPORTED ONLY IN SOLID AREAS.</p>			
TOOLS: Standard Tool Kit			
CONSUMABLES: Gleitmo/Fuchs Lagermeister 3000+ Molykote 1000			
SPARE PARTS: Hex. Head Screw Fully Thr PN 5018016120 , A4-80, ISO 4014 M16x12			

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-03-01-01-04/R-05	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: MECHANICAL COUPLER
COMPONENT: SUPPORT SPRING ASSEMBLY HEX HEAD SCREW	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). <p>2. REPLACEMENT</p> <p>The Hex Head Screw (7) replacement is included in the Spring Support Replacement procedure. Refer to Sheet R-C-03-01-01-04 /R-03.</p> <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-01-04/R-05

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

MECHANICAL COUPLER

COMPONENT:

SUPPORT SPRING ASSEMBLY HEX HEAD SCREW

MAN HOURS

1.00

MAINTENANCE TASK:

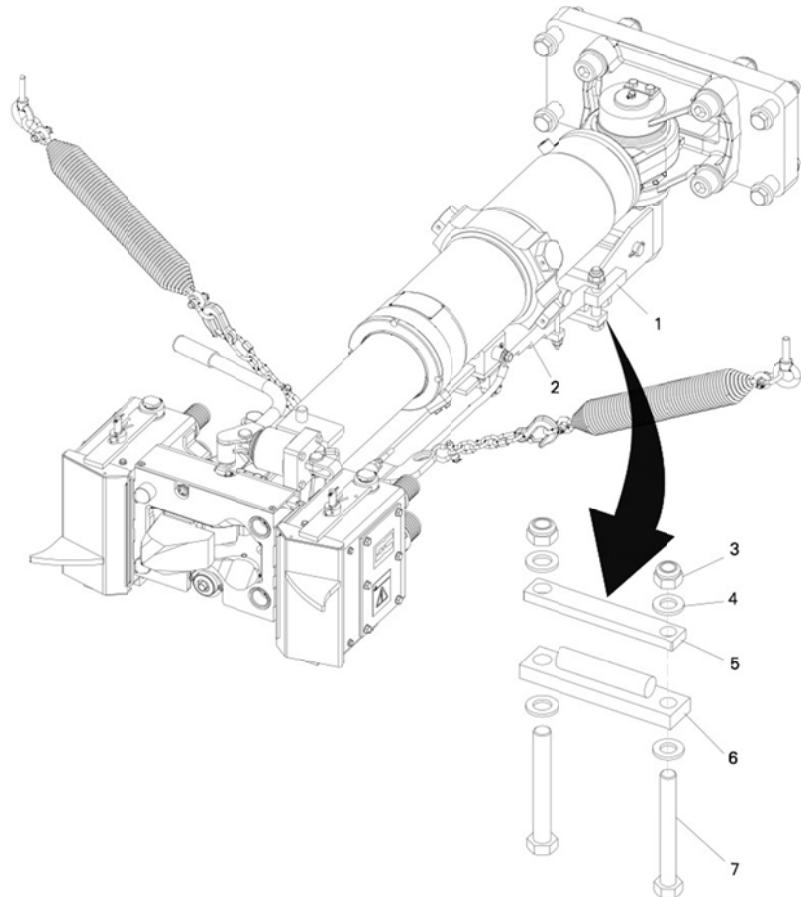
REPLACEMENT**PROCEDURE:**

FIGURE 1 SUPPORT SPRING ASSEMBLY HEX HEAD SCREW REPLACEMENT

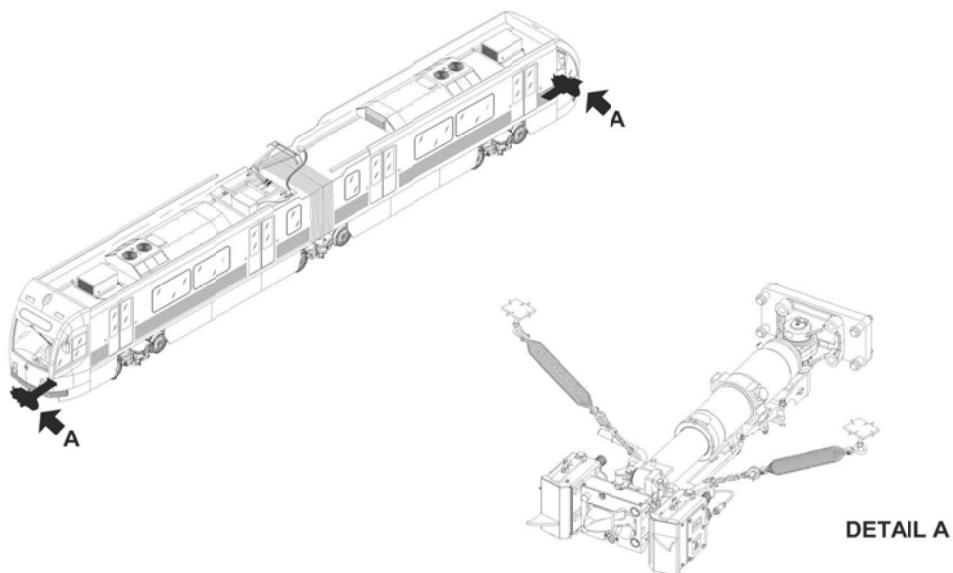
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: CENTERING SPRINGS ASSY
COMPONENT: CENTERING SPRINGS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-02-01/R-00	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: CENTERING SPRINGS ASSY
COMPONENT: CENTERING SPRINGS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS: Centering Spring P/N 1010620	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-02-01/R-00	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: CENTERING SPRINGS ASSY
COMPONENT: CENTERING SPRINGS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
1. PRELIMINARY OPERATIONS	
<ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
2. REPLACEMENT	
<ul style="list-style-type: none"> a. Disconnect the Spring (2) from the Snap Hook (3). <p>NOTE: By pushing the Coupler towards the same side as the Spring unhooking the Snap Hook can be made easier.</p> <ul style="list-style-type: none"> b. Remove the Chain with Snap Hook (3) from the Coupler by disconnecting the Shackle (4) from the fitting on the Guide Rail (5). c. Remove the Spring (2) from the Vehicle Underframe by disconnecting the Eye Bolt (1). d. Fit the Spring (2) to the Vehicle Underframe by mounting the Eye Bolt (1). e. Fit the Chain with Snap Hook (3) to the Coupler by mounting the Shackle (4) to the fitting on the Guide Rail (5). f. Connect the Spring (2) to the Snap Hook (3). <p>NOTE: By pulling the Coupler towards the same side as the Spring hooking of the Snap Hook can be made easier.</p> <ul style="list-style-type: none"> g. Push the Coupler horizontally to the side and ensure that it returns to its centered position. 	
3. FINAL OPERATIONS	
<ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-02-01/R-00

SYSTEM:

COUPLERS

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

CENTERING SPRINGS ASSY

COMPONENT:

CENTERING SPRINGS

MAN HOURS

1.00

MAINTENANCE TASK:

REPLACEMENT

PROCEDURE:

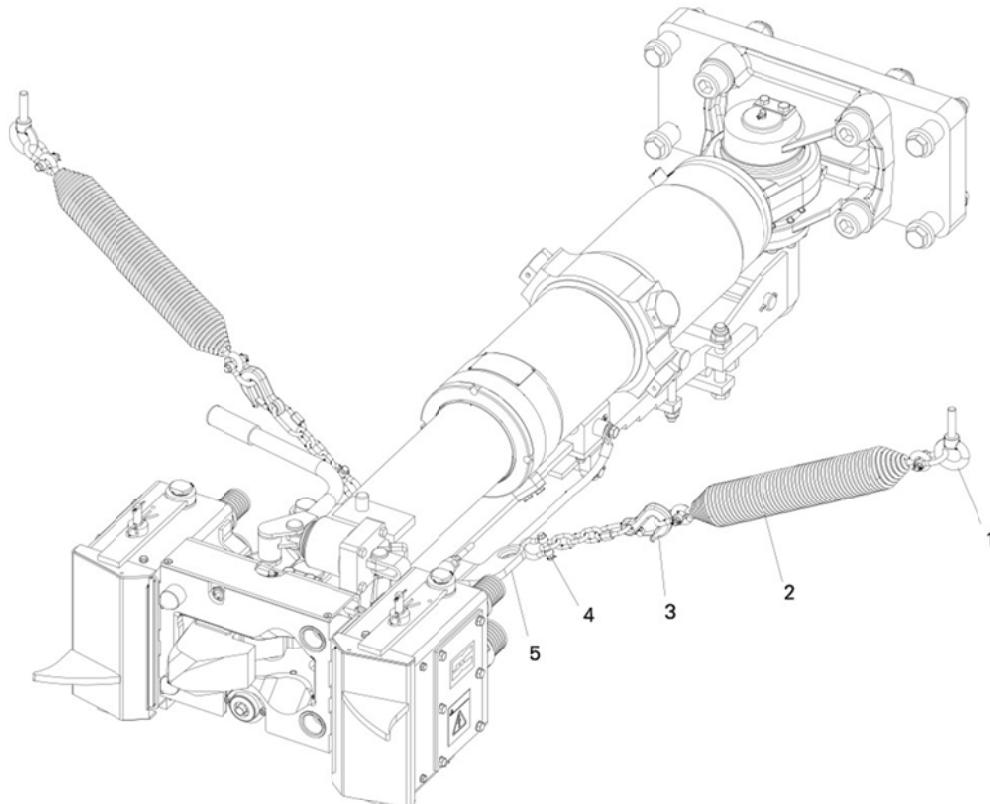


FIGURE 1 - CENTERING SPRINGS REPLACEMENT

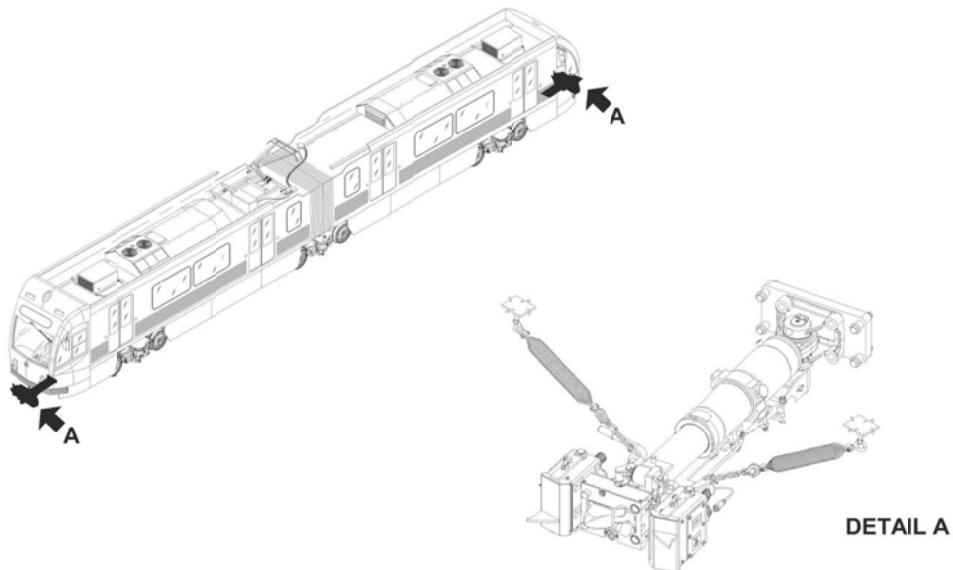
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEAD (LEFT)	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-03-01/R-00	
SYSTEM: COUPLER	SHEET: 2/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEAD (LEFT)	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS:	
Electrical Head (Left) Cable Tie	P/N 1008883 P/N 152651

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-03-01/R-00	
SYSTEM: COUPLER	SHEET: 3/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEAD (LEFT)	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>1. REPLACEMENT</p> <ul style="list-style-type: none"> a. Disconnect the Electrical Cables (12) from the Vehicle. b. Remove the Plate (2) by removing the four Screws (1). c. Disconnect the Switch Cable Contact (9) from the back of the Electrical Coupler Left (13). d. Remove the Ground Cable (18) by removing the Screw (14), Lock Washer (15) and Washers (16). e. Remove the Split Pin (6) and Pin (7) holding the Uncoupling Cylinder (5) to the Electrical Coupler Bracket (8). f. Support the Electric Coupler Left (13) properly to ensure that it will not fall when released from the Coupler Head (19). <p>WARNING: THE ELECTRIC COUPLER LEFT IS HEAVY, BE CAREFUL WHEN REMOVING IT FROM THE COUPLER.</p> <ul style="list-style-type: none"> g. Remove the Nuts (3), Screws (11) and Washers (4 and 10) securing the Electrical Coupler to the Mechanical Coupler Head and pull the Electrical Coupler Left (13) off from the Mechanical Coupler Head (19). h. Remove and discard the two Parallel Pins (17). <p>CAUTIONS: REPLACE ALL FASTENERS AND RUBBER PARTS. NEVER REUSE THE TWO PARALLEL PINS).</p> <ul style="list-style-type: none"> i. Fit the two Parallel Pins (17) to the Coupler Head (19). j. Fit the Electrical Coupler Left (13) to the Mechanical Coupler Head (19) and mount the Locking Nuts (3) and Washers (4). 	

P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-03-01/R-00	
SYSTEM: COUPLER	SHEET: 4/6
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEAD (LEFT)	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE: REPLACEMENT (CONT'D)	
<p>k. Mount the Screw (11) and Washer (10).</p> <p>l. Fit the Uncoupling Cylinder (5) to the Electrical Coupler Bracket (8) and mount the Pin (7) and Split Pin (6).</p> <p>m. Fit the Ground Cable (18) to the Electrical Coupler Left (13) and mount the Screw (14), Lock Washer (15) and Washer (16).</p> <p>n. Connect the Switch Cable Contact (9) to the back of the Electrical Coupler Left (13).</p> <p>NOTE: Fasten the Switch Cable to the Bracket of the Electrical Coupler with Cable Tie.</p>	
<p>3. FINAL OPERATIONS</p> <p>a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler.</p> <p>b. Restore Electrical Power to the Coupler.</p> <p>c. Record Task Results on the Defect Report Card for administrative and maintenance planning.</p> <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 03-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion".</p>	

P2550 CORRECTIVE MAINTENANCE SHEET

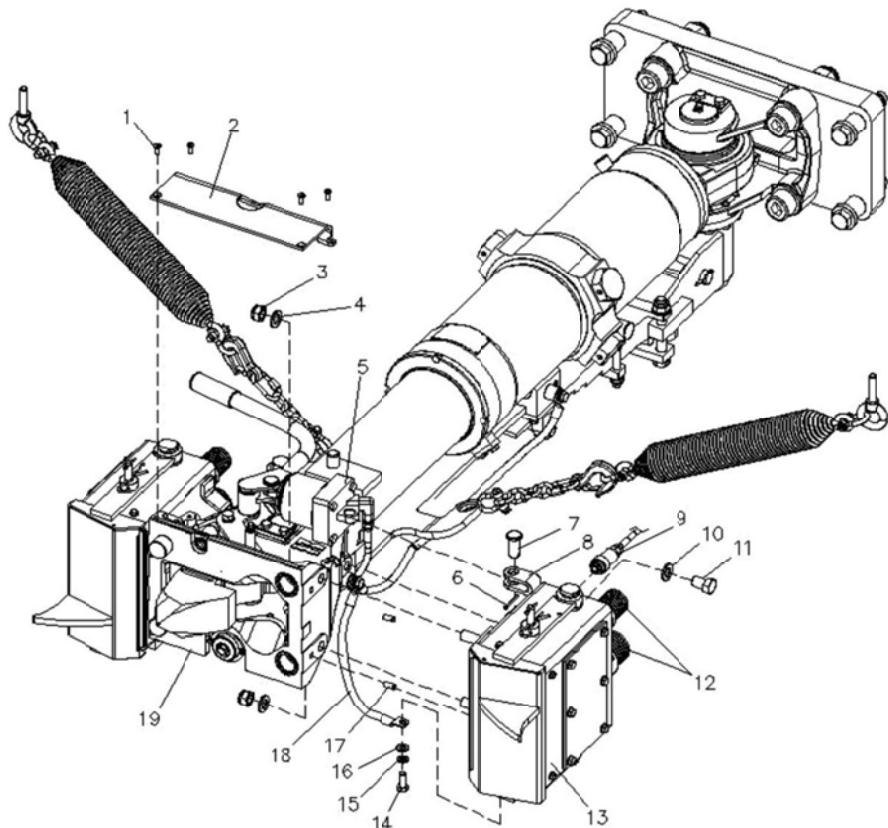
CARD CODE:

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

SYSTEM: COUPLER	SHEET: 5/6
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SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
---	------------------------------------

COMPONENT: ELECTRICAL HEAD (LEFT)	MAN HOURS: 1
---	------------------------

 MAINTENANCE TASK:
REPLACEMENT
PROCEDURE:

FIGURE 1 - ELECTRICAL HEAD (LEFT) REPLACEMENT

P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM:

COUPLERS

SHEET:

6/6

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

ELECTRICAL COUPLER

COMPONENT:

ELECTRICAL HEAD (LEFT)

MAN HOURS:

MAINTENANCE TASK:

REPLACEMENT**INTENTIONALLY LEFT
BLANK**

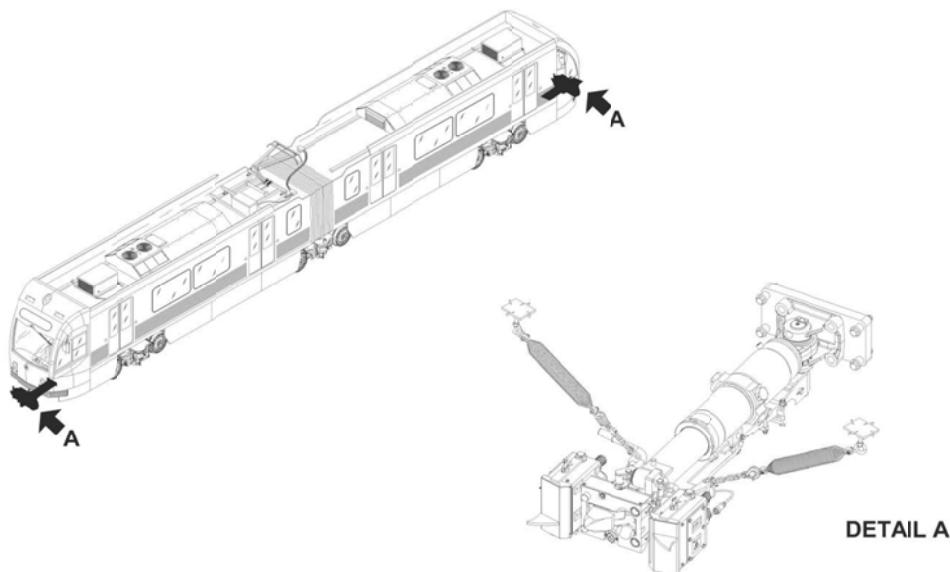
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-03-01/R-01

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS CONTACTS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-03-01/R-01	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS CONTACTS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p> <p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p> <p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool kit Insertion/Extraction Pliers P/N 1013616	
CONSUMABLES:	
SPARE PARTS: Contact P/N 184789	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-03-01/R-01	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS CONTACTS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <p>NOTE : The following Instructions are applicable for :</p> <ul style="list-style-type: none"> • Electric Coupler Left, 1008883 • Electric Coupler Right, 1008885 <p>a. Pull out the Cutter Pin (1). b. Put the Cover (2) in open position as shown in Figure 1 B.</p> <p>NOTE: Ensure that the Bolt (4) drops down and locks against the Electric Coupler (3) preventing the Cover (2) from closing.</p> <p>c. Remove the Contact (5) by using a pair of Insertion/Extraction Pliers. d. Mount the Contact (5) by pushing it into position by using the Insertion/Extraction Pliers. e. Make sure that the Contact is pushed to a distinct stop. f. Open the Cover (2) to release the Bolt (4) and press it upwards. Carefully close the Cover (2). g. Fit the Cutter Pin (1) securing the Bolt (4) in upward position as shown in Detail A.</p>	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-03-01/R-01

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

ELECTRICAL COUPLER

COMPONENT:

ELECTRICAL HEADS CONTACTS

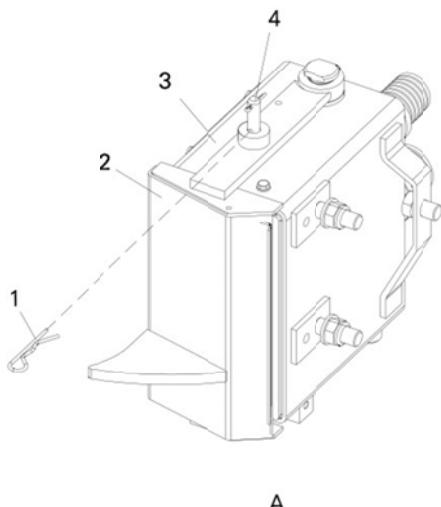
MAN HOURS

1.00

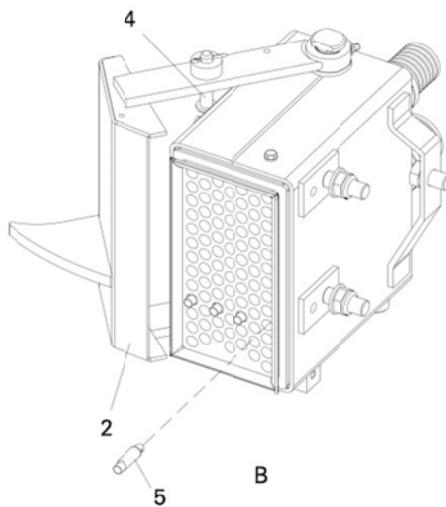
MAINTENANCE TASK:

REPLACEMENT

PROCEDURE:



Electrical Head (Cover Closed)



Electrical Head (Cover Open)

FIGURE 1 - ELECTRICAL HEADS CONTACTS REPLACEMENT

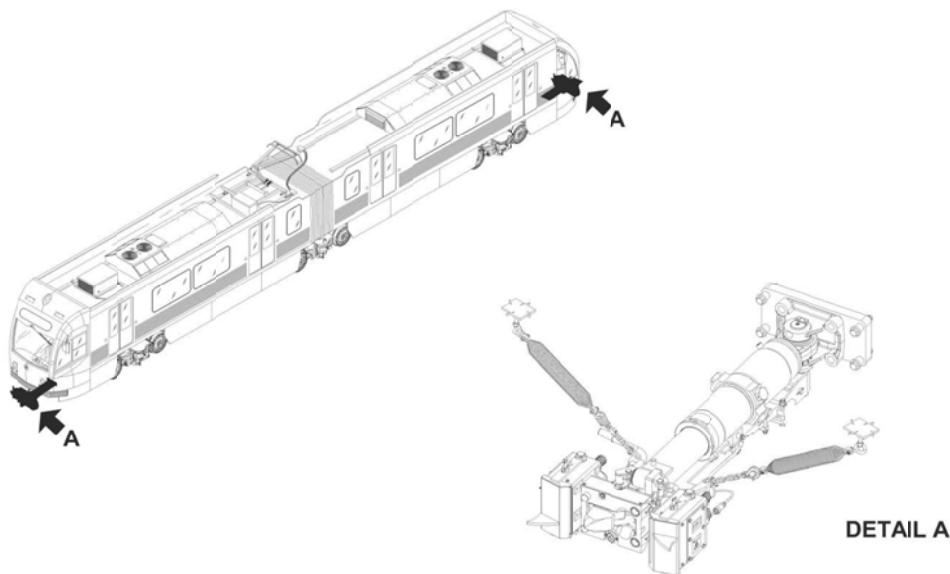
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-03-01/R-07

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS FRONT SEAL	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-03-01/R-07	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS FRONT SEAL	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS:	
Standard Toolkit	
CONSUMABLES:	
Soapy Water	
SPARE PARTS:	
Front Seal P/N 169961	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-03-01/R-07	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS FRONT SEAL	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <p>NOTE : The following Instructions are applicable for :</p> <ul style="list-style-type: none"> • Electric Coupler Left, 1008883 • Electric Coupler Right, 1008885 <p>a. Pull out the Cutter Pin (1).</p> <p>b. Put the Cover (2) in open position as shown in Figure 1B.</p> <p>NOTE: Ensure that the Bolt (4) drops down and locks against the Electric Coupler Housing (3) preventing the Cover (2) from closing.</p> <p>c. Release the Contact Device (7) by removing the four Screws (6) and Washers (5).</p> <p>NOTE: It is not necessary to pull the Contact Device (7) completely out of the Electrical Coupler Housing (3) to remove the Front Seal (8).</p> <p>d. Pull the Front Seal (8) off the Contact Device (7).</p> <p>e. Carefully fit the new Front Seal (8) on the Contact Device (7). Fitting can be made easier by using Soapy Water.</p> <p>f. At the lower end of the Front Seal (8) cut two drain holes (9 and 10).</p> <p>g. Fit the Contact Device and Front Seal Assembly into the Electrical Coupler Housing (3) and mount the four Screws (6) and Washers (5).</p> <p>h. Open the Cover (2) to release the Bolt (4) and press it upwards. Carefully close the Cover (2).</p> <p>i. Fit the Cutter Pin (1) securing the Bolt (4) in upward position as shown in Detail A.</p>	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-03-01/R-07SYSTEM:
COUPLER

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

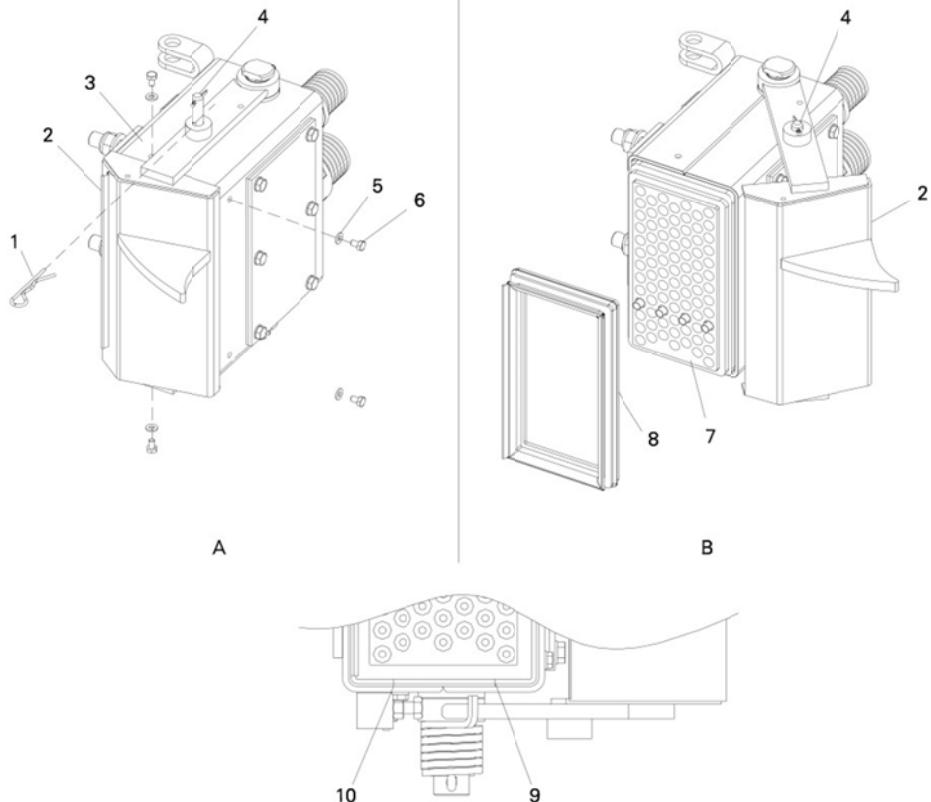
COMPONENT:

ELECTRICAL HEADS FRONT SEAL

SHEET:

4/4

MAINTENANCE TASK:

REPLACEMENT**PROCEDURE:****A** Electric Coupler (Cover Closed)**B** Electric Coupler (Cover Open)**FIGURE 1 - ELECTRICAL HEADS FRONT SEAL REPLACEMENT**

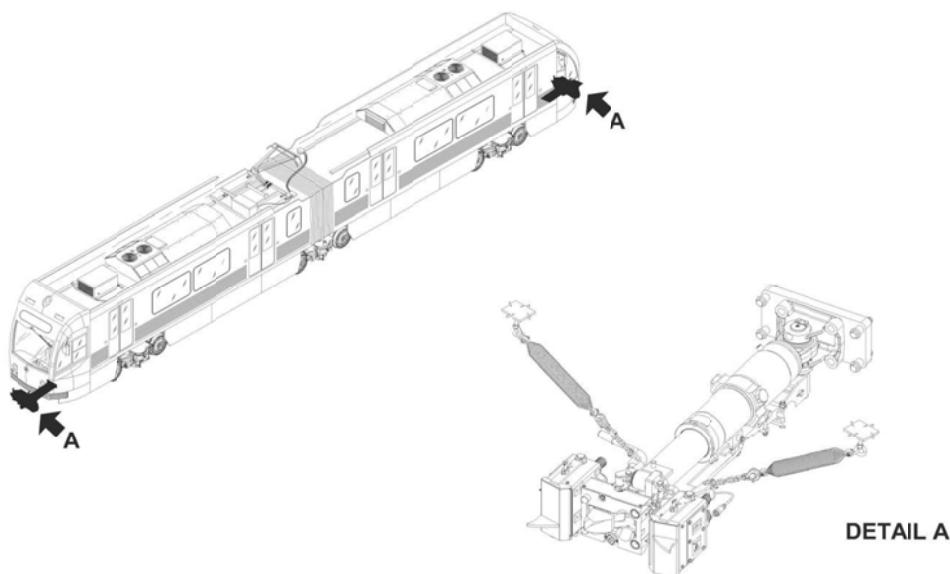
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-03-01/R-08

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS PROTECTING COVER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-03-01/R-08	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS PROTECTING COVER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Toolkit	
CONSUMABLES: Gleitmo/Fuchs Lagermesiter 3000+ Silicone	
SPARE PARTS: Protecting Cover P/N 1009456	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-03-01/R-08	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS PROTECTING COVER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE: <ol style="list-style-type: none"> 1. PRELIMINARY OPERATIONS <ol style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 2. REPLACEMENT <p>NOTE : The following Instructions are applicable for :</p> <ul style="list-style-type: none"> • Electric Coupler Left, 1008883 • Electric Coupler Right, 1008885 <ol style="list-style-type: none"> a. Remove the Side Cover and Side Seal according to Sheet R-C-03-01-03-01/R-10. b. Remove the Split Pin (12) and remove the Spring (11). c. Remove the Split Pins (9) and pull up the Pin (10) and Tap (8). d. Remove the Bearings (7) and O-Rings (6). e. Remove the Cover (1). f. Pull Spring Pin (3) and Cotter Pin (2) and remove the Bolt (13). g. Remove Grease Fittings (4). h. Fit Grease Fittings (4) to the Cover (1). <p>NOTE: Ensure that there are no dirt in the Grease Fittings (4) and/or the fittings on the Cover (1).</p> <ol style="list-style-type: none"> i. Fit Bolt (13) to the Cover (1) and mount the Cotter Pin (2) and Spring Pin (3). j. Fit the Cover (1) to the Electric Coupler Housing (5) and mount the two Bearings (7), O-Rings (6), the Pin (10) and Tap (8) with the Split Pins (9). k. Fit the Spring (11) to the Pin (13) and mount the Split Pin (12). l. Fit the Side Cover (1) (Refer to Maintenance Sheet R-C-03-01-03-01/R-10). m. Seal the Upper Hole in the Cover (1) with Silicone. n. Check the movement of the Cover by open and closing it manually. 3. FINAL OPERATIONS <ol style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-03-01/R-08

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

ELECTRICAL COUPLER

COMPONENT:

ELECTRICAL HEADS PROTECTING COVER

MAN HOURS:

1.00

MAINTENANCE TASK:

REPLACEMENT

PROCEDURE:

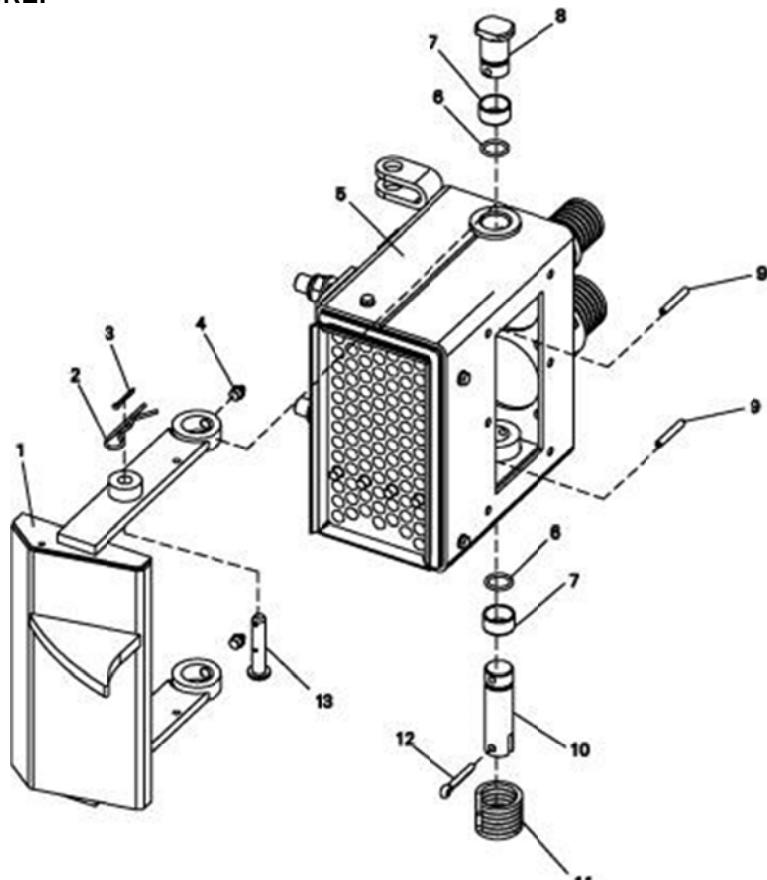


FIGURE 1 - ELECTRICAL HEADS PROTECTING COVER REPLACEMENT

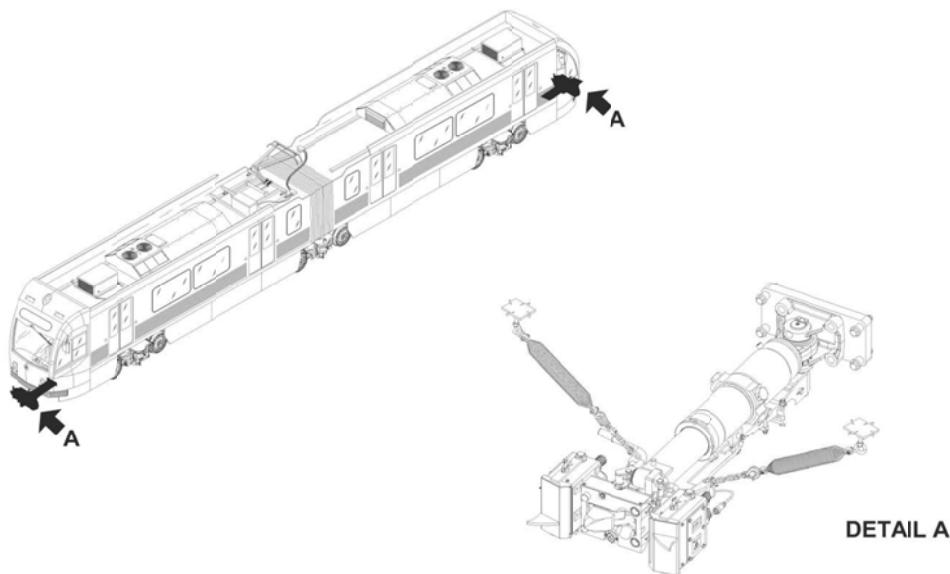
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-03-01/R-09

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS SIDE SEAL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-03-01/R-09	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS SIDE SEAL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS: Side Seal P/N 169959	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-03-01/R-09	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS SIDE SEAL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>REPLACEMENT</p> <p>NOTE : The following Instructions are applicable for :</p> <ul style="list-style-type: none"> • Electric Coupler Left, 1008883 • Electric Coupler Right, 1008885 <ul style="list-style-type: none"> a. Remove the Side Cover (2) and the Side Seal (1) from the Electric Coupler Housing (7) by removing the six Screws (4) and Washers (3). b. Discard the Side Seal (1). c. Fit the Side Seal (1) and Side Cover (2) to the Electric Coupler Housing (7) and mount the Washers (3) and Screws (4). 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-03-01/R-09

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

ELECTRICAL COUPLER

COMPONENT:

ELECTRICAL HEADS SIDE SEAL

MAN HOURS

1.00

MAINTENANCE TASK:

REPLACEMENT

PROCEDURE:

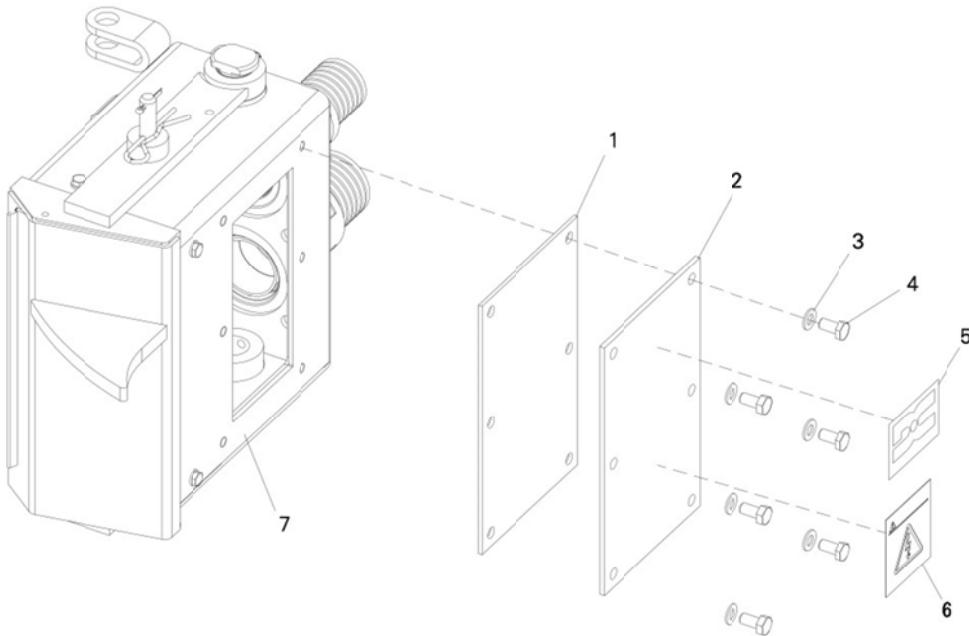


FIGURE 1 - ELECTRICAL HEADS SIDE SEAL REPLACEMENT

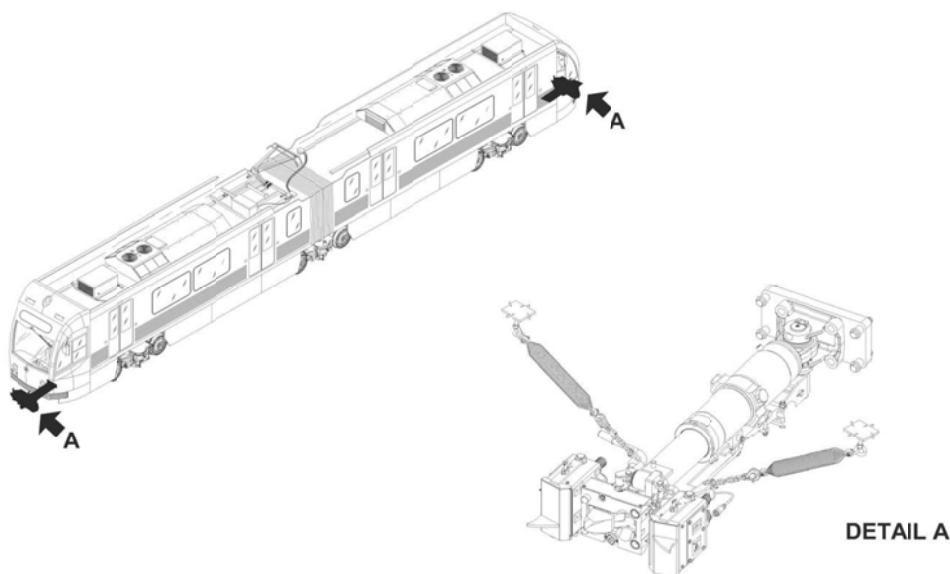
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-03-01/R-10

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS SIDE COVER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-03-01-03-01/R-10

SYSTEM: COUPLER	SHEET: 2/4
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SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
---	------------------------------------

COMPONENT: ELECTRICAL HEADS SIDE COVER	MAN HOURS: 1.00
--	---------------------------

MAINTENANCE TASK:

REPLACEMENT

SAFETY PRECAUTIONS:

WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT.
TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.

WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE.
IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY.
TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE.
2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED.
3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE.
THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.

WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS.
2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.

TOOLS:

Standard Toolkit

CONSUMABLES:

SPARE PARTS:

Side Cover P/N 169958
 DC Logo Sticker P/N 1006717
 Warning Decal P/N 183210

P2550 CORRECTIVE MAINTENANCE SHEET	
Card Code: R-C-03-01-03-01/R-10	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS SIDE COVER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <p>NOTE : The following Instructions are applicable for :</p> <ul style="list-style-type: none"> • Electric Coupler Left, 1008883 • Electric Coupler Right, 1008885 <ul style="list-style-type: none"> a. Remove Side Cover (2) and Side Seal (1) from the Electric Coupler Housing (7) by removing the six Screws (4) and Washers (3). b. Fit the Side Seal (1) and the new Side Cover (2) to the Electric Coupler Housing (7) and mount the Washers (3) and Screws (4). c. To complete the new Side Cover replacement apply on it the new DC Logo Sticker (5) and Warning Decal (6). 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-03-01/R-10

SYSTEM: COUPLER	SHEET: 4/4
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SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
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COMPONENT: ELECTRICAL HEADS SIDE COVER	MAN HOURS 1.00
--	--------------------------

MAINTENANCE TASK:

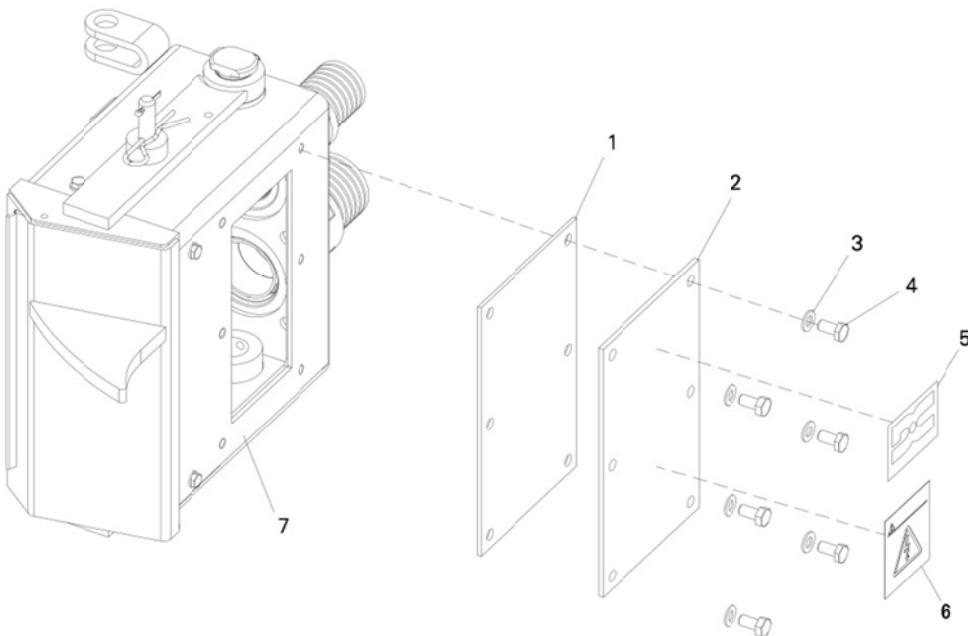
REPLACEMENT**PROCEDURE:**

FIGURE 1 - ELECTRICAL HEADS SIDE COVER REPLACEMENT

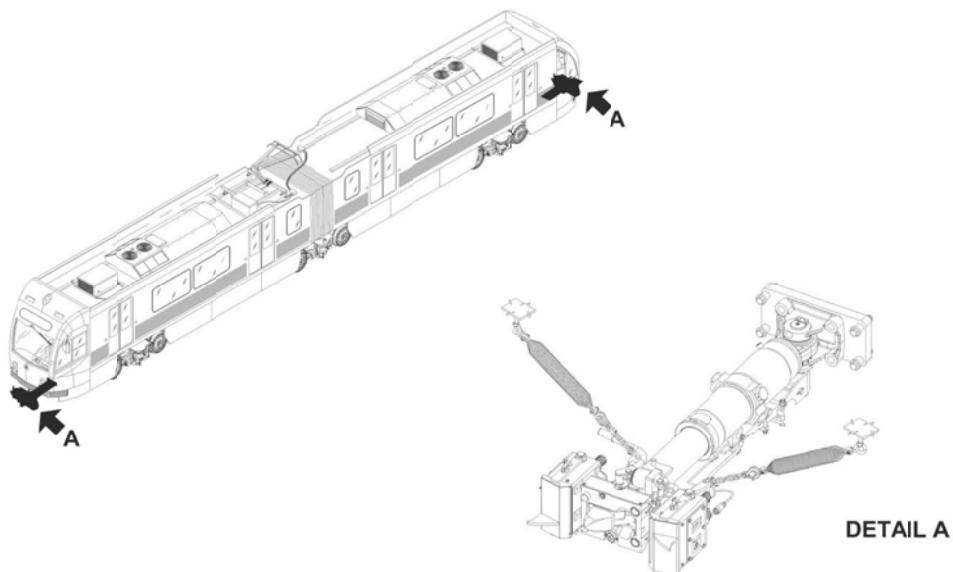
P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-03-01-03-01/R-12

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS TORSION SPRING	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-03-01/R-12	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS TORSION SPRING	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS: Torsion Spring P/N 169972	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-03-01/R-12	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEADS TORSION SPRING	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>REPLACEMENT</p> <p>NOTE : The following Instructions are applicable for :</p> <ul style="list-style-type: none"> • Electric Coupler Left, 1008883 • Electric Coupler Right, 1008885 <ul style="list-style-type: none"> a. Remove the Split Pin (2) and remove the Torsion Spring (1). b. Fit the Torsion Spring (1) and mount the Split Pin (2). 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-03-01/R-12	
SYSTEM:	COUPLER	SHEET: 4/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT:	ELECTRICAL HEADS TORSION SPRING	MAN HOURS 1.00
MAINTENANCE TASK:	REPLACEMENT	

PROCEDURE:

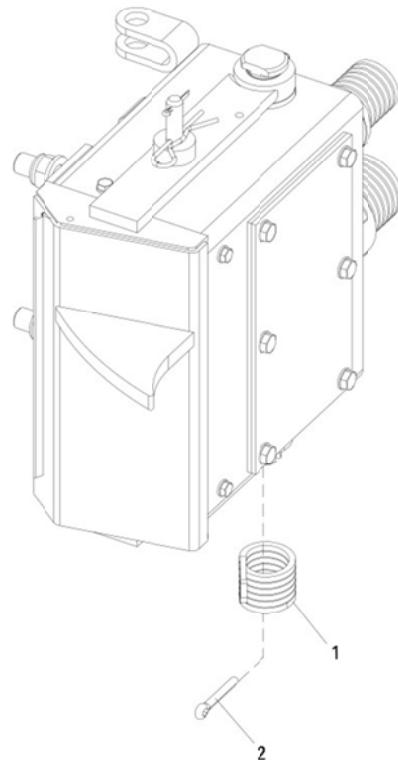


FIGURE 1 - ELECTRICAL HEADS TORSION SPRING REPLACEMENT

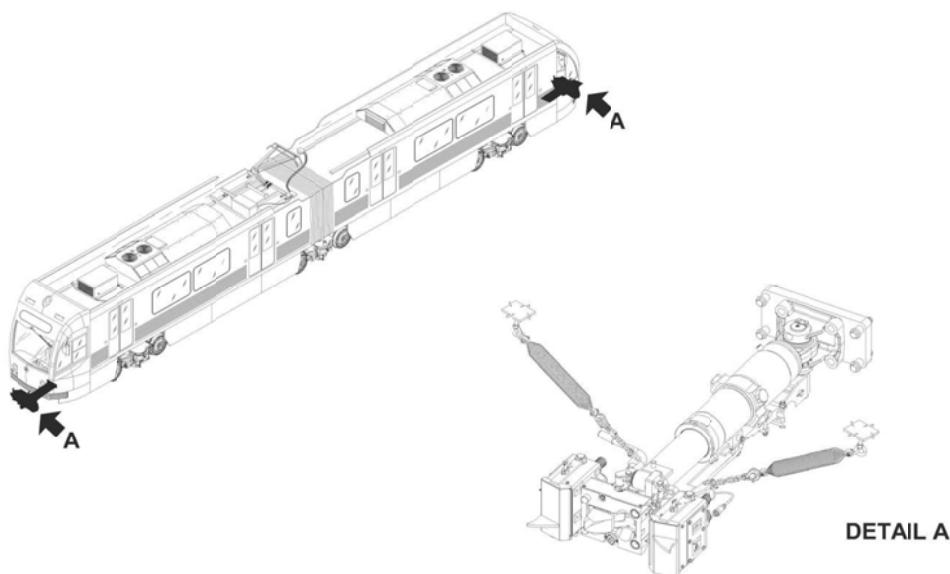
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

R-C-03-01-03-01/R-13

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL (LEFT) HEAD CONNECTOR	MAN HOURS: 2.50
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-03-01/R-13	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL (LEFT) HEAD CONNECTOR	MAN HOURS: 2.50
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS:	
Standard Toolkit	
CONSUMABLES:	
SPARE PARTS:	
Circular Connector (Female) P/N 158327	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-03-01/R-13	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL (LEFT) HEAD CONNECTOR	MAN HOURS: 2.50
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>REPLACEMENT</p> <ul style="list-style-type: none"> a. Disconnect the Cable Contact (3) from the Circular Connector (2). b. Remove the two Screws (4) and pull out the Circular Connector (2) from the back of the Electrical Coupler (1). c. Mark the Cables connected to the Circular Connector (2) and disconnect them. d. Fit Cables to the new Circular Connector (2) according to previous notes. e. Fit the new Connector on the back of the Electrical Coupler (1) by mounting the two Screws (4). f. Connect the Cable Contact (3) to the Circular Connector (2). 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."</p>	

P2550 CORRECTIVE MAINTENANCE SHEET

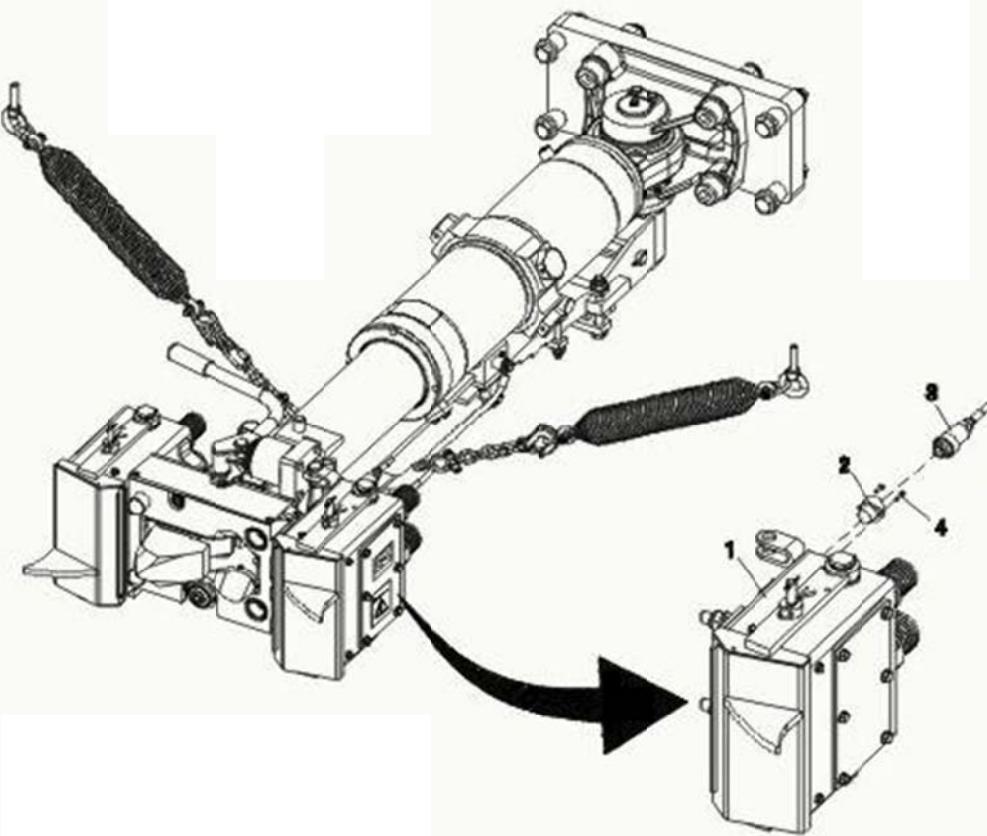
CARD CODE:

R-C-03-01-03-01/R-13SYSTEM:
COUPLER

SHEET:

4/4SUBSYSTEM/ASSY:
AUTOMATIC COUPLERUNIT:
ELECTRICAL COUPLERCOMPONENT:
ELECTRICAL (LEFT) HEAD CONNECTORMAN HOURS:
2.50

MAINTENANCE TASK:

REPLACEMENT**PROCEDURE:****FIGURE 1 - ELECTRICAL (LEFT) HEAD CONNECTOR REPLACEMENT**

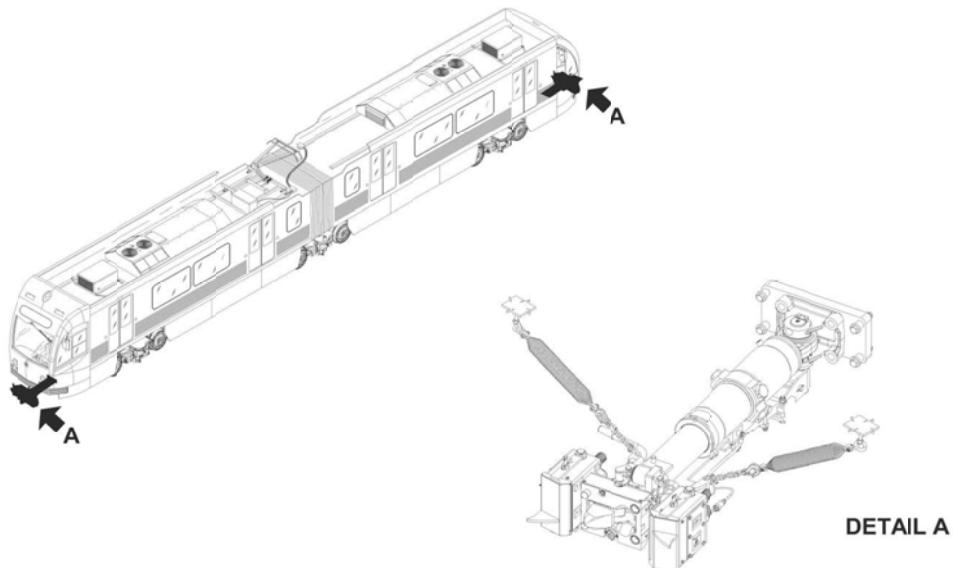
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEAD (RIGHT)	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM:

COUPLER

SHEET:

2/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

ELECTRICAL COUPLER

COMPONENT:

ELECTRICAL HEAD (RIGHT)

MAN HOURS:

1

MAINTENANCE TASK:

REPLACEMENT**SAFETY PRECAUTIONS:**

WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT.
TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.

WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE.
IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY.
TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE.
2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED.
3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE.
THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.

WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS.
2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.

TOOLS:

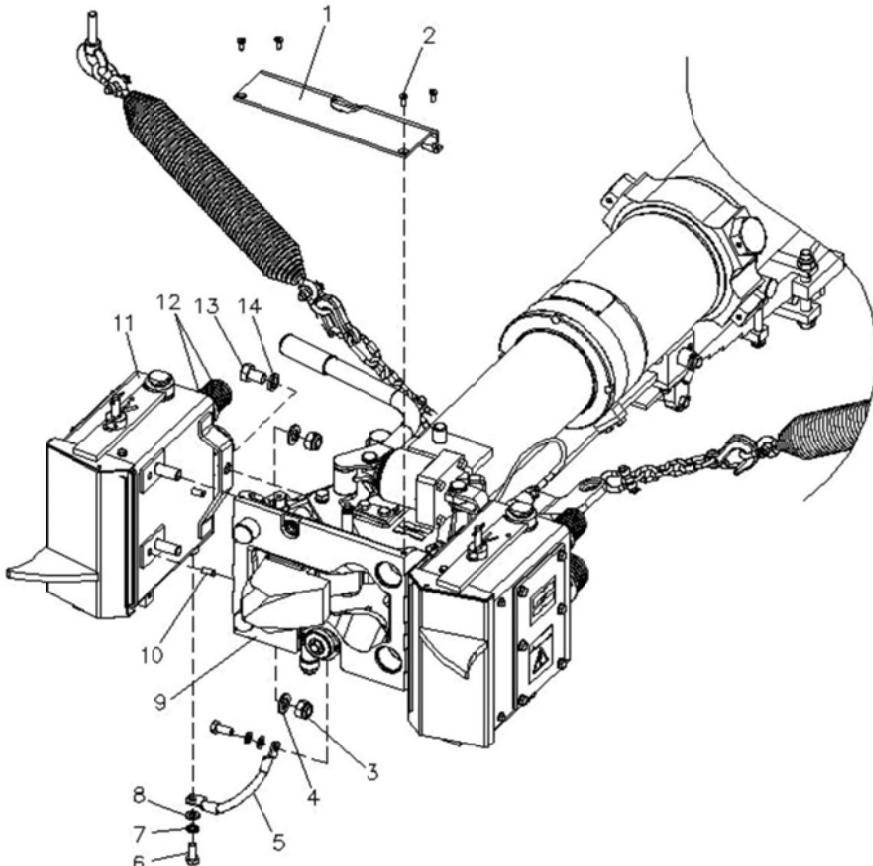
Standard Tool Kit

CONSUMABLES:**SPARE PARTS:**

Electrical Coupler (Right) P/N 1008885

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-03-02/R-00	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER
COMPONENT: ELECTRICAL HEAD (RIGHT)	MAN HOURS: 1
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <ul style="list-style-type: none"> b. Disconnect the Electrical Cables (12) from the Vehicle. c. Remove the Plate (2) by removing the four Screws (1). d. Remove the Ground Cable (5) by removing the Screws (6), Lock Washers (7) and Washers (6). e. Support the Electric Coupler Right (11) properly to ensure that it will not fall when released from the Coupler Head (9). <p style="text-align: center;">WARNING: THE ELECTRIC COUPLER RIGHT IS HEAVY, BE CAREFUL WHEN REMOVING IT FROM THE COUPLER.</p> <ul style="list-style-type: none"> f. Remove the Nuts (3), Screws (13) and Washers (4 and 14) securing the Electrical Coupler to the Mechanical Coupler Head and pull the Electrical Coupler Right (11) off from the Mechanical Coupler Head (9). g. Remove and discard the two Parallel Pins (10). <p style="text-align: center;">CAUTION: REPLACE ALL FASTENERS AND RUBBER PARTS. NEVER REUSE THE TWO PARALLEL PINS.</p> <ul style="list-style-type: none"> h. Fit the new two Parallel Pins (10) to the Coupler Head (9). i. Fit the new Electrical Coupler Right (11) to the Mechanical Coupler Head (9) and mount the Locking Nuts (3) and Washers (4). j. Mount the Screw (13) and Washer (14). k. Fit the Ground Cable (5) and mount the two Screws (6), Lock Washer (7) and Washer (8). l. Fit Plate (2) and mount the four Screws (1). m. Connect the two Cables (12) to the Vehicle. 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. 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 03-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-03-01-03-02/R-00		
SYSTEM: COUPLER	SHEET: 4/4	
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: ELECTRICAL COUPLER	
COMPONENT: ELECTRICAL HEAD (RIGHT)	MAN HOURS: 1	
MAINTENANCE TASK: REPLACEMENT		
PROCEDURE:		
FIGURE 1 - ELECTRICAL HEAD (RIGHT) REPLACEMENT		

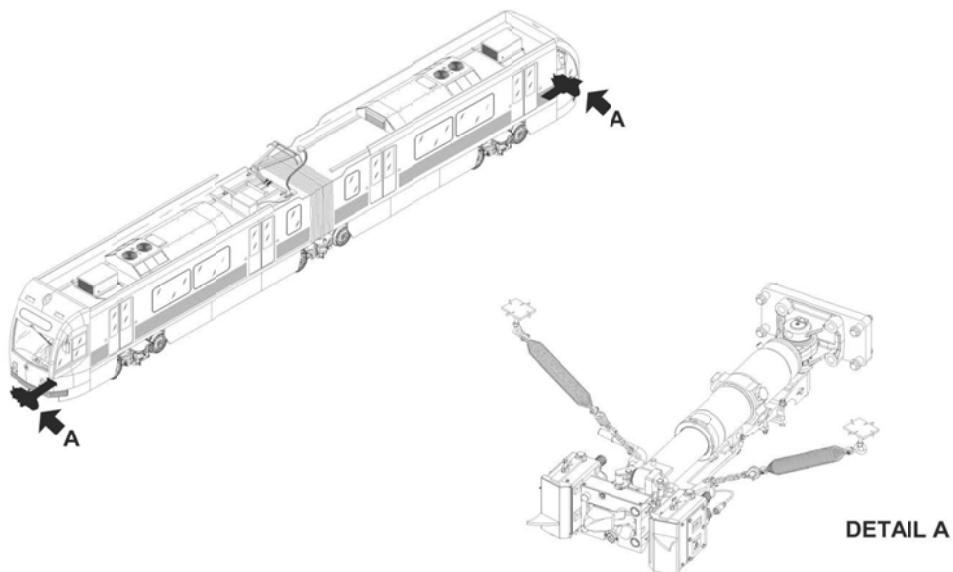
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MAIN RESERVOIR PIPE (MRP) VALVE	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM:

COUPLER

SHEET:

2/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

PNEUMATIC COUPLER

COMPONENT:

MAIN RESERVOIR PIPE (MRP) VALVE

MAN HOURS:

1.00

MAINTENANCE TASK:

REPLACEMENT**SAFETY PRECAUTIONS:**

WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT.
TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.

WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE.
IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY.
TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE.
2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED.
3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE.
THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.

WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS.
2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.

TOOLS:

Standard Tool Kit

CONSUMABLES:**SPARE PARTS:**

MRP Valve P/N 1001701

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-04-01/R-00	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MAIN RESERVOIR PIPE (MRP) VALVE	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). <p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Disconnect the Pneumatic Connection (2) from the Uncoupling Cylinder (1). b. Disconnect the Pneumatic Connections from Hose Fitting (3) and Tube Fitting (7). c. Remove the Pneumatic Coupler MRP Valve (6) from the Coupler by removing the two Screws (4) and Lock Washers (5). d. Fit the new Pneumatic Coupler MRP Valve (6) to the Coupler and mount the two Screws (4) and Lock Washers (5). e. Connect the Pneumatic Connections to Hose Fitting (3) and Tube Fitting (7). f. Connect the Pneumatic Connection (2) to the Uncoupling Cylinder (1). <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Perform coupling to verify correct function and tightness. d. 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 03-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-03-01-04-01/R-00SYSTEM:
COUPLER

SHEET:

4/4SUBSYSTEM/ASSY:
AUTOMATIC COUPLERUNIT:
PNEUMATIC COUPLERCOMPONENT:
MAIN RESERVOIR PIPE (MRP) VALVEMAN HOURS:
1.00MAINTENANCE TASK:
REPLACEMENT

PROCEDURE:

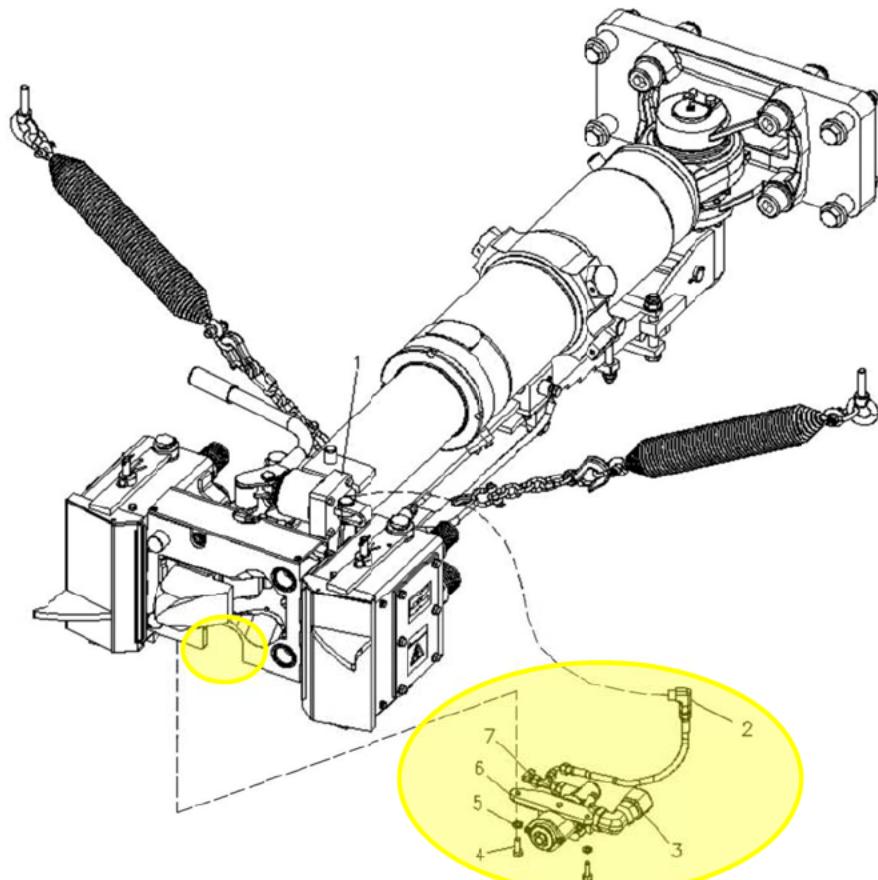


FIGURE 1 - MAIN RESERVOIR PIPE (MRP) VALVE REPLACEMENT

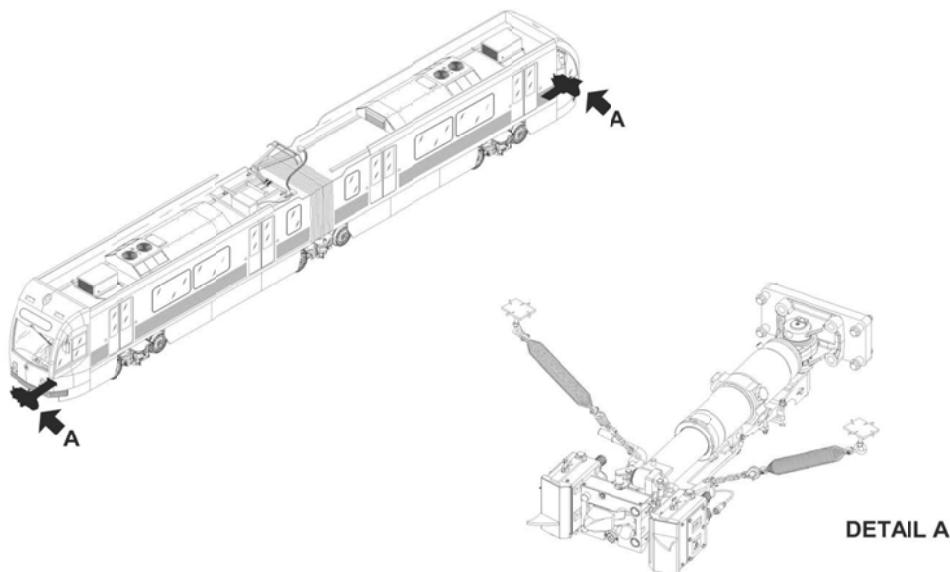
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SEAL HOLDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-04-01/R-01	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SEAL HOLDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS: Seal Holder P/N 170459	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-04-01/R-01	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SEAL HOLDER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Securing Washer (5) by removing the two Screws (7). b. Pull out the Seal Holder (4), Front Seal (6), O-Ring (3) and Spring (2). c. Remove the Front Seal (6) and O-Ring (3) from the Seal Holder (4). d. Fit the Front Seal (6), O-Ring (3) and Spring (2) to the new Seal Holder (4). e. Fit the new Seal Holder (4) to the Pneumatic Coupler (1). f. Mount the Securing Washer (5) with the Screws (7). 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Perform coupling to verify correct function and tightness. d. 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 03-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-03-01-04-01/R-01

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

PNEUMATIC COUPLER

COMPONENT:

MRP VALVE SEAL HOLDER

MAN HOURS

1.00

MAINTENANCE TASK:

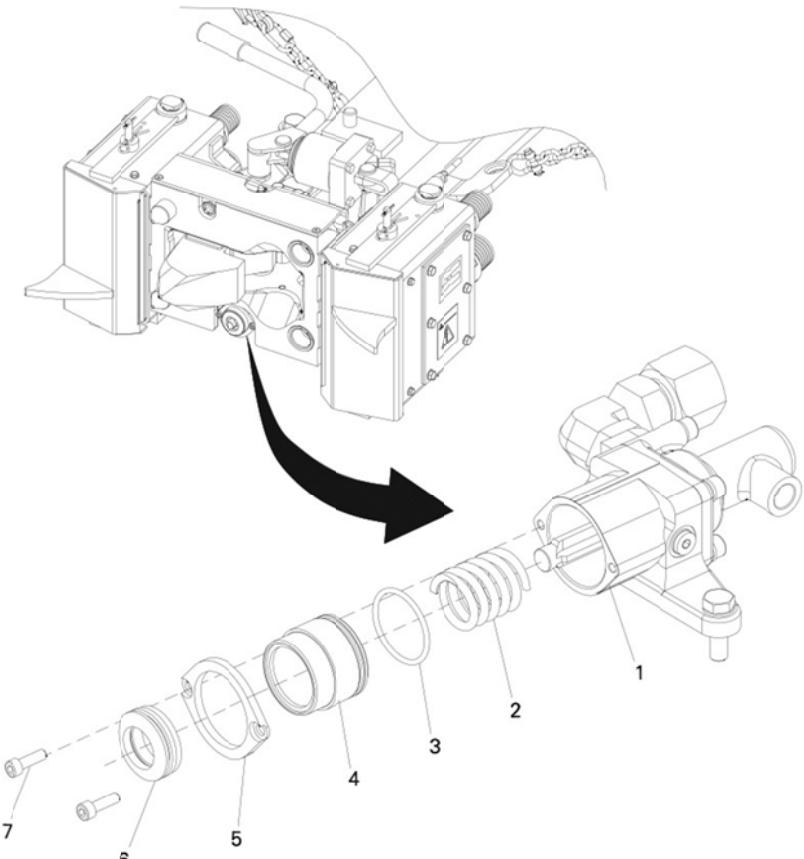
REPLACEMENT**PROCEDURE:**

FIGURE 1 - MRP VALVE SEAL HOLDER REPLACEMENT

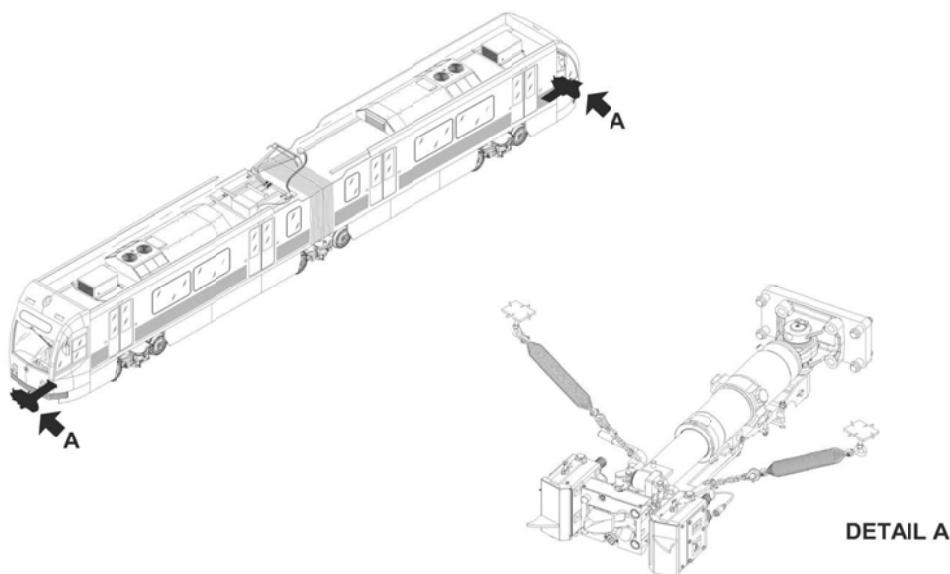
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE FRONT SEAL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-04-01/R-02	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE FRONT SEAL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES:	
SPARE PARTS: Front Seal P/N 184173	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-04-01/R-02	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE FRONT SEAL	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
1. PRELIMINARY OPERATIONS	
<ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
2. REPLACEMENT	
<ul style="list-style-type: none"> a. Remove the Securing Washer (5) by removing the two Screws (7). b. Pull out the Seal Holder (4), Front Seal (6), O-Ring (3) and Spring (2). c. Remove the Front Seal (6) and O-Ring (3) from the Seal Holder (4). d. Fit the Front Seal (6), O-Ring (3) and Spring (2) to the Seal Holder (4). e. Fit the Seal Holder (4) to the Pneumatic Coupler (1). f. Mount the Securing Washer (5) with the Screws (7). 	
3. FINAL OPERATIONS	
<ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Perform coupling to verify correct function and tightness. d. 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 03-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-03-01-04-01/R-02	
SYSTEM:	COUPLER	SHEET: 4/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT:	MRP VALVE FRONT SEAL	MAN HOURS 1.00
MAINTENANCE TASK:	REPLACEMENT	

PROCEDURE:

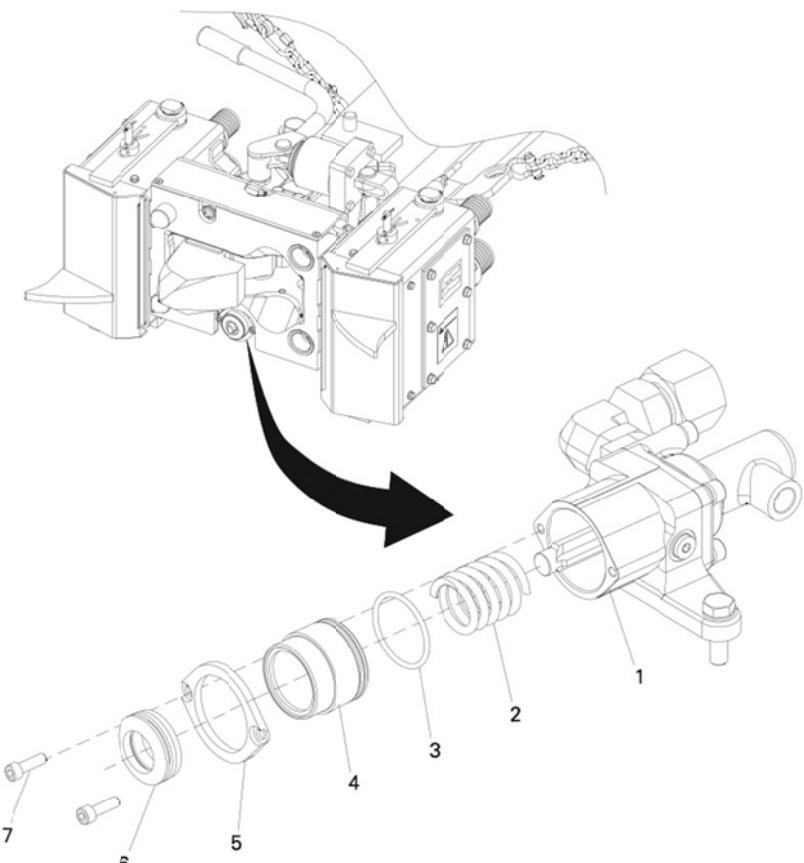


FIGURE 1 - MRP VALVE FRONT SEAL REPLACEMENT

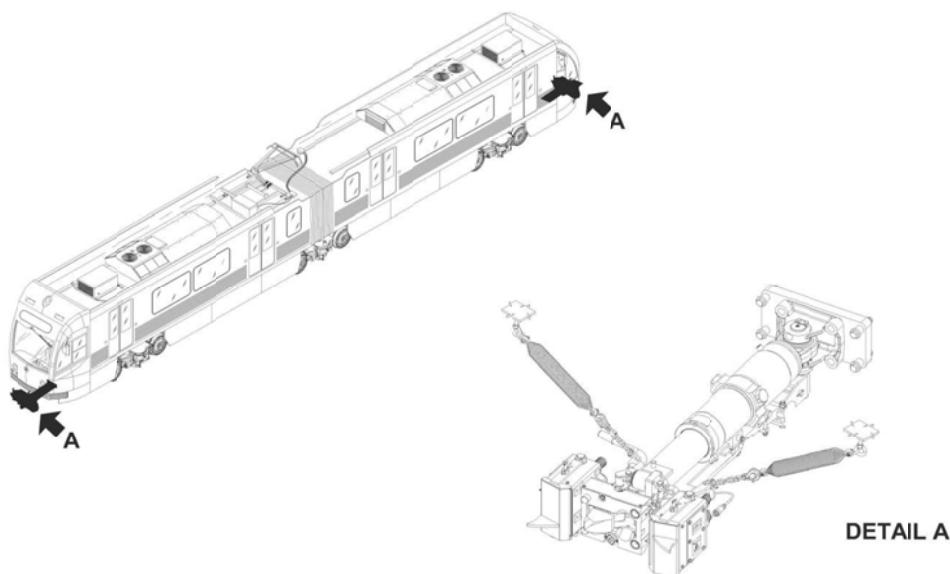
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SPRING	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM:

COUPLER

SHEET:

2/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

PNEUMATIC COUPLER

COMPONENT:

MRP VALVE SPRING

MAN HOURS:

1.00

MAINTENANCE TASK:

REPLACEMENT**SAFETY PRECAUTIONS:**

WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT.
TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.

WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE.
IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY.
TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE.
2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED.
3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE.
THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.

WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS.
2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.
R.

TOOLS:

Standard Tool Kit

CONSUMABLES:**SPARE PARTS:**

Spring P/N 170473

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-04-01/R-03	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SPRING	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). <p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Securing Washer (5) by removing the two Screws (7). b. Pull out the Seal Holder (4), Front Seal (6), O-Ring (3) and the Spring (2). c. Fit the Front Seal (6), O-Ring (3) and the new Spring (2) to the Seal Holder (4). d. Fit the Seal Holder (4) to the Pneumatic Coupler (1). e. Mount the Securing Washer (5) with the Screws (7). <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Perform coupling to verify correct function and tightness. d. 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 03-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-03-01-04-01/R-03

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

PNEUMATIC COUPLER

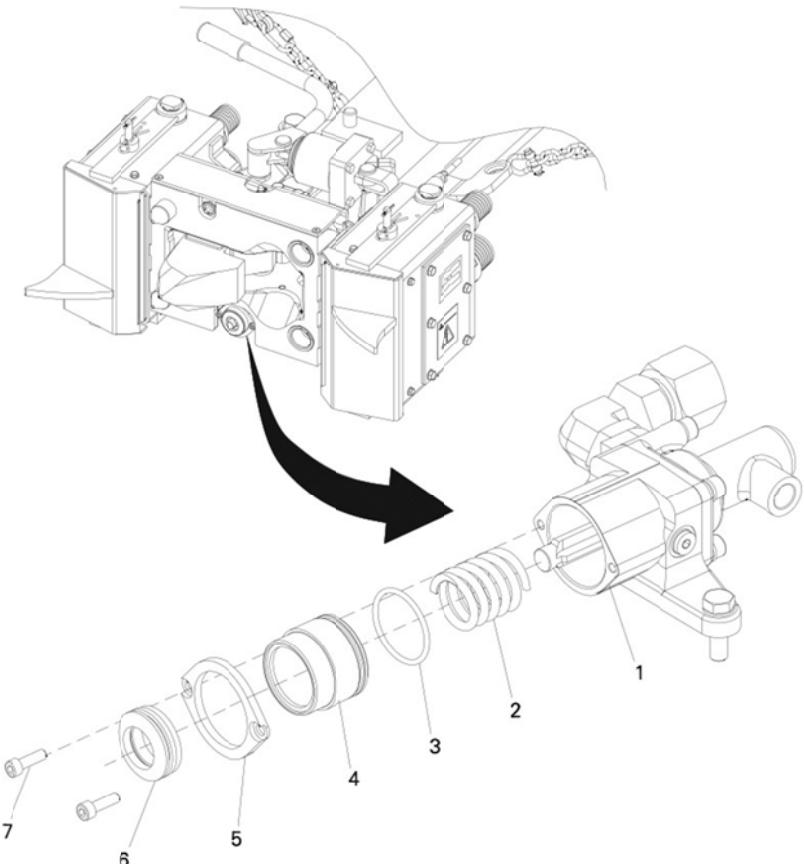
COMPONENT:

MRP VALVE SPRING

MAN HOURS

1.00

MAINTENANCE TASK:

REPLACEMENT**PROCEDURE:****FIGURE 1 - MRP VALVE SPRING REPLACEMENT**

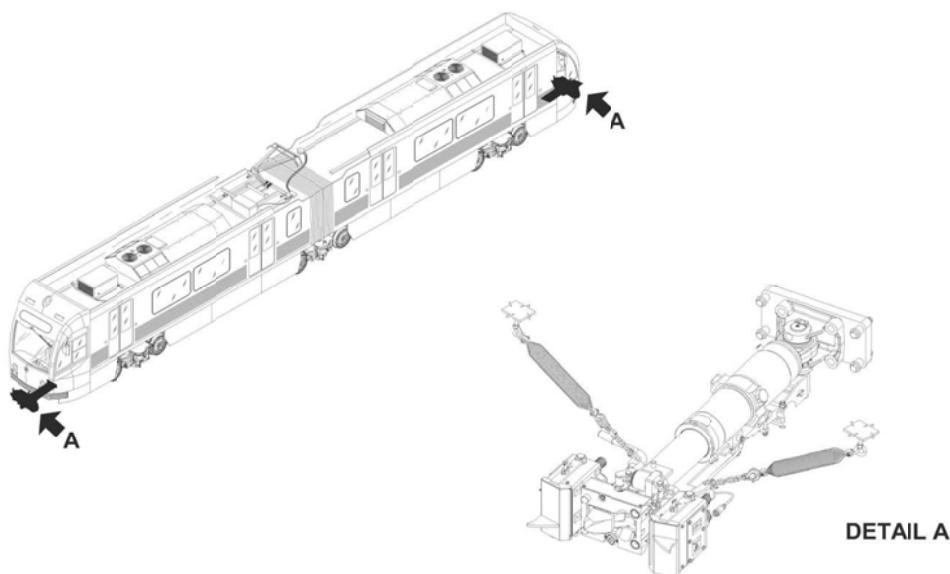
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SECURING WASHER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-04-01/R-04	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SECURING WASHER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Toolkit	
CONSUMABLES:	
SPARE PARTS: Securing Washer P/N 170458	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-04-01/R-04	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SECURING WASHER	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). <p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the Securing Washer (5) by removing the two Screws (7). b. Install the new Securing Washer (5) and fix it with the Screws (7). <p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Perform coupling to verify correct function and tightness. d. 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 03-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-03-01-04-01/R-04	
SYSTEM:	COUPLER	SHEET: 4/4
SUBSYSTEM/ASSY:	AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT:	MRP VALVE SECURING WASHER	MAN HOURS 1.00
MAINTENANCE TASK:	REPLACEMENT	

PROCEDURE:

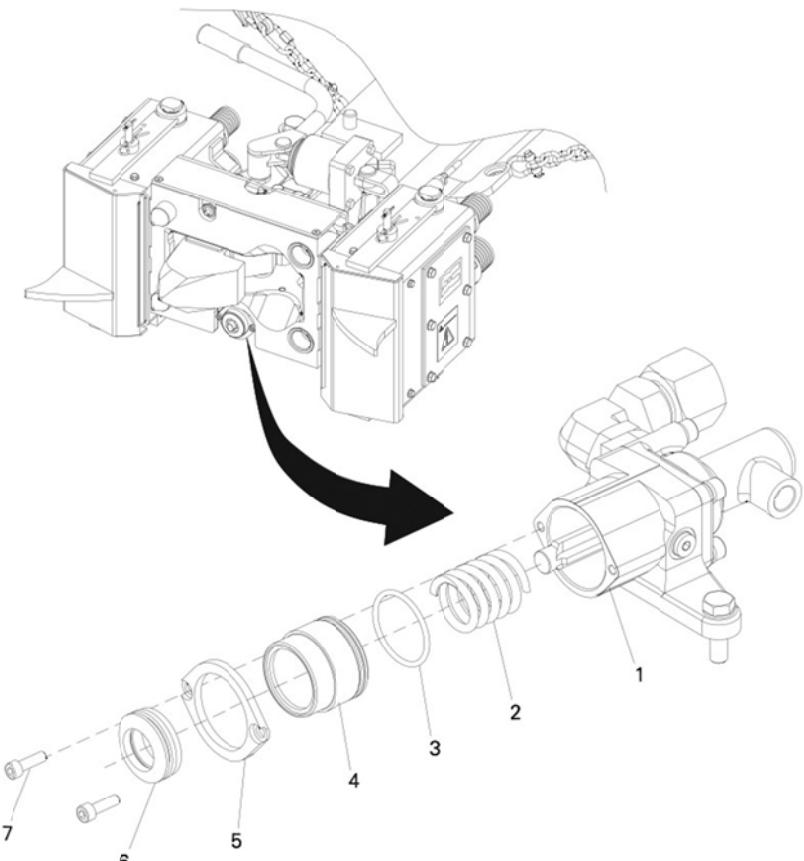


FIGURE 1 - MRP VALVE SECURING WASHER REPLACEMENT R

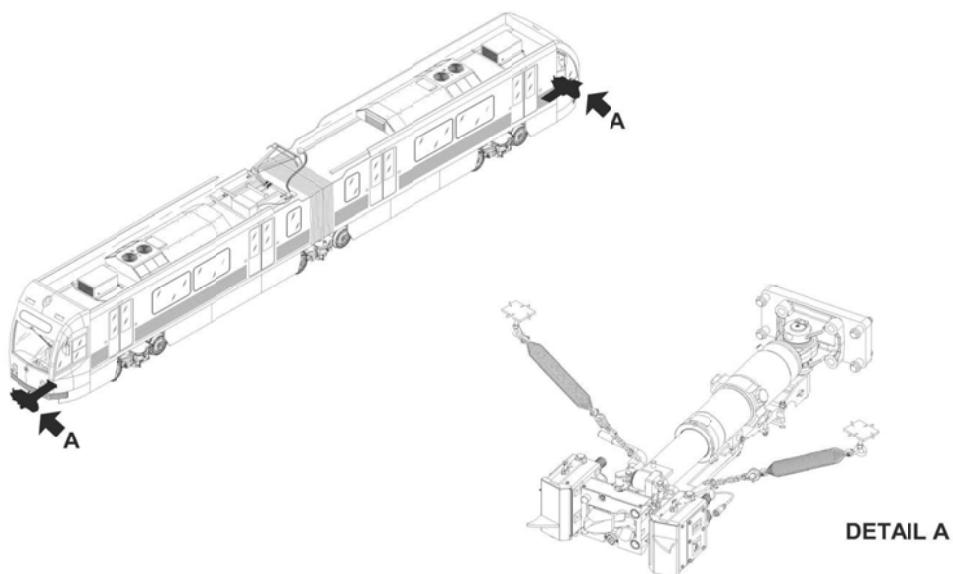
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SEAL HOLDER SCREWS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-01-04-01/R-06	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SEAL HOLDER SCREWS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT. TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.</p>	
<p>WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE. IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE. 2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED. 3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE. THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.</p>	
<p>WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING: 1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS. 2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.</p>	
TOOLS: Standard Toolkit	
CONSUMABLES:	
SPARE PARTS: Hex. Cap Screw PN 5058006020 A4-80, DIN 912 M6x20	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-01-04-01/R-06	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: AUTOMATIC COUPLER	UNIT: PNEUMATIC COUPLER
COMPONENT: MRP VALVE SEAL HOLDER SCREWS	MAN HOURS: 1.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Remove the two Screws (7). b. Install the two Screws (7). 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Perform coupling to verify correct function and tightness. d. 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 03-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-03-01-04-01/R-06

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

AUTOMATIC COUPLER

UNIT:

PNEUMATIC COUPLER

COMPONENT:

MRP VALVE SEAL HOLDER SCREWS

MAN HOURS

1.00

MAINTENANCE TASK:

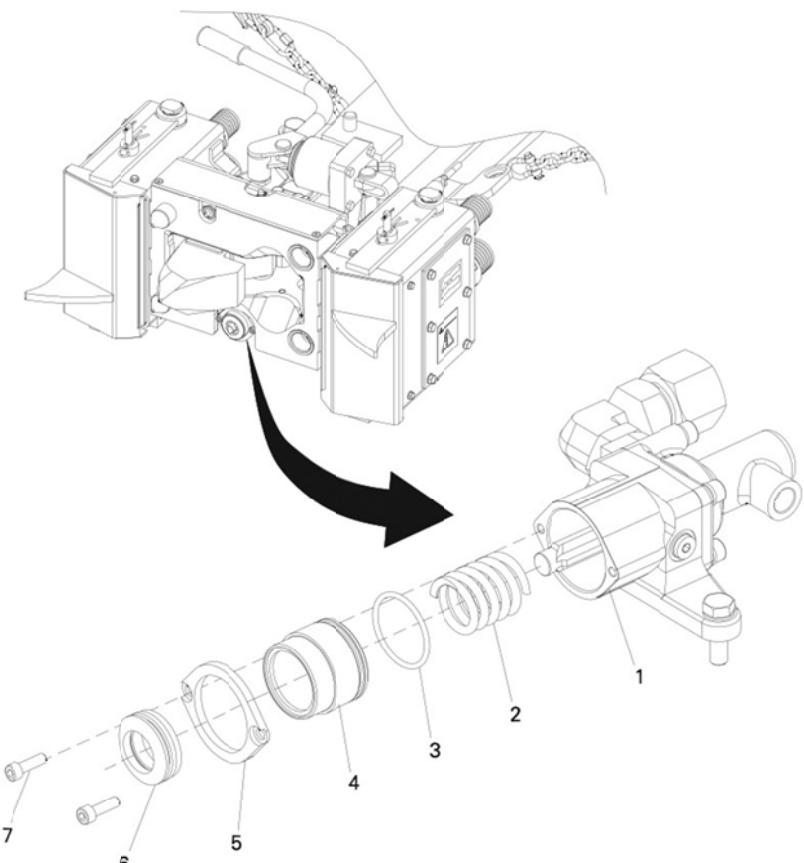
REPLACEMENT**PROCEDURE:**

FIGURE 1 - MRP VALVE SEAL HOLDER SCREWS REPLACEMENT

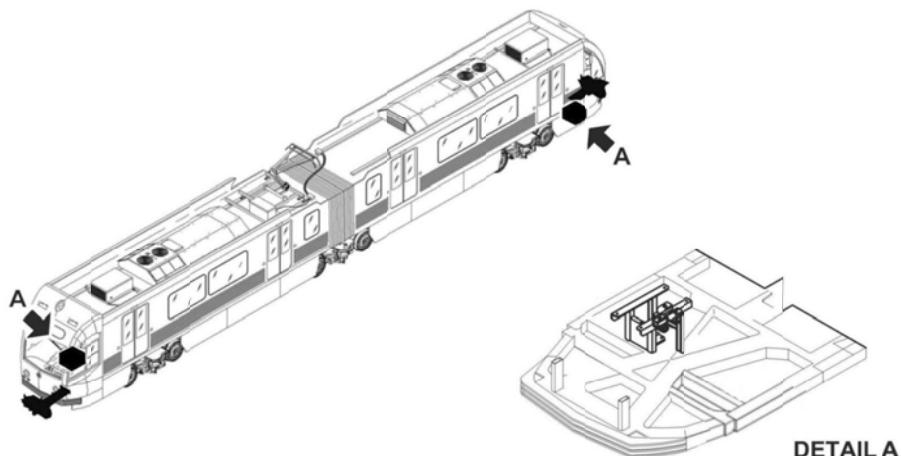
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: VEHICLE MOUNTED EQUIPMENT	UNIT: PNEUMATIC CONTROLS
COMPONENT: SINGLE SOLENOID VALVE	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-02-01-01/R-00	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: VEHICLE MOUNTED EQUIPMENT	UNIT: PNEUMATIC CONTROLS
COMPONENT: SINGLE SOLENOID VALVE	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: BLUE FLAG THE VEHICLE IN ACCORDANCE WITH ALL LACMTA BLUE FLAG POLICIES, RULES, & PROCEDURES IN ORDER TO WARN THAT MAINTENANCE PERSONNEL ARE WORKING ON, UNDER, OR NEAR ROLLING EQUIPMENT.</p> <p>WARNING: APPLY WHEEL CHOCKS TO PREVENT VEHICLE FROM MOVING.</p> <p>WARNING: WORKING AREAS MUST BE WELL VENTILATED, LIGHTED, AND CLEAR OF DEBRIS FOR OBVIOUS SAFETY REASONS.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES: N/A	
SPARE PARTS: Single Solenoid Valve AA03F3L	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-02-01-01/R-00	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: VEHICLE MOUNTED EQUIPMENT	UNIT: PNEUMATIC CONTROLS
COMPONENT: SINGLE SOLENOID VALVE	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
1. PRELIMINARY OPERATIONS	
<ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
2. REPLACEMENT	
<ul style="list-style-type: none"> a. Disconnect the Single Solenoid Valve. (1) Electrical Connections. Take note of Wiring Color Codes. b. Unscrew both Pipeline Adapters(3) and both Elbows (2), to disconnect the Single Solenoid Valve (1) from Pipelines (4, 5). c. Install suitable protections on the Air Connections and on the Single Solenoid Valve openings. d. Remove Bolts (6), Washers (7), Lock Washers (8) and Nuts (9). e. Remove Single Solenoid Valve (1) from Underframe Structure. f. Position the new Single Solenoid Valve (1) on the Underframe Structure. g. Install Bolts (6), Washers (7), Lock Washers (8) and Nuts (9). h. Torque the Nuts (9) to 30 lb-ft. i. Remove the protections, previously installed from Air Connections and from Single Solenoid Valve openings. j. Connect the Single Solenoid Valve to the Pipelines (4,5) with Adapters (3) and Elbows (2). k. Reconnect Single Solenoid Valve Electrical Connections according to the Color Codes previously noted. 	
3. FINAL OPERATIONS	
<ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Check Single Solenoid Valve Pneumatic Connection for air leakage with soap solution. d. Perform Coupling-Uncoupling to verify correct function. e. 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 03-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-03-02-01-01/R-00	
SYSTEM:	COUPLER	SHEET: 4/4
SUBSYSTEM/ASSY:	VEHICLE MOUNTED EQUIPMENT	UNIT: PNEUMATIC CONTROLS
COMPONENT:	SINGLE SOLENOID VALVE	MAN HOURS: 2.00
MAINTENANCE TASK:	REPLACEMENT	

PROCEDURE:

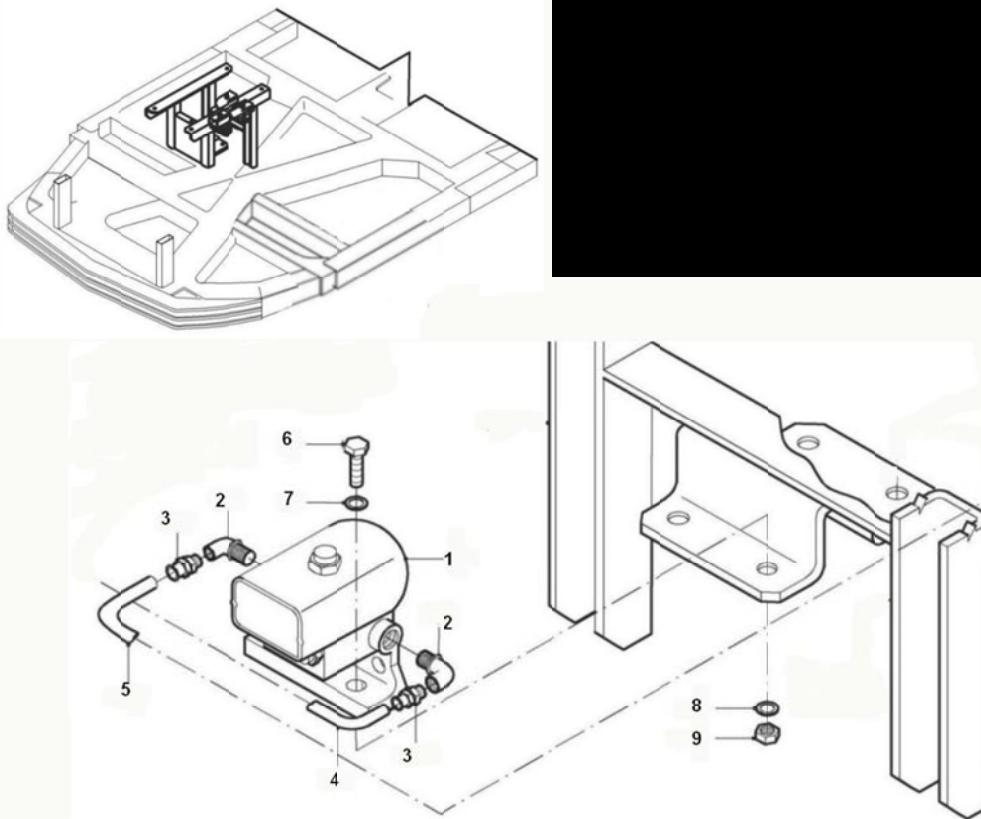


FIGURE 1 - SINGLE SOLENOID VALVE REPLACEMENT

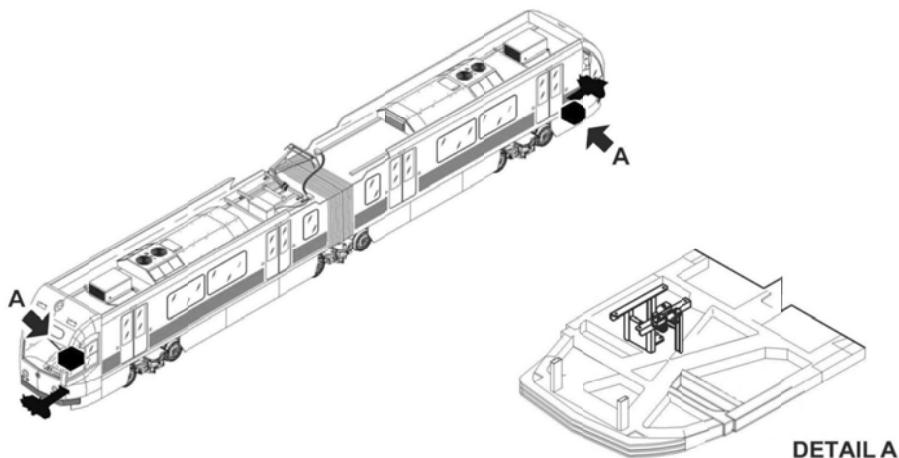
P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE:

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

SYSTEM: COUPLER	SHEET: 1/4
SUBSYSTEM/ASSY: VEHICLE MOUNTED EQUIPMENT	UNIT: PNEUMATIC CONTROLS
COMPONENT: DUPLEX SOLENOID VALVE	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

CARD CODE: R-C-03-02-01-02/R-00	
SYSTEM: COUPLER	SHEET: 2/4
SUBSYSTEM/ASSY: VEHICLE MOUNTED EQUIPMENT	UNIT: PNEUMATIC CONTROLS
COMPONENT: DUPLEX SOLENOID VALVE	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	
SAFETY PRECAUTIONS:	
<p>WARNING: BLUE FLAG THE VEHICLE IN ACCORDANCE WITH ALL LACMTA BLUE FLAG POLICIES, RULES, & PROCEDURES IN ORDER TO WARN THAT MAINTENANCE PERSONNEL ARE WORKING ON, UNDER, OR NEAR ROLLING EQUIPMENT.</p> <p>WARNING: APPLY WHEEL CHOCKS TO PREVENT VEHICLE FROM MOVING.</p> <p>WARNING: WORKING AREAS MUST BE WELL VENTILATED, LIGHTED, AND CLEAR OF DEBRIS FOR OBVIOUS SAFETY REASONS.</p>	
TOOLS: Standard Tool Kit	
CONSUMABLES: N/A	
SPARE PARTS: Duplex Solenoid Valve AA03F3M	

P2550 CORRECTIVE MAINTENANCE SHEET	
CARD CODE: R-C-03-02-01-02/R-00	
SYSTEM: COUPLER	SHEET: 3/4
SUBSYSTEM/ASSY: VEHICLE MOUNTED EQUIPMENT	UNIT: PNEUMATIC CONTROLS
COMPONENT: DUPLEX SOLENOID VALVE	MAN HOURS: 2.00
MAINTENANCE TASK: REPLACEMENT	
PROCEDURE:	
<p>1. PRELIMINARY OPERATIONS</p> <ul style="list-style-type: none"> a. Place the Vehicle on the Pit or Stand Up Rail. b. Set the Vehicle in Safety Condition in accordance with LACMTA Maintenance Shop Regulations. c. Verify ISOLATE/CONNECT Switch (14S04-Coupler Control Panel located on the Operator's Console) is to ISOLATE position. d. Switch the 14F01 COUPLER PROTECTION Circuit Breaker (LV Locker A-B Sections) to OFF. e. Open the Air Reservoir Drain Cocks to vent the Pneumatic System. f. Release Pneumatic Pressure from Coupler by closing the Cut-Out Cock (B19). 	
<p>2. REPLACEMENT</p> <ul style="list-style-type: none"> a. Disconnect the Duplex Solenoid Valve. (1) Electrical Connections. Take note of the Wiring Color Codes. b. Unscrew the relevant Pipeline Adapters (2) and Elbows (3), to disconnect the Duplex Solenoid Valve (1) from Pipelines.(4,5). c. Install suitable protections on the relevant Air Connections and on the Duplex Solenoid Valve openings. d. Remove Bolts (6), Washers (7), Lock Washers (8) and Nuts (9). e. Remove the relevant Duplex Solenoid Valve (1) from Underframe Structure. f. Position the new Duplex Solenoid Valve (1) on its Seat. g. Install Bolts (6), Washers (7), Lock Washers (8) and Nuts (9). h. Torque the Nuts (9) to 30 lb-ft. i. Remove the (previously installed) protections from the relevant Air Connections and from Duplex Solenoid Valve openings. j. Connect the Duplex Solenoid Valve to the Pipelines (4,5)with relevant Adapters (2) and Elbows (3). k. Reconnect Duplex Solenoid Valve Electrical Connections according to the Color Codes previously noted. 	
<p>3. FINAL OPERATIONS</p> <ul style="list-style-type: none"> a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler. b. Restore Electrical Power to the Coupler. c. Check Duplex Solenoid Valve Pneumatic Connection for air leakage with soap solution. d. Perform Coupling-Uncoupling to verify correct function. e. 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 03-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-03-02-01-02/R-00

SYSTEM:

COUPLER

SHEET:

4/4

SUBSYSTEM/ASSY:

VEHICLE MOUNTED EQUIPMENT

UNIT:

PNEUMATIC CONTROLS

COMPONENT:

DUPLEX SOLENOID VALVE

MAN HOURS:

2.00

MAINTENANCE TASK:

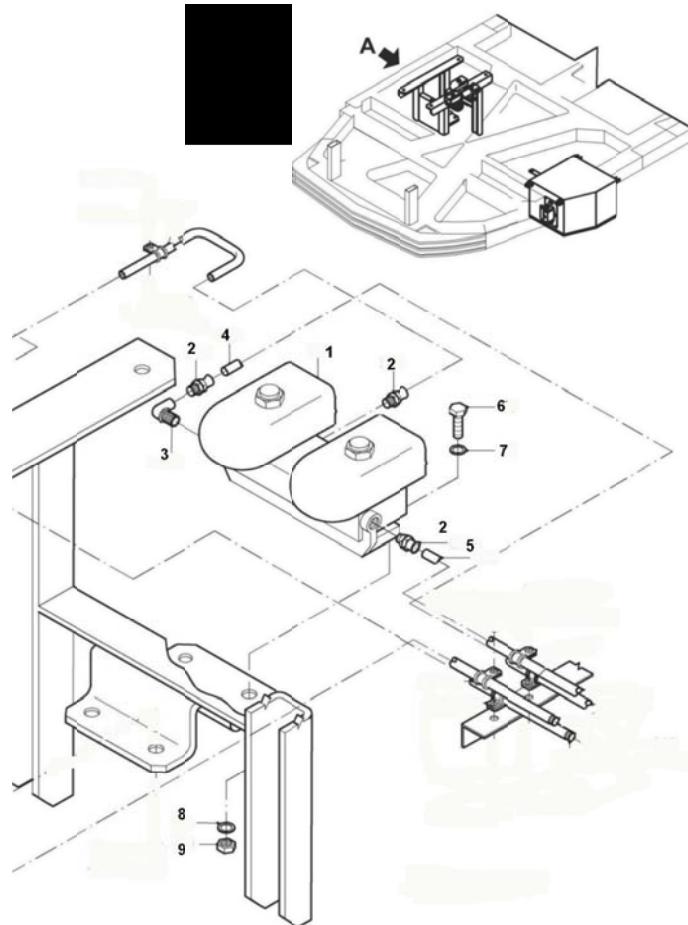
REPLACEMENT**PROCEDURE:**

FIGURE 1 - DUPLEX SOLENOID VALVE REPLACEMENT

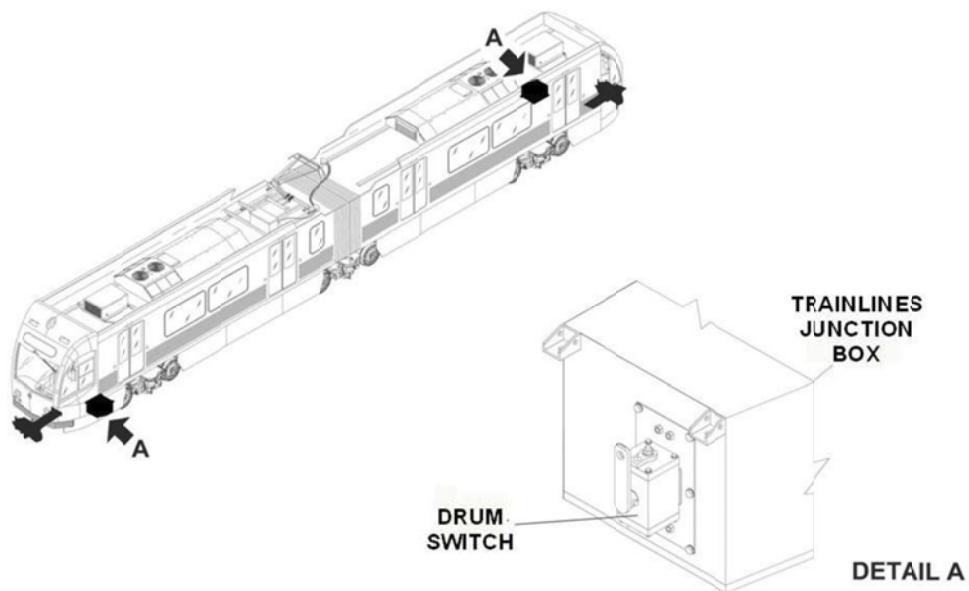
P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System: COUPLER	Sheet: 1/10		
Subsystem/Assy: VEHICLE MOUNTED EQUIPMENT	Unit: TRAIN LINES JUNCTION BOX		
Component: TRAIN LINES JUNCTION BOX	Man Hours: 0.60	Component: DRUM SWITCH	Man Hours: 1.00
Maintenance Task: REPLACEMENT			

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System:

COUPLER

Sheet:

2/10

Subsystem/Assy:

VEHICLE MOUNTED EQUIPMENT**TRAIN LINES JUNCTION BOX**

Component:

TRAIN LINES JUNCTION BOX

Man Hours:

0.60

Component:

DRUM SWITCH

Man Hours:

1.00

Maintenance Task:

REPLACEMENT**SAFETY PRECAUTIONS:**

**WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT.
TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.**

**WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE.
IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY.
TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE.
2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED.
3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE.
THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.**

**WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS.
2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.**

TOOLS:

Standard Tool Kit

CONSUMABLES:

Acetone (Commercial)

SPARE PARTS:

Trainlines Junction Box Assembly	P/N	AA03FDW
Trainlines Junction Box Cover Gasket	P/N	AA03KYC
Drum Switch Plate Gasket	P/N	AA043L4
Drum Switch Assy	P/N	1006084



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P2550 CORRECTIVE MAINTENANCE SHEET			
			Card Code:
R-C-03-02-02-01/R-00			
System: COUPLER	Sheet:	3/10	
Subsystem/Assy: VEHICLE MOUNTED EQUIPMENT	Unit:	TRAIN LINES JUNCTION BOX	
Component: TRAIN LINES JUNCTION BOX	Man Hours: 0.60	Component: DRUM SWITCH	Man Hours: 1.00
Maintenance Task: REPLACEMENT			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

R-C-03-02-02-01/R-00System:
COUPLER

Sheet:

4/10

Subsystem/Assy:

VEHICLE MOUNTED EQUIPMENT TRAIN LINES JUNCTION BOX

Component:

TRAIN LINES JUNCTION BOX

Man Hours:

0.60

Component:

DRUM SWITCH

Man Hours:

1.00

Maintenance Task:

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System: **COUPLER** Sheet: **5/10**

Subsystem/Assy: **VEHICLE MOUNTED EQUIPMENT** Unit: **TRAIN LINES JUNCTION BOX**

Component: TRAIN LINES JUNCTION BOX	Man Hours: 0.60	Component: DRUM SWITCH	Man Hours: 1.00
--	------------------------	-------------------------------	------------------------

Maintenance Task:

REPLACEMENT
PROCEDURE (CONT'D):
2-2 REPLACEMENT

- a. Support the Train Lines Junction Box Assy and ensure it will not fall down when removed from the Vehicle Underframe.

CAUTION: THE TRAIN LINES JUNCTION BOX ASSY WEIGHS APPROXIMATELY 30 LB.TAKE THE NECESSARY PRECAUTIONS TO PREVENT THE TRAIN LINES JUNCTION BOX ASSY FROM FALLING DOWN AND TO AVOID PERSONAL INJURIES.

- b. Remove the Train Lines Junction Box Assy by removing the relevant attaching hardware (refer to Fig 4).
- c. Make available for Maintenance the removed Train Lines Junction Box Assy.

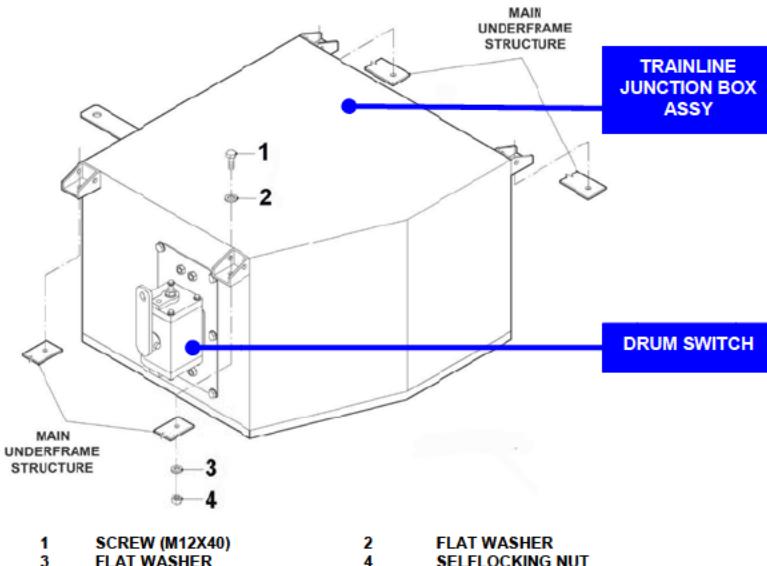


FIG 4
TRAIN LINES JUNCTION BOX ASSY REMOVAL/INSTALLATION

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System:

COUPLER

Sheet:

6/10

Subsystem/Assy:

VEHICLE MOUNTED EQUIPMENT**TRAIN LINES JUNCTION BOX**

Component:

TRAIN LINES JUNCTION BOX

Man Hours:

0.60

Component:

DRUM SWITCH

Man Hours:

1.00

Maintenance Task:

REPLACEMENT**PROCEDURE (CONT'D):****2-2 REPLACEMENT (CONT'D)**

CAUTION: THE TRAIN LINES JUNCTION BOX ASSY WEIGHS APPROXIMATELY 30 LB.TAKE THE NECESSARY PRECAUTIONS TO PREVENT THE TRAINLINES JUNCTION BOX ASSY FROM FALLING DOWN AND TO AVOID PERSONAL INJURIES.

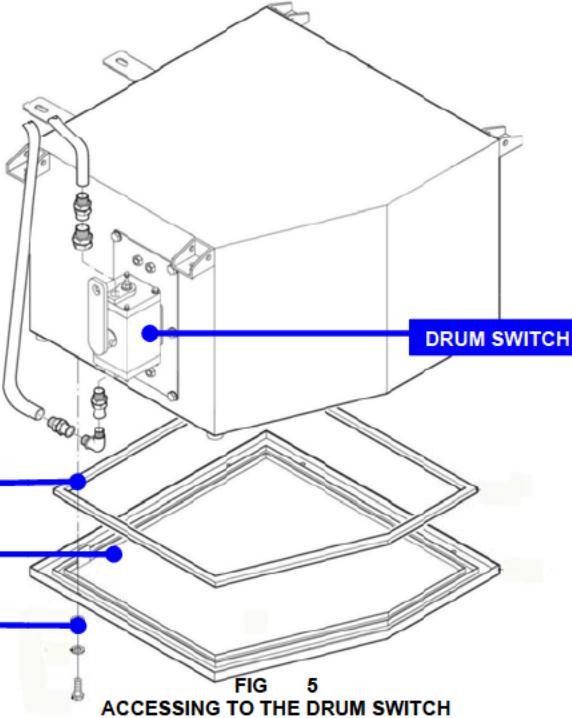
- Get a "new" Train Lines Junction Box Assy complete with Drum Switch.

NOTE: It is assumed that the Circuit Breakers and Wirings of the Drum Switch inside the Train Lines Junction Box Assy are properly installed and connected.

- Position and support the "new" Train Lines Junction Box Assy and ensure it will not fall down during installation on the Vehicle Underframe.
- Upon completing the positioning of the "new" Train Lines Junction Box Assy, install its relevant attaching hardware (refer to Fig 4).Tighten the screw (1) to **52 ft lb**.

2-3 COMPLETION OPERATIONS

- Remove the (previously installed) Protection Caps from all the Connector Plugs and re-connect all the Connectors to the relevant Plug Receptacle Pins on the Train Lines Junction Box Assy.
- Remove the (previously installed) Protections from Pipelines and Drum Switch Assy Pneumatic openings.
- Reconnect the Pipelines Pneumatic Connections (refer to Fig 3).
- Engage the Cab Drum Flexball Cable to Drum Switch Assy Handle (refer to Fig 3).
- Adjust the position of the Flexball Cable Adjusting Swivel according to the Mark previously noted.
- Install the Protection Bar and secure it by installing its relevant attaching hardware (refer to Fig 2). Tighten the Screw (1) to **15.2 ft lb** and the screw (6) to **6.2 ft lb**.
- Operate manually the Drum Switch Assy Handle and verify that it moves freely between the two positions.(ISOLATE -Uncoupled / CONNECT -Coupled).

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-03-02-02-01/R-00			
System: COUPLER	Sheet: 7/10		
Subsystem/Assy: VEHICLE MOUNTED EQUIPMENT	Unit: TRAIN LINES JUNCTION BOX		
Component: TRAIN LINES JUNCTION BOX	Man Hours: 0.60	Component: DRUM SWITCH	Man Hours: 1.00
Maintenance Task: REPLACEMENT			
PROCEDURE (CONT'D):			
3. DRUM SWITCH REPLACEMENT <ol style="list-style-type: none"> Locate the Drum Switch to be replaced Perform the Starting Operations according to previous Step 2-1 (refer to Fig 5) Locate the Trainlines Junction Box Cover on the Bottom of the Trainlines Junction Box and remove it by removing the relevant Fixing Hardware. (refer to Fig 5) Retain both for later use. Remove and discard the relevant Box Cover Gasket. Gain access to the (Drum) Switches Sub Assy inside the Junction Box. 			
 <p>FIG 5 ACCEESSING TO THE DRUM SWITCH</p>			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System:

COUPLER

Sheet:

8/10

Subsystem/Assy:

VEHICLE MOUNTED EQUIPMENT

Unit:

TRAIN LINES JUNCTION BOX

Component:

TRAIN LINES JUNCTION BOX

Man Hours:

0.60

Component:

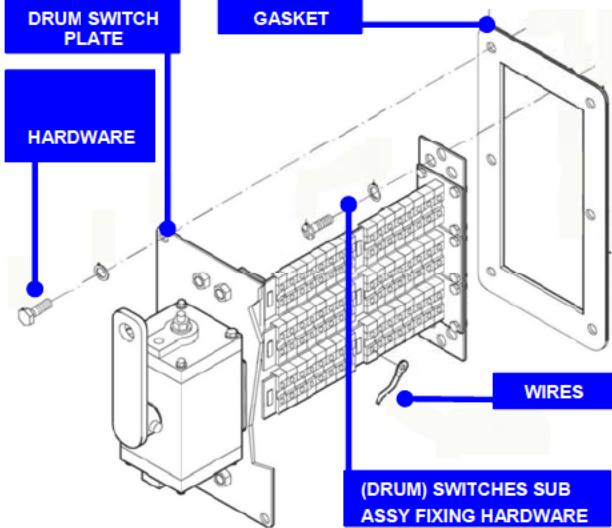
DRUM SWITCH

Man Hours:

1.00

Maintenance Task:

REPLACEMENT

P2550 CORRECTIVE MAINTENANCE SHEET			
Card Code: R-C-03-02-02-01/R-00			
System: COUPLER	Sheet: 9/10		
Subsystem/Assy: VEHICLE MOUNTED EQUIPMENT	Unit: TRAIN LINES JUNCTION BOX	Component: TRAIN LINES JUNCTION BOX	Man Hours: 0.60
Component: DRUM SWITCH	Component: DRUM SWITCH	Man Hours: 1.00	
Maintenance Task: REPLACEMENT			
PROCEDURE (CONT'D):			
3 DRUM SWITCH REPLACEMENT(CONT'D)			
(refer to Fig 7)			
<ul style="list-style-type: none"> k. Carefully clean the Seat of the Gasket on the Drum Switch Plate using recommended agent. l. Position the new Gasket on the Drum Switch Plate. m. Carefully slide in the Drum Switch Assy to match the (Drum) Switches Sub Assy Fixing Hardware Holes in the Junction Box. n. Install and tighten to 4.5. ft lb the (Drum) Switches Sub Assy Fixing Hardware (inside the Box). o. Install and tighten to 6.2 ft lb the Drum Switch Assy Plate Fixing Hardware (outside the Box). p. Reconnect the Wires to the (Drum) Switches Sub Assy Electrical Connections according to the Wiring Color Codes previously noted. q. Carefully clean the Seat of the Gasket on the Trainlines Junction Box Cover using recommended agent. r. Install the new (adhesive) Gasket onto the Trainlines Junction Box Cover. s. Perform the Completion Operations according to previous Step 2-3. 			
 <p>FIG 7 DRUM SWITCH ASSY COMPLETE</p>			

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System:

COUPLER

Sheet:

10/10

Subsystem/Assy:

VEHICLE MOUNTED EQUIPMENT

Unit:

TRAIN LINES JUNCTION BOX

Component:

TRAIN LINES JUNCTION BOX

Man Hours:

0.60

Component:

DRUM SWITCH

Man Hours:

1.00

Maintenance Task:

REPLACEMENT

PROCEDURE:

3. FINAL OPERATIONS

- a. Restore Pneumatic Pressure to the Pneumatic System and to the Coupler.
- b. Restore Electrical Power to the Coupler.
- c. Check Drum Switch Assy Pneumatic Connection for air leakage with soap solution.
- d. Check Drum Switch for proper functions by operating the Switch either from the outside or from the inside of the Cab, by means of the Red Handle at the left of the Operator Seat, behind the Hinged Panel since the Inside Handle is connected to the Outside One by means of the Flexball Cable.
- e. Perform Coupling-Uncoupling to verify correct function.
- f. 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 03-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

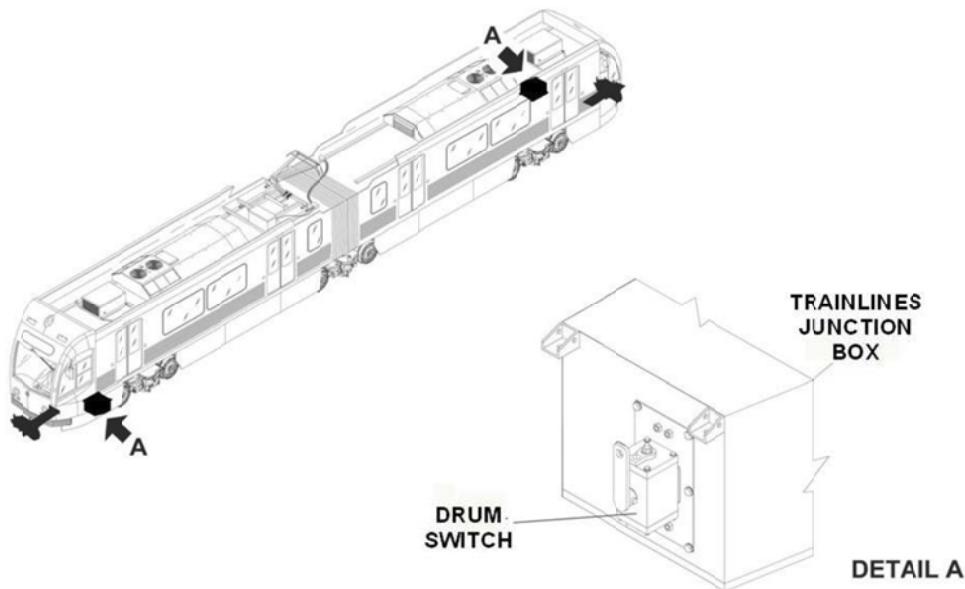
P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System: COUPLER	Sheet: 1/4
Subsystem/Assy: VEHICLE MOUNTED EQUIPMENT	Unit: DRUM SWITCH
Component: HANDLE	Man Hours: 1.00
Maintenance Task: REPLACEMENT	

LOCATION:



P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System:

COUPLER

Sheet:

2/4

Subsystem/Assy:

VEHICLE MOUNTED EQUIPMENTUnit:
DRUM SWITCH

Component:

HANDLE

Man Hours:

1.00

Maintenance Task:

REPLACEMENT**SAFETY PRECAUTIONS:**

WARNING: SPECIAL PRECAUTIONS MUST BE TAKEN SO THAT VEHICLE MOVEMENT WILL NOT RESULT IN SEVERE INJURY OR DEATH AND/OR DAMAGE TO EQUIPMENT.
TO AVOID ACCIDENTS, WHILE WORKING, ENGAGE THE VEHICLE PARKING BRAKE AND APPLY WHEEL CHOCKS TO THE VEHICLE.

WARNING: WHEN OPERATING THE COUPLER FUNCTIONS, WHILE THE COUPLER IS PRESSURIZED, AIR CAN FLOW FREELY OUT OF THE VALVES IN THE COUPLER FRONT FACE.
IF THIS IS NOT PREVENTED IT CAN CAUSE PERSONAL INJURY.
TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. CUT THE AIR SUPPLY IF IT IS NOT NECESSARY TO PERFORM THE PROCEDURE.
2. DO NOT LOOSEN ANY AIR LINES WHILE THE SYSTEM IS PRESSURIZED.
3. TIGHTEN A STEEL PLATE OR SIMILAR WITH CLAMPS AGAINST THE COUPLER FRONT FACE SO THAT IT COVERS THE CONNECTION FOR THE VALVE IN THE FRONT FACE.
THE FRONT SEAL IN THE CONNECTIONS WILL ENSURE AN AIRTIGHT CONNECTION.

WARNING: CONTACT WITH ENERGIZED ELECTRIC PARTS CAN CAUSE PERSONAL INJURY. TO AVOID ACCIDENTS, DO THE FOLLOWING:
1. IF ELECTRIC CIRCUITS NEED TO BE ENERGIZED FOR TESTING PURPOSES. KEEP HANDS, TOOLS ETC. AWAY FROM ALL ELECTRIC PARTS.
2. IN ANY OTHER CASE, ISOLATE ALL ELECTRICAL POWER TO THE COUPLER.

TOOLS:

Standard Toolkit

CONSUMABLES:**SPARE PARTS:**

Handle	P/N 1007738
Spring pin	P/N 5551061032



MTA P2550 - LRV
Running Maintenance and Service Manual - Section 03

P2550 CORRECTIVE MAINTENANCE SHEET	
	Card Code:
	R-C-03-02-02-01/R-01
System: COUPLER	Sheet: 3/4
Subsystem/Assy: VEHICLE MOUNTED EQUIPMENT	Unit: DRUM SWITCH
Component: HANDLE	Man Hours: 1.00
Maintenance Task: REPLACEMENT	

P2550 CORRECTIVE MAINTENANCE SHEET

Card Code:

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

System:

COUPLER

Sheet:

4/4

Subsystem/Assy:

VEHICLE MOUNTED EQUIPMENT

Unit:

DRUM SWITCH

Component:

HANDLE

Man Hours:

1.00

Maintenance Task:

REPLACEMENT

PROCEDURE:

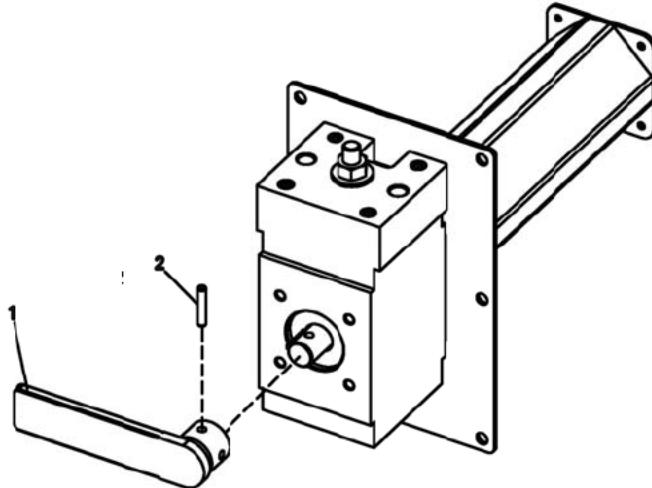


FIGURE 1 - HANDLE REPLACEMENT

3. FINAL OPERATIONS

- Restore Pneumatic Pressure to the Pneumatic System and to the Coupler.
- Restore Electrical Power to the Coupler.
- Check Drum Switch for proper functions by operating the Switch either from the outside or from the inside of the Cab, by means of the Red Handle at the left of the Operator Seat, behind the Hinged Panel since the Inside Handle is connected to the Outside One by means of the Flexball Cable.
- Perform Coupling-Uncoupling to verify correct function.
- 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 03-III-04-01-02 of this Section) and follow the prescriptions provided at Step 3 "At every Task Completion."

03-III-05 CONSUMABLE MATERIALS LIST (R-CML)

The Consumable Materials needed to accomplish the Coupler Running Maintenance are listed, sequenced in alphabetical order, by SUBSYSTEM /ASSY -UNIT / COMPONENT in the following Table 03-III-05.1.

Table 03-III-05.1 Running Maintenance Consumable Materials List (R-CML)

SYSTEM 03	COUPLER		
SUBSYSTEM /ASSY - UNIT / COMPONENT	AGENT	PN	MTA PN
AUTOMATIC COUPLER ASSEMBLY	Gleitmo/Fuchs Lagermeister 3000+		
	CTP D 350	5694000003	
	Shell Rimula X oil		
	Degreaser (Low aromatic white spirit)		
ELECTRICAL COUPLER	CRC 2000 Contact Cleaner		
	Soapy Water	(commercial)	
	Gleitmo/Fuchs Lagermesiter 3000+		
	Silicone		
MECHANICAL COUPLER ASSEMBLY	Adhesive Loctite 243		
MECHANICAL COUPLER - SUPPORT SPRING ASSY	Molykote 1000		
	Gleitmo/Fuchs Lagermeister 3000+		
PNEUMATIC CONTROLS	Soapy Water		
ELECTRICAL PLANT	Acetone	(commercial)	

03-III-06 TEST EQUIPMENT & SPECIAL TOOLS LIST (R-TESTL)

The Tools and Test Equipment needed to accomplish the Coupler Running Maintenance are listed, sequenced in alphabetical order, by SUBSYSTEM /ASSY -UNIT / COMPONENT, in the following Table 03-III-06.1.

Refer to "Tools and Test Equipment Manual" for Special Tools / Test Equipment Description and Maintenance.

Table 03-III-06.1 Running -Test Equipment & Special Tools List (R-TESTL)

SYSTEM 03		COUPLER		
SUBSYSTEM /ASSY - UNIT / COMPONENT	LACMTA STANDARD TOOLS KIT	LACMTA WORKSHOP DEVICES	SPECIAL TOOL / TEST EQUIPMENT	PN
AUTOMATIC COUPLER ASSEMBLY	X	Brush or similar Grease gun.		
		Clean lint free cloth		
			PORTABLE TEST UNIT (PTU)	1002240
CENTERING SPRINGS ASSEMBLY	X			
ELECTRICAL COUPLER	X	Non metallic Cleaning Pad		
			TEMPLATE CONTACT BLOCK- RIGHT	183013
			TEMPLATE CONTACT BLOCK- LEFT	183014
			INSERTION / EXTRACTION PLIERS	1013616
			SIMULATION PLATES for Coupler Test VPCT 16	TBS 1
MECHANICAL COUPLER - SUPPORT SPRING ASSY	X	Water or Spirit Level		
PNEUMATIC CONTROLS	X			
MECHANICAL COUPLER ASSEMBLY	X	"Milbar" Locking Wire		
		Tool or equal	WRENCH FRONT NUT	161696
			PULLING FACE "GO" GAUGE	163701
			PULLING FACE "NO-GO" GAUGE	163702
			COUPLER HOOK "NO-GO" GAUGE	167379
			MAIN PIN HOLE GAUGE	167380
			WRENCH REAR NUT	168820
			COMPRESSION RING	169099
			CLAMP	169895
			COUPLER THROAT "NO-GO" GAUGE	183135
			TOOL Dismounting	1003706
			DISMANTLING TOOL ENERGY ABSORBER	1003725
PNEUMATIC COUPLER	X			
DRUM SWITCH	X			