### Work Order Detail for Asset 246



Work Order: MRDVSH-2020-875 Status: WORK FINISHED Warranty: NO Dept: MECH - MECHANICAL Asset No: 246 - 1978 PULLMAN/MK BTC-1C COACH - POWER Serial No: 246 DOOR License: 08/07/2020 03:30 Date In: JAMES.DUNN Opened By: Asset No: 09/21/2020 03:30 Date Due: Current Equip Status: 1978-PULLMAN/MK-BTC Eq Type: 08/07/2020 03:30 Opened: 254-530001 Account: Job Type: 08/10/2020 09:17 Finished: 0.00 Reference WO: Meter 1: 0.00 Closed: Estimated Hours: 0.00 Meter 2: 0.00 Warranty Expire: User Hours: 77.78 Shop Hrs: **M4 - EVALUATE NEXT OPPORTUNITY** Accident: Priority: Project: Incident:

Non Service Request Tasks  Task: AC FILTER-30 - Replace Return Air And Fresh Filters -30 Day				Warranty:	NO	
NAC: Reason:						
Nork Class: Comments:						
Task: BTC180-PM - Btc 180 Day Class Pm				Warranty:	NO	
WAC: <b>09 - SERVICED</b> Reason:						
Vork Class: Comments:						
Task Notes						
HOWARD.F 8-8-2020 9:04AM CHANGED MAIN RES AND BRAKE PIPE HOSES F LUBRICATED CUT-OUT VALVES AND HANDLE CO T.C ASSISTED	ROM FRONT TO R OCKS.	REAR.				
Labor			Labor Hrs		Cost	
08/08/2020 10:04 Emp: <b>PARKERH - Howard Parker</b>			2.53		9.58	
08/08/2020 11:58 FLAHERDA - Daniel Flaherty			2.40	100	6.00	
08/08/2020 12:30 PELTONK - Kenneth Pelton			0.02		0.55	
08/08/2020 13:15 HALLD - David Hall			5.28		5.20	
08/08/2020 13:30 HALLB - Brian Hall			0.03		0.83	
08/08/2020 13:40 DILETIG - Gino Diletizia			5.55		52.63	
Parts	Qty Issued	Iss Price	Tax & Markup		l Cost	
2099901544-0 - SHOCK; SHOCK ABSORBER VERTICAL F/ALL SINGLE LEVELS	2.00	193.29	0.00	38	36.58	
220300182X-0 - BODY; BODY MICRO-SWITCH 2" X 3"	1.00	67.04	0.00	6	57.04	
2275639814-0 - FILTER; FILTER AIR DIRT COLLECTOR F/HORIZON	3.00	5.91	0.00	1	17.74	
2412003258-0 - HEAD; HEAD OPERATING CUTLER HAMMER F/ AEM-7	1.00	58.78	0.00	5	58.78	

Overhead

Small Parts - Labor: 0.00

Tools: 0.00

Overhead Costs: 0.00 Small Parts - Parts: 0.00

Total Overhead Costs: 0.00

### Messages

Unit Is 5 Days Late For Inspection Service Coach-Cln-A - Due Date 08/05/2020 Unit Is 5 Days Late For Inspection Service Coach-Cln-Ex - Due Date 08/05/2020 Unit Is 5 Days Late For Inspection Service Coach-Cln-C - Due Date 08/05/2020



Work Order Detail

Work Order: MRDVSH-2020-875

PM Checklist								
Task / Comment			Employee	Completed	N/A	Failed	SR	Comments
AC FILTER-30	Exception	PM: No						
PM5840 - REPLACE RE FILTERS	TURN AIR AND FRESH	PELTONK PELTON	- KENNETH	1				
BTC180-PM	Exception	PM: No						
PM448 BLIN 180-DAY INSPECTION		PARKERH PARKER	- HOWARD	$\checkmark$				
PM110 SHEE	ET METAL WORKER	PARKERH PARKER	- HOWARD	1				T.C ASSISTED
PM323 - CHECK UNDER OF LOOSENING AND D	RCAR PIPING FOR SIGNS DAMAGE	PARKERH PARKER	- HOWARD	$\checkmark$				T.C
PM330 - INSPECT ALL HOSES & FITTINGS TH		PARKERH PARKER	- HOWARD	$\checkmark$				T.C
Procedure: OF LEAKSÝ HOLESÝ HAVE MISSIN COMPONENTS OR ARE RESTRICTIONS.								
PM338 - FLUSH AND C EVAPORATOR COILS	LEAN DRAINPAN UNDER	PARKERH PARKER	- HOWARD	1				
PM339 - REPAIR ANY INSULATION	TORN OR MISSING PIPE	PARKERH PARKER	- HOWARD	1				
PM720 - RECONNECT TO TRUCKS	HOSES FROM CAR BODY	PARKERH PARKER	- HOWARD	1				
PM721 - AVAILABLE FO SINGLE CAR AIR TEST	OR LEAK REPAIR DURING	PARKERH PARKER	- HOWARD	$\checkmark$				
PM117 CARI	MAN	FLAHERDA	A - DANIEL	1				
PM324 - INSPECT ALL VALVES TREAD BRAKE		FLAHERDA	A - DANIEL	$\checkmark$				
Procedure: OPERATION ALL BOLTS AND BUSH KEYS				_				
PM325 - INSPECT TRU TRUCK-MOUNTED COM	ICK FRAME AND MPONENTS FOR PROPER	DILETIZIA		1				
ALL SPRINGS AND SEA CASTINGÝ BRAKE RIG	BUMPERSÝ RUBBER NG SYSTEMÝ SHOCK L BOX AND BEARINGSÝ ATSÝ TRUCK CENTER GINGÝ SIDE BEARINGSÝ DSÝ SAFETY HANGERSÝ							
PM817 - CHECK ALL E BUSHINGS FOR DAMA		HURNEYJ	- JOHN HURNE	Y				
Procedure: UIRED - 8 RMM 12.2.3 FRA 238.3	LOCATIONS PER COACH 803(C)(5)(IV)							
PM326 - INSPECT WHI COMPLETE WHEEL RE		DILETIG -		<b>√</b>				WHEEL TRUE
PM327 - CHANGE BRA	KE SHOES AS NEEDED	HURNEYJ	- JOHN HURNE	Y				

			Accounted Assessment	
PM328 - INSPECT COUPLERS AND COUPLER PARTS FOR HEIGHT AND CONDITION	DILETIG - GINO DILETIZIA	$\checkmark$		
Procedure: RECORD ON CRM-3A RMM-3.2 FRA FRA-238.303(E)(3)		_		
PM329 - INSPECT DRAFT GEAR - TIGHTNESS IN POCKET, CRACKING,	DILETIG - GINO DILETIZIA	1		
Procedure: OTHER DAMAGES				
PM637 - INSPECT WELDED BRACKETS USED TO ATTACH HANDRAILS ON BOMBARDI	DILETIG - GINO DILETIZIA	$\checkmark$		
Procedure: ER COACHES (300`SÝ 600`S AND 1600`S) AND ON KAWASAKI COACHES (700-766Ý AND 1700`S). ALSO INSPECT WELDED BRACKETS AT UNCOUPLING LEVERS ON ALL KAWASAKI COACHES (700 SÝ 900 SÝ AND 1700 S).				
PM331 - INSPECT ENTIRE CAR BODY FOR LOOSE , DEFECTIVE AND	HURNEYJ - JOHN HURNEY	1		
Procedure: MISSING PARTSÝ TO INCLUDE LUGGAGE RACKSÝ SEATSÝ SEAT ATTACHMENTS AND TRAPS RMM-1.4.1.A FRA FRA-238.307(C)(1)				
PM332 - CLEAN FRESH AIR INTAKE SCREEN AT BOTH ENDS	FLAHERDA - DANIEL FLAHERTY	$\checkmark$		
PM333 - TEST AND LUBRICATE THE HANDBRAKE	HURNEYJ - JOHN HURNEY	1		
PM334 - INSPECT FIRE EXTINGUISHER FOR PROPER GAUGE AND DATE AND VERI	HALLD - DAVID HALL	1		ASSISTED BY JJ [
Procedure: FY PIN AND SEAL ARE INTACT FRA-238.307(C)(4)				
PM335 - INSPECT FOR EMERGENCY PRY BAR IN PLACE	HALLD - DAVID HALL	✓		JJD RD
PM336 - LUBRICATE ALL MOVEABLE PARTS INCLUDING DOOR TRACKS AND	HALLD - DAVID HALL	1		JJD RD
Procedure: ROLLERS WITH DRY GRAPHITE				
PM337 - REPLACE BAD-ODOR SPONGE AT BOTH ENDS OF CAR	FLAHERDA - DANIEL FLAHERTY	<b>√</b>		
PM651 - INSPECT ALL SEATS, SEAT CUSHIONS AND SEAT ATTACHMENTS FOR BR	HALLD - DAVID HALL	1		JJD RD
Procedure: OKENÝ LOOSEÝ OR SHARP EDGES RMM-1.4.1.A FRA FRA-238.307(C)(1)				
PM340 - VERIFY PROPER OPERATION OF EMERGENCY EXIT WINDOW	HALLD - DAVID HALL	1		JJD RD
Procedure: LOCATION AND RECORD				
PM341 - CHECK FOR PROPER EMERGENCY SIGNAGE INTERIOR AND EXTERIOR AND	HALLD - DAVID HALL	1		JJD RD
Procedure: HIGH VOLTAGE SIGNS.				
PM341.2 - INSPECT LOW LEVEL EXIT PATH MARKING (LLEPM) SIGNAGE	HALLD - DAVID HALL	1		JJD RD

Work Order Detail

Work Order: MRDVSH-2020-875

PM342 - FUNCTIONALLY TEST OPERATION OF POWER DOOR RELEASE MECHANISMS	HALLD - DAVID HALL	1		JJD RD
Procedure: BOTH INTERIOR AND EXTERIOR - POWER DOOR EQUIPPED COACHES ONLY.				
PM575 - TEST ALL EMERGENCY VALVES (CONDUCTORS VALVES)	FLAHERDA - DANIEL FLAHERTY	1		
PM343 - PERFORM SINGLE CAR AIR TEST (RECORD ON CRM-3A)	FLAHERDA - DANIEL FLAHERTY	$\checkmark$		
Procedure: NOT ON 180 DAY IN LINE INSPECTION EXCEPT IF CONDITIONS WARRANT				
PM574 - REPLACE E-TYPE FILTER CARTRIDGE	FLAHERDA - DANIEL FLAHERTY	<b>√</b>		H PARKER
PM610 - CHECK FOR FIRST AID KIT AND REPLENISH AS NECESSARY	HALLD - DAVID HALL	1		JJD RD
PM360 - CLEAN RETURN AIR FILTER GRILLS	FLAHERDA - DANIEL FLAHERTY	1		
PM454 ELECTRICAL	HALLB - BRIAN HALL	1		AJ
PM345 - INSPECT ALL UNDERSIDE CONDUIT AND ENCLOSURES FOR SIGNS OF	HALLB - BRIAN HALL	1		AJ
Procedure: DAMAGE AND SEAL INTEGRITY				
PM346 - CHECK UNDER CAR HIGH AND LOW VOLTAGE WIRING AND CABLING AND	HALLB - BRIAN HALL	1		AJ
Procedure: ELECTRICAL EQUIPMENT FOR SIGNS OF DAMAGE OR OVERHEATING			 	
PM347 - CHECK ALL WHEEL SENSORS AND CABLING FOR SIGNS OF DAMAGE AND	HALLB - BRIAN HALL	<b>√</b>		AJ
Procedure: PROPER GAP				
PM348 - INSPECT AND CLEAN ALL JUMPERS AND JUMPER RECEPTACLES	HALLB - BRIAN HALL	$\checkmark$		AJ
PM349 - REPAIR OR REPLACE AS NEEDED ALL GROUND STRAPS AND CABLES	HALLB - BRIAN HALL	<b>√</b>		AJ
PM712 - REPAIR AND REPLACE TRAP HEATERS (AS NEEDED)	HALLB - BRIAN HALL	1		AJ
PM350 - TEST ALL M.U. AND SIGNAL CIRCUITS	HALLB - BRIAN HALL	1		AJ
PM351 - CHECK ALL SWITCHES, RELAYS, CONTACTORS, SHUNT TRIPS, WIRING	HALLB - BRIAN HALL	$\checkmark$		AJ
Procedure: CONNECTIONS AND CIRCUIT BREAKERS FOR PROPER OPERATIONSY SIGNS OF LOOSENING AND OVERHEATING.				
PM352 - REPLACE AS NEEDED HEAD LIGHTS, BRAKE INDICATOR LIGHTS, CLASS	HALLB - BRIAN HALL	$\checkmark$		AJ
Procedure: LIGHTSÝ NUMBER LIGHTSÝ STEP LIGHTSÝ EMERGENCY LIGHTS AND GENERAL LIGHTING.				
PM353 - TEST WHEEL SLIDE SYSTEM FOR PROPER OPERATION AND SECURE CONT	HALLB - BRIAN HALL	$\checkmark$		AJ
Procedure: POL BOY				

Page 4 of 6

Report Date: 8/10/2020

Work Order: MRDVSH-2020-875

PM354 - CLEAN AND VACUUM ALL ELECTRICAL LOCKERS	HALLB - BRIAN HALL	1	AJ	
PM355 - CHECK FOR PROPER OPERATION OF H.V.A.C. CONTROLS AND THERMOST	PELTONK - KENNETH PELTON	1		
Procedure: ATS				
PM356 - CHECK THE EVAPORATOR BLOWER AND CONDENSER FANS FOR PROPER	PELTONK - KENNETH PELTON	<b>√</b>		
Procedure: WORKING CONDITION				
PM357 - REPLACE RETURN AIR AND FRESH AIR INTAKE FILTERS	PELTONK - KENNETH PELTON	<b>√</b>		
PM358 - INSPECT ENTIRE H.V.A.C. SYSTEM FOR LOOSE OR MISSING COMPONEN	PELTONK - KENNETH PELTON	1		
Procedure: TS, LEAKS AND SIGNS OF EXCESSIVE VIBRATION			 _	
PM359 - INSPECT COMPRESSOR FOR PROPER OIL LEVEL AND RECEIVER TANK FO	PELTONK - KENNETH PELTON	1		
Procedure: R PROPER REFRIGERANT LEVEL			 	
PM362 - TEST HIGH AND LOW VOLTAGE SYSTEMS FOR GROUNDS	HALLB - BRIAN HALL	<b>√</b>	A	J
PM363 - INSPECT AND REPAIR TRAP HEATERS AS NEEDED	HALLB - BRIAN HALL	✓	A	J
PM638 - TEST POWER DOOR OPERATION-POWER DOOR EQUIPPED COACHES ONLY	HALLB - BRIAN HALL	$\checkmark$	A	J
PM361 - CLEAN SURFACE OF CONDENSER COILS	HALLB - BRIAN HALL	1	K	Р
PM5032 COACH CLEANER	NURSEM - MARK NURSE	1		
PM5974 - REMOVE ALL TRASH	NURSEM - MARK NURSE	$\checkmark$		
PM5982 - REMOVE ALL TRASH FROM ELECTRICAL LOCKER AND FUSEE BOX	NURSEM - MARK NURSE	<b>√</b>		
PM5983 - WIPE DOWN ALL HANDLES GRAB HANDLES AND HANDHOLDS	NURSEM - MARK NURSE	1		
PM5984 - CLEAN SEAT BACKS BOTTOMS AND TABLES	NURSEM - MARK NURSE	<b>√</b>		
PM5985 - SWEEP AND WET MOP FLOORS AND STAIRS	NURSEM - MARK NURSE	<b>√</b>		
PM5986 - HAND WASH ALL TOILET ROOM SURFACES AND BUTTONS	NURSEM - MARK NURSE	$\checkmark$		
PM5987 - CLEAN AC VENTS	NURSEM - MARK NURSE	<b>√</b>		
PM5988 - WIPE DOWN ALL CAB SURFACES CONTROLS AND DISPLAY SCREENS	NURSEM - MARK NURSE	$\checkmark$		
PM5989 - CLEAN WINDSHIELD INSIDE AND OUTSIDE	NURSEM - MARK NURSE	1		
PM5990 - CLEAN ALL WINDOWS	NURSEM - MARK NURSE	1		
PM5975 - REMOVE ALL GRAFFITI AND	NURSEM - MARK NURSE	1		

Work Order: MRDVSH-2020-875

**WO Notes** 

Comments:

Work Order Total:	\$964.93
Internal Total: Commercial Total:	\$964.93 0.00
Overhead Costs:	\$0.00
Equipment Usage Costs:	\$0.00
Commercial Tax & Markup:	\$0.00
Commercial Misc Cost:	\$0.00
Commercial Labor Cost:	\$0.00
Commercial Parts Cost:	\$0.00
Internal Labor Cost:	\$434.79
Internal Parts Cost:	\$530.14



### PM PACKET SIGN-OFF SHEET

Instructions: Please complete this form ensuring all attached paperwork is completed. Once completed, attach this form with the required PM packet documents.

Fau	ipment ID: 146
) [20	d 9/6
	180 034
Dat	te Work Order Closed: 8-10-20
	Work Deferred
Yes No	
	Enter Deferred Work Order number below
Yes No	Enter Deferred Work Order Number
Yes No	
	Coach Tests
	Disc Report
	A/C Filters
	Toilet
	45 Day PM
	clearly and sign)
Signature	: (10)
y and sign)	
Signature	2:
	Yes No  Yes No  Yes No  Yes No  Signature  Yes and sign)



### **MAINTENANCE & REPAIR FORM**

KEOLIS/MR-1

TRAIN# COACH 92 DAY 2 YR 1 YR CAB CARD 5 YR 3 YR 1 YR DATES LOCO 90 DAY Coach Coach Coach Loco/Cab Car Coach Coach Coach Coach Loco/Cab Car Coach **EMPLOYEE CORRECTIVE ACTION TAKEN & DATE SIGNATURE** LOCO/COACH # DEFECT FOUND NONE EMERSELY WINDOWS L VERTICAL Shock NO 2R VERFICAL Shock NOT

FOREMAN IN CHARGE



### EMERGENCY LIGHTING DURATION TEST RECORD

All Single-Level Coaches 90-DAY PM 🗹 180-DAY PM Date Tested: 8/8/10 Time Test Began: (h) 16 (m) 00 Time Test Ended: (h) 4 (m) 00 Coach #: \_\_\_\_\_ Employee #: \_\_\_\_\_ Employee Signature: \_\_\_\_ B H Ensure emergency ballasts have been charged for 30 minutes. At the epd of 60 minutes in operation, the emergency lights were (check one): Record any failures and ballast All emergency lighting is functioning properly. replacements on MR1 form. Duration: 60 minutes (How long lighting functioned) #1 END LIGHTING ARRANGEMENT 200 - 258 SERIES BTC LIGHTING ARRANGEMENT # 2 END 350 - 389 SERJES BTC #2 END 600 - 1600 SERIES BTC - CTC LIGHTING ARRANGEMENT #2 END 500 - 1500 SERIES BTC - CTC COMMENTS:

NOTE: Refer to instructions for performing tests on Page 2 if needed.



# EMERGENCY LIGHTING DURATION TEST RECORD All Single-Level Coaches

### INSTRUCTIONS:

Before beginning, verify the following: Any/All emergency lighting ballast replacements have been completed.

- 1. The emergency lighting ballasts have been charging for at least 30 minutes.
- Ensure the main lighting circuit breaker is ON, all individual light switches are ON, and when equipped, the emergency light cutout switch in the circuit breaker control panel is in the NORMAL position.
- Verify all regular inside coach lighting in ON.
- 4. Turn the main lighting circuit breaker OFF.
- 5. Verify all emergency lighting comes ON.
- Verify emergency lighting remains ON for 60 minutes. If at any point in the 60-minute period
  the emergency lighting stops functioning altogether, record its duration on the MR1 form, then
  refer to the NOTE that follows Step 10.
- At the end of 60 minutes, record the results in the spaces provided on the record sheet.
- Turn the main lighting circuit breaker ON after testing /recording is complete.
- Ensure the record sheet is fully completed, then submit it to the Foreman on duty. The completed record sheet is to be included in the PM completed work order and control forms package.
- Charge the emergency ballasts for 30 minutes.

**NOTE:** If any of the steps fail to perform as expected, consult the OEM manual as needed, and troubleshoot/repair/replace parts. If all the emergency lighting fails early, begin by double-checking that the ballast actually did charge a full 30 minutes prior to testing. Retest. Provide PM comments or open a Service Order, whichever is applicable.



### COACH COUPLER INSPECTION REPORT



Coach#: JUG

For any maintenance and/or replacement

Task	Description	Other reference	Front	Rear
	Inspect Coupler to Include:			
1.	Visually Inspect Coupler for Proper Coupling, damage and Body Integrity	FRA-238.303(e)(3) APTA PR-M-RP-002-98	)H	2H
2.	Gauge Coupler for 31000 34100-1 34100-2A (if required) 32600 34101-4 44250-5	APTA PR-M-RP-002-98	SH	SH
3.	Inspect Coupler lock + lock drop/ and inspect for proper coupling CHECK "TELLTALE" IS CLEAR, NO OBSTRUCTION.	APTA PR-M-RP-002-98	SH	ЭН
4.	Inspect Coupler Anti-Creep+ Draft Gear for Excessive Wear, Loose or Cracked Welds in Pocket	FRA-238.303(e)(3) APTA PR-M-RP-002-98	2H	HC
5.	Coupler Lock Lift (Special Lock) lever and Operating Rod Eye Clearance.	APTA PR-M-RP-002-98	SH	HC
6.	Inspect Coupler Free Slack	APTA PR-M-RP-002-98	ZH	JH
7.	Inspect Coupler Left Level Coupler as Required, Measure Height+ Record on Document# HRU-3	HRU-3	SH	XH
8.	Perform Coupler Carrier Inspection	FRA-238.303(e)(3) APTA PR-M-RP-002-98	41	JH
	Record all Defects on Form MR1			

	Record all Defects on Form MR1			
Date:	8.8-20	Employee:	HULNEY.	_
Employee I	D:	Employee Signature:	) pp	_
Foreman:	Della	Foreman Signature:	1/61	
KCS-ME-FO-2:	10072 Rev. 4		11/6/2018 Coupler Inspection Report	

### Keolis

Coach #: 216

# COACH WHEEL REPORT



3.1			и
	<b>10</b> 46		В
			ı
			8
			8
PERMIT	Section 1		

	011111		- 1		1100		000
			WHEEL	IEASURE_		Test Date	88-2
POS.	FLANGE HEIGHT [LIMIT: 1 7/16"]	FLANGE THICKNESS [LIMIT: 1"]	RIM THICKNESS [LIMIT: 1 1/18"]	POS.	FLANGE HEIG	THICKNESS	RIM THICKNESS [LIMIT: 1 1/18"
L1		(annual )		R1			
L2				R2			
L3				R3			
L4				R4			
Comm	ents:						
			TOP OF RAIL C	LEARANCE	HEIGHT		
	COUPLER HEIG	нт		OT HEIGHT		FLOOR F	
(	MAX. 34 1/2" MIN.		(MAX	(MAX. 6" MIN. 4")			1L T/S
FR	ONT 3	2	FRONT	RONT N/A		1R5/25	2L 5/2
RI	AR S		o cooling VEDI	FICATION	NEDECTION		
		<u>A</u>	IR SPRING VERI	FICATION	NSPECTION	•	
LI		NG HEIGHT	R2 <u>9</u>	SPRING NO. 1 END 56 LBS			<u>6</u> _LBS.
			SINGLE CAR	TEST PRES	SURES		
		ASP		ВСР	FULL SERVICE	EMER	GENCY
	DEFLATED	0		DEFLATED	57	67	
	AW0	56 S	8	AW0	58	70	
	AW3		12	AW3	68	79	
					Employee:	Kenter	1 12

# Keolys Commuter Services

# WHEEL MACHINE- DAILY PRODUCTION LOG

SHIFTS

FACILITY RDV

MACHINE OPERATORS ( COUS K

NCE								
COMMENTS NONCONFORMANCE DISPOSITION								
NEW LOCK PLATE								
FINISH READING RIM	1 13/11	1/3/1/2	1/5/1	1/3//	1 3/8	13/8	1 7/8	11/8
FINISH READING FLANGE	0/0	_						>
BACK TO BACK	5 3%							>
REASON FOR WORK	FS	_						>
REA FO WO	ST	_						>
WHEEL SERIAL NUMBER								
WHEEL POSITION NUMBER	7	R1	173	R2	L3	R3	L4	R4
EQUIPMENT LOCOMOTIVE OR COACH			246					

"0" + OR -1 ON WHEEL GAUGE

FLANGE THICKNESS

BACK TO BACK

REASON FOR WORK

FLAT SOT

BUT

53 TO 53 3/8

SERVICE LIMITS

INSPECTED BY

**5% FINAL INSPECTION** 

BOTH WITHIN 1 TAPE

TAPE SIZE WHEELS RIM THICKNESS

SHELLED TREAD BUILT UP TREAD

HEAT CHECKS HIGH FLANGE

오 生 ST

THIN FLANGE

HOLLOW WEAR

¥

RE-PROFILE

1" MINIMUM

1. WHEN JOURNAL BEARING END CAPS ARE REMOVED, APPLY NEW LOCKING PLATES

KEOLIS PASSENGERS CAR 53 3/32" TO 53 3/4", LOCO. NJ-53 3/32" TO 53 3/8" / WT-53" TO 53 1/4

WHEN WHEEL SERIAL NUMBER IS NOT AVAILABLE, ENTER N/A IN THE SPACE PROVIDED

REPORT APPROVAL

DATE

DIESEL HOUSE FORMAN / DATE

COACH HOUSE FORMAN / DATE ( IF NECESSARY, IF NOT MARK N/A ) Keolis

### MBTA COMMUTER RAIL COACH WHEEL SLIDE REPORT

VEHICLE NO: _	246 DATE:	8/8/20	LOCATION:	Rd	<u></u>
WHEEL SŁID	E CONTROL UNIT:				
四	Wheel Slide Control Un performance test	it System	COMMENTS		
	Electronic panels, cards lights and fuses	, wires, test			
	Speed sensor resistance	check Signature:	RH	KP	
	#4 977		COMMENTS		
PNEUMATICS	A & B valve operation A B	Signature:	BH	ΚP	
SPEED SENSO	DRS AND CABLES:		COMMENTS	:	
	Speed sensor cables Proper sensor				
	Speed sensor gap		,		
	gear	Signature:	BH	KP	
DEFERRED V		SEVERIT A - HOLD CAR- B - SCHEDULE C - MONITOR	Y CODES FOR REPAIR		RECOMMENDED SEVERITY CODE
SYSTEM STA	TUS:			1	1
	FUNCTIONING	Foreman		1/6	1
	NOT FUNCTIONING	Signature		141	

Keolis

## MBTA COMMUTER RAIL HVAC SYSTEM INSPECTION for Single Level Coaches

Bombardier Coaches 600-653, 1600-1652 (Faiveley A/C System R-22) Bombardier Coaches 350-389, (Stone Safety A/C System R-22) MBB Coaches 500-532, 1500-1533 (Sigma A/C System R-22) Pullman Coaches 200-257 (Stone Safety A/C System R-22)

COACH CLEA	RMEN CREATE DATE COMP	UMBER: <u>246</u> PLETED: <u>8 8 2020</u>
REQUIRED TO	attachments, Megohmeter, Electronic Leak Detector, HVAC Ma Bristle Brush, Rubber Mallet, Step ladder	
WARNING	ALL SAFETY PRECAUTIONS AND EQUIPMENT TAG OUT PROC BE STRICTLY ADHERED TO. FOLLOW SPECIFIC PROCEDURE INSTRUCTIONS FOR DETERMINING IF EQUIPMENT IS TO BE E PRIOR TO STARTING ANY TEST.	
	-	PASS FAIL
	erant level in lower sight glass of receiver tank is visible. de refer to leak detection/repair procedure	
	ng visual and electronic leak detector for Freon leaks and traces of connections, fittings, valves, compressor, condenser coils, etc.	
<ol><li>Vacuum air flow.</li></ol>	intake compartment and check evaporator pan and drains for water	~
4. Wash return	n air grill.	
5. Check all m	notors and mounts for securement and deterioration/damage.	
6. Inspect air f	flow boots for integrity and proper attachment.	i~
Inspect all of blower motors	contactors, that control compressor, condenser fan, heaters, and ors.	
8. Blow all cor	ntrol boxes with air to clean any debris from them.	
	and dust from temperature sensors and temperature control units.	
10. Replace air	filters and Bad Odor Sponges.	
		PASS FAIL

11.	Megger test compressor, condenser fan, and blower motors for grounds with Megohmeter.
12.	Test resistance values of all overhead (30-80 $\Omega$ 's), and floor heaters (30-50 $\Omega$ 's). Megger test from heater circuit to ground (>2M $\Omega$ ). See Chart in appendix A (May through November only)
13.	Test resistance values of all protective heaters (10 to 50 $\Omega$ 's). Megger test from heater circuit to ground (>2M $\Omega$ ).
14.	Inspect and test operation of air flow switch and overhead heat thermostat (Klixon).
15.	Inspect all motors and record current draw on all phases.
	EVAPORATOR BLOWER  MOTOR #1  CONDENSER FAN MOTOR #1  Phase A 1-3  Phase B 1-3  Phase B 2.7  Phase C 2-1  Phase C 2-7  Phase C 2-7  Phase C 2-7  Phase C 2-7
	EVAPORATOR BLOWER  MOTOR #2  CONDENSER FAN MOTOR #2  Phase A 1-3  Phase B 1-3  Phase B 2-7  Phase C 2-7  Phase C 2-7
16.	Check for proper rotation and air flow of condenser fan and blower motors.
17.	Check thermal expansion valve bulbs for proper securement.
	PUT HVAC SYSTEM ON AUTOMATIC AND CHECK FOR PROPER OPERATION
18.	Between Nov 1st through May 1st apply manifold gauges to high and low sides of system, apply diagnostic equipment (TEST BOX). Operate the system and record Freon pressures.
	No. 1 END No. 2 END
	Line valve THX Modulation THX Line valve THX Modulation THX
	Low Side     Low Side       Suction Pressure     Suction Pressure         Low Side       Suction Pressure         Suction Pressure         Suction Pressure         Suction Pressure
	Saturation Temp. Saturation Temp. (from chart) Saturation Temp. (from chart) Saturation Temp. (from chart)
	Suction Temp Suction Temp Suction Temp
	SUPERHEATSUPERHEATSUPERHEAT
	High Side
	Ambient Temperature Discharge Pressure

PASS FAIL

19.	glass. (Nominal: 270 - 275 psig)		
	Cover condenser coils with cardboard to cause #2 condenser fan to operate.		
	(Nominal: 250 psig) START PRESSURE: 260		
	Restrict compressor suction valve to lower system pressure, until shutdown.  (Nominal: 20 to 25 psig)	71	
	SHUTDOWN PRESSURE: /b		
	REOPEN SUCTION VALVE		
22.	Block condenser completely to cause system to go into modulation, if necessary heat coach prior to attempting modulation to cause a higher pressure. (Nominal: 380 - 400 psig)  MODULATION PRESSURE:  Observe that modulation occurs and continues to operate in modulation until a pressure of 330 +/-10 psig is reached. (When modulation occurs you will see a sudden drop in pressure around 400 psig).		
23.	Block condenser completely to cause system to shutdown on high pressure, if necessary heat coach prior to attempting shutdown to cause a higher pressure.  (Nominal: 425 - 430 psig)  SHUTDOWN PRESSURE: 425  CAUTION: DO NOT CONTINUE IF PRESSURE GOES ABOVE 435 psig.		
	NOTE: Do not use discharge valve to raise pressure.		
24.	Record the loading pressure and the unloading pressure for each head.  (place a heat load on the coach and use suction valve)		
	1st stage unloader LOADED: 64 1st stage unloader UNLOADED: (Nominal: 63 - 65 psig) (Nominal: 51 - 55 psig) 2nd stage unloader LOADED: 92nd stage unloader UNLOADED: (Nominal: 68 - 70 psig) (Nominal: 56 - 60 psig)	54 58	_
25.	. Check system for moisture at the filter dryer sight glass indicator, if indicator is pink in color, or the sight glass indicates moisture, checked failed. If failed change the filter/dryer.		
26.	. Between Nov 1st through May 1st take oil sample (Acid Test) use test kit. Follow the oil sample kit instructions to determine condition of the compressor oil and record result.		
	MARGINAL PASS FAIL N/A		
27.	. Wash condenser compressor unit and associated piping.		

PASS FAIL

28	Using the DTE (Diagnostic Test Equipment) raise the temperature in the coach so that Full Cool will be called for. (>75°F)	
29	Remove the DTE and observe that the coach responds properly moving from Full Cool to Partial Cool. Verify that the modulation valves deenergize. (Appox. $74^{\circ}F$ )	
30	When the Coach gets cooler Reheat is energized. Verify 1st stage OH heat contactors close. (Approx. $72^{\circ}F$ )	
31	The Coach should continue to cool until Partial cool drops out. Verify Compressor contactor is Open. (Approx. 71°F)	

Reviewed by

FOREMAN

MANAGER

### APPENDIX A

	Resistance	Char
OH -	1et Stane	

200	OH - 1st Stage	75+- 2.5	Ω
	OH - 2nd Stage	47.5+- 2.5	Ω
	FH - 1st Stage	32.5 +- 2.5	Ω
	FH - 2nd Stage	Disabled	
300	OH - 1st Stage	75+- 2.5	Ω
	OH - 2nd Stage	47.5+- 2.5	Ω
	FH - 1st & 2nd Stage	52.5 +-2.5	Ω
500	OH - 1st Stage	67.5 +- 2.5	Ω
	OH - 2nd Stage	35 +- 5	Ω
	FH - 1st & 2nd Stage	35 +- 5	Ω
600	OH - 1st Stage	57.5 +- 2.5	Ω
	OH - 2nd Stage	37.5 +- 2.5	Ω
	FH - 1st & 2nd Stage	32.5 +- 2.5	Ω



### REFRIGERANT USAGE AND LEAK REPAIR RECORD

The EPA, in accordance with Section 608 of the CLEAN AIR ACT, requires record keeping of refrigerant usage and leak repairs for comfort cooling systems with a charge of 50 pounds or greater. All single level coaches have approximately a 55 pound charge. Kawasaki coaches have a 33 pound charge in each end. Any leak with an annual leak rate greater than 15% of system capacity must be repaired.

Coach 246 Date 8-8-	2020 Location REA	DUILLE
Defect		
Repair		
Amount of Refrigerant recovered from system	-0-	
Amount of recovered Refrigerant reinstalled in system	-0-	
Amount of new Refrigerant charged to system	-0-	
Amount of Refrigerant drawn from stores	-0-	

	Single-level								Bi-level											
	55# SYSTEM										VSRS 33# SYSTEM									
#	%	#	%	П	#	%		#	%		#	%	#	%	T	#	%	П	#	%
1	1.8	12	21.8	П	23	41.8		34	61.8		45	81.8	1	3.0		12	36.4		23	69.7
2	3.6	13	23.6	П	24	43.6		35	63.6		46	83.6	2	6.1		13	39.4		24	72.7
3	5.5	14	25.5	П	25	45.5		36	65.5		47	85.5	3	9.1	I	14	42.4		25	75.8
4	7.3	15	27.3	П	26	47.3		37	67.3		48	87.3	4	12.1	I	15	45.5		26	78.8
5	9.1	16	29.1	П	27	49.1		38	69.1		49	89.1	5	15.2	I	16	48.5		27	81.8
6	10.9	17	30.9	П	28	50.9		39	70.9		50	90.9	6	18.2	I	17	51.5		28	84.8
7	12.7	18	32.7		29	52.7	1	40	72.7		51	92.7	7	21.2	Ī	18	54.5		29	87.9
8	14.5	19	34.5	П	30	54.5	6	41	74.5		52	94.5	8	24.2		19	57.6		30	90.9
9	16.4	20	36.4		31	56.4	1	42	76.4		53	96.4	9	27.3	ľ	20	60.6	1	31	93.9
10	18.2	21	38.2		32	58.2	6	43	78.2		54	98.2	10	30.3	Ī	21	63.6	1	32	97.0
11	20.0	22	40.0		33	60.0	4	44	80.0		55	100.0	11	33.3		22	66.7		33	100.0

Alstom	Bi-leve
Alte 13#	Circuits
#	%
1	8
2 3	15
3	23
4	31
5	38
6	46
7	54
8	62
9	69
10	77
11	85
12	92
13	100
The second second second	NAME AND ADDRESS OF THE OWNER, WHEN PERSONS NAMED AND ADDRESS OF T

Has the system been charged in the past 12 months?

If yes, what was the percentage of system capacity charged?

What is the percentage of system capacity charged for this repair

Total percentage charged past 12 months

Technician

Foreman

Copies of this form are to go into the coach file and into the Freon control file.