NOVA BUS

SERVICE BULLETIN BS4153E

REFERENCE:	Nova Bus Manuals
SECTION:	02: Doors and Mechanism
RS Nº:	MQR 7621-1165
EFFECTIVE IN PROD.:	N/A

APPLICATION DEADLINE: 2019MA14
CLAIM REFERENCE NUMBER: WB-4153

SUBJECT:	Front door - Upper brush cover seal
JUSTIFICATION:	Automatic Passenger Counter may report erroneous data due to dust or water intrusion on optical front door sensor lens.

LEVEL	DESCRIPTION	DIRECT CHARGES		TIME
		LABOUR	MATERIAL	
1	Installation of rubber seal to cover the upper door brush with the hardware provided.	Nova Bus	Nova Bus	45 min
2	–	–	–	–

MATERIAL

QTY	PART Nº	REV.	DESCRIPTION	REPLACES PART N°
LEVEL 1				
1	N91377	A	SEAL FRT OVRHD APC SENSOR PRCT	–
9	N20265	–	SCREW 10-24 X 5/8 MACH PAN CR	–
9	N8906932	–	WASHER	–
LEVEL 2				
–	–	–	–	–

Materials will be available within 21 days once your order has been placed. To order, please contact Prevost Parts by phone at 1-800-771-6682, by fax at 1-888-668-2555 or by email at prevostparts.commandes@volvo.com. Specify document number, quantity of parts required and shipping address.

DISPOSAL OF PARTS

REMOVED PARTS ARE:	DISCARDED *	RETAINED	* Dispose of the unused parts and the defective parts in accordance with local environmental standards in effect.
	Yes	–	

REVISION HISTORY

REV.	DATE	CHANGE DESCRIPTION	WRITTEN BY
NR	2018AL10	Initial release	Kumaraswamy K S

APPROVED BY: Daniel Theriault

Digitally signed by Daniel Theriault
DN: cn=Daniel Theriault, o=Nova Bus, ou, email=daniel.theriault@volvo.com, c=CA
Date: 2018.05.02 13:27:14 -04'00'

CLIENT	ORDER	ROAD NUMBER		VIN (2NVY/4RKY...)		QTY
		FROM	TO	FROM	TO	
Démo US	L724	7300	7301	S92Y1D4500275	S92Y3D4500276	2
SEPTA - Pennsylvania	L728	-	-	L82W7D4500335	L82W7D4500335	1
SEPTA - Pennsylvania	L749	7302	7354	S92Y7D4500409	S92L2E4500470	53
SEPTA - Pennsylvania	L743	7356	7370	S92L1E4500489	S92L2E4500503	15
SEPTA - Pennsylvania	L741	7355	7355	S92L4E4500504	S92L4E4500504	1
SEPTA - Pennsylvania	L744	8601	8689	L82L7E4500570	L82LXE4500661	89
SEPTA - Pennsylvania	L742	7371	7414	S92L6E4500729	S92L7E4500772	44
SEPTA - Pennsylvania	L745	7415	7415	S92L0F4500873	S92L0F4500873	1
SEPTA - Pennsylvania	L746	7416	7454	S92L7F4500952	S92L8F4501012	39
SEPTA - Pennsylvania	L861	7300	7484	S92L5G9775188	S92L8G9775220	32

WARNING

Follow your internal safety procedures.

PROCEDURE

1.1. Park the vehicle on an even surface with transmission in neutral (N).

1.2. Open the front door.

1.3. Set the Master control switch in the STOP position (see Figure 1).

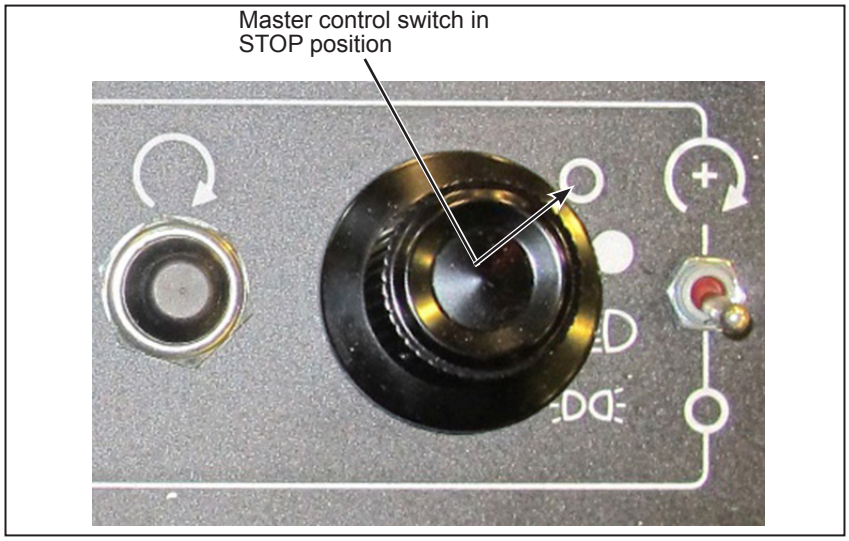

Figure 1 - Master Control Switch in STOP Position

1.4. Locate the upper door brush of the front door (see Figure 2).

Figure 2 - Typical Location of Upper Door Brush

1.5. Remove the hardware holding the upper door brush and retain the brush in its original position.

NOTE

The rubber seal must be installed correctly. Its positioning is determined by the curve in the rubber seal. The rubber seal must curve toward the door.

1.6. Align the holes of rubber seal (N91377) with the pre-existing holes on the door structure (see Figure 3).

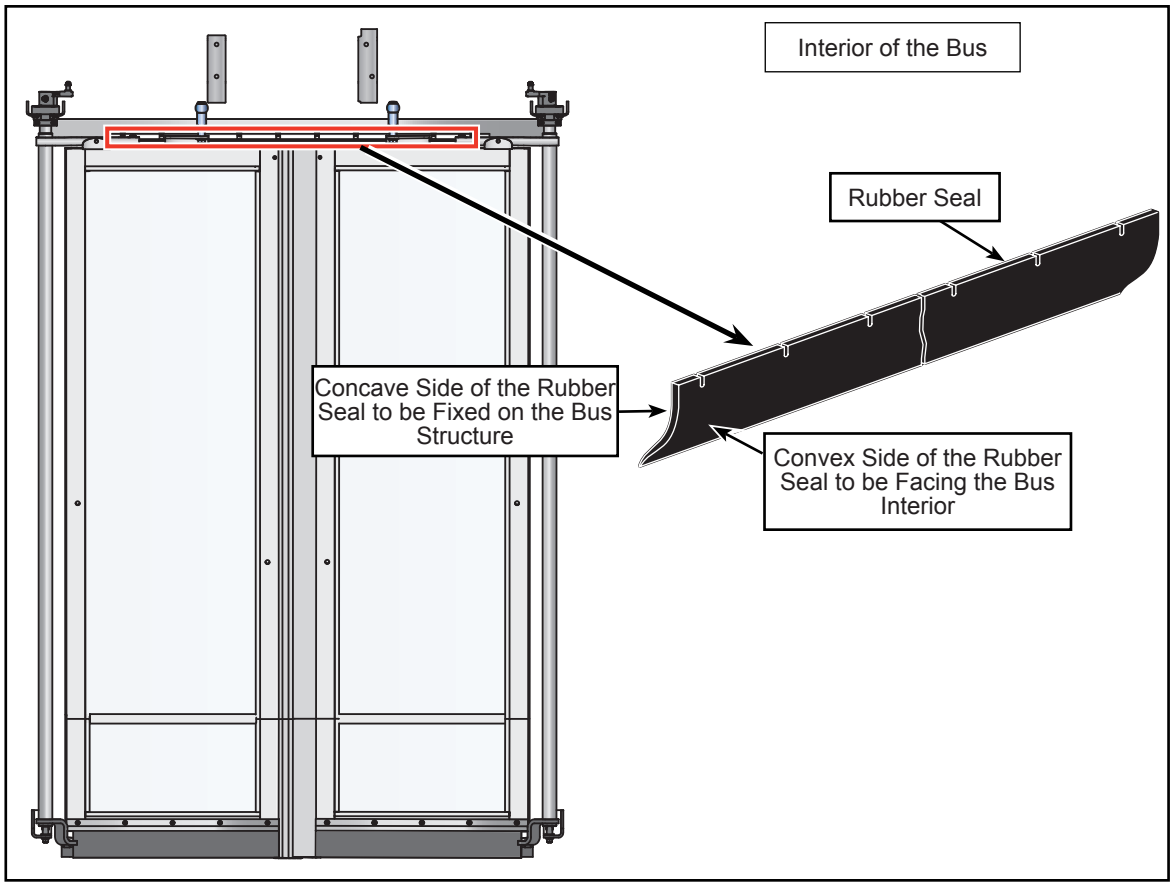

Figure 3 - Alignment of Rubber Seal

1.7. Secure the rubber seal and upper door brush with the new screws (N20265) and washers (N8906932) (see Figure 4).

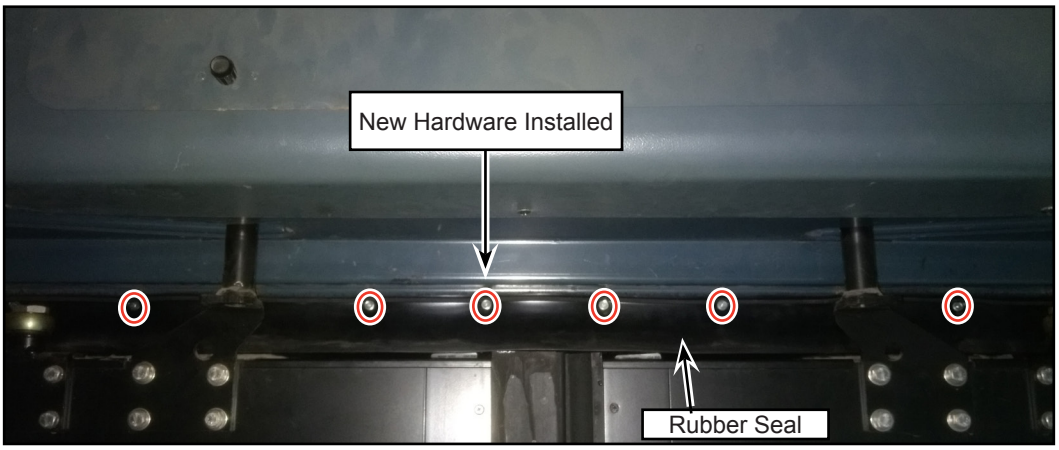

Figure 4 - Installation of Rubber Seal

ADJUSTING THE UPPER BRUSH

1.8. Adjust the upper door brush while loosening the screws from inside the vehicle.

1.9. Position the brush so that it touches lightly the outside of the door, without straddling it.

1.10. Check from outside the vehicle, with closed door panels, that the brush lightly touches the outside of the door. If it does not touch, reposition the brush.

1.11. Tighten the brush retaining screws.

1.12. Place the Master control switch in ON position.

1.13. Check for proper functioning of the front door.

ADJUSTING OVERHEAD SENSORS

1.13.1. UTA's overhead diffuse sensor assembly (see Figure 5 and Figure 6), used on SEPTA Nova buses is identical in function to the retroreflective sensor, but differs in operation. The overhead sensor "strips" each contain a series of infrared emitter LED's and a series of infrared receivers. When emitted infrared light is detected, by reflecting back from an object (passenger) below, the output of the sensor is triggered and a signal sent to the Smart Sensor.

The sensitivity of each sensor "strip" is adjustable by a small potentiometer which can be seen and accessed through a small hole in the sensor lens. Turning the potentiometer clockwise with a small straight-blade screwdriver will increase the detection range of the sensor. Turning the screw counterclockwise will decrease the detection range.

Figure 5 - Typical View of Overhead Sensor Assembly

Any sensor mounted to the underside of the door header, near the outside of a bus is subject to accumulation of water/dirt/air system oil, etc., which may penetrate the door seal or drip from the door motor area above. UTA's sensor assemblies are no exception to this, and cleaning of the sensors may be required.

As with any optical situation (car windshield, eyeglasses, camera lenses, etc) this accumulation of dirt or residue will restrict the light passing through the lens. In the case of APC infrared sensors, accumulation of dirt will restrict the emitted infrared light AND the light returned from the reflection from the passenger below. This has the same effect as "shortening" the detection range of the sensor by the adjustment potentiometer.

Figure 6 - Typical Location of Overhead Sensor Assembly mounted over Novabus Doorway

SENSOR ADJUSTMENT

NOTE

ALWAYS CLEAN THE SENSORS PRIOR TO ATTEMPTING ADJUSTMENT - Detection range of dirty sensors can be 10-12" less than clean sensors he rubber seal must be installed correctly. Its positioning is determined by the curve in the rubber seal. The rubber seal must curve toward the door.

Detection range is measured from the FLOOR.

Always use a "standard" target when adjusting diffuse sensors – UTA recommends brown cardboard as it is readily available and optically "neutral". That is, has an "average" texture and color.

1.13.2. The detection range of the overhead sensors is adjustable to accommodate different mounting heights. In the case of SEPTA's Novabus fleet, the detection range should be set to:
Outboard Sensor – 30-32"
Inboard Sensor – 36-38"

NOTE

Overhead sensor adjustment can be an iterative process. The above measurements are given as a typical starting point for adjustment.

Below is an illustration of the sensor adjustment/detection range (see Figure 7). Note the outboard sensor is adjusted several inches lower than the inboard. This is to enhance the separation between the detection point of the two sensors, and to aid in detecting passengers stepping up into the bus from the ground (or down, when exiting).

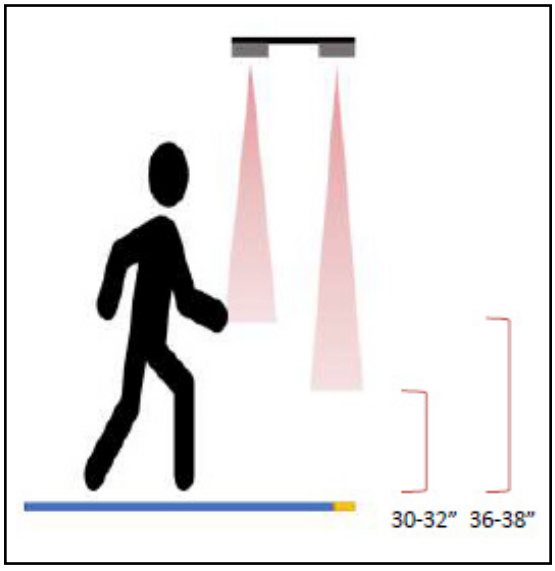

Figure 7 - Typical View of the Sensor Adjustment/Detection Range

1.14. The vehicle may be returned to service.❖