



INSTRUCTION TO SERVICE

ITS: 58911	
SECTION:	203 FRONT SUSPENSION
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SUBJECT:	Retrofitting new shock dust covers, height sensor & harness assembly. 40' & 60' Buses with Smart Rider Lite system.(supercedes ITS-58860)

ITS58911

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PROCEDURE:

1. Turn the main battery disconnect switch to the "OFF" position.
2. Drain the air from the air system.
3. Raise coach in accordance with the New Flyer Service Manual and install appropriate jack stands to support the vehicle.
4. Use wheel lifts on the front suspension to lift the front suspension slightly to support the weight of the front axle and suspension components.

 **Caution:** **ALWAYS support the weight of the axle when replacing shock absorbers.**

5. Disconnect the electrical connector that attaches the shock absorber height sensor to the vehicle harness.
 - a. Remove clamps used to attach the harness to the under body and set them aside.

Note: If the harness is bundled and tyrapped around the shock dust cover, the harness must be rerouted when the shock absorber unit is reinstalled.
6. Remove the four nuts retaining the upper shock mounting plate to the chassis bracket.
7. Remove the protective cap from the lower shock mounting nut and remove the nut.
8. Remove the clamping plate, rubber bushing and centering ring from the shock stud noting the location and orientation of the parts.
9. Compress the lower shock sufficiently to remove the shock stud from the lower mounting bracket. Remove the remaining rubber bushing from the shock stud.
10. Remove the shock absorber assembly from the vehicle and disassemble the upper mounting components as follows:
 - a. Remove the protective cap from the upper shock mounting nut and remove the nut.
 - b. Remove the clamping plate, rubber bushing and centering ring from the shock stud noting the location and orientation of the parts.
 - c. Remove the mounting plate, rubber bushing and steel sleeve from the shock stud.
11. Take the shock assembly to the work bench and secure the unit in a vice by the upper shock stud with the side of the dust cover containing the sensor channel facing upward.

 **NOTE:** **Use soft jaws in the vice to protect the threads on the upper shock stud from damage.**

12. Using a rubber mallet, apply a sharp blow to the upper end of the dust cover at the square open end of the channel in the dust cover. The dust cover should pop loose from the shock absorber.



Figure 1: Rubber Mallet Use to Release Dust Cover

13. Slide the dust cover and sensor harness off the shock absorber body and set aside.
14. Install a new dust cover/sensor/harness assembly NF P/N 6482203 over the shock body.
 - a. Align the square section channel with the magnet on the outside of the shock body and slide the dust cover over the shock body. Center the opening in the top of the dust cover with the grey circular retaining ring below the bushing on the shock stud.



Figure 2: Install Dust Cover & Center Over Grey Retaining Ring.

- b. Using a rubber mallet, apply a sharp blow to the bottom of the dust cover to seat the cover on the grey circular retaining ring. Do not strike the height sensor harness plug.



Figure 3: Using Rubber Mallet To Seat Dust Cover on Retaining Ring.

15. Install the dirt exclusion cover at the top of the dust cover.

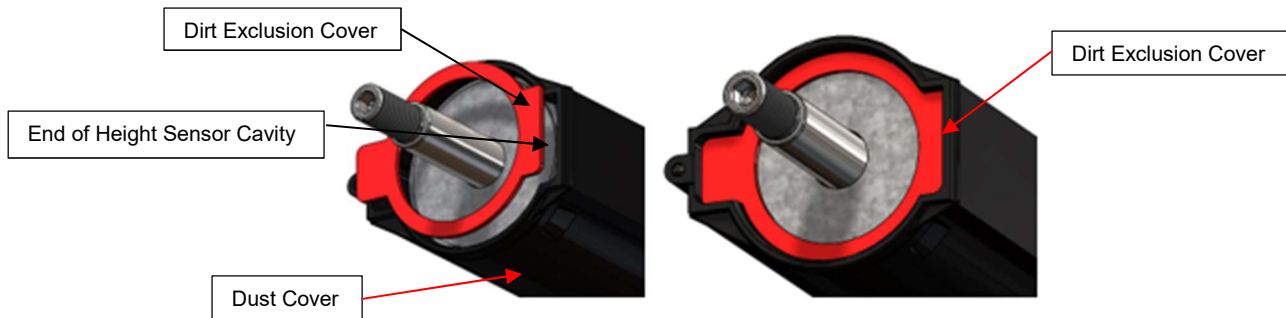


Figure 4: Dirt Exclusion Cover.

16. Assemble the upper shock mounting components as follows:

- a. Slide the steel sleeve and rubber bushing onto the shock stud. Ensure that the flat side of the rubber bushing seats against the shock body.
- b. Place the mounting plate onto the rubber bushing ensuring that the mounting plate seats on the pilot diameter of the rubber bushing.

17. Assemble the remaining upper shock mounting components as follows:

- c. Slide the centering ring and rubber bushing onto the shock stud ensuring that the pilot diameter of the rubber bushing seats within the concave side of the centering ring.
- d. Install the clamping plate onto the rubber bushing ensuring that the concave side of the clamping plate seats against the flat side of the rubber bushing.
- e. Install the M16 self-locking nut and torque to 56 Ft lbs using NEVER SEEZ NF P/N 5928660.
- f. Install the protective cap over the lock nut.

18. Align the four holes in the upper shock mount plate with the studs on the chassis mounting bracket.

19. Install four lock nuts NF P/N 203772 and torque the lock nuts to 35 Ft lbs using NEVER SEEZ NF P/N 5928660.

20. Assemble the remaining lower shock mounting components as follows:

- a. Slide the rubber bushing onto the shock stud ensuring that the flat side of the rubber bushing seats against the shock body.
- b. Compress the shock sufficiently to allow the shock stud to enter the lower mounting bracket.

21. Assemble the remaining lower shock mounting components as follows:

- a. Slide the centering ring and rubber bushing onto the shock stud ensuring that the pilot diameter of the rubber bushing seats within the concave side of the centering ring.
- b. Install the clamping plate onto the rubber bushing ensuring that the concave side of the clamping plate seats against the flat side of the rubber bushing.
- c. Clock the dust cover height sensor cavity approx. 30 degrees off the center line of the bus to ensure that the upper mounting plate nuts are not aligned with the end of the height sensor cavity in order to create better clearance and prevent contact between the bolt and the cover.



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- d. Install the M16 self locking nut and torque to 56 Ft lbs using NEVER SEEZ NF P/N 5928660. Take care that the dust cover does not rotate out of position when torquing the nut.
- e. Install protective cap over the lock nut.

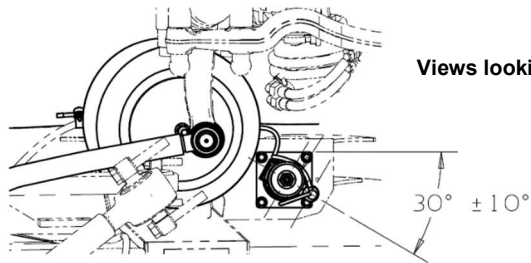


Figure 5A: Street Side Dust Cover Orientation.

Views looking upward

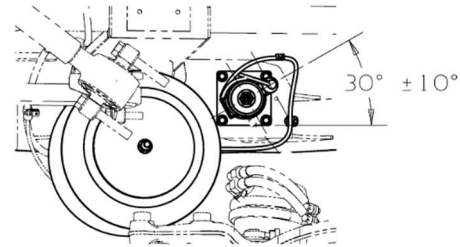


Figure 5B: Curb Side Dust Cover Orientation.

22. Connect the height sensor harness to the vehicle harness. Take care to ensure that the screw connector is tight and secure.
 - a. Route the shock sensor harness using the existing harness retaining clips. Bundle the remaining vehicle harness length and secure with tie wraps NF P/N 5955945.
23. Lower the bus in accordance with the New Flyer Service Manual.
24. Turn the main battery disconnect switch to the "ON" position.
25. Ensure that the latest version 21 Smart Rider software is loaded in the bus. The software is available from your regional product support manager (RPSM).
26. Perform a ride height sensor calibration. Refer to Section 8 of the Service Manual for the calibration procedure.
27. Road test the bus to ensure proper operation
28. Remove all tools and debris and return the bus to service condition.



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LABOUR ESTIMATE

	Operation	People	Hours	Labor Time
1	Retrofitting new shock dust covers, height sensor & harness assembly.	1	2.0	2.0

PARTS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
1	6482203	SENSOR ASSY-RIDE HEIGHT	2	EA	
2	5955945	TYRAP – 14.0 BLACK	9	EA	
3	5928660	NEVER SEIZE	0.01	EA	

SPECIAL TOOLS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
		No Special Tools Required			