



## INSTRUCTION TO SERVICE

<b>ITS: 5846</b>	
<b>SECTION:</b>	350 Driver's Control
<b>WRITTEN BY:</b>	Iman Fatemi
<b>SUBJECT:</b>	Replace brake pedal mounting plate and BVA valve

# ITS5846

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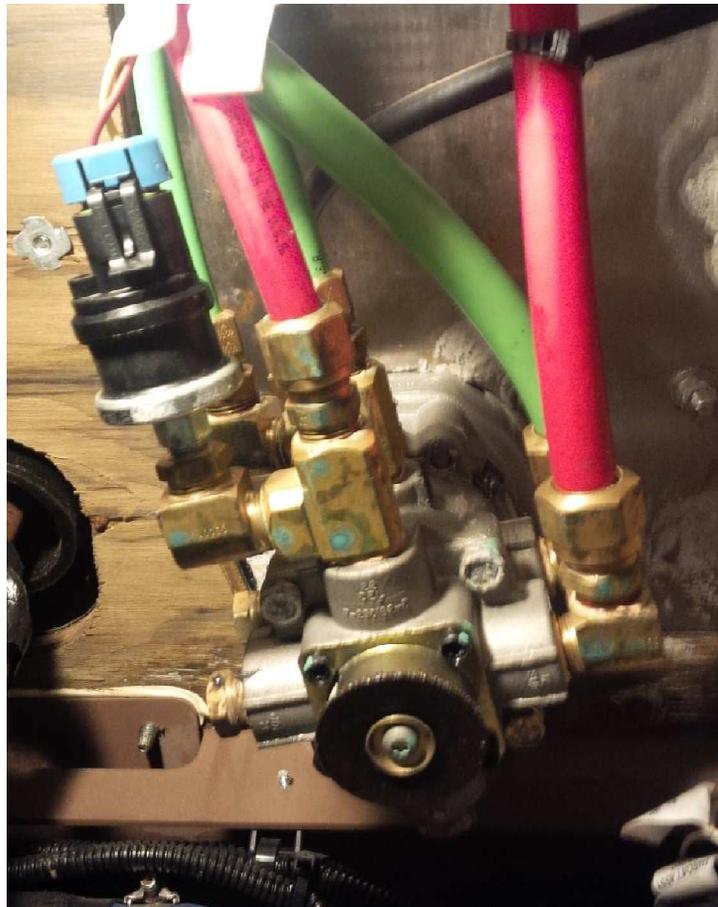
**PROCEDURE:**

1. Turn the main battery disconnect switch to the “OFF” position.
2. Raise coach in accordance with the New Flyer Service Manual.
3. Open the access door for the brake treadle valves under the driver’s platform.
4. Locate the brake treadle valve assembly, see Figure 1.
5. Deplete all system air pressure.
6. Disconnect all airlines from E6 and BVA valve, see Figure 1.

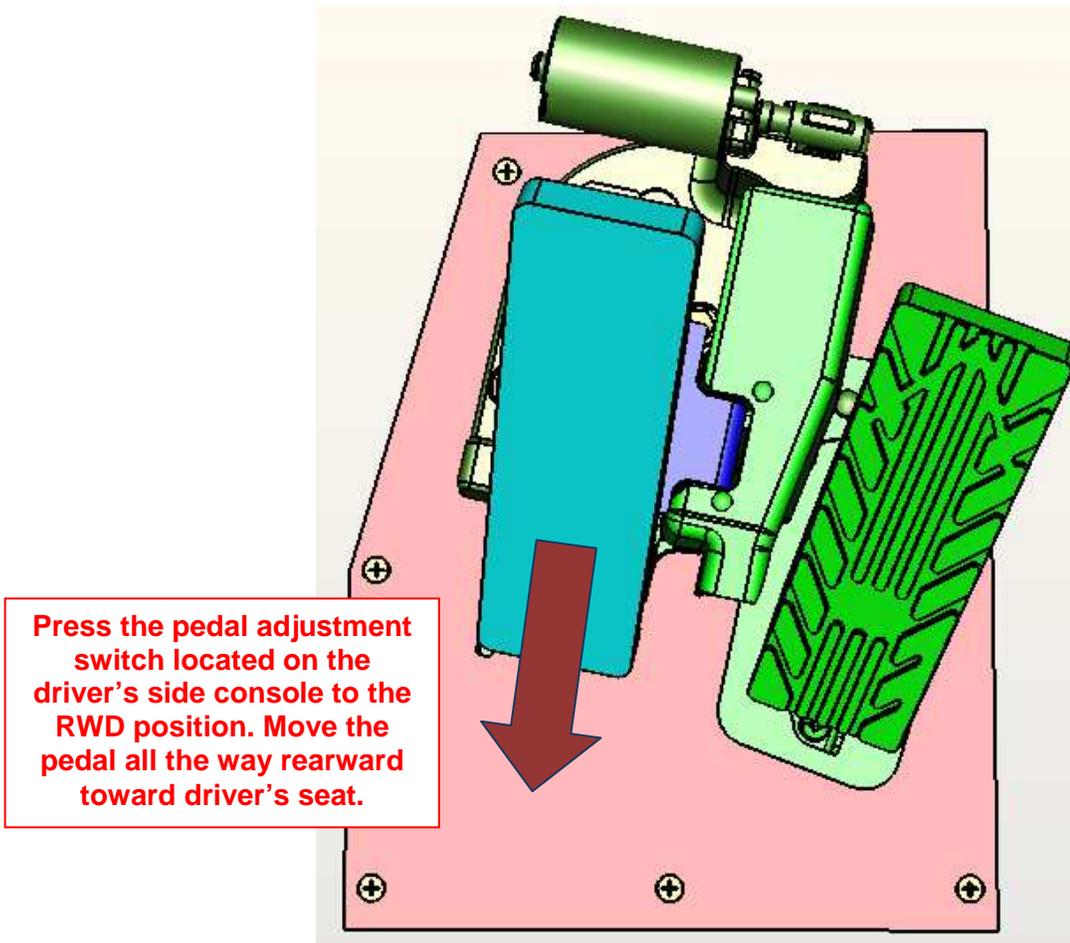
🔑 **NOTE:** Draw a mark on each airline and electrical connection prior to removal, use different colors/marks to distinguish the ports and airlines attached to them. This will help finding the right port when returning the bus to the original configuration.

⚠️ **WARNING:** Do NOT disconnect an airline unless you are certain all system pressure has been depleted.

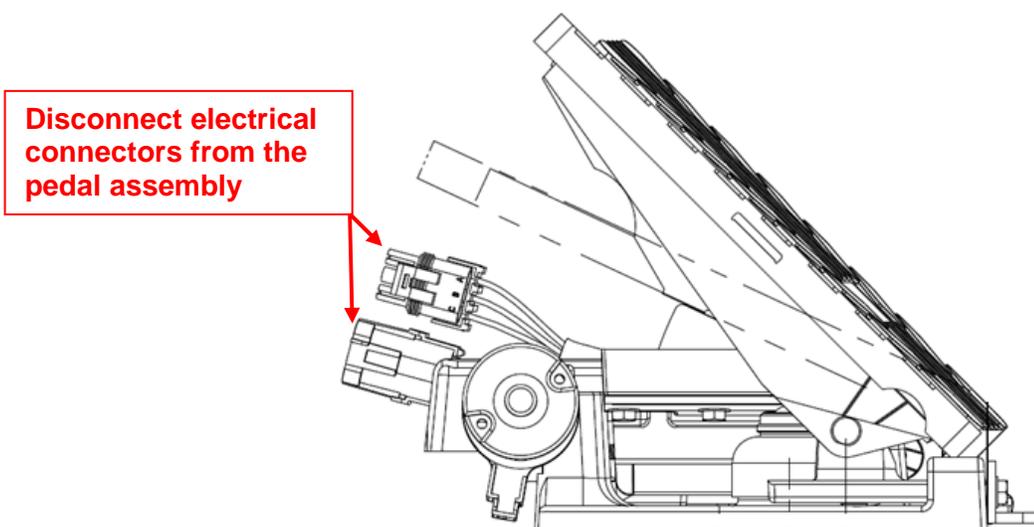
7. Disconnect the electrical connector from the pressure switch, see Figure 1.



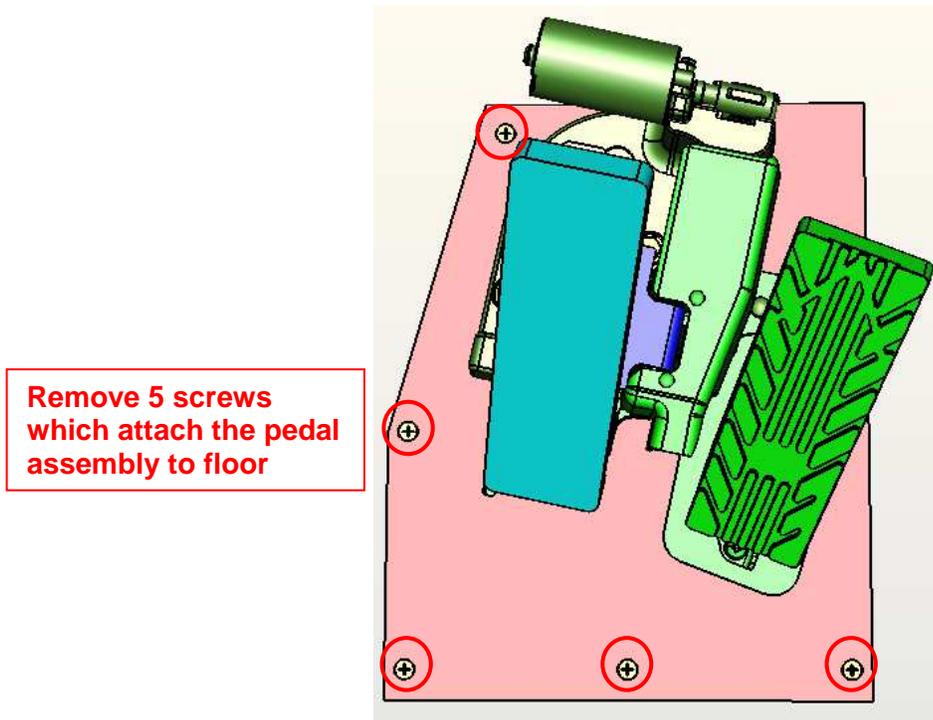
**Figure 1: Brake Treadle Valve Assembly**



**Figure 2: Move the Pedals toward Driver's Seat**

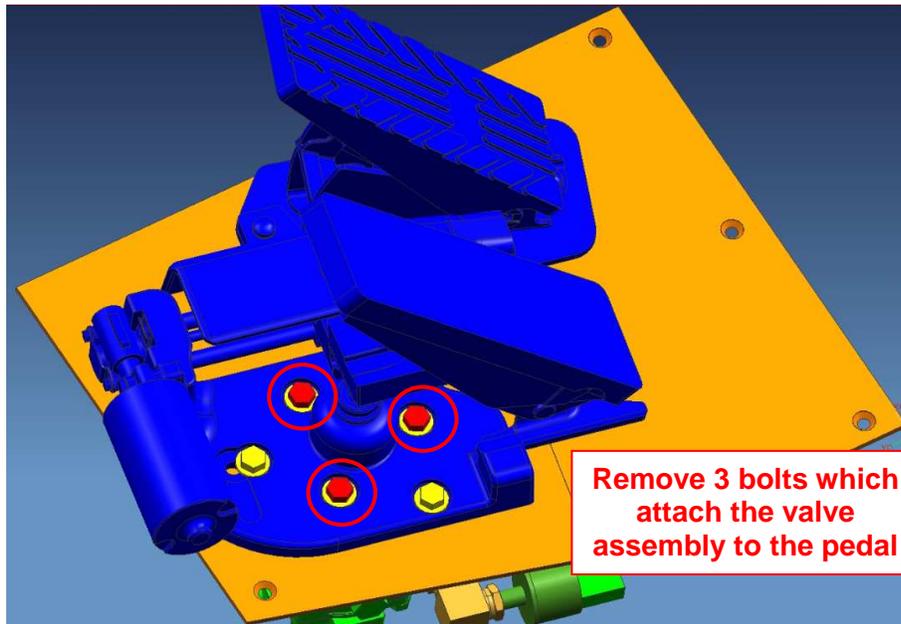


**Figure 3: Disconnect Electrical Connectors**



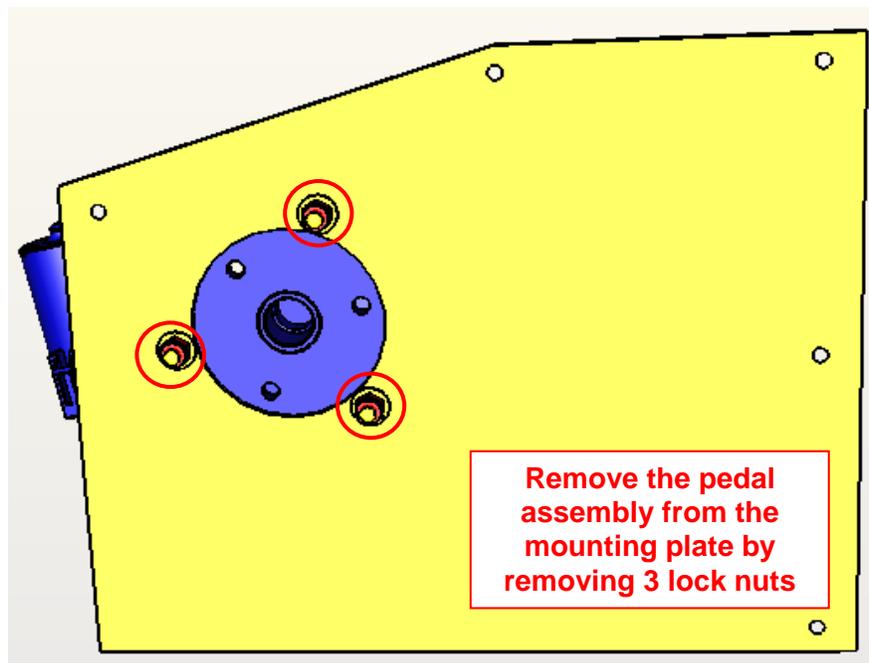
**Figure 4: Remove Brake/Accelerator Treadle Assembly**

8. Close the treadle valve access door before lowering the coach.
9. Lower coach in accordance with the New Flyer Service Manual.
  - ⚠ **WARNING:** Ensure the treadle valve access door is closed before lowering the coach.
10. Turn the main battery disconnect switch to the “ON” position.
11. Press the pedal adjustment switch located on the driver’s side console to the RWD position. Move the pedal all the way rearward toward driver’s seat, see Figure 2.
  - 🔧 **NOTE:** The transmission must be in neutral and the parking brake must be applied before the adjustable floor pedal system can be operated.
  - 🔧 **NOTE:** The pedal adjustment system requires power supply and does not move manually. Ensure the pedal is moved all the way toward driver’s seat prior to removal. This is to get access to the mounting hardware.
12. Turn the main battery disconnect switch to the “OFF” position.
13. Disconnect the harness from the pedal assembly, see Figure 3.
14. Remove 5 screws which attach brake/accelerator pedal assembly to floor, see Figure 4.
15. Remove the entire assembly from bus and put it on a work bench.



**Figure 5: Remove the Valve Assembly**

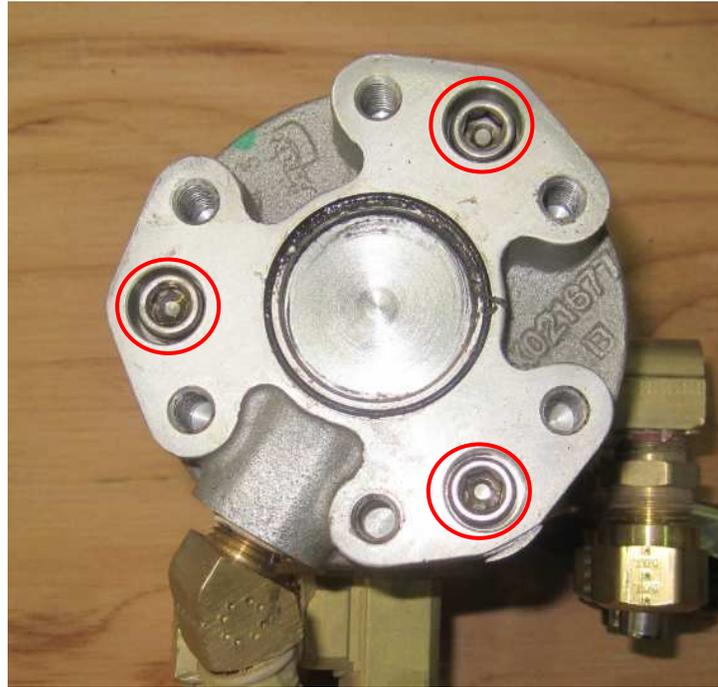
16. Remove 3 bolts which attach the valve assembly to the pedal assembly. Set hardware aside for reuse, See Figure 5.



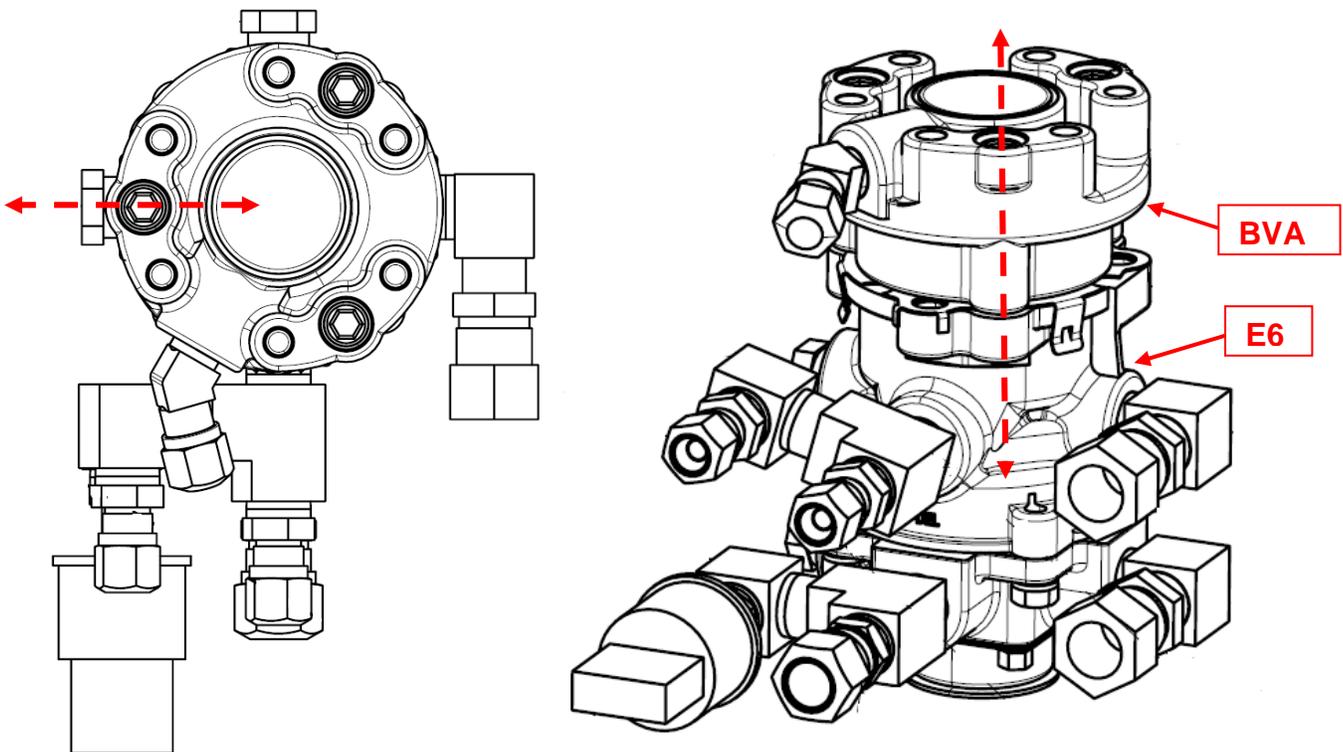
**Figure 6: Remove the Pedal Assembly**

17. Remove the pedal assembly from the mounting plate by removing 3 lock nuts shown in Figure 6. Discard locknuts and retain all remaining hardware for reuse.

18. Discard the brake pedal mounting plate (stainless steel plate).



**Figure 7: Remove BVA Valve**



**Figure 8: Replace BVA Valve**



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19. Remove three allen bolts which attach the BVA valve to the E6 treadle valve, see Figure 7. Retain the allen bolts for reuse.
  20. Remove the BVA valve from E6.
  21. Remove the 45 degree elbow from BVA valve, retain the elbow and discard the BVA valve.
  22. Align a new BVA valve (PN: 477422) with the E6 valve as shown in Figure 8. Attach the BVA valve using the 3 allen bolts previously removed in Step 19, see Figure 7.
- ☞ **NOTE: Apply loctite – 243 (PN: 081034) Medium to the allen bolts.**

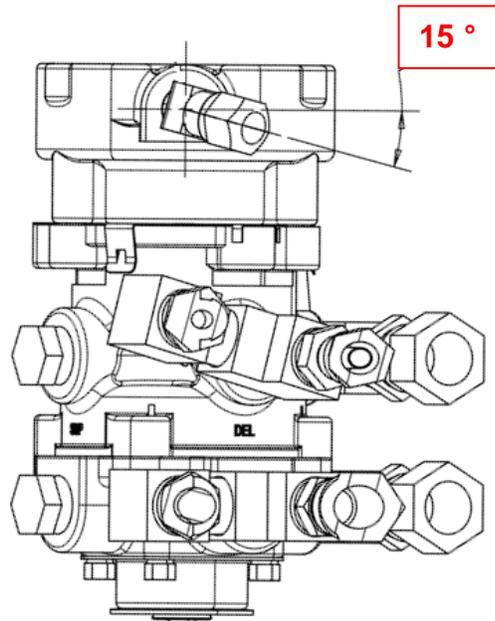
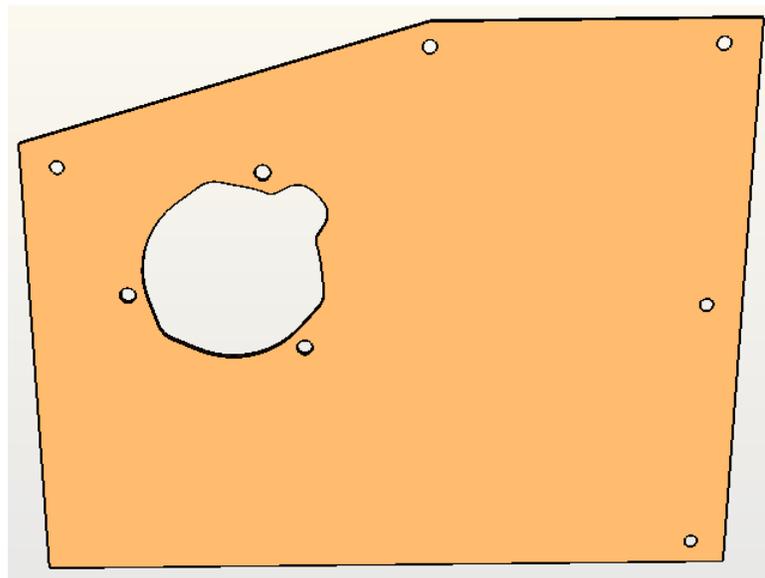
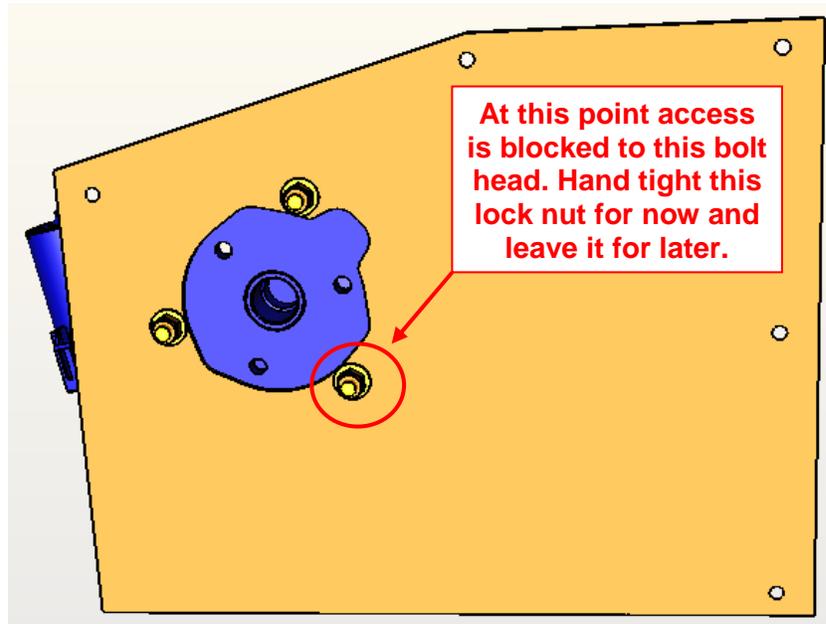


Figure 9: Align the 45 Degree Elbow



**Figure 10(a): New Modified Brake Pedal Mounting Plate**



**Figure 10(b): Install Brake Pedal Assembly**

23. Install the 45 degree elbow previously removed in step 21 at the BVA port, see Figure 9.

☞ **NOTE: Apply loctite 567 – Thread Sealant (PN: 8110442) to the thread fitting.**

24. Align the elbow as shown in Figure 9 (15 ° relative to BVA mounting surface).

25. Using the hardware removed in Step 17 and 3 new lock nuts (PN: 40N05000), install the pedal assembly on the new modified brake plate (PN: 553292), see Figures 10(a) and 10(b).

☞ **NOTE: Place a washer between the new plate and the lock nuts and another washer between the pedal mounting hole and the bolt head, see Figure 10(b).**

☞ **NOTE: At this point access is blocked to the bolt head shown in Figure 10(b). Hand tight the lock nut for now and leave it for later.**

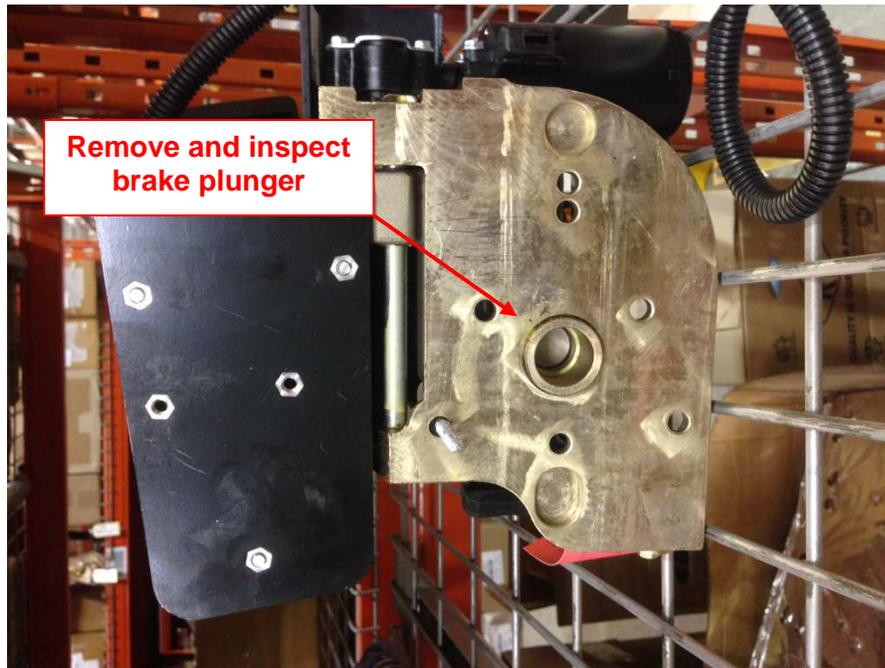
26. Remove the brake plunger, see Figure 11.

27. Clean and inspect the brake plunger and valve casting bore for wear, scoring or damage.

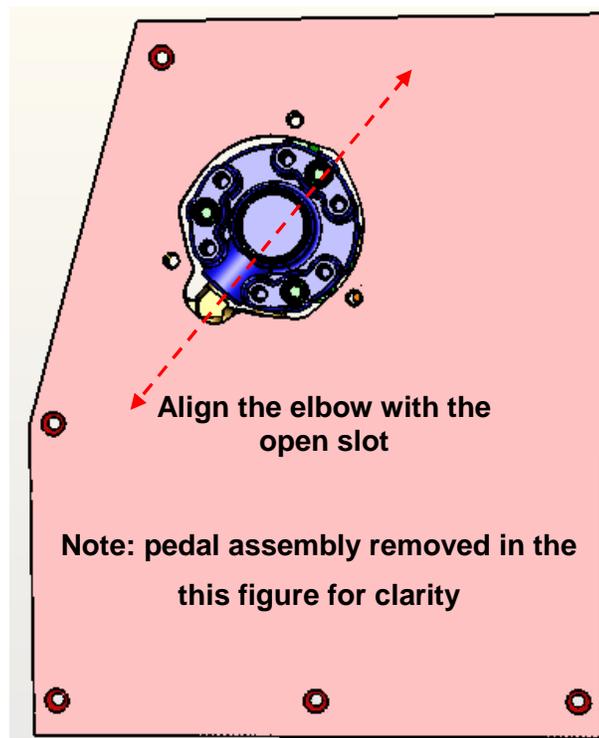
☞ **NOTE: If any scoring or damage is noted, either the plunger and/or valve casting (complete brake pedal assembly unit) must be replaced.**

28. Apply a thin layer of Barium based grease per BW-204-M (PN: 117267) to pedal plunger and the bore in pedal mount.

29. Put the plunger in the bore and install the rubber boot, ensure the rubber boot is seated properly.

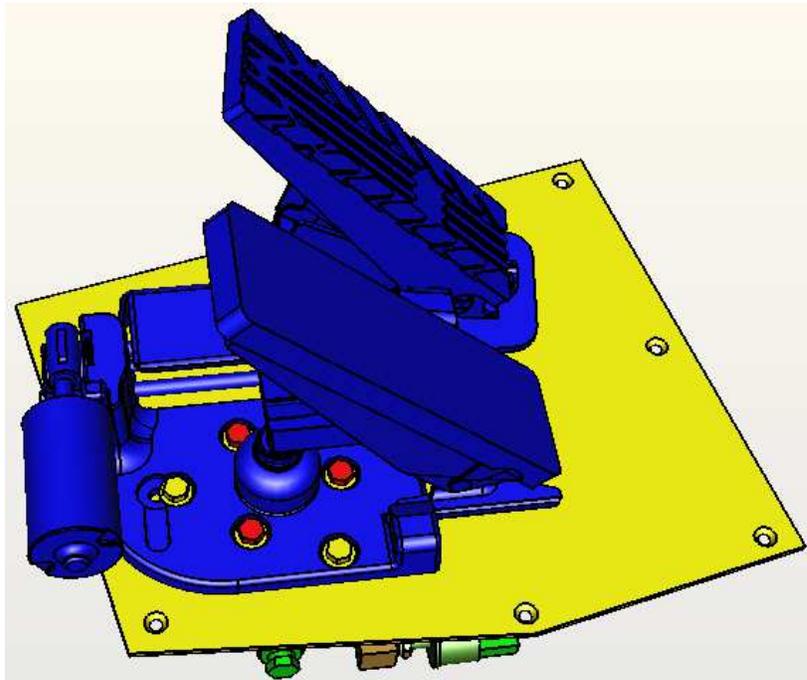


**Figure 11: Inspect the Brake Plunger**

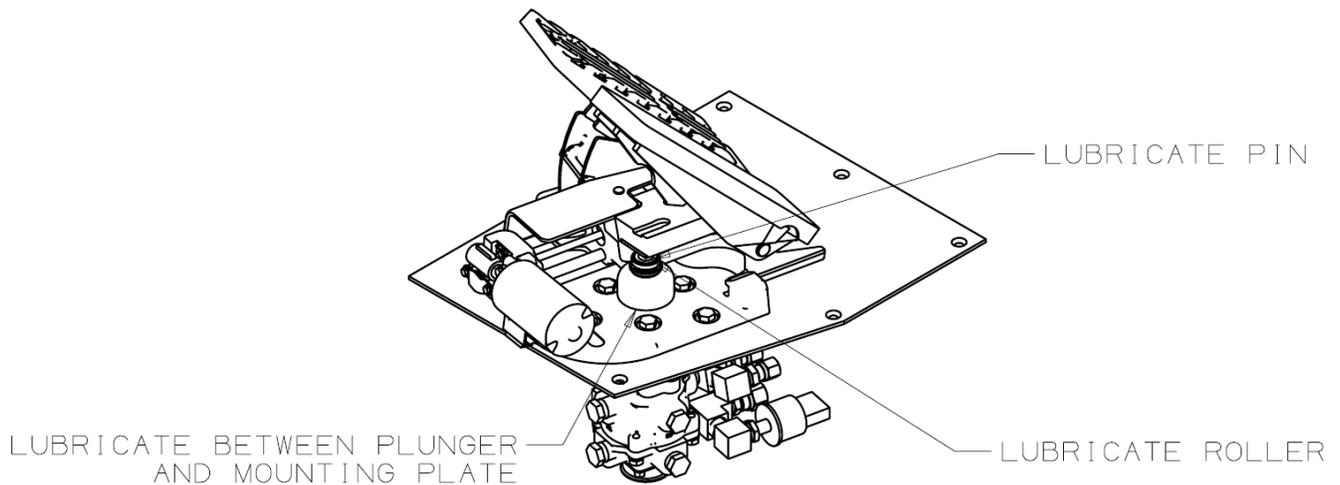


**Figure 12: Align the BVA Valve with the New Plate**

30. Align the BVA valve and the 45 degree elbow with the open slot in new plate as shown in Figure 12.



**Figure 13: Install the Valve Assembly**



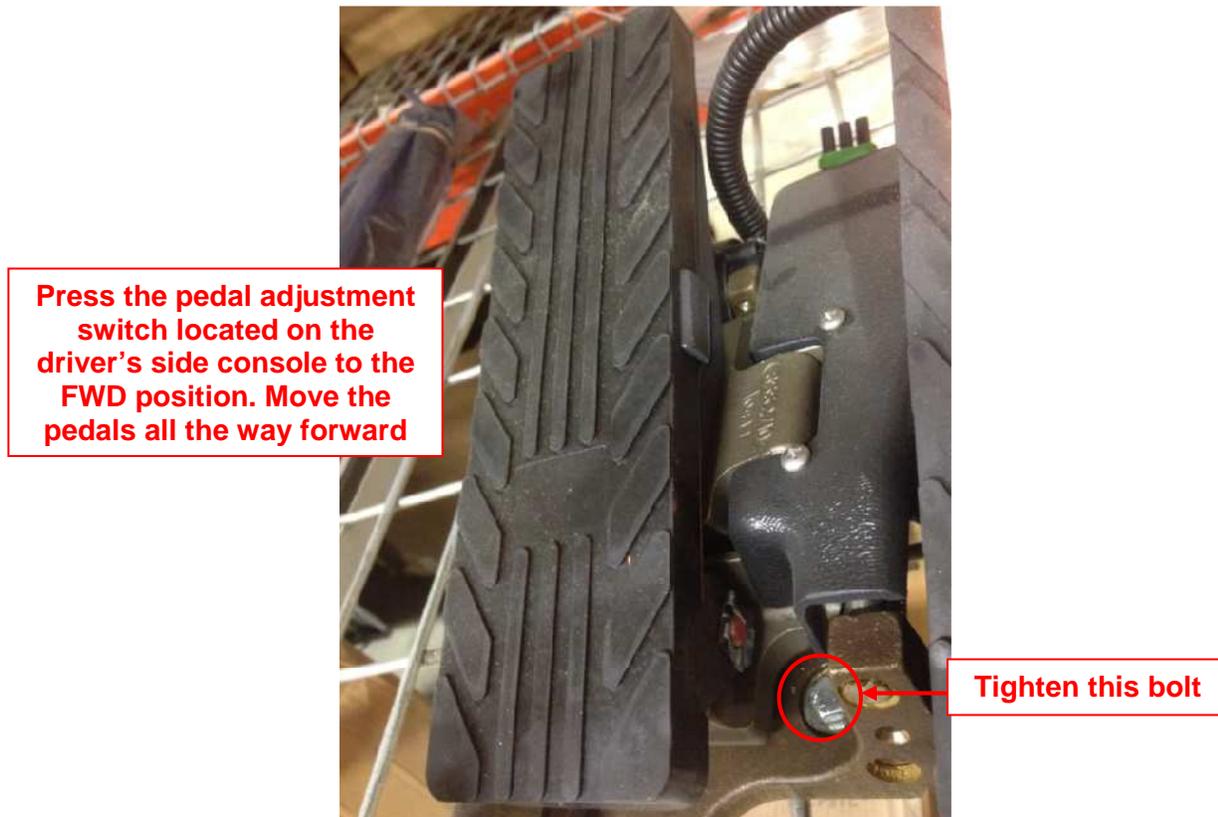
**Figure 14: Apply Grease**

31. Attach the valve assembly to the pedal assembly using the hardware previously removed in Step 16 (3 bolts, 3 washers), see Figure 13. Tighten the bolts.

🔧 **NOTE:** Place a washer between the pedal mounting hole and the bolt head, see Figure 13.

🔧 **NOTE:** Apply loctite – 243 (PN: 081034) Medium to the mounting bolts.

32. Apply a thin layer of Barium grease per BW-204-M (PN: 117267) to the roller and the roller pin, see Figure 14.



**Figure 15: Move the Pedals Forward**

33. Re-connect the electrical connectors as per original configuration.
34. Turn the main battery disconnect switch to the "ON" position.
35. Press the pedal adjustment switch located on the driver's side console to the FWD position. Move the pedals all the way forward to get access to the bolt head that was previously blocked by the pedal mount, see Figure 15. Tighten the bolt.

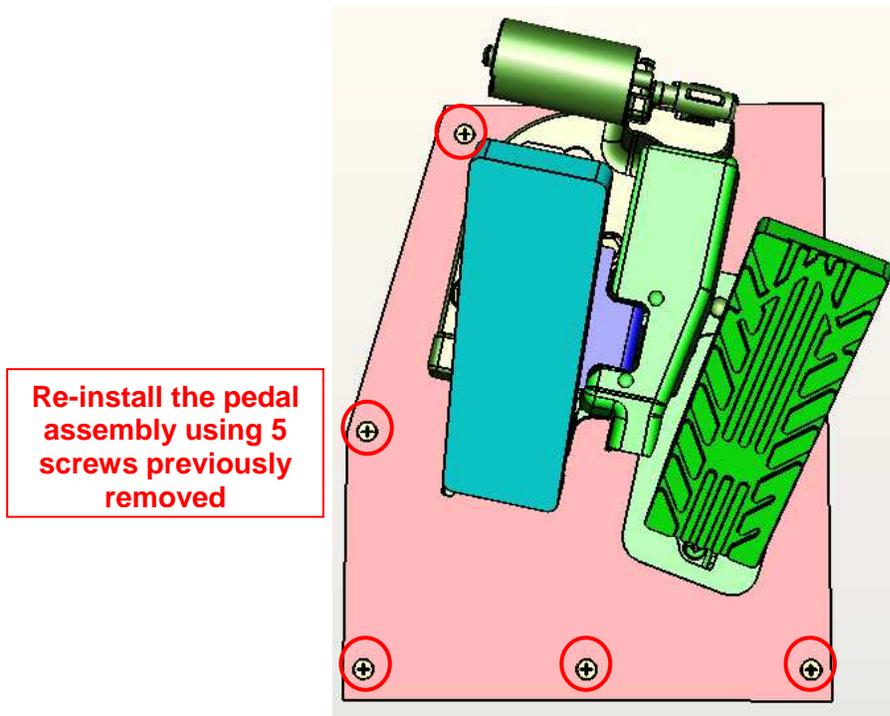
**🔧 NOTE: The transmission must be in neutral and the parking brake must be applied before the adjustable floor pedal system can be operated.**

36. Turn the main battery disconnect switch to the "OFF" position.



**Figure 16: Apply Sika**

37. Apply Sika 221 Black (PN: 055700) on plywood to the border of the mounting frame as shown in Figure 16.



**Figure 17: Re-install Brake/Accelerator Treadle Assembly**

38. Re-install the pedal assembly using the 5 screws previously removed in Step 14. See Figure 17.



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39. Raise coach in accordance with the New Flyer Service Manual.
40. Open the access door for the brake treadle valves under the driver's platform.
41. Re-connect the air lines and the pressure switch harness as per original configuration. Use the marks applied in Step 6 to find the right port for each air line.

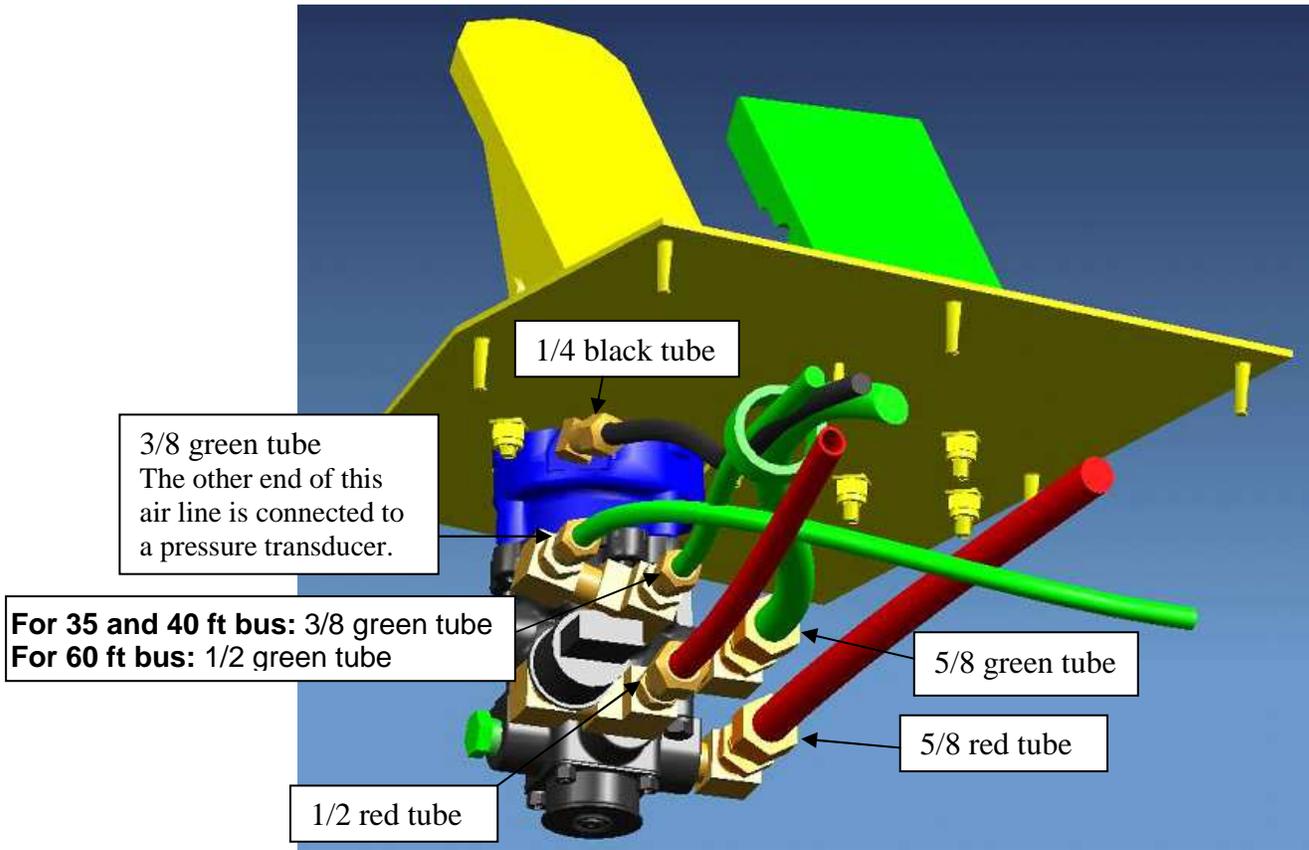
 **NOTE: Double-check the connections with Figure 18.**

 **WARNING: Ensure the airlines are connected to the correct port.**

42. For all pipe thread fittings:
  - a. Check that the joint assembly is free of dirt, burrs or excessive nicks.
  - b. Apply thread sealant to male portion only, if fitting does not have pre-applied thread sealant. Do not coat the first one or two threads, to avoid system contamination.
  - c. Screw the fittings into the port finger tight.
  - d. Tighten the connector 2-3 turns from the finger tight.
43. Close the treadle valve access door before lowering the coach.
44. Lower coach in accordance with the New Flyer Service Manual.

 **WARNING: Ensure the treadle valve access door is closed before lowering the coach.**

45. Turn the main battery disconnect switch to the "ON" position.
46. Close drain valves and bring air system up to full operating pressure (either shop air or running the engine).
47. Actuate pedal and listen for leaks.
48. Apply several brake applications to verify proper function of the brake pedal and accelerator treadle.



**Figure 18: Airline Connections to the E6 and BVA Valves**



**NEW FLYER**

### LABOUR ESTIMATE

	Operation	Men	Hours	Labour Time M X HR
1	Replace brake pedal mounting plate and BVA valve	1	1.5	1.5

### PARTS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
1	553292	PLT – DRVR CONT ADJ PDL	1	EA	
2	477422	VALVE – BRAKE ACTUATOR	1	EA	
3	40N05000	NUT LOCK NYLON 5/16" 18 UNC	3	EA	
4	117267	LUBRICANT – BRAKE TREADLE	0.1	EA	
5	8110442	LOCTITE 567 – THREAD SEALANT	0.01	EA	
6	055700	ADHESIVE – SIKA 221 BLACK	0.01	EA	
7	081034	LOCTITE – 243 MEDIUM 10ML	0.01	EA	

### SPECIAL TOOLS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
		NO SPECIAL TOOLS REQUIRED			