



TECHNICAL SERVICE INFORMATION BULLETIN

TSIB 22-07 Rev A		August 23, 2022
TO:	All Operators	
TITLE:	Powerex Air Compressor Field Maintenance Updates	
APPLICABILITY:	All New Flyer Xcelsior Buses Equipped with Powerex Direct Drive Electric Scroll Type Air Compressors.	

With the cooperation of Powerex, New Flyer has developed several maintenance updates for Xcelsior buses currently equipped with Powerex electric air compressors. This TSIB introduces the following field modifications in order to simplify maintenance operations and/or improve compressor longevity:

Part A - Air Filter Parts Kit Implementation

Part B – Compressor Air Line Cleaning Process

Part C – Compressor Hardware Removal

Part D - Curb Side Grease Port Modification Procedure

NOTE: The information in the TSIB is for the sole purpose of communicating both best practices and field maintenance updates for Powerex air compressors used on New Flyer Xcelsior buses. The introduction of these modifications in no way constitutes a change in either the New Flyer or Powerex established warranty coverage. These improvements are intended to supplement the information stated in the New Flyer Service Manuals and they do not supersede the existing field procedures or established preventative maintenance intervals.

Part A - Air Filter Parts Kit Implementation:

Recent field investigations have shown that the gaskets and/or O-ring located inside the Powerex air filter cannister are not being inspected and replaced when damage is observed during the filter replacement intervals. Damage to these seals can allow dust and debris to bypass the filter and enter the compressor scrolls.

New Flyer has worked with our supplier Powerex to provide a new kit that provides butterfly gaskets, an O-ring and the air filter element together as a kit. This new kit provides your technicians with everything that is needed to ensure a proper seal, protecting your compressor from damage due to dirt ingestion. To facilitate this change, both New Flyer and Powerex have implemented a new **Air Filter Parts Kit P/N 6490265** (includes filter element, butterfly gaskets x2 and O-ring). Air Filter Parts Kit P/N 6490265 has fully superseded previous Air

Filter P/N 6475034 and will be automatically provided when an order is placed through NFI Parts. Refer to Figure A.

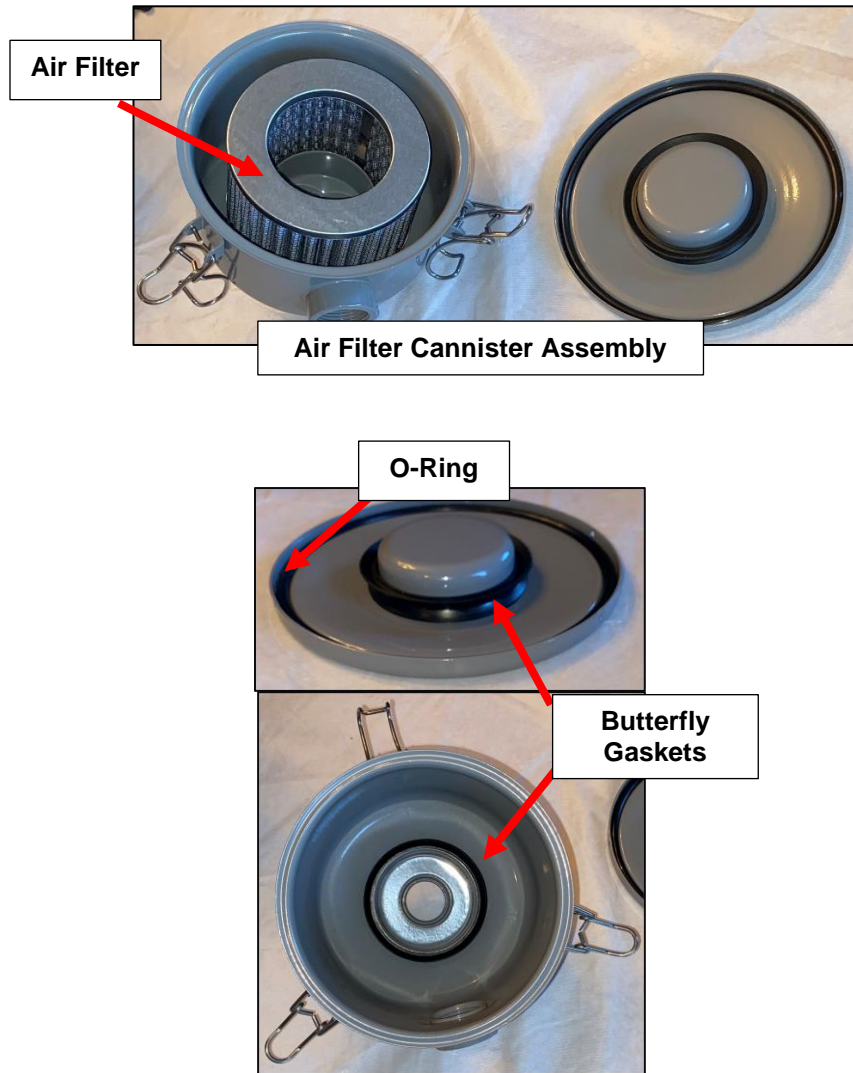


Figure A – Air Filter Parts Kit Components Inside Cannister Assembly

☞ **NOTE:** The new Air Filter Parts Kit P/N 6490265 is ONLY compatible with Powerex air compressors which feature the “Bowl Style” filter cannister assemblies. Air Filter Parts Kit P/N 6490265 is NOT applicable to the alternative “Hat Style” filter assemblies and ONLY the filter element needs to be changed out for this specific filter cannister design. Refer to Figure B.



“Bowl Style” air filter assembly – Install new Air Filter Parts Kit P/N 6490265.



“Hat Style” air filter assembly – NOT COMPATIBLE with new Air Filter Parts Kit P/N 6490265 and ONLY the filter element needs to be changed.

Figure B – “Bowl Style” and “Hat Style” filter cannister assemblies

Part B – Compressor Air Line Cleaning Process:

After a Powerex air compressor failure, there is a risk that debris can remain in the air lines, both upstream and downstream of the unit. If both the air lines and associated components are not thoroughly cleaned, debris from the failure can potentially remain in either the intake hose/air filter cannister as well as in the discharge line up to the air dryer. Improper air line cleaning practices can potentially result in repeat air compressor failures if any remaining debris is ingested back into the unit after bus start-up.

In the event of a compressor failure, both Powerex and New Flyer require that all operators **thoroughly clean all associated air lines and components with shop air**. On the air intake side, both the air filter cannister and intake hose should be purged with shop air before installing a new Air Filter Parts Kit P/N 6490265 (if applicable).

Downstream of the compressor, all air lines up to the air dryer should be purged with shop air. The purge valve, over-pressure protection valve and air dryer should also be purged and visually inspected for signs of remaining dirt or debris.

This air line cleaning process should be followed in conjunction with all related compressor R&R procedures specified in the applicable New Flyer Service Manual.

Part C – Compressor Hardware Removal:

It has come to New Flyer’s attention that some customers are removing the four bolts securing the Powerex air-end and motor support brackets from the baseplate. These bolts should NOT be removed at any time during preventative maintenance operations. Separating the air-end and/or motor support from the baseplate can potentially damage the flex coupling/bearings and can lead to compressor alignment issues. Additionally, the four (4) bolts that secure the motor support bracket to the motor adapter ring should NOT be removed during preventative maintenance operations. Refer to both Figures C and D. Removal of any of these fasteners could lead to damage of the compressor which will not be covered by warranty.

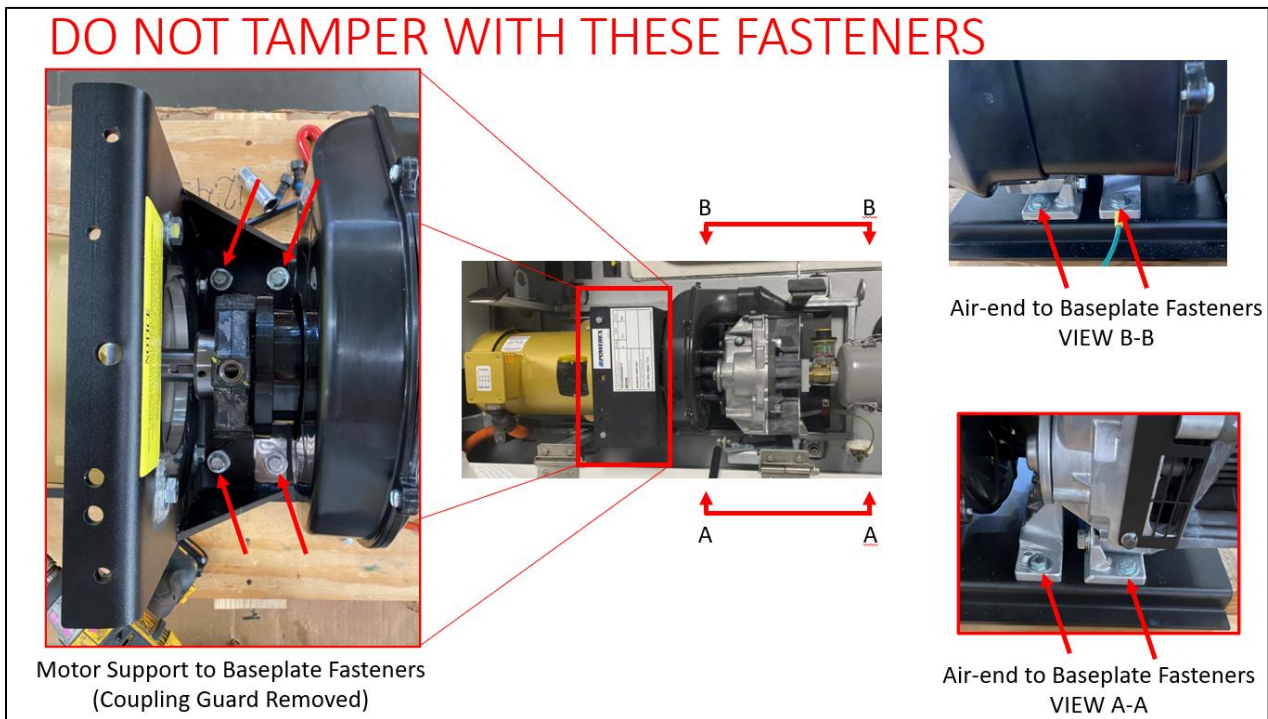


Figure C – Do NOT remove motor support bracket hardware during PM operations

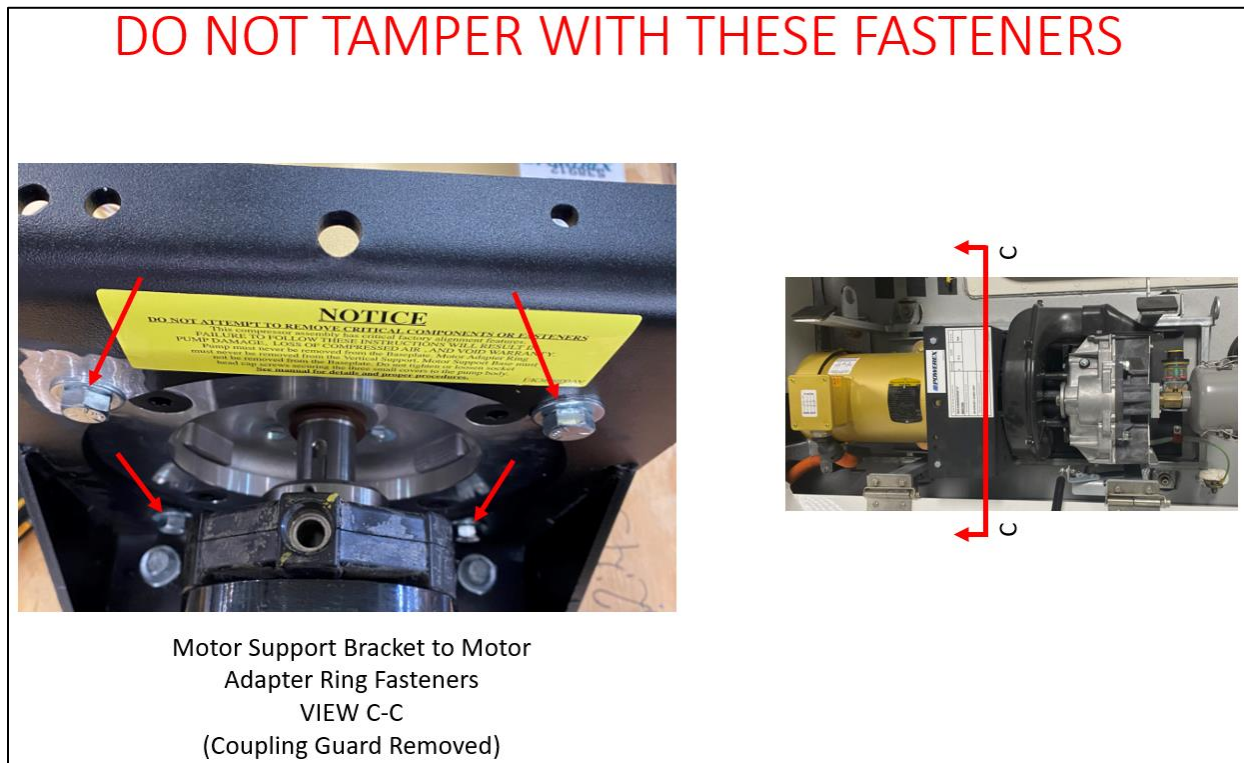


Figure D – Do NOT remove motor adapter ring hardware during PM operations

Part D - Curb Side Grease Port Modification Procedure:

Some models of the Powerex air compressors currently installed on New Flyer Xcelsior buses do not feature a grease access port on the curb side of the unit. The orbital scroll bearing grease zerk is only accessible via the single access port on the street side of the unit (adjacent to engine) and routine bearing lubrication requires the removal of the entire compressor from the bus.

To ease the preventative maintenance procedure to grease the orbital bearing, your team can perform the following **optional procedure** to add an access port on the curb side of the bus. Once completed, this modification allows the orbital scroll bearing to be lubricated with the compressor left in position in the bus, resulting in simplified maintenance operations and time savings.

All required parts and special tooling to perform this modification are available to order from NFI Parts.

🔧 **NOTE:** Visually confirm that the Powerex air compressor DOES NOT already feature a curb side grease access port before starting procedure. Refer to Figure E for curb side grease port location.



Figure E – Existing Curb Side Grease Port Location

PROCEDURE:

1. Turn the main battery disconnect switch to the “OFF” position.
2. Open the engine compartment curbside access door.
3. Locate the air compressor.
4. Locate the area on the scroll compressor body shown in Figure 1 and wipe it free of dirt and debris.
5. Remove the bracket that supports the intake hose between the air filter and compressor intake. Disconnect the intake hose at the filter and plug the opening to prevent entry of debris. Carefully reposition the intake hose to allow room for drilling.

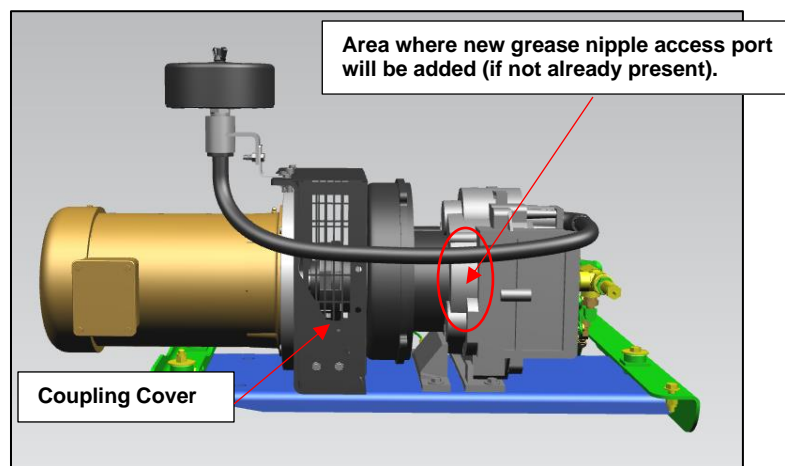


Figure 1: Air Compressor Curb Side Grease Port Position

6. Measure 1.5 inches up from the reinforcing rib on the compressor housing and 0.25 inches (to the left) from the edge of the ventilation opening flange. Mark the drilling location. Refer to Figure 2.

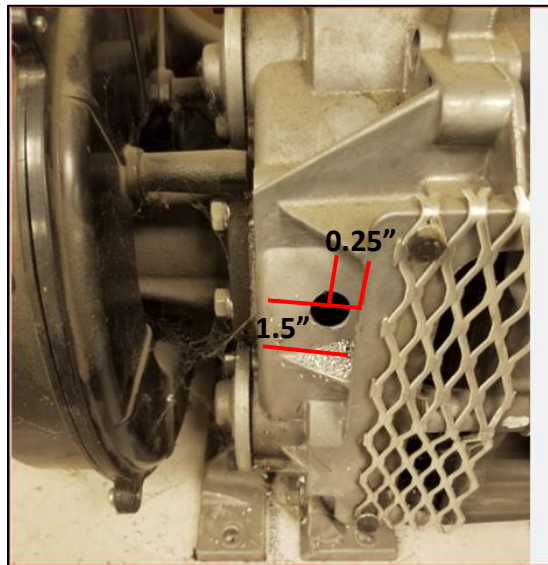


Figure 2: Air Compressor Grease Port Drilling Location

7. Use a center punch to locate the drill start point.
8. Using a 1/8 inch diameter drill bit, drill through the aluminum casting. Casting is approx. 1/8 inch thick.
 - a. Enlarge the hole to ¼ inch dia and then finish the hole to ½ inch diameter.

⚠ WARNING: If using a unibit, take care not to enlarge the hole to more than ½ inch diameter.

9. Using an OSHA approved blow gun, blow air into the hole just created; this will expel the bulk of any chips that fell inward during the drilling process. The chips and debris will come out the ventilation opening.
10. Clean up the area around the new opening.
11. Remove the coupling cover Figure 1 and turn the shaft to align the grease fitting with the newly drilled port.
 - a. Using a Powerex grease gun (Special Tool P/N 6403621) and extension adaptor (Special Tool P/N 92583130), engage the grease fitting, then use an Allen key to loosen the nut on the gun to start pumping. Apply the correct amount (three strokes of the grease gun handle) of Powerex grease NF P/N 6403622. Refer to Figure 3.

👉 NOTE: Use only Powerex genuine grease. Pump grease gun before feeding. This eliminates air from the grease passage of the extension adapter.

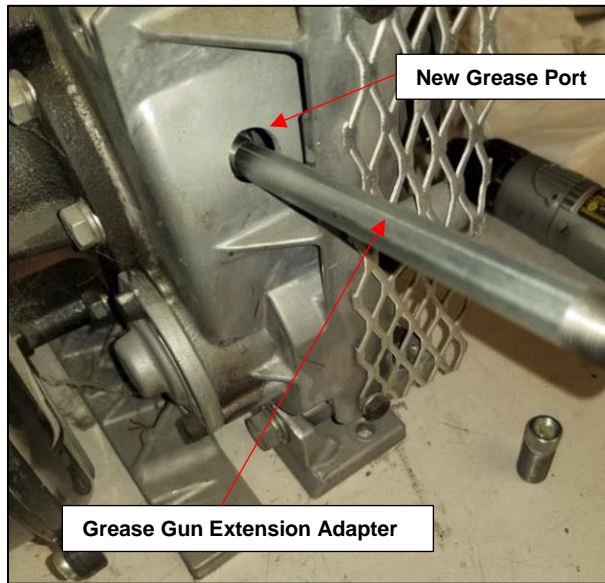


Figure 3: Air Compressor Grease Port Drilling Location.

12. Reinstall the coupling cover and torque the mounting hardware to 76 In-Lbs.
13. Install an expanding plug NF P/N 6465413 with bolt NF P/N 20B04012 and washer NF P/N 10W02000 to seal the new grease port opening. Torque bolt to 15 In-Lbs.
14. Remove all tools and debris and return the bus to service condition.
15. Close and secure the curbside access door.
16. Turn the main battery disconnect switch to the "ON" position.

PARTS REQUIRED					
Item	Part Number	Description	Qty. per Coach	Units	Notes
1	6403622	GREASE, POWEREX	0.033	EA	
2	6465413	WELLNUT INSULATED RUBBER 1/4 - 20	1	EA	
3	20B04012	BOLT HEX SS 1/4" 20 UNC X 3/4" LG	1	EA	
4	10W02000	WASHER FLAT #12	1	EA	



SPECIAL TOOLS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
1	6403621	KIT - GREASE W GUN & ADAPTOR.	1	EA	If Needed

Direct all inquiries regarding this bulletin to:

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