

FLA COE  
FLB COE  
FLD Conventional  
Business Class

FLC 112 Conventional  
> Century Class Conventional  
Argosy COE  
Cargo

> Columbia  
> Coronado  
> Business Class M2  
Cascadia

**Freightliner  
Service Bulletin**

**Description of Revisions:** *This bulletin replaces the version dated August 2004. This bulletin has a new title, and has been extensively revised.*

## General Information

EPA04 engines required higher coolant capacity than earlier models, and had larger coolant lines. To match the larger coolant lines, the surge tank inlets were enlarged from 3/8 inch to 1/2 inch, and the new models superseded the old surge tanks.

Mounting and other exterior features are the same, and EPA04 surge tanks are the correct replacements for both EPA04 and older vehicles.

To retrofit an EPA04 tank, adaptors must be installed in the coolant lines to adapt them from the 3/8-inch connections, to 1/2-inch at the surge tank.

## Parts

See [Table 1](#) for surge tank replacements; see [Table 2](#) for retrofit parts.

| Old Surge Tank p/n | EPA04 Surge Tank p/n                                           | Application                             |
|--------------------|----------------------------------------------------------------|-----------------------------------------|
| A05-17076-000      | 05-23045-000<br>NOTE: Also requires Pressure Cap, 05-20763-001 | EPA04 Century Class, Columbia, Coronado |
| 05-20529-000       | 05-23045-000                                                   | EPA04 Century Class, Columbia, Coronado |
| 05-21178-000       | 05-23195-000                                                   | EPA04 Business Class M2                 |

**Table 1, Surge Tank Retrofit**

| Part Number  | Description                                                                                                                         | Qty.                |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 05-23345-001 | 3/8-to-1/2 Inch Adaptor                                                                                                             | 2                   |
| 23-12691-005 | 1/2-Inch Spring-Steel Clamp                                                                                                         | 4                   |
| 48-25122-050 | 1/2-Inch Blue-Stripe Hose, Century Class, Columbia, Coronado                                                                        | 4 feet (1.2 meters) |
| 48-02256-050 | 1/2-Inch Silicon Hose (use in place of blue-stripe hose for vehicles spec'd with silicone hoses), Century Class, Columbia, Coronado | 4 feet (1.2 meters) |
| 05-23308-001 | Hose, Elbow, 60 Deg. ECR, for Business Class M2 only                                                                                | 2                   |
| 23-12410-000 | Tie Cable, Dual                                                                                                                     | 1                   |

**Table 2, Retrofit Surge Tank Hose**

## Procedure

1. Park the vehicle on a level surface. Set the parking brake, shut down the engine, chock the tires, and open the hood.
2. Drain the cooling system until the coolant level falls below the surge tank hoses.

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Do not remove or loosen the radiator cap until the engine and cooling system have completely cooled and depressurized.

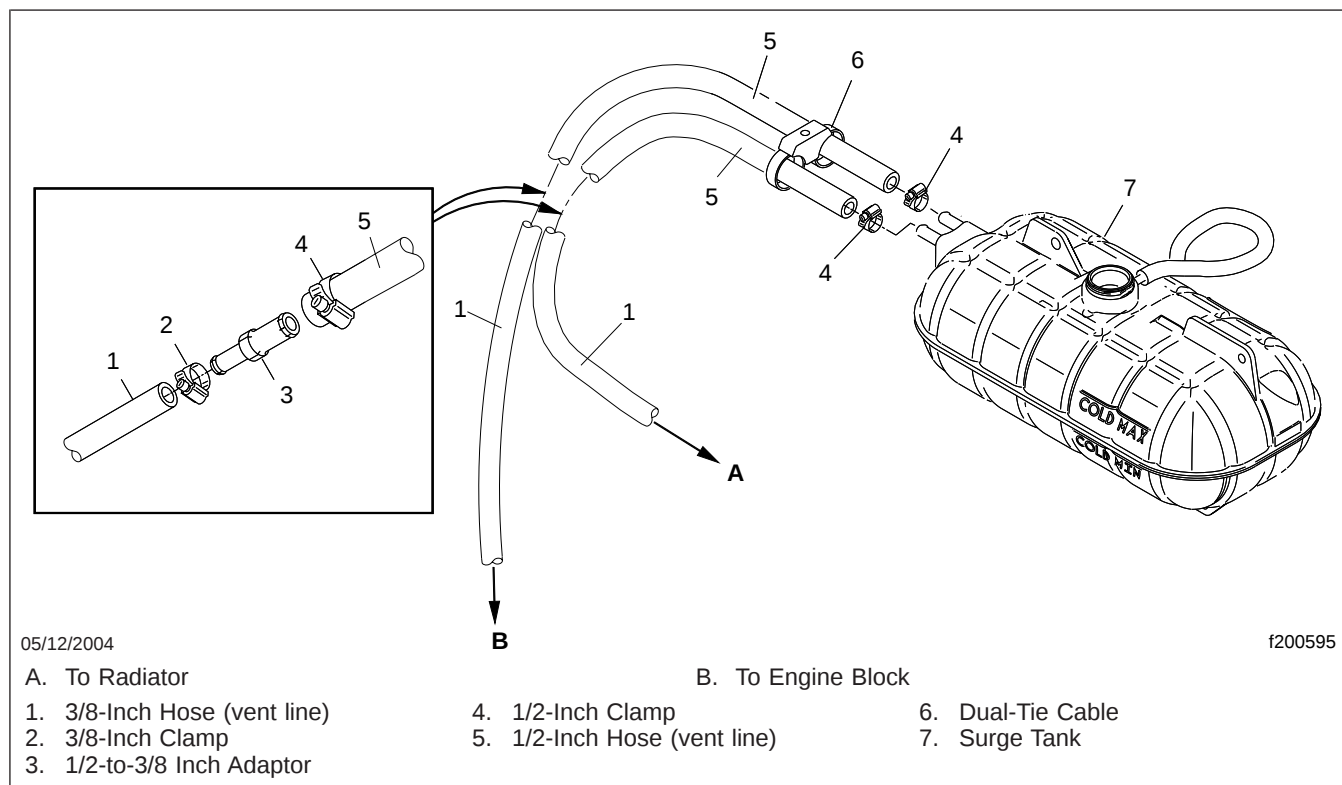
When removing the surge tank cap, wrap it with a shop rag, press down, and slowly, carefully, turn it counterclockwise to open, until all residual pressure has been released. Suddenly opening the cap when the coolant is hot and pressurized can allow scalding coolant to gush out, possibly causing severe personal injury.

- Unplug the coolant level sensor, and remove it from the surge tank. Disconnect the coolant lines from the surge tank, and save the 3/8-inch hose clamps to use on the adaptor connection.

Do not remove the connections at the engine and radiator.

- Install the new surge tank. See [Fig. 1](#).
- For Century Class, Columbia, or Coronado vehicles, install two lengths of 1/2-inch blue-stripe hose (or 1/2-inch silicon hose for vehicles specified with silicone hoses), at least 8-inches (200-mm) long, but no more than 24-inches (600-mm) long, onto the two vent line connections. Secure them with 1/2-inch spring-steel clamps.

For Business Class M2 vehicles, install two molded hoses (with the molded ends at the surge tank) and secure with 1/2-inch spring-steel clamps.



**Fig. 1, EPA04 Surge Tank Installation (Century/Columbia/Coronado shown)**

# New Design Replacement Surge Tanks for Pre-EPA04 Vehicles

# 20-48

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6. Install a 1/2-to-3/8-inch adaptor into one of the 1/2-inch lines, and secure it with a 1/2-inch spring clamp. Cut the original 3/8-inch hose (leading to the radiator or engine block) so that it is the correct length to join with the adaptor, and connect it to the other end of the adaptor. Secure the connection with one of the 3/8-inch clamps that was removed from the old surge tank connection. Repeat for the other vent hose.
7. Install a dual-tie cable close to the adaptor connection, and use it to support the hoses as required.
8. Install the coolant-level sensor, and attach the overflow hose and the radiator-inlet hose.
9. Fill the cooling system to the appropriate level.
10. Start the engine and check for leaks.
11. Close the hood, and remove the chocks.

## Warranty

Normal warranty applies. When submitting claims, refer to this service bulletin by number in the story of the claim. Use the damage code and time guide information in [Table 3](#).

| Damage Code and Labor Allowance |           |               |           |                              |                                         |                      |
|---------------------------------|-----------|---------------|-----------|------------------------------|-----------------------------------------|----------------------|
| VMRS CK33                       | VMRS CK18 | Damage Code   | SRT Code  | Description                  | Time: hours                             |                      |
|                                 |           |               |           |                              | Century Class/<br>Columbia/<br>Coronado | Business<br>Class M2 |
| 042-002-009                     | 12        | 267-000A05982 | 267-5040A | EPA04 Surge<br>Tank Retrofit | 1.0                                     | 0.8                  |

**Table 3, Damage Code and Labor Allowance**