

FLA COE
FLB COE
> FLD Conventional
Business Class

FLC 112 Conventional
Century Class Conventional
Argosy COE
Cargo

Columbia
Condor
Coronado
Business Class M2

**Freightliner
Service Bulletin**

Description of Revisions: *This bulletin replaces the version dated April 2005. The parts required list has been modified, and additional instructions are given for replacing transmission temperature gauges and axle temperature gauges.*

General Information

FLD Conventionals with MBE4000 engines, produced from May 2003 until February 21, 2005 may have some gauges with mismatched dials and backlighting. New style Ametek NGI Condor gauges have a 270-degree sweep and amber backlighting. Older gauges had a 90-degree sweep and green backlighting. Typically, it is the fuel level, axle temperature, and transmission temperature gauges that are affected. Occasionally, others such as air gauges may also be mismatched. Follow this procedure to replace mismatched gauges.

NOTE: These instructions are written for a typical vehicle build. Truck configurations vary, and modifications may be necessary in some cases. For example, some gauges may be located in overhead panels, requiring routing of the longest daisy chain harness to that location.

The following gauge setups are not supported and their backlighting and sweep will remain as received from the factory.

- Pyrometers
- Dual fuel level gauges
- Tri-axle temperature gauges
- Allison transmission temperature gauge
- Engine air filter restriction gauge (dash mounted)

NOTE: Installation of a new suspension air gauge will require adapting the vehicle side 1/4" air line to a 5/32" air line for connection at the gauge.

Parts

See [Table 1](#) for required parts.

Required Parts		
Description	Part Number	Qty
Harness, Speedo, ICUF Overlay	A06-52319-000	1
Terminal, male, MP150	PAC 12047581	1 per transmission and axle gauge replaced
Harness, 94-inch (238-cm) Daisy Chain (for overhead mounted gauges)	A06-41592-094	1 per gauge (order length required)
Harness, 18-inch (45-cm) Daisy Chain	AMA18014584 004	
Harness, 7-inch (18-cm) Daisy Chain	AMA18014584 005	
Additional Parts Required for Rosewood Dash		
Split Washer	AMA 10219500	1 per gauge
Short Locking Ring	AMA 03314163	1 per gauge
Additional Parts Required for Transmissions or Axle gauges		
Sender	06-23464-000	1 per gauge
Connector	PAC 12162197	1 per gauge
Terminals	PAC 12103881	2 per gauge

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Required Parts		
Description	Part Number	Qty
Wire	18 ga GXL	Length as required from sender to ground point
Terminal to attach the 18 ga wire to a ground point	n/a	1 per gauge

Table 1, Required Parts

See [Table 2](#) for a crossover list for the gauges from a 90-degree sweep with green backlighting, to a 270-degree sweep with amber backlighting.

Gauge Replacements			
Gauge Description	Input	Old Part Number	New Part Number
Fuel Gauge, Black	Electric	A22-38890-000	A22-58825-005
Fuel Gauge, Chrome/Bright	Electric	A22-39581-000	A22-58825-015
Rear Axle Temp Gauge, Black, Std	Electric	A22-38895-000	A22-58820-000
Rear Axle Temp Gauge, Black, Metric	Electric	A22-39771-000	A22-58820-100
Rear Axle Temp Gauge, Chrome/Bright, Std	Electric	A22-39582-000	A22-58820-010
Rear Axle Temp Gauge, Chrome/Bright, Metric	Electric	A22-39771-001	A22-58820-110
Fwd Axle Temp Gauge, Black, Std	Electric	A22-38896-000	A22-58820-001
Fwd Axle Temp Gauge, Black, Metric	Electric	A22-39770-000	A22-58820-101
Fwd Axle Temp Gauge, Chrome/Bright, Std	Electric	A22-39579-000	A22-58820-011
Fwd Axle Temp Gauge, Chrome/Bright, Metric	Electric	A22-39770-001	A22-58820-111
Transmission Temp Gauge, Black, Std	Electric	A22-38894-000	A22-58820-002
Transmission Temp Gauge, Black, Metric	Electric	A22-39772-000	A22-58820-102
Transmission Temp Gauge, Chrome/Bright, Std	Electric	A22-39707-000	A22-58820-012
Transmission Temp Gauge, Chrome/Bright, Metric	Electric	-	A22-58820-112

Table 2, Gauge Replacements

[Table 3](#) lists additional gauges with a 270-degree sweep and amber backlighting.

NOTE: The pyrometer is not part of the matching gauge package and may differ from the rest of the dash gauges.

Additional Gauges		
Gauge Description	Input	Part Number
Turbo Boost, Black, Std	Electric	A22-58820-003
Turbo Boost, Black, Metric	Electric	A22-58820-103
Turbo Boost, Bright, Std	Electric	A22-58820-013
Turbo Boost, Bright, Metric	Electric	A22-58820-113
Application Air, Black, Std	Air	A22-58820-004
Application Air, Black, Metric	Air	A22-58820-104
Application Air, Bright, Std	Air	A22-58820-014
Application Air, Bright, Metric	Air	A22-58820-114
Suspension Air, Black, Std	Air	A22-58820-005
Suspension Air, Black, Metric	Air	A22-58820-105

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Additional Gauges		
Gauge Description	Input	Part Number
Suspension Air, Bright, Std	Air	A22-58820-015
Suspension Air, Bright, Metric	Air	A22-58820-115
Engine Oil Temp, Black, Std	Electric	A22-58820-006
Engine Oil Temp, Black, Metric	Electric	A22-58820-106
Engine Oil Temp, Bright, Std	Electric	A22-58820-016
Engine Oil Temp, Bright, Metric	Electric	A22-58820-116
Coolant Temp, Black, Std	Electric	A22-58825-000
Coolant Temp, Black, Metric	Electric	A22-58825-100
Coolant Temp, Bright, Std	Electric	A22-58825-010
Coolant Temp, Bright, Metric	Electric	A22-58825-110
Oil Pressure, Black, Std	Electric	A22-58825-001
Oil Pressure, Black, Metric	Electric	A22-58825-101
Oil Pressure, Bright, Std	Electric	A22-58825-011
Oil Pressure, Bright, Metric	Electric	A22-58825-111
Primary Air, Black, Std	Air	A22-58825-002
Primary Air, Black, Metric	Air	A22-58825-102
Primary Air, Bright, Std	Air	A22-58825-012
Primary Air, Bright, Metric	Air	A22-58825-112
Secondary Air, Black, Std	Air	A22-58825-003
Secondary Air, Black, Metric	Air	A22-58825-103
Secondary Air, Bright, Std	Air	A22-58825-013
Secondary Air, Bright, Metric	Air	A22-58825-113
Voltmeter, Black	Electric	A22-58825-004
Voltmeter, Bright	Electric	A22-58825-014

Table 3, Additional Gauges

Procedure

1. Park the vehicle on a level surface, shut down the engine, and set the parking brake. Chock the tires.
2. Disconnect the batteries at the negative terminals.
3. Remove the fasteners that secure the speedometer and tachometer panel, and tilt it forward to access the rear of the speedometer. See [Fig. 1](#).
4. Access the rear of any additional instrument panels that house gauges that need to be replaced.
5. Remove the cover from the power distribution panel (panel "E"). See [Fig. 2](#).
6. Remove the cover from the dash panel "B" (located above the radio). See [Fig. 2](#).
7. Plug the 16-pin connector of the new overlay harness into the back of the speedometer.
8. Route the two connectors (1-pin and 6-pin) of the new overlay harness to the "B" panel area.
9. Locate the vehicle harness connector in the main dash harness that houses circuit #47, GND2, and 81C. It should be in the "B" panel area above the radio, and may be taped over. See [Fig. 3](#).

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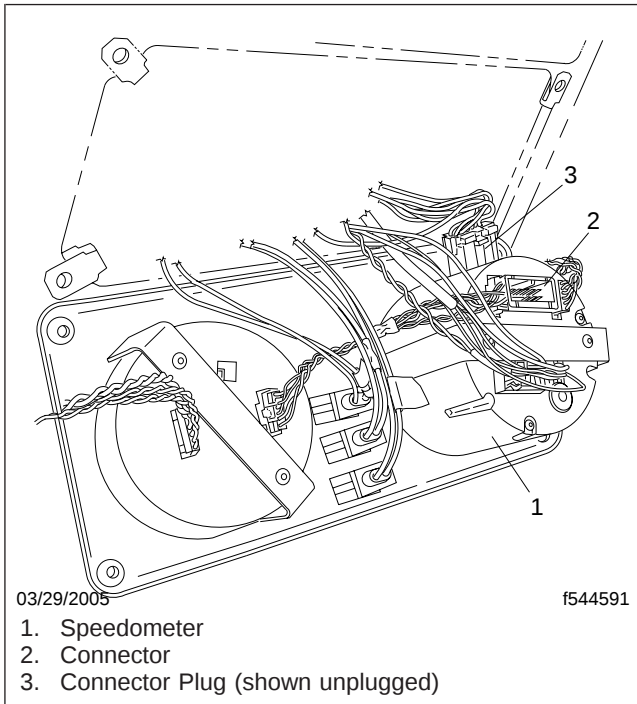


Fig. 1, Rear of Speedometer and Tachometer

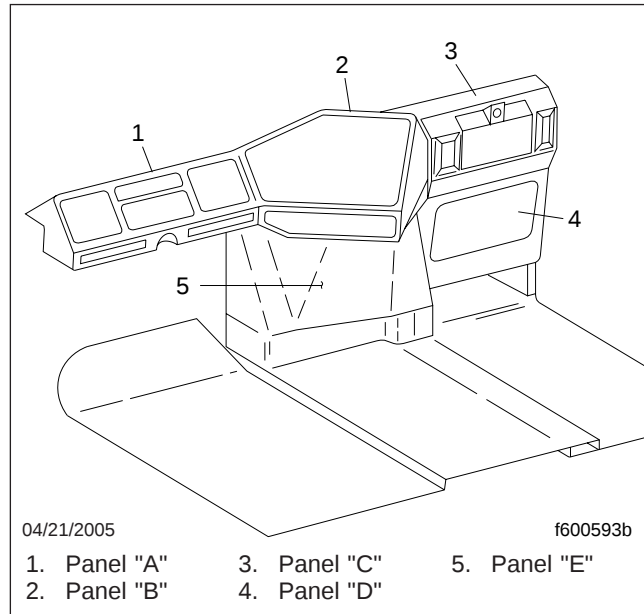


Fig. 2, FLD Dash Panels

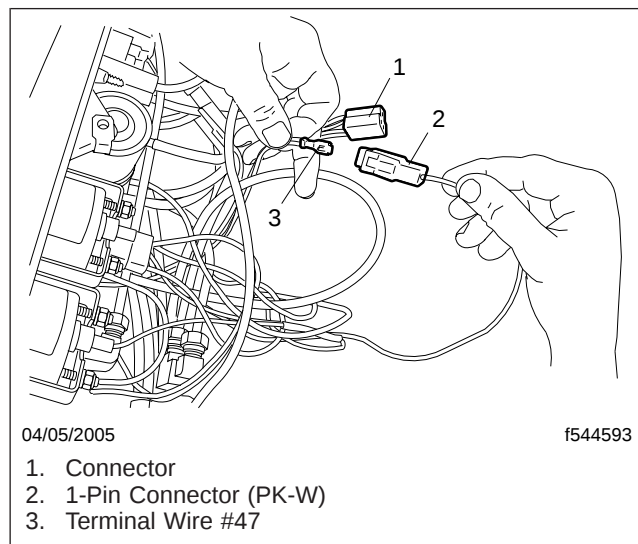


Fig. 3, Dash Panel "B" Wiring

10. Using a flat pick tool, Delphi tool GM12094430, remove the circuit #47 wire from the connector. (Circuit #47 can be traced back from the fuel level gauge.) Install the circuit #47 wire into the 1-pin connector for the PK-W wire on the new harness. Ensure the wire is locked in place.
11. Apply new tape on the vehicle harness connector.

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12. Follow the black ground wire from the existing harness down to the power distribution panel. Route the ground terminal wire from the new overlay harness down to this area, and connect to a ground stud.
13. If a transmission temperature gauge is being installed, the sender must be replaced, and the input from the sending unit wire must be connected to the 6-pin connector of the new overlay harness.
 - 13.1 Remove the connector from the back of the existing gauge. Attach a new terminal to the end of circuit #30 and install it in cavity "A" of the new 6-pin connector. The connector and other wires from the existing gauge will not be used and should be secured so they will not rub or cause problems.
 - 13.2 Drain (and save) the transmission fluid to an appropriate level and remove the sender. Install a new sender and fill the fluid to the correct level.
 - 13.3 Cut the ring terminal off the harness, insert the chassis wire into and through the new connector (cavity A). Strip the wire end, and crimp on a new terminal. Insert a new wire into and through the new connector (cavity B). Strip the wire end, and crimp on a new terminal. Pull both wires firmly until the terminals seat and lock into the connector. Route the new wire to a ground point, install an appropriate terminal end, and connect it to ground. Secure the wire in place as needed.
14. If a forward axle temperature gauge is being installed, the sender must be replaced, and the input from the sending unit wire must be connected to the 6-pin connector of the new overlay harness.
 - 14.1 Remove the connector from the back of the existing gauge. Attach a new terminal to the end of circuit #42 and install it in cavity "C" of the new 6-pin connector. The connector and other wires from the existing gauge will not be used and should be secured so they will not rub or cause problems.
 - 14.2 Drain (and save) the fluid to an appropriate level and remove the sender. Install a new sender and add fluid to the correct level.
 - 14.3 Cut the ring terminal off the harness, insert the chassis wire into and through the new connector (cavity A). Strip the wire end, and crimp on a new terminal. Insert a new wire into and through the new connector (cavity B). Strip the wire end, and crimp on a new terminal. Pull both wires firmly until the terminals seat and lock into the connector. Route the new wire to a ground point, install an appropriate terminal end, and connect it to ground. Secure the wire in place.
15. If a rear axle temperature gauge is installed, the sender must be replaced, and the input from the sending unit wire must be connected to the 6-pin connector of the new overlay harness.
 - 15.1 Remove the connector from the back of the existing gauge. Attach a new terminal to the end of circuit #43 and install it in cavity "B" of the new 6-pin connector. The connector and other wires from the existing gauge will not be used and should be secured so they will not rub or cause problems.
 - 15.2 Drain (and save) the fluid to an appropriate level and remove the sender. Install a new sender and add fluid to the correct level.
 - 15.3 Cut the ring terminal off the harness, insert the chassis wire into and through the new connector (cavity A). Strip the wire end, and crimp on a new terminal. Insert a new wire into and through the new connector (cavity B). Strip the wire end, and crimp on a new terminal. Pull both wires firmly until the terminals seat and lock into the connector. Route the new wire to a ground point, install an appropriate terminal end, and connect it to ground. Secure the wire in place.
16. Remove any other mismatched gauge(s), and install the Ametek NGI Condor gauge(s). If air gauges are being replaced, drain the air tanks prior to removal. The new air gauges still use air as the input for the gauge, but the dial and lighting will now match. See [Table 3](#) for air gauges.
17. Install either a 7-inch (18-cm) or an 18-inch (45-cm) daisy chain, depending on the distance from an existing correct gauge to the newly installed gauge. Daisy chains are required for each new gauge regardless of the gauge being electrical or air.

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18. Install the dash cover panels, and any instrument panels that were removed.
19. Connect the batteries.
20. Remove the chocks.

Warranty

Normal warranty applies. When submitting claims, reference this service bulletin by number in the story of the claim. Primary failed part number is A06-52319-000, speedometer harness. Use the damage code and time guide information in [Table 4](#).

Damage Code and Time Guide Information			
Damage Code	SRT Code	Description	Hours
869-000A04982	810-5000A	Replace 1 or 2 Gauges, Harness, and Sender	1.6
869-000A04982	810-5000B	Replace 3 to 6 Gauges, Harness, and Sender	2.8

Table 4, Damage Code and Time Guide Information