



AMERICAN LAFRANCE SERVICE MANUAL

**Models: Eagle
Metropolitan®**

FOREWORD

The purpose of this manual is to assist the service technician when the vehicle is serviced. Major drivetrain component service information is not included in this manual, but is located in each manufacturer's service manual.

Instructions and procedures are those recommended by American LaFrance LLC or the component manufacturer.

Maintenance schedules and additional service information are included in the *Condor® Maintenance Manual*.

IMPORTANT: Descriptions and specifications in this manual were in effect at the time of printing. American LaFrance LLC reserves the right to discontinue models at any time, or change specifications and design without notice and without incurring obligation.

For additional information, please contact American LaFrance LLC, 1090 Newton Way, Summerville SC 29483, or refer to www.condortrucks.com.

ENVIRONMENTAL CONCERNS AND RECOMMENDATIONS

Whenever you see instructions in this manual to discard materials, you should attempt to reclaim and recycle them. To preserve our environment, follow appropriate environmental rules and regulations when disposing of materials.

NOTICE: PARTS REPLACEMENT CONSIDERATIONS

Do not replace suspension, axle, or steering parts (such as springs, wheels, hubs, and steering gears) with used parts. Used parts may have been subjected to collisions or improper use and have undetected structural damage.

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Descriptions of Service Publications

American LaFrance LLC distributes the following major service publications.

Workshop Manual	Workshop manuals contain service and repair information for all vehicle systems and components, except for major components such as engines, transmissions, and rear axles. Each workshop manual section is divided into subjects that can include general information, principles of operation, removal, disassembly, assembly, installation, specifications, and troubleshooting.
Maintenance Manual	Maintenance manuals contain routine maintenance procedures and intervals for vehicle components and systems. They have information such as lubrication procedures and tables, fluid replacement procedures, fluid capacities, specifications, procedures for adjustments and for checking the tightness of fasteners. Maintenance manuals do not contain detailed repair or service information.
Operator's Manual	Operator's manuals contain information needed to enhance the driver's understanding of how to operate and care for the vehicle and its components. Each manual contains a chapter that covers pretrip inspection and daily maintenance of vehicle components. Driver's/operator's manuals do not contain detailed repair or service information.
Parts Technical Manual	American LaFrance LLC publishes this manual to aid in the identification of serviceable replacement vehicle parts. This manual is used in conjunction with the parts book and the service parts catalog microfiche.
Service Bulletins	<p>Service bulletins provide the latest service tips, field repairs, product improvements, and related information. Some service bulletins are updates to information in the workshop manual. These bulletins take precedence over workshop manual information, until the latter is updated; at that time, the bulletin is usually canceled. The service bulletins manual is available only to dealers. When doing service work on a vehicle system or part, check for a valid service bulletin for the latest information on the subject.</p> <p>IMPORTANT: Before using a particular service bulletin, check the current service bulletin validity list to be sure the bulletin is valid.</p>
Recall Bulletins	These bulletins pertain to special situations that involve service work or replacement of parts in connection with a recall notice. Recall bulletins pertain to matters of vehicle safety. All bulletins are distributed to dealers; customers receive notices that apply to their vehicles.
Field Service Modifications	This publication is concerned with non-safety-related service work or replacement of parts. All field service modifications are distributed to dealers; customers receive notices that apply to their vehicles.

For a page example of the printed manual, see Fig. 1.

The diagram shows a page from a manual with the following content and labels:

- A:** Points to the section title "Caterpillar Engine, CFE".
- B:** Points to the section number "01.00".
- C:** Points to the subject title "Drive Belt Replacement, Caterpillar CFE".
- D:** Points to the manual title "American LaFrance Eagle Workshop Manual, July 1998".
- E:** Points to the release date "110/1".
- F:** Points to the subject number "110/1".
- G:** Points to the subject page number "110/1".

The page content includes:

Caterpillar Engine, CFE
01.00
Drive Belt Replacement, Caterpillar CFE

Belt Replacement
FAN AND ALTERNATOR BELT

- Remove the belt.
 - Remove the belt from the refrigerant compressor pulley and let the belt rest on the fan hub. Refer to the refrigerant compressor belt removal procedure in this subject.
 - Insert a 1/2-inch breaker bar in the belt tensioner and rotate the tensioner down and off the belt.
 - Holding the belt tensioner down, remove the belt from the alternator pulley.
 - Slowly release the belt tensioner, and remove the breaker bar.
 - Lower the belt, and take it off the vibration damper. Raise the belt, and take it off over the fan. Remove the belt from the engine compartment.
- Install the belt.
 - Inspect the pulleys and used belts (even if installing new belts) as instructed in **Subject 100**.
 - If the fan or fan hub was removed to remove the compressor belt, install the fan or fan hub with the compressor belt in the fan pulley groove. Do not attach the compressor belt to the compressor at this time.
 - Loop the fan/alternator belt around the fan and align it in the rear channel of the fan pulley.
 - Loop the belt down and around the vibration damper pulley.
 - Install the refrigerant compressor belt on the compressor. Refer to the refrigerant compressor belt installation instructions in this subject.
 - Insert a 1/2-inch breaker bar in the belt tensioner, and rotate the tensioner down while installing the belt on the alternator pulley.
- Slowly release the tensioner assembly onto the belt. The tensioner automatically tightens the belt to the correct tension.
- Remove the breaker bar from the tensioner.
- Adjust the belt tension.
 - The Caterpillar belt tensioner automatically adjusts the fan and alternator belt to the correct tension.
 - If the belt slips, repair or replace the tensioner. For instructions, refer to the *Caterpillar CFE Truck Engine Service Manual*.

REFRIGERANT COMPRESSOR BELT

- Remove the belt.
 - Loosen the refrigerant compressor jam nut, back off the adjusting nut, and loosen the compressor mounting bolts. Move the compressor towards the fan pulley until the belt can be removed from the compressor.
 - Remove the compressor belt from the fan pulley. If necessary, remove the fan from the fan pulley according to the instructions in **Section 20.01**.
- Install the belt.
 - Inspect the pulleys and used belts (even if installing new belts) as instructed in **Subject 100**.
 - Install the belt around the fan and the compressor pulleys.

If the fan was removed, install it according to the instructions in **Section 20.01**.
 - While keeping the belt seated in the pulley grooves, move the compressor away from the fan pulley to increase belt tension. Use your thumb to apply about 25 lb (11 kg) of force at the center of the longest belt free-span to check the tension. When belt deflection is about 1/2 to 3/4 inch (13 to 19 mm), stop, and adjust the belt tension.
- Adjust the belt tension.
 - Install a belt tension gauge at the center of the belt's longest free-span.

American LaFrance Eagle Workshop Manual, July 1998 110/1

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A. Section Title
B. Section Number (made up of the Group Number—first two digits, followed by a sequence number—last two digits)
C. Subject Title
D. Manual Title
E. Release (Supplement) Date
F. Subject Number
G. Subject Page Number

Fig. 1, Page Example of the Printed Manual

Workshop Manual Contents

Group No.	Group Title
00	General Information
01	Engine
03	Crankshaft Assembly
05	Valve Train
07	Fuel Injection System
09	Air Intake
13	Air Compressor
14	Engine Exhaust
15	Alternators and Starters
18	Engine Lubrication
20	Engine Cooling/Radiator
25	Clutch
26	Transmission
30	Throttle Control
31	Frame and Frame Components
32	Suspension
33	Front Axle
35	Rear Axle
40	Wheels and Tires
41	Driveline
42	Brakes
46	Steering
47	Fuel
49	Exhaust
54	Electrical, Instruments, and Controls
55	Special Equipment, Fire/Emergency/ Vocational
60	Cab
70	Aerial Ladders
72	Doors
75	Body
80	Hydraulics
82	Windshield Wipers and Washer
83	Heater and Air Conditioner
88	Hood, Grille, and Cab Fenders
90	Fire Suppression Systems
91	Seats and Restraint Systems
98	Paint