

Freightliner LLC New Vehicle and Aftermarket Parts Limited Warranties warrant that Freightliner LLC products will be free from defects in material and workmanship that occur under normal use within the applicable warranty period, subject to certain limitations and exclusions as specified in the Warranty Manual.

A/C compressors that have been damaged by handling or abnormal operation are not warrantable and should not be submitted for warranty. (See Section 1 and 2 of the Warranty Manual and the following Sections of this document for a thorough description of warranty limitations and exclusions including damage.)

Always follow the troubleshooting instructions in the vehicle's workshop/service manual. **Submitting a fully functional A/C compressor for a warranty claim will be returned as no defect found.**

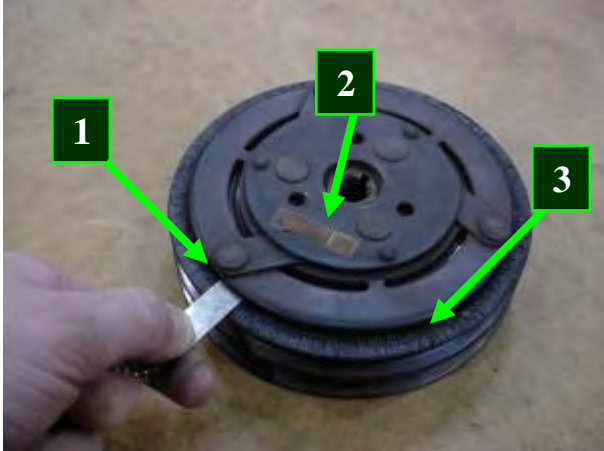
Use quality test equipment. Accuracy of functional checks depends upon the technician holding a current ASE—or other accredited organization—certification in air conditioning repair and quality test equipment that has been properly maintained.


Non-generic (N83-numbered) A/C compressors must be returned with the name plate affixed and legible. Returning a non-generic compressor without a legible name plate will be denied warranty consideration. Generic (G83-numbered) A/C compressors have an identification mark on the back and are not supplied with a name plate. Generic compressors without nameplates will be considered for warranty.


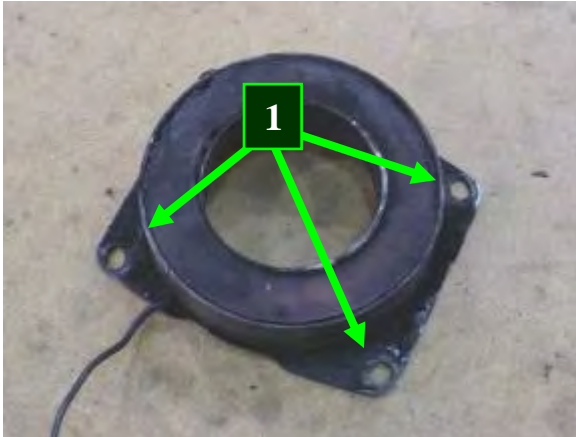
The A/C system is complex and has many components. **When checking for leaks, check all components, hoses and fittings for leaks.** A/C compressors are extremely susceptible to failure when refrigerant charge is lost: lubrication is carried out of the compressor and not returned, and low refrigerant will not cool the compressor adequately.



Previously failed compressors may contaminate the A/C system with metal debris. This contamination initiates compressor failure by introducing wear particles into the new compressor. **Warranty claims may be denied for previous contamination.** Removal of contaminant will increase system performance, reliability and lifetime.

Submit warranty claims only for parts and repairs covered under new vehicle warranty or replacement parts warranty. **Warranty claims for vehicles or parts outside warranty coverage will be denied**

Clutch Wear-Out	Section 83.02.01 Damage Code: 130-001080590
 <p>Figure 1. A 0.045" feeler gage inserted between the pulley and the armature indicates clutch wear-out (Ref. 1). Notice signs of heat, indicating slipping and friction, such as: burned and shrunk label (Ref. 2) and coil material melting and expelled across pulley surface (Ref 3).</p>	<p>Vehicle Symptoms: Clutch wear-out is indicated by any of the following:</p> <ul style="list-style-type: none"> • Poor A/C performance. • Abnormal under-hood noise. <p>Post-removal Observations: Clutch wear-out is indicated by all of the following:</p> <ul style="list-style-type: none"> • Clutch pulley gap larger than .045" • Signs of excessive heat: <ul style="list-style-type: none"> ○ Blueing ○ Burned or shrunk label ○ Burned or cracked rubber <p>Note: If compressor clutch exhibits signs of excessive slipping (ie. excessive heat & premature wear-out), supply voltage should be checked. A normally operating electrical system should never supply less than 12V to the clutch, but poor grounding or other electrical faults could cause this low voltage condition.</p> <p>Warranty Coverage: A clutch with evidence of clutch wear-out is warrantable if all of the following apply:</p> <ul style="list-style-type: none"> • A/C system free of leaks. • A/C compressor and other components function correctly <p>A clutch with evidence of clutch wear-out is non-warrantable if any of the following apply:</p> <ul style="list-style-type: none"> • A/C system leaks. • A/C compressor has failed. • A/C clutch coil circuit receives low voltage <p>Note: Clutch may be claimed as progressive damage if attached to a claim with correct PFI.</p>

Shorted / Open Clutch Coil Circuit	Section 83.02.02 Damage Code: 130-001A09315 (Open) 130-001A09317 (Short)
 <p>Figure 2. A clutch coil hooked up to a multimeter. The clutch reads a correct resistance of 3.2Ω (Ref. 1).</p>	<p>Vehicle Symptoms: Shorted or open circuit is indicated by the following:</p> <ul style="list-style-type: none"> • Non-functioning A/C system. <p>Post-removal Observations: Shorted or open circuit is indicated by any of the following:</p> <ul style="list-style-type: none"> • Multimeter measurement shows no continuity in coil circuit. • Multimeter shows resistance lower than 2Ω. <p>Warranty Coverage: A clutch with evidence of a shorted or open circuit is warrantable unless any of the following apply:</p> <ul style="list-style-type: none"> • Coil wire is damaged. • Coil is cracked, burned or otherwise damaged.

Incorrect Clutch Mounting	Section 83.02.03 Damage Code: 130-001080500
<div data-bbox="235 344 808 772">  </div> <p>Figure 3. The coil mounting bracket is broken (Ref. 1), indicating movement.</p> <div data-bbox="235 884 808 1318">  </div> <p>Figure 4. The mounting holes have been enlarged to a size greater than normal (Ref. 1).</p>	<p>Vehicle Symptoms: Incorrect clutch mounting is indicated by any of the following:</p> <ul style="list-style-type: none"> • Underperforming A/C system. • Under-hood noise and vibration. <p>Post-removal Observations: Incorrect clutch mounting is indicated by any of the following:</p> <ul style="list-style-type: none"> • Missing or loose coil mounting bolts. • Enlarged or broken coil mounting holes. <p>Warranty Coverage: A clutch with evidence of incorrect clutch mounting is warrantable if any of the following apply:</p> <ul style="list-style-type: none"> • Part is covered under new vehicle warranty. • Clutch was pre-installed on compressor. <p>A clutch with evidence of incorrect clutch mounting is non-warrantable if the following applies:</p> <ul style="list-style-type: none"> • Clutch was purchased separately.

Front Seal Leak	Section 83.02.04 Damage Code: 130-001551609
 <p>Figure 5. When the system is (re)charged with refrigerant, a leak detector will respond when placed behind the clutch from multiple angles if a front shaft seal leak is present.</p>  <p>Figure 6. The same test with clutch removed.</p>	<p>Vehicle Symptoms: A front seal leak is indicated by any of the following:</p> <ul style="list-style-type: none"> • Non-functioning A/C system. • Underperforming A/C system. <p>Observations: A front seal leak is indicated by all of the following:</p> <ul style="list-style-type: none"> • Leak detected at front shaft seal area by electronic leak detection. • Clean Oil • Front shaft does not shake or wobble (i.e. not a bearing failure). • Note: Oily residue under front shaft seal area will be present to some degree. <p>Warranty Coverage: A compressor with evidence of a front shaft seal leak is warrantable unless the following applies:</p> <ul style="list-style-type: none"> • Another leak is present in the system. • Internal system blockage was found. • Condenser air flow was restricted.


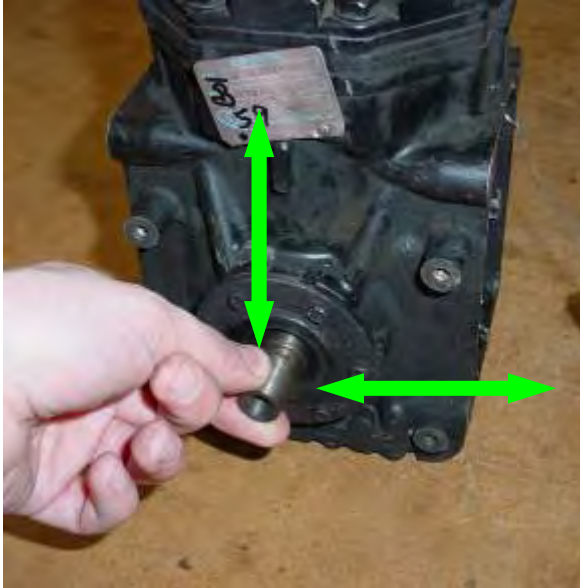

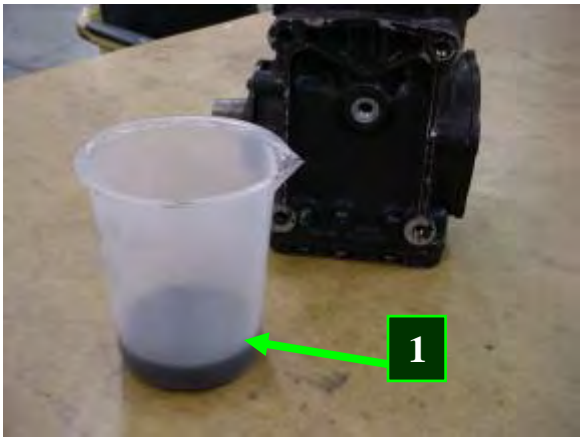
Clutch Pulley Failure	
	Section 83.02.05
	Damage Code: 130-001435130
	Vehicle Symptoms: Clutch pulley failure is indicated by all of the following: <ul style="list-style-type: none">• Non-functioning A/C system.• Abnormal under-hood noise. Post-removal Observations: Clutch pulley failure is indicated by the following: <ul style="list-style-type: none">• Fractured or broken clutch pulley. Warranty Coverage: A clutch with evidence of clutch pulley failure is warrantable unless any of the following apply: <ul style="list-style-type: none">• Associated A/C compressor failure• Part was abused.

Figure 7. A failed pulley may exhibit missing rivets (Ref. 1) and broken leaf springs (Ref. 2).

Bearing Failure	Section 83.02.06 Damage Code: 130-001050345 130-001050950
 <p>Figure 8. A bearing failure will allow the front shaft to move relative to the compressor body. The shaft may have to be rotated.</p>  <p>Figure 9. A back bearing failure may result in a deformation of the back bearing plate (Ref. 1).</p>	<p>Vehicle Symptoms: Bearing failure is indicated by any of the following:</p> <ul style="list-style-type: none"> • Underperforming or non functioning A/C system. • Abnormal under-hood noise. <p>Observations: Bearing failure is indicated by all of the following:</p> <ul style="list-style-type: none"> • Front shaft has play when moved, • Pulley and coil rubbing marks, <p>And any of the following:</p> <ul style="list-style-type: none"> • If back bearing failed, rear bearing plate is deformed. • Dark oil. • Leak at front shaft seal. • Shaft does not turn freely <p>Warranty Coverage: A compressor with evidence of bearing failure is warrantable unless any of the following apply:</p> <ul style="list-style-type: none"> • Part was abused or damaged during service.

Internal Failure	Section 83.02.07 Damage Code: 130-001A09345 130-001A09590
 <p>Figure 10. An internal failure will result in dark oil (Ref. 1) Please return oil to compressor after checking volume and color.</p>	<p>Vehicle Symptoms: Internal failure is indicated by all of the following:</p> <ul style="list-style-type: none"> • Non-functional or underperforming A/C system. • Possible abnormal under-hood noise. <p>Post-removal Observations: Internal failure is indicated by all of the following:</p> <ul style="list-style-type: none"> • Dark oil and/or metallic sludge. • Shaft may not turn freely. • Possible leak at front shaft seal. • Clutch may exhibit signs of excessive heat. • Possible lack of compression and suction when shaft is turned. • Rattling from loose parts within the compressor. • Compressor casing may be cracked <p>Warranty Coverage: A compressor with evidence of internal failure is warrantable unless any of the following apply:</p> <ul style="list-style-type: none"> • A leak exists elsewhere in the system. • System was contaminated by previous failure or repair. <p>Note: Clutch may be claimed as progressive damage if attached to a claim with correct PFI.</p>


Incorrect Diagnostic Procedure	
Section 83.02.08	
Damage Code: 130-001423609	
	<p>Observations:</p> <p>Incorrect diagnostic procedure is indicated by the following:</p> <ul style="list-style-type: none">• Back bearing plate seal compromised. <p>Charging the compressor sump with high-pressure nitrogen will damage seals and other components. The compressor sump is not designed to handle the pressures from nitrogen testing.</p>
	<p>Warranty Coverage:</p> <ul style="list-style-type: none">• A compressor with evidence of incorrect diagnostic procedure is non-warrantable.

Figure 11. The seal between the back plate and compressor housing will leak if subjected to high pressures associated with high-pressure nitrogen.

Disassembled Compressor	Section 83.02.09 Damage Code: N/A
 <p>Figure 12. A disassembled compressor. Bolts have been unfastened and sealing surfaces have been compromised.</p>	Observations: Disassembled compressor is indicated by any of the following: <ul style="list-style-type: none">• Case or head bolts with cracked or missing paint.• Stripped bolts.• Compromised seals and sealing surfaces.
	Warranty Coverage: <ul style="list-style-type: none">• A compressor with evidence of disassembly is non-warrantable.

No Defect Found.	Section 83.02.10
	Damage Code: N/A
	Post-removal Observations: No defect found is indicated by all of the following: <ul style="list-style-type: none">• Shaft turns smoothly.• No leak present in compressor.• Clean oil.• Compressor has compression and suction when turned.
	Warranty Coverage: <ul style="list-style-type: none">• A compressor with evidence of no defect found is non-warrantable. <p>Note: No defect found compressors returned with failed clutches will result in a chargeback for over-repair.</p>