

Bearings, Part 2: OE Service Bulletins

Ford: Added protection for bearings

To protect the DE bearing in 3G Series alternators, Ford made a running change in the DE frames, and carried this change over to the 4G and 6G as well. They added a raised collar around the bearing opening in the DE frame, which then required a pulley with a cut-out that would fit over this collar. The point of this modification is to prevent debris from attacking the bearing seal (Figure 1). Note that the pulleys from the



early-style units were not cut out and will not fit on the revised DE frame.

Figure 1. Ford added a raised collar on the D.E. frame of 3G series alternators to protect the bearing. The pulley was modified to accommodate the collar.

Ford truck bearing problem

Ford TSB (Technical Service Bulletin) #95-17-13 covers a concern with the DE bearing in Motorcraft 95-amp 3G Series alternators that were used on FD1060/1460 engines in vehicles built before 7/3/95.

This DE bearing seems to be wearing out prematurely because of the force of the main drive-belt load. A revised alternator 1-1997-11FD (F5PZ-10346-GA) has a 24mm-wide DE bearing, which improves the handling of the force produced by the main drive-belt load. This alternator uses a 21-225 DE Frame, bearing 10-3032-4 and 24-2265 pulley. If you are building these alternators, you need to use all three of these parts along with the other standard 3G parts if you want to avoid warranty returns (Figure 2).



Figure 2. To prevent premature bearing failure in 3G alternators used on medium and heavy trucks, Ford started using a 24mm-wide bearing. DE frame and pulley were modified to accommodate the bearing. All three must be used together when rebuilding these particular alternators.

CS130: Change to bearing & DE frame

In March 1994 GM issued Service Bulletin #366402, concerning improvements to CS130 series alternators. The bulletin covered CS130 units used on the following vehicles:

- 1990 - 94 Chevrolet & GMC P3 Models, all engines
- 1992 - 93 Chevrolet & GMC M/L/G Vans & S/T trucks with 4.3L engines (VIN's W and Z - RPOs

L35 and LB4)
 1992 - 94 Chevrolet & GMC C/K, all engines
 1992 - 93 Oldsmobile Bravada

According to this bulletin, beginning in 1994, all CS130 alternators used in the applications noted above would be produced with a larger 6303 DE bearing plus a steel cooling fan on the rotor. In addition, all new CS130 service units intended for use on the 1992-93 vehicles on this list would be produced with 6303 bearings, and all of GM's remanufactured units for these

vehicles would also be built to the 1994 specifications using the larger bearing.

As a result of this change, DE frames for these CS130 units also had to be changed to accommodate the larger bearing.

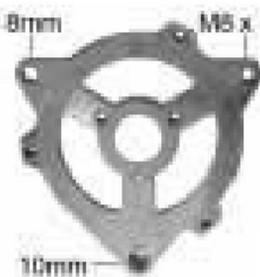
See Table 1 below for a complete list of supersessions in the service units and the corresponding DE frames. Also see the conversion chart on page 3 for further clarification on changes to these DE frames.

continued on page 4

Table 1. CS130 Unit and DE frame supersessions to accommodate 6303 bearing

Units w/ 6203 bearings superseded to				Units w/ 6303 bearings			
OE Unit #	Service Unit #	WAIR #	DE Frame 6203	OE Unit #	Service Unit #	WAIR #	DE Frame 6303
1101111	10463002	1-1629-34DR	21-124	10480086	10463417	1-1766-33DR	21-146
1101293	10463110	1-1629-21DR	21-124	10480094	10463424	1-1766-22DR	21-146
1101318	10463111	1-1629-21DR	21-124	10480084	10463415	1-1766-22DR	21-146
1101346	10463049	1-1250-34DR	21-123	None	10463621	None	21-145
1101500	10463146	1-1629-11DR	21-124	10480082	10463413	1-1766-12DR	21-146
1101571	10463140	1-1652-31DR	21-118	10480088	10463419	1-1903-31DR	21-149
1101617	10463146	1-1629-11DR	21-124	10480082	10463413	1-1766-12DR	21-146
1101618	10463049	1-1625-34DR	21-123	None	10463621	None	21-145
1101619	10463105	1-1640-11DR	21-118	None	10463414	None	21-149
1101620	10463111	1-1629-21DR	21-124	10480084	10463415	1-1766-22DR	21-146
1101621	10463039	1-1640-11DR	21-118	10480085	10463416	1-1895-11DR	21-149
1101629	10463110	1-1629-21DR	21-124	10480094	10463424	1-1766-22DR	21-146
1101633	10463002	1-1629-34DR	21-124	10480086	10463417	1-1766-33DR	21-146
1101635	10463159	1-1640-35DR	21-118	10480092	10463423	1-1895-13DR	21-149
1101636	10463180	1-1640-35DR	21-118	10480092	10463423	1-1895-13DR	21-149
1101637	10463445	1-1629-11DR	21-124	10480087	10463418	1-1766-12DR	21-146
1101806	10463183	1-1652-32DR	21-118	None	10463420	None	21-149
1101807	10463048	1-1640-32DR	21-118	10480090	10463421	1-1895-32DR	21-149
1102630	10463159	1-1640-35DR	21-118	10480092	10463423	1-1895-13DR	21-149
1102631	10463180	1-1640-35DR	21-118	10480092	10463423	1-1895-13DR	21-149
1105688	10463039	1-1640-11DR	21-118	10480085	10463416	1-1895-11DR	21-149
1105716	10463105	1-1640-11DR	21-118	None	10463414	None	21-149
1105720	10463048	1-1640-32DR	21-118	10480090	10463421	1-1895-32DR	21-149
1105722	10463049	1-1250-34DR	21-123	None	10463621	None	21-145
10479802	10463245	1-1622-21DR	21-124	10480094	10463424	1-1766-22DR	21-146
10479883	10463140	1-1640-31DR	21-118	10480091	10463422	1-1895-31DR	21-149
10479974	10463367	1-1625-12DR	21-123	None	10463622	None	21-145
10479997	10463368	1-1629-34DR	21-124	10480099	10463425	1-1766-33DR	21-146

Conversion Chart for CS130 Series D.E. Frames

Use with 6203 Bearing & 46-1602 Rotor Spacer (3mm thick)	=	Use with 6303 Bearing & 46-1618 Rotor Spacer (1mm thick)	Use with 6203 Bearing & 46-1602 Rotor Spacer (3mm thick)	=	Use with 6303 Bearing & 46-1618 Rotor Spacer (1mm thick)
 21-117		 21-162	 21-125		 21-164
 21-118		 21-149	 21-128		 21-139
 21-119		 21-163	 21-130		 21-151
 21-123		 21-145	 21-135		 21-150
 21-124		 21-146	<p>D.E. Frame Quick Identification: For most CS130 Series, D.E. frames requiring a 6203 bearing have 3 spokes D.E. frames requiring a 6303 bearing have 5 spokes</p>		

