Ford Motor Company

FORD LABORATORY TEST METHOD BJ 113-03

HIGH TEMPERATURE WHEEL BEARING GREASE LEAKAGE TEST

Application

This procedure is used to determine the oil and grease leakage properties of front wheel bearing greases at 163 +/- 3 °C temperature and the condition of the grease and bearings after completion of the test. The procedure is a modification of ASTM D 1263, "Leakage Tendencies of Automotive Wheel Bearing Greases".

Apparatus Required

Test Apparatus

Use apparatus described in ASTM D 1263 available from:

Source: Testing Machines Inc.
2910 Expressway Dr. S.
Central Islip, NY 11749-1407

(Koehler Model K187) or other source referenced by ASTM for ASTM D 1263.

Modify the main spindle for the addition of a stem-type thermocouple to control the test temperature adjacent to the inner bearing. Drill a suitable diameter hole from the large end of the tapered shaft on an angle toward the 7.14 mm dia x 38.1 mm hole in the center of the shaft. Insert thermocouple through the drilled hole so the point is below the inner bearing diameter to permit installation of bearing. Connect wires coming out of the 7.14 mm dia hole to a temperature indicator or recorder.

Note: Inasmuch as the high temperature may deteriorate the V-belt, the belt should be checked visually prior to each test for wear.

Test Bearings and Cups

Outer Bearing	No. 09074
Outer Cup	No. 09196
Inner Bearing	No. 15118
Inner Cup	No. 15250 X

Spatula

Date	Action	Revisions
2001 07 24	Revised	Editorial – no technical change A. Cockman
1990 05 16		

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Syringe

Oven
Shall be capable of maintaining 163 +/- 3 °C.

Materials Required

ASTM Precipitation Naphtha or Stoddard Solvent
Do not use chlorinated solvents. Caution: Low flash point. Refer to Fire Control Bulletin No. 18. Refer to Industrial Hygiene for health and safety comments. (Industrial Hygiene Field Service, Telephone (313) 337-8955).

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

1. Clean spindle, inside of hub, collector and hub cap with the prescribed solvent. Weigh collector and cap to nearest 0.1 g, record each.

2. Clean bearings and cups thoroughly with the prescribed solvent and dry in oven at 38 +/- 1 °C for approximately 1/2 h.

3. Install cups in hub.

   New bearings and cups are not required for each test. However, if any part shows staining, corrosion, wear or surface defects, that part and its mating part should be replaced.

4. Use a total of 60 +/- 2 g of grease for bearings and hub.

5. Pack outer bearing with 2.9 +/- 1 g and inner bearing with 4.7 +/- 0.1 g of grease. A suitable syringe is recommended to fill grease in between the bearing rollers. With narrow blade spatula, press grease between the rollers to remove air pockets and level grease with edge of cage.

6. Distribute remaining grease inside the hub adjacent to each cup. Do not put grease into the hub cap.

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