



Designation: D1264 – 18^ε¹

Standard Test Method for Determining the Water Washout Characteristics of Lubricating Greases¹

This standard is issued under the fixed designation D1264; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

^ε¹ NOTE—Editorially updated Footnote 2 and 5.1 in February 2020.

1. Scope*

1.1 This test method covers the evaluation of the resistance of a lubricating grease to washout by water from a bearing, when tested at 38 °C and 79 °C (100 °F and 175 °F) under the prescribed laboratory conditions. It is not to be considered the equivalent of service evaluation tests. Precision and bias was determined using grease ranging from NLGI 3 to 0 grades in the research report (see Section 10).

1.2 This test method may not be suitable for some greases containing highly volatile components. This test method does not attempt to account for sample evaporation. It is the user's responsibility to determine if evaporation of the sample is a significant contributor to mass loss at the required drying temperature.

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* For specific warning statements, see 6.3.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.G0.06 on Functional Tests - Contamination.

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2. Referenced Documents

- 2.1 *ASTM Adjuncts:*
Standard Ball Bearing²
D2PP, Version 4.43, Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products³

3. Summary of Test Method

3.1 The grease is packed into a ball bearing, the bearing is then inserted in a housing with specified clearances, and rotated at 600 r/min \pm 30 r/min. Water, controlled at the specified test temperature, impinges on the bearing housing at a rate of 5 mL/s \pm 0.5 mL/s. The amount of grease washed out in 60 min \pm 1 min is a measure of the resistance of the grease to water washout.

4. Significance and Use

4.1 This test method estimates the resistance of greases to water washout from ball bearings under conditions of the test. No correlation with field service has been established.

5. Apparatus

5.1 *Ball Bearing*, Size 6204 deep groove ball bearing containing eight 7.9 mm (⁵/₁₆ in.) balls, separated by a two-piece, pressed steel cage, having an internal free volume of 6.5 cm³ \pm 0.5 cm³. ADJD126419² bearings meet these requirements, however other bearings with the same dimensions may be used.

5.2 *Bearing Housing and Shield* with dimensions as shown in Fig. 1.

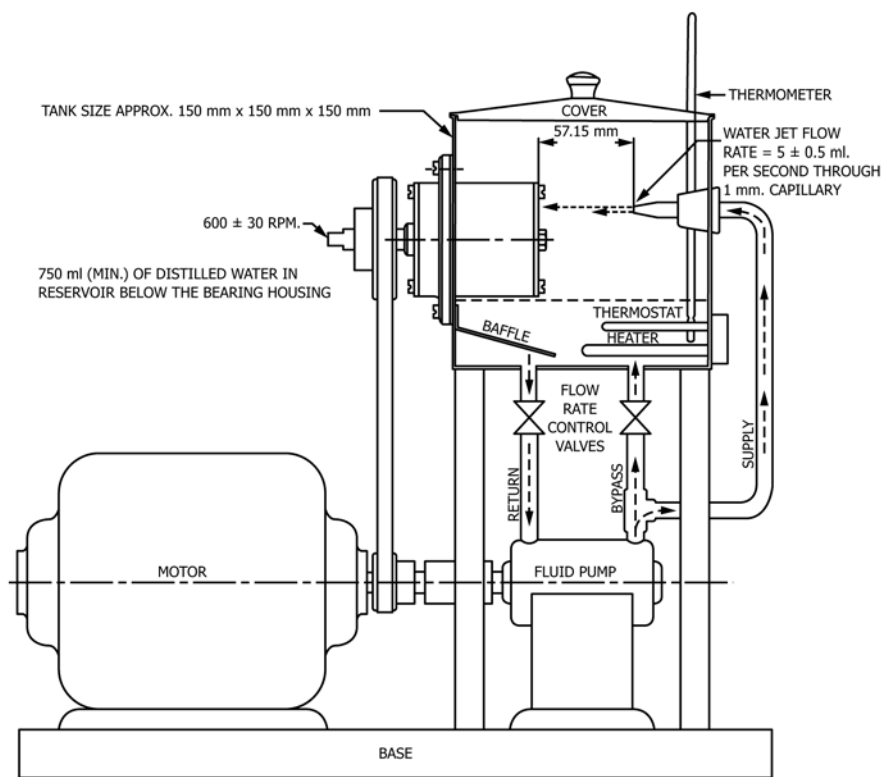
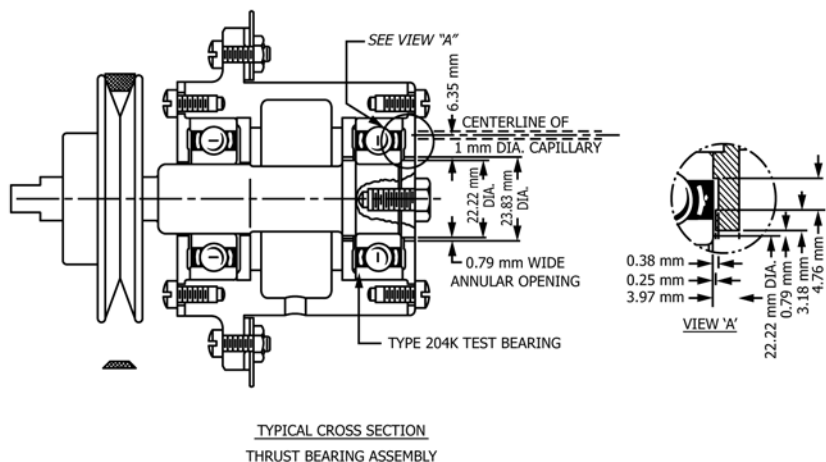
5.3 *Reservoir, Bearing-Housing Mount, Circulating Pump, and Drive Motor*, similar or equivalent to those shown in Fig. 1.

5.4 *Heating Source*, to maintain the water temperature at 38 °C \pm 1.7 °C (100 °F \pm 3 °F) or 79 °C \pm 1.7 °C (174 °F \pm 3 °F).

² Available from ASTM International Headquarters. Order Adjunct No. ADJD126419. Original adjunct produced in 1984.

³ ADJD6300 is no longer available.

*A Summary of Changes section appears at the end of this standard



in.	mm	in.	mm	°F	°C
0.010	0.25	0.875	22.22	100 ± 3	38 ± 1.7
0.015	0.38	0.938	23.81	174 ± 3	79 ± 1.7
0.031	0.79	2 1/4	57.1		
1/8	3.18	6	152		
5/32	3.97				
3/16	4.76				
1/4	6.35				

FIG. 1 Water Washout Characteristics of Lubricating Grease Apparatus