



Designation: ~~D1264~~—~~12~~ D1264 – 16

# Standard Test Method for Determining the Water Washout Characteristics of Lubricating Greases<sup>1</sup>

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 ( $\epsilon$ ) 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.*

## 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  $3838\text{ }^{\circ}\text{C}$  and  $79^{\circ}\text{C}$  ( ~~$10079\text{ }^{\circ}\text{C}$~~  ( $100\text{ }^{\circ}\text{F}$  and  ~~$175^{\circ}\text{F}$~~ ) $175\text{ }^{\circ}\text{F}$ ) 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 state in SI units are to be regarded as the standard. ~~The values given in parentheses are for information only.~~

1.3.1 *Exception*—~~The values given in parentheses are for information only.~~

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 this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For specific warning statements, see 6.3.

## 2. Referenced Documents

2.1 *ASTM Adjuncts:*

Standard Ball Bearing<sup>2</sup>

D2PP, Version 4.43, Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products<sup>3</sup>

## 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  $600600\text{ r/min} \pm 3030\text{ r/min}$ . Water, controlled at the specified test temperature, impinges on the bearing housing at a rate of  $55\text{ mL/s} \pm 0.50.5\text{ mL/mL/s}$ . The amount of grease washed out in  $6060\text{ min} \pm 1\text{ min}$  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*, ASTM test bearing size 6204 (see ADJD3336.<sup>2</sup>

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.

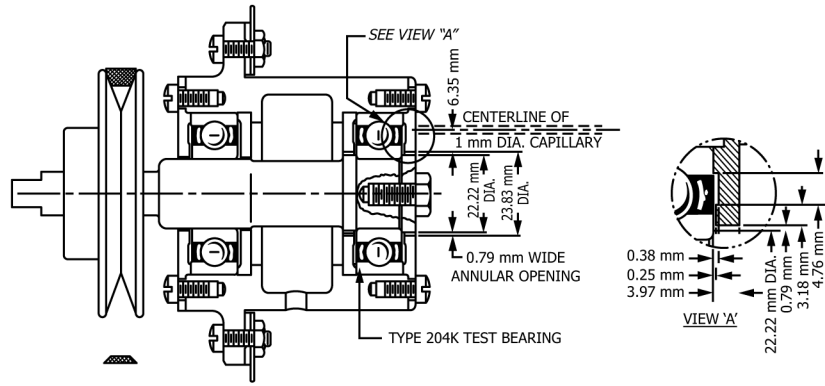
<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products—Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.G0.06 on Functional Tests - Contamination.

Current edition approved Dec. 1, 2012April 1, 2016. Published March 2013April 2016. Originally approved in 1953. Last previous edition approved in 2012 as D1264D1264 – 12. DOI: 10.1520/D1264-12.10.1520/D1264-16.

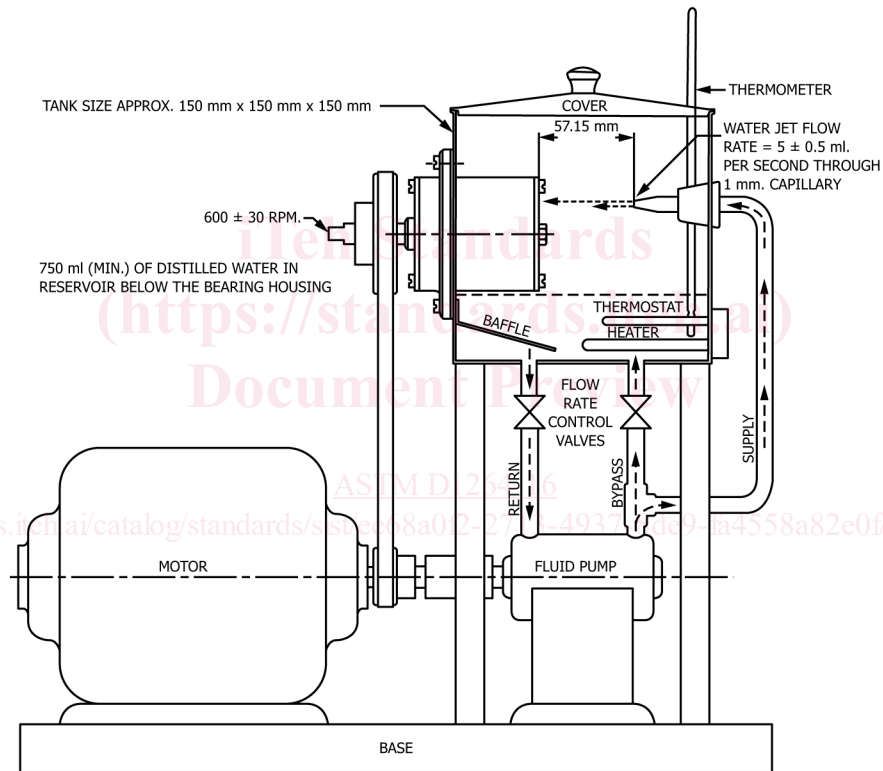
<sup>2</sup> Available from ASTM International Headquarters. Order Adjunct No. ADJD3336. Original adjunct produced in 1984.

<sup>3</sup> ADJD6300 is no longer available.

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



TYPICAL CROSS SECTION  
THRUST BEARING ASSEMBLY



| 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