

**AUTOMOTIVE GASOLINE ENGINE OIL STANDARD
(JASO M 364:2019)**

ANNEX TO APPLICATION MANUAL

**MANAGEMENT OF TEST PRECISION OF MOTORED
FUEL ECONOMY TEST**

July, 2019

JASO Engine Oil Standards Implementation Panel

Table of Contents

1. Introduction	3
2. Effectiveness judgment criteria in reference oils of motored fuel economy test.....	3
3. Management of test precision of motored fuel economy test based on reference oils	4

1. Introduction

This document has been prepared as a part of the activities of the JASO Engine Oil Standards Implementation Panel, which was established voluntarily by various industrial organizations and academic associations related to engine oils in Japan, to ensure proper implementation of JASO Engine Oil Standards in Japan and overseas. This document describes the process to control test severity and precision of the Gasoline Engine Oil Motored Fuel Economy Test Procedure (JASO M 365:2019) and its application in the Automotive Gasoline Engine Oil Standard (JASO M 364: 2019) established by the Society of Automotive Engineers of Japan, Inc.

The operational rules defined in this document shall be maintained and revised by the Gasoline Fuel Economy Test Surveillance Panel which is formed under the JASO Engine Oil Standards Implementation Panel, or the JASO Next Generation Gasoline Engine Oil Taskforce, or the Motored Fuel Economy Test Procedure Working Group formed under the Taskforce, in order to solve any severity, precision, operational issues, and any technical issues.

2. Effectiveness judgment criteria in reference oils of motored fuel economy test

When conducting this test for the first time, replacement of engine bench, change of engine bench, replacing the engine or replacing the torque sensor, in principle, conduct tests using the following three reference oils and confirm that the test is correctly performed.

The criteria for judging the validity of reference oil JASO BC are shown below. They are guides.

- Confirm that the fuel economy improvement rate (domestic mode) of GE108A is in the range of 1.92 to 2.09%
- Confirm that the fuel economy improvement rate (domestic mode) of GE208 is in the range of 1.48 to 1.67%
- Confirm that the fuel economy improvement rate (domestic mode) of GE216 is in the range of 1.07 to 1.21%

3. Management of test precision of motored fuel economy test based on reference oils

In order to conduct a fuel consumption test, it is necessary to go through the procedure shown below.

- (1) Conduct tests based on JASO M365, and submit test data to Japan Lubricating Oil Society (JALOS). The report format for submission is shown in Table 1 and downloaded from the JALOS website. If the test results fall out of range, conduct several tests on the test oil and report only the data finally included in the range

Table 1 Fuel economy improvement in WLTC mode

Test laboratory :

Test number	Test oil	Estimated fuel consumption (Japanese mode) kg/h	Fuel economy improvement in Japanese mode Difference from previous JASO BC %	Test date	Effectiveness judgment criteria
1	JASO BC	-	0.0		-
2	GE108A				1.92~2.09 %
3	JASO BC				-0.2~+0.2 %
4	GE208				1.48~1.67 %
5	JASO BC				-0.2~+0.2 %
6	GE216				1.07~1.21 %
7	JASO BC				-0.2~+0.2 %

- (2) Check the submitted data on the fuel economy test surveillance panel
- (3) If there is no problem with the data, JALOS will give a number that proves the confirmation as a "test bench". After assigning the number, it becomes a fuel economy test bench. The assigned number is used as a "Bench number" at the time of test result report.

Example of bench number) M365-Z001

M365-Test organization code name (1 digit alphabet) + serial number for each test organization starting with number 001