

MOTORCYCLES—FOUR-STROKE CYCLE GASOLINE ENGINE OILS
(JASO T 903:2006)

IMPLEMENTATION MANUAL

April 1999
(Revised April, 2006)

JASO Engine Oil Standards
Implementation Panel

CONTENTS

	Page
1. Foreword	1
2. Purpose of the Implementation System	2
3. Outline of JASO T 903:2006 Standard	2
3.1 JASO Test Procedure	2
3.2 Basic Concept of the Performance Classification	2
3.3 Evaluation Items and The Numerical Range of Index for Each Performance Classification	2
3.4 Background of Development of JASO Test Procedures and Performance Classification	5
3.5 Background of Establishment of an Organization for Implementation of the JASO Motorcycle Four Cycle Oil Standards	6
3.6 New Notification of a Conforming Oil, Effective On-File Period and Indication of a Performance Class	6
4. Procedures for Utilization of the JASO Motorcycle Four-Cycle Oil Standards	7
4.1 Outline	7
4.2 Procedure Flow	7
4.3 Submission and Filing of Notification Documents	9
4.4 Custody and Submission of Test Data	9
4.5 Document Check	9
4.6 Oil Code Reference Numbers	10
4.7 Disclosure of On -file Information	10
4.8 Quality Assurance	10
4.9 Maintenance of Secrecy	11
4.10 Alteration of on -file data	11
4.11 Items to be taken into Consideration by the Submitter	12
5. Labeling	12
6. Market Survey	12
7. Utilization of the Standards by of Motorcycle Dealers	12
8. References	13
8.1 Addressee of Notification Documents for Filing, and Supplier of the Forms	13
8.2 Supplier of the Test Procedure and Performance Classification (JASO Standards)	13
8.3 Supplier of JAFRE-A and JAFRE-B Reference Oils	13
8.4 Supplier of Standard Friction Plates and Steel Plates	13
Appendix 1 - FILING NOTIFICATION BASED ON MOTORCYCLES—FOUR-STROKE CYCLE GASOLINE ENGINE OILS (JASO T 903:2006)	
Appendix 2 - NOTIFICATION AND WRITTEN CONSENT OF FILING BASED ON THE MOTORCYCLES—FOUR-STROKE CYCLE GASOLINE ENGINE OILS (JASO T 903:2006)	
Appendix 3 - EXAMPLES OF SETTING UP OIL CODE REFERENCE NUMBERS AND THE NECESSITY FOR SUBMISSION OF DOCUMENTS FOR ALTERATION OF FORMULATIONS	

Appendix 4 - GUIDELINES FOR READ-ACROSS WHEN MODIFYING MOTORCYCLE
FOUR-CYCLE OIL FORMULATIONS

Appendix 5 - INSTRUCTIONS FOR LABELING OR PRINTING THE OIL CODE REFERENCE
NUMBER AND PERFORMANCE CLASSIFICATION

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NOTICE

The quality, performance and labeling of the Motorcycle Four-Stroke Cycle Gasoline Engine Oils notified and filed under this JASO Four-Stroke Cycle Gasoline Engine Oil Standards Implementation System, is classified and guaranteed based upon the judgment and responsibility of the company (the lube oil supplier) which submitted the specified notification documents for filing. The company shall assume all liabilities resulting therefrom.

Accordingly, under this system, the JASO Engine Oil Standards Implementation Panel does not guarantee the quality or performance of the oil, and takes no responsibility with regard to such matters.

In the case where any problems associated with the quality, performance, or labeling of the motorcycle 4-stroke cycle gasoline engine oil arise, the company that has utilized the JASO Motorcycle Four-Stroke Cycle Gasoline Engine Oil Standard shall itself resolve the problems.

In order to facilitate the proper use of the JASO Motorcycle Four-Stroke Cycle Gasoline Engine Oil Standard, the Panel requests that the users of the standard fully understand this manual. Information regarding any change in the contents of this manual will be provided through the Internet Web site of the JASO Engine Oil Standards Implementation Panel (<http://www.jalos.or.jp/onfile/>) or by any other means. Before attempting submission of notification, please check the latest information.

1. Foreword

This manual has been prepared as a part of the activities of the JASO Engine Oil Standards Implementation Panel (hereinafter referred to as the "Panel"). The Panel has been voluntarily organized by various industry associations and academic societies in Japan concerned with engine oils in order to promote in Japan and other countries the popularization of Motorcycle Four-Stroke Cycle Gasoline Engine Oil Standard (the "JASO Motorcycles Four-Cycle Oil Standard" or "**JASO T 903** Standard"). This standard was established by the Society of Automotive Engineers of Japan, Inc. ("JSAE"). The purpose of this Manual is to explain the procedures to enable those who distribute, supply or otherwise offer for sale, four-stroke cycle gasoline engine oils for motorcycles in the course of trade or business (hereinafter referred to collectively as "Suppliers"), to take the steps necessary to submit to the Panel the notification documents in accordance with the JASO Motorcycles Four-Cycle Oil Standard.

In this manual, the term "Four-Cycle Engines" means four-stroke cycle engines using gasoline as fuel, and the term "Four-Cycle Oils" means lubricating oils for four-cycle engines.

In reply to an inquiry from the Automotive/Lubricant Joint Committee ("ALJC"), a committee of the Petroleum Association of Japan ("PAJ") and the Japan Automobile Manufacturers Association, Inc. ("JAMA"), this submission and on-file system was drafted by the Motorcycle Four-Cycle Engine Oil Working Group and was established with the approval of the relevant industrial and academic associations/bodies.

The Motorcycle Four-Cycle Engine Oil Working Group itself was set up by the "JASO

Engine Oil Standards Implementation Panel” (formerly, the JASO Two-Cycle Oil Standards Implementation Panel)”, a subsidiary organization of the ALJC.

2. Purpose of the Implementation System

In recent years, engine oils for 4-wheel vehicles have tended toward lower viscosity and lower friction to achieve better fuel economy. There are concerns that such low friction and low viscosity oils, when used in motorcycles, may cause clutch slippage and transmission gear pitting wear.

Therefore, standards specifying a test method to properly evaluate the oil quality and specifying the oil performance classifications to be determined by the test method have been established by JSAE.

The implementation system, described in this document, was established to facilitate the choice of appropriate four-cycle oils through the use of such performance classifications. The use of **JASO T 903** standard will help consumers to correctly select four-cycle oils for motorcycles, and will reduce field problems resulting from the choice and use of inappropriate oils.

3. Outline of JASO T 903:2006 Standard

3.1 JASO Test Procedure

The test procedure shown in **Table 1** was developed by the Motorcycle Four-Stroke Cycle Engine Oil Working Group, which was organized within the Motorcycle Subcommittee of JSAE.

This procedure will be used to evaluate four-cycle engine oils to confirm that they meet motorcycle oil requirements.

Table1—Motorcycle Four-Cycle Oils JASO Test Procedure

Test Procedure	JASO Standard No.
Motorcycles - Four-stroke cycle gasoline engine oils - Test procedure for friction property of clutch system	JASO T 904:2006

3.2 Basic Concept of the Performance Classification

The performance level of four-cycle oils, which meet engine oil performances and required physical and chemical properties as specified in **JASO T 903**, is classified into four grades, MA, MA1, MA2 and MB, according to the test results based on the above-mentioned JASO clutch system friction test. MA/MA1/MA2/MB grade oils are appropriate for motorcycle four-cycle engines and the grade is characterized by three friction characteristic indices. MB grade oils are classified as the lowest friction oils among motorcycle four-cycle oils.

3.3 Evaluation Items and the Numerical Range of Index for Each Performance Classification

The evaluation items in the JASO test procedure and the numerical range of index for each performance classification are shown in **Table 2.1**.

Table 2.1—Performance classification

Classification Evaluation Item	Test Procedure	Range of Index	
		MA	MB
* DFI (Dynamic Friction Characteristic Index-DFI)	JASO T 904 : 2006	≥1.45 and <2.50	≥0.50 and <1.45
* SFI (Static Friction Characteristic Index-SFI)		≥1.15 and <2.50	≥0.50 and <1.15
* STI (Stop Time Index-STI)		≥1.55 and <2.50	≥0.50 and <1.55

Classification Evaluation Item	Test Procedure	Range of Index	
		MA2	MA1
* DFI (Dynamic Friction Characteristic Index-DFI)	JASO T 904 : 2006	≥1.80 and <2.50	≥1.45 and <1.80
* SFI (Static Friction Characteristic Index-SFI)		≥1.70 and <2.50	≥1.15 and <1.70
* STI (Stop Time Index-STI)		≥1.90 and <2.50	≥1.55 and <1.90

NOTE Four-cycle oils are to be classified as MB when one or more indices of the three friction property indices fall into MB limits.
Submitter may on-file an oil which satisfies the MA specifications as a MA1 or MA2 oil depending on the indices specified in **Table 2.1**.

Table 2.2 shows the specific samples how to select a performance class.

Submitter selects one of the performance classes specified in **Table 2.2** in order to on-file it with the On-File system and then is able to show it on a bottle.

Table 2.2—Specific samples to define a performance class

Sample	DFI	SFI	STI	MA	MA1	MA2	MB
1	≥0.50 and <1.45	≥0.50 and <1.15	≥0.50 and <1.55	—	—	—	○
2	≥1.45 and <1.80	≥1.15 and <1.70	≥1.55 and <1.90	○	○	—	—
3	≥1.80 and <2.50	≥1.70 and <2.50	≥1.90 and <2.50	○	—	○	—
4	≥1.45 and <1.80	≥1.70 and <2.50	≥1.90 and <2.50	○	—	—	—
5	≥1.80 and <2.50	≥1.15 and <1.70	≥1.90 and <2.50	○	—	—	—
6	≥1.80 and <2.50	≥1.70 and <2.50	≥1.55 and <1.90	○	—	—	—
7	≥1.45 and <1.80	≥1.15 and <1.70	≥1.90 and <2.50	○	—	—	—
8	≥1.80 and <2.50	≥1.15 and <1.70	≥1.55 and <1.90	○	—	—	—
9	≥1.45 and <1.80	≥1.70 and <2.50	≥1.55 and <1.90	○	—	—	—
10	≥0.50 and <1.45	≥1.15 and <2.50	≥1.55 and <2.50	—	—	—	○
11	≥1.45 and <2.50	≥0.50 and <1.15	≥1.55 and <2.50	—	—	—	○
12	≥1.45 and <2.50	≥1.15 and <2.50	≥0.50 and <1.55	—	—	—	○
13	≥0.50 and <1.45	≥0.50 and <1.15	≥1.55 and <2.50	—	—	—	○
14	≥1.45 and <2.50	≥0.50 and <1.15	≥0.50 and <1.55	—	—	—	○
15	≥0.50 and <1.45	≥1.15 and <2.50	≥0.50 and <1.55	—	—	—	○

Oils must be of the quality level of one of the quality categories shown in **Table 3**.
Oils must also meet the physicochemical requirements shown in **Table 4**.

Table 3—Four-cycle oil quality

Specifications	Quality categories
API	SG, SH, SJ, SL, SM
ILSAC	GF-1, GF-2, GF-3
ACEA	A1/B1, A3/B3, A3/B4, A5/B5, C2, C3

Table 4—Physicochemical Properties

Test item	Performance criteria	Test procedure
Sulfated ash mass %	1.2 max.	JIS K 2272
Phosphorus content mass %	0.08 min and 0.12 max	JPI-5S-38
Evaporative loss mass %	20 max.	JPI-5S-41
Foaming tendency (foaming/settling) Sequence I Sequence II Sequence III mL	10/0 max. 50/0 max. 10/0 max.	JIS K 2518
Shear stability (Kinematic viscosity (100°C) after the test) mm ² /s	xW-30: 9.0 min. xW-40: 12.0 min. xW-50: 15.0 min. Other grades: stay in grade	JPI-5S-29 ¹⁾
High temperature high shear viscosity mPa·s	2.9 min.	JPI-5S-36

NOTE ¹⁾: Test shall be conducted by diesel injector method under the standard test conditions (30 cycles).

3.4 Background of Development of JASO Test Procedures and Performance Classification

In spite of the fact that Japan is one of the leading countries producing motorcycle four-cycle engines in the world, domestic quality standards of motorcycle four-cycle oils have been unavailable. Currently there are some four-cycle oil standards such as API, ILSAC and ACEA. However, they are primarily for 4-wheel vehicles but not for motorcycles. Therefore there is a concern that four-cycle oils for 4-wheel vehicles may cause problems in the drive-line components, when used in motorcycles in which a lubricating oil is used commonly for the engine, clutch and transmission.

There are concerns that lower friction and lower viscosity four-cycle oils, which are strongly required recently for achieving better fuel economy of 4-wheel vehicles, may cause clutch slippage or poor gear durability in motorcycles. Field problems have actually been observed that are probably attributable to such problems.

Because of this, there was a strong demand by Japanese motorcycle manufacturers to develop new four-cycle oil standards. The standards were finally established through the following process:

- * In May 1994, the "Motorcycle WG" of JAMA Engine Oil Subcommittee carried out surveys on the existing four-cycle oil standards, engine test methods and reference oils and conducted evaluation tests to see the effects of four-cycle oils on actual motorcycles.
- * In April 1996, the "Motorcycle Four-Stroke Cycle Engine Oil Subcommittee" was formed under the JSAE Motorcycle Subcommittee, and development of test methods and standardization of motorcycle four-cycle oils were carried out for two

years until March 1998.

In March 1998, a JASO standard regarding Friction Characteristics Evaluation Test Method, and another JASO standard regarding Motorcycle Four-Cycle Oil Quality were developed. The latter standard consists of performance classification based on the clutch friction characteristics evaluation tests and physicochemical property requirements.

- * Since the standards were established in 1998, the quality of four-cycle oils in the market has been changing in line with the updating of passenger car oil specifications such as API and ILSAC. In addition, improvements in motorcycle oil quality have been continually required for better performance in the areas of emissions control and fuel economy. Driven by these factors, **JASO T 903** was revised in March 2006, adding new performance classes as well as a requirement for phosphorous content, so as to address current and future requirements for motorcycle oil quality. Coupled with the revision of **JASO T 903**, a minor updating change was made to **JASO T 904** at the same time.

3.5 Background of establishment of an organization for Implementation of the JASO Motorcycle Four-Cycle Oil Standards

Operation of the JASO Motorcycle Four-Cycle Oil Standards described above will be handled by a provisional organization which has been formed under the following process.

- * Based on the request from "Automotive/Lubricant Joint Committee ("ALJC")" which is a joint committee between "The Petroleum Association of Japan" (PAJ) and "The Japan Automobile Manufacturers Association"(JAMA), the "JASO Motorcycle Four-Cycle Engine Oil Standards Implementation Working Group" was formed in September 1998. It is a lower branch of the "JASO Two-Cycle Oil Implementation Panel" which is the only organization that operates JASO Engine Oil Standards.
- * Based upon the WG proposal the former JASO Two-Cycle Engine Oil Implementation Panel was restructured into the "JASO Engine Oil Standards Implementation Panel" in April 1999 to cover four-cycle oils and to manage the smooth operation of the implementation system.

3.6 New Notification of a Conforming Oil, Effective On-File Period and Indication of a Performance Class

- * The first date when performance class indication is allowed, the last date when a new notification is accepted, and the expiration date of the on-file data for engine oils conforming to
 - Motorcycles – Four-stroke cycle gasoline engine oils (**JASO T 903:1998**) and
 - Motorcycles – Four-stroke cycle gasoline engine oils (**JASO T 903:2006**)are as follows:
- * The last date when a new notification is accepted for engine oils conforming to **JASO T 903:1998** will be April 30, 2006. Further, the expiration date of the on-file data for engine oils conforming to **JASO T 903:1998** will be April 30, 2011. The first date when performance class indication is allowed for engine oils conforming to **JASO T 903:2006** will be May 1, 2006.

Table 5—Effective Period of On-file Data

Year of Issuance of the Standard	First date when Class Indication is allowed	Last date when new notification is accepted	Expiration date of the on -file data
1998	April 1, 1999	April 30, 2006	April 30, 2011
2006	May 1, 2006		

4. Procedures for Utilization of the JASO Motorcycle Four-Cycle Oil Standards

4.1 Outline

The Panel advises that a lube oil supplier (user of the JASO Motorcycle Four Cycle Oil Standards), who desires to notify a four-cycle oil Performance Class based on the **JASO T 903** Standard, (hereinafter referred to as the "Submitter") should go through certain formalities for the utilization of the standard for each brand of product and for each formulation according to the below-mentioned procedure.

4.2 Procedure Flow

The outline of the notification and filing procedure is shown in **Figure 1**.

4.3 Submission and Filing of Notification Documents

A submitter of the Motorcycle Four-Cycle Oil should fill in the notification documents (see **Appendix 1**) and Column B of the notice with written consent (see **Appendix 2**) in duplicate, and mail them to the following address of the Panel c/o the Japan Lubricating Oil Society, which is entrusted with handling the management of acceptance of documents submitted and their filing.

JASO Engine Oil Standards
Implementation Panel
c/o Business Dept.
Japan Lubricating Oil Society
2-16-1 Hinode, Funabashi-shi,
Chiba, 273-0015, Japan

The submitter shall pay the fee indicated in **Appendix 1** (which includes consumption tax) as a management fee by payment into the bank account indicated in **Appendix 1**, and shall submit the certificate of payment along with the specified documents to the Panel. At the time of reporting, the submitter shall submit to the Panel a representative example of performance classification marking on the four-cycle oil container and a copy of the label (drawing allowable). In principle, the documents submitted and the management fee paid are not returned to the submitter. Should the management fee be revised, the Panel will publicize it through relevant organizations.

4.4 Custody and Submission of Test Data

The original test reports, which must be prepared in the form prescribed in **JASO T 904**, and from which the notification documents were completed, shall be retained by the submitter on its responsibility until the submitter withdraws the on-file documents concerned.

On receipt of a request from the Panel, the submitter shall submit the test reports promptly.

4.5 Document Check

The Panel will check the documents received from a submitter as follows:

- i) Are all required items completed?
- ii) Is an infrared absorption spectrum analysis chart, prepared in the specified form, attached to the documents?
- iii) Is the engine oil performance category correctly marked in the table of the application form?
- iv) Are the physicochemical properties in compliance with the requirements in terms of the five parameters specified in **Table 2** of **JASO T 903:2006**?
- v) Are the JASO friction test results within the index range of the performance class?

Also the Panel will check whether there is any incorrect statement in the description of the performance class or improper expression which might lead to misunderstanding in the product label.

In the case where even one of the above items is not satisfactory, the Panel will mail to the submitter a notice of the rejection of the filing along with the reason for the rejection, or a notice requesting the submitter to make necessary corrections.

In the case where all the items are satisfactory, the Panel will mail a notice of the filing to the submitter and file a copy of the notice with the notification documents submitted.

4.6 Oil Code Reference Numbers

A submitter shall decide an oil code reference number, which the Panel will record. An oil code reference number is to be established on the following basis:

M ○○○ △△△ □□□
① ② ③ ④

- ① Oil Code (One capital alphabetic character)
M is assigned to motorcycle four-cycle oils.
- ② Country Number (three digits)
The country code of the international telephone number of the submitter or the company which manufactures the four-cycle oil concerned (e.g. Japan: 081; the United States: 001; the United Kingdom: 044)
- ③ Lube oil Supplier's Code (three capital alphabetic characters)
This code consists of three capital alphabetic characters that the submitter wishes, e.g., HMC for Honda Motor Company and ENE for Nippon Oil Corporation. Note that a submitter should use only one supplier's code.

In the case where a submitter has already filed the supplier's code with other JASO engine oils such as 2-cycle oil, the same code should be used unless there are specific reasons for the use of a different code.

If the requested supplier's code is already used by another supplier, the Panel will ask the submitter to change the code to avoid confusions.

- ④ Control Number (three digits)
This is the submitter's own number, which is freely chosen by a submitter. However, it is not allowable for a submitter to apply the same control number to more than one product or trial product.

For reference, examples for deciding oil code reference numbers are indicated in **Appendix 3**.

4.7 Disclosure of On-file Information

For promoting public recognition of the JASO Motorcycle Four-Cycle Oil Standard (**JASO T 903:2006**) as well as the motorcycle four-cycle oil products, the Panel will publicize oil code reference numbers, brand names, submitter names and performance classes of the on-file products which have been notified and filed according to this manual through such communication media as internet, newspapers, magazines and other printed matters.

If the publicized information is incorrect, the submitter shall notify the Panel of the fact, asking for remedial action, in written materials as soon as possible.

The Panel does not have any responsibility for any loss and damage incurred by the submitter caused by the information in the "NOTIFICATION OF FILING WITH WRITTEN CONSENT" which the submitter has confirmed and agreed to be publicized.

4.8 Quality Assurance

The quality and performance of the on-file four-cycle oils are classified and guaranteed on the responsibility of the submitter, and therefore all the resulting responsibility rests

with the submitter (the supplier).

The Panel will not assume any responsibility for quality or performance of four-cycle oils on the file. The Panel will not take any responsibility for any loss or damage resulting from the use of the four-cycle oils.

In the case where a problem associated with the quality or the performance of the four-cycle oils occurs, it must be resolved by the submitter.

Further, in the case where this system conflicts with any legislation of the country concerned (including local governments), the legislation shall be over-riding. Accordingly, the Panel will not assume any responsibility for loss or damage that may be caused by using this system should it be incompatible with any legislation.

4.9 Maintenance of Secrecy

Except for the information mentioned in **4.7**, Disclosure of On-file Information, the Panel will not disclose to a third party any filed document or relevant information without the written consent of the submitter.

This rule, however, does not apply to the case where the Panel is required by a public body to disclose such information based on a legal requirement. Should the notification documents submitted or contents thereof become disclosed or leaked to a third party, the Panel shall in no event be held responsible for compensation for any loss or damage resulting from such disclosure or leakage.

In the case where a market problem occurs and the Panel receives an inquiry in writing from a party concerned, the Panel shall be allowed to reply to the party as to whether or not the four cycle oil having the designated Oil Code Reference Number is on-file, and to advise the party of the submitter name concerned. Further, in the case where the party desires to directly contact the submitter, the Panel will inform the submitter of the fact, and will leave the settlement of the issue to the submitter. The Panel will take no further action.

4.10 Alteration of on-file data

When a submitter wishes to change the product name of an on-file four-cycle oil, or to change the formulation of the oil without changing the product name, new notification documents shall be submitted. In this case, the control number of the Oil Code Reference Number must be revised.

However, it is not necessary to revise the Oil Code Reference Number if the reformulation is within the allowable range of the read-across indicated in **Appendix 4**. In any of the following cases, the submitter shall report to the Panel in advance. In any of these cases, the submitter shall make necessary payment as specified in **4.3** and update the Oil Code Reference Number concerned.

- (1) Change of the name of submitter (company) or the code of submitter
- (2) Change of the name of product
- (3) Change of the performance classification marking design

In any of the following cases, the submitter shall promptly report to the Panel. Note that it is not required to pay the fee specified in **4.3** or update the Oil Code Reference Number concerned.

- (1) Change of the information on communication with the submitter (address,

telephone number, etc.)

Regarding the alteration of formulation and the necessity for amending the on-file data, see **Appendix 3**.

4.11 Items to be taken into Consideration by the Submitter

In the case where a submitter indicates an Oil Code Reference Number and a performance class on the product containers, the submitter has to take the following into consideration.

- 1) The quality and performance of the marketed product and its labeling shall be the same as those described in the notification documents.
- 2) In the case where problems associated with the quality, performance or labeling of the product occurs, the submitter shall, on his/her own responsibility, resolve such problems and, if necessary, make compensation.
- 3) It is requested that submitters widely publicize and advise purchasers through their sales channels that the quality and performance of the filed four-cycle oils and their labeling is guaranteed on their own responsibility.
- 4) The submitter is requested to inform the Panel of cancellation of the on-file data whenever they stop marketing the oil.

5. Labeling

In the case where a submitter, who has received a notice of acceptance from the Panel, labels the performance class and Oil Code Reference Number on the containers, the submitter shall expressly state that the performance classification and labeling is his/her own responsibility, using the form indicated in **Appendix 5**.

A submitter, who labels his/her products accordingly, shall not use in advertising a description which might lead to the misunderstanding that the Panel has approved or certified the quality and performance of the four-cycle oil concerned. Further, as stated in **4.3**, a submitter shall submit to the Panel by mail a representative example of performance classification marking on the four-cycle oil container and a copy of the label (drawing allowable).

6. Market Survey

In the interests of both consumers and submitters, the Panel will conduct market surveys regarding filed four-cycle oils and check that the JASO Motorcycles Four-Cycle Oil Standards (**JASO T 903: 1998** or **JASO T 903:2006**) are used correctly in the market. Therefore, the Panel may take samples of four-cycle oils categorized as MA/MA1/MA2/MB from the market randomly, examine the performance marking form and quality/performance items specified in the JASO Motorcycles Four-Cycle Oil Standard (**JASO T 903:1998** or **JASO T 903:2006**), and check them against the on-file documents concerned. If any clear discrepancy from the on-file documents concerned is found in the market surveys, the Panel may ask the submitter for the reason, in writing, or make a request for improvement.

The Panel may disclose the results of market surveys in a manner such that particular names of submitters and their oil products are not identifiable.

7. Utilization of the Standard by Motorcycle Dealers

A person who distributes, deals, supplies or otherwise offers motorcycles for supply in the

course of trade or business (the "Dealer") can utilize **JASO T 903** by way of recommending in the owner's manual, etc. four-cycle oils to be used by consumers according to the performance classification set forth in **JASO T 903**, based on the Dealer's own judgment and responsibility.

When recommending a four-cycle oil, a user of the standard shall not utilize any expression which may lead to the misunderstanding that the Panel has approved or certified the quality and performance of the oil (e.g., an expression such as "four-cycle oil approved by the Panel")

Further, a user of the standard, recommending one of the on-the-file four-cycle oils, is requested to submit a typical example of the owner's manual to the Panel.

8. References

The availability of reference documents, parts and the other items relating to this system are given below:

8.1 Addressee of Notification Documents for Filing, and Supplier of the Forms

The JASO Engine Oil Standards Implementation Panel
c/o Business Dept.
Japan Lubricating Oil Society
2-16-1 Hinode, Funabashi-shi, Chiba
273-0015 Japan
Tel: +81-(0)47-433-5181/Fax: +81-(0)47-431-9579

8.2 Supplier of the Test Procedure and Performance Classification (JASO Standards)

The Society of Automotive Engineers of Japan, Inc.
Gobancho Center Bldg. 5F
10-2 Gobancho, Chiyoda-ku, Tokyo
102-0076 Japan
Tel: +81-(0)3-3262-82145/Fax: +81-(0)3-3261-2204

8.3 Supplier of JAFRE-A and JAFRE-B Reference Oils

Technical Center
Japan Lubricating Oil Society
2-16-1 Hinode, Funabashi-shi, Chiba
273-0015 Japan
Tel: +81-(0)47-433-5181 / Fax: +81-(0)47-431-9579

8.4 Supplier of Standard Friction Plates and Steel Plates

- * Friction Plate (Part Number:FZ127-24-Y1)
- * Steel Plate (Part Number:FZ132-8-Y2)
Chuoseiko Co., Ltd. Kanagawa branch
637 Ichinotsubo, Nakahara-ku, Kawasaki-shi, Kanagawa-ken
211-0016 Japan
Tel: +81-(0)44-422-1613 / Fax: +81-(0)44-435-7550

Appendix 1

FILING NOTIFICATION BASED ON MOTORCYCLES—FOUR-STROKE CYCLE GASOLINE ENGINE OILS (JASO T 903:2006)

Date of submission of Documents		/Day /Month /Year
Submitter	Contact Person	
Name of Person Responsible for Documentation	Name	Position
Signature	Address	
Title	Tel	Fax

Motorcycle 4-Cycle Oil To Be Filed	
Internal Product Name or No.	
Trade Name	
Viscosity Grade	
Performance Classification	MA MA1 MA2 MB
Oil Code Reference Number	

Circle one of MA or MA1 or MA2 or MB.

1. Quality on Engine Oil Specifications

Specifications	Categories
API	SG SH SJ SL SM
ILSAC	GF-1 GF-2 GF-3
ACEA	A1/B1 A3/B3 A3/B4 A5/B5 C2 C3

Circle the performance category satisfied.

2. Physicochemical Properties

Item	Test method		Measured value	Specification
	JIS K or JPI	ASTM		
Density (at 15 °C)	g/cm ³	K 2249	D1298	Report
Flash point	°C	K 2265	D92 or D93	Report
Kinematic viscosity (at 40 °C)	mm ² /s	K 2283	D445	Report
Kinematic viscosity(at 100 °C)	mm ² /s	K 2283	D445	Note 1
Viscosity index		K 2283	D2270	Report
Low-temp. Vis, CCS(- °C)	mPa.s		D5293	Note 1
High-temp. High-share rate Vis.(at 150 °C)	mPa.s	JPI-5S-36-91	D4683	2.9 Min.
Sulfated Ash	mass %	K 2272	D874	1.2 Max.
Acid Number	mg KOH/g	K 2501	D664	Report
Base Number (HClO ₄ method)	mg KOH/g	K 2501	D2896	Report
Evaporative Loss	mass %	JPI-5S-41-93	D5800	20 Max.
Foaming Tendency (Tendency-Stability)	Seq.I	K 2518	D892	10 Max.-Nil
	Seq.II mL			50 Max.-Nil
	Seq.III			10 Max.-Nil
Shear Stability(by diesel injector method) (Kinematic Viscosity after the test, at 100 °C)	xW-30	JPI-5S-29-88 (Note 2)	D6278	9.0 Min.
	xW-40			12.0 Min.
	xW-50			15.0 Min.
	mm ² /S Other grades			Stay in grade
Color (Visual inspection)				Report
Elemental analysis mass %	Calcium	JPI-5S-38-92	D4951	Report
	Barium	JPI-5S-38-92	D4951	Report
	Magnesium	JPI-5S-38-92	D4951	Report
	Zinc	JPI-5S-38-92	D4951	Report
	Boron	JPI-5S-38-92	D4951	Report
	Phosphorus	JPI-5S-38-92	D4951	≥0.08≤0.12
	Nitrogen	K 2609-1990	D4629	Report
	Sulfur	K 2541-1992	D2622	Report
	Other elements > 100 ppm (except carbon, hydrogen, and oxygen)			
Infrared absorption spectrum analysis (0.1 mm sealed absorption cell)				A4 size IR chart to be attached

NOTE 1 In accordance with Engine Oil Viscosity Classification, **SAE J300**.

NOTE 2 Test shall be conducted under the standard test conditions (30 cycles).

3. Clutch Test Results of Friction properties (JASO T 904:2006)

Test Method	Evaluation Item	Test Results	Standard Index			
			MA	MA2	MA1	MB
JASO T 904:2006	* DFI (Dynamic Friction Characteristic Index-DFI)		≥1.45 and <2.50	≥1.80 and <2.50	≥1.45 and <1.80	≥0.50 and <1.45
	* SFI (Static Friction Characteristic Index-SFI)		≥1.15 and <2.50	≥1.70 and <2.50	≥1.15 and <1.70	≥0.50 and <1.15
	* STI (Stop Time Index-STI)		≥1.55 and <2.50	≥1.90 and <2.50	≥1.55 and <1.90	≥0.50 and <1.55

We hereby warrant that the test results described in this document indicate typical figures of the motorcycle four-cycle oil concerned and representative performance of the product that will be marketed as such.

The test reports were prepared according to the format specified in the JASO Standard and the retained test reports are kept under our own responsibility. We herewith submit a representative example of performance classification marking and a copy of the label of the motorcycle 4-cycle oil concerned that will be used on containers and documentation.

Note:

- 1) Refer to the "MOTORCYCLES—FOUR-CYCLE GASOLINE ENGINE OILS (JASO T 903:2006) IMPLEMENTATION MANUAL" in filling in this form.
- 2) The current version of the JASO test procedure at the time of submission must be used to generate test data which are reported in the documents submitted.
- 3) The management fee is Yen 40,000 per submission. It should be paid into one of the following bank accounts, and a certificate of the payment should be attached to the documents being submitted to the JASO Engine Oil Standards Implementation Panel.

Appointed Bank:	Funabashi Branch of the Sumitomo Mitsui Banking Corporation
Account No:	Ordinary Deposit #6359999
Owner of the Account:	The Japan Lubricating Oil Society
Or	
Appointed Bank:	Funabashi Branch of the Tokyo-Mitsubishi UFJ. Ltd.
Account No:	Ordinary Deposit #1036018
Owner of the Account:	The Japan Lubricating Oil Society

- 4) In the case where a false report is made, and labeling of the performance of a product and sales were made based on such a report, the company concerned may be penalized under the Act against Unjustifiable Premiums and Misleading Representations of Japan, Article 4, Item 1 or the Unfair Competition Prevention Laws of Japan, Article 2, Item 10, or any other equivalent laws in the country in which the product is marketed.

Only for the Use of the JASO Engine Oil Standards Implementation Panel	
Person responsible for receipt - Name: _____	Seal: _____
Date of receipt: _____	
Receipt number: _____	
Remarks:	

Appendix 2
ORIGINAL

TABLE A

**NOTIFICATION AND WRITTEN CONSENT OF FILING BASED ON
THE MOTORCYCLES—FOUR-STROKE CYCLE GASOLINE ENGINE OILS
(JASO T 903:2006)
[NOTIFICATION OF FILING]**

TO : _____ DATE : ___/Day ___/Month ___/Year

From : The JASO Engine Oil Standards
Implementation Panel

As shown below, we have filed the motorcycle four-cycle oil with the oil code reference number and performance class indicated below, and hereby inform you as follows:

Receipt no. : _____
Product name or no. : _____
Trade name: _____
Viscosity grade: _____
Oil code reference no. : _____
Performance class : _____

ORIGINAL

TABLE B

**NOTIFICATION AND WRITTEN CONSENT OF FILING BASED ON
THE MOTORCYCLES—FOUR-STROKE CYCLE GASOLINE ENGINE OILS
(JASO T 903:2006)
[WRITTEN CONSENT OF FILING]**

TO : The JASO Engine Cycle Oil Standards Implementation Panel

Regarding the marketing of a motorcycle four-cycle oil filed by the JASO Engine Oil Standards Implementation Panel (the "Panel"), we hereby agree to the following items:

1. We shall be liable for and guarantee the quality and performance of the motorcycle four-cycle oil concerned as well as the labeling thereof.
2. We shall resolve, by ourselves, any problems associated with the use of the motorcycle four-cycle oil concerned in the market, and we agree that the Panel will not be held responsible in any way.
3. We hereby guarantee that the quality and performance described in the notification

documents submitted for filing are data representing the physicochemical properties and performance of the motorcycle four-cycle oil that will be actually marketed. Also the description of quality and performance being submitted is representative of that which will be used.

4. We will widely publicize and educate consumers through our sales channels that the quality and performance of the motorcycle four-cycle oil and its description being submitted for filing have been classified and guaranteed on our own accountability.
5. We shall not use in our advertisement any expression that may lead to the misunderstanding that the Panel has approved or certified the performance of the motorcycle four-cycle oil concerned.
6. Upon receipt of a request from the Panel, we shall submit the original friction test results under **JASO T 904** without delay.
7. We will approve that the Panel may disclose oil code reference number, submitter name, product name and performance class, through communication media including internet, newspapers, magazines, and other publications. Further, where market survey is conducted by the Panel, we will approve that the Panel may disclose the results of the market survey in a form whereby the name of the submitter and the oils are not identifiable.
8. When the marketing of the motorcycle four-cycle oil concerned is discontinued, we will immediately notify the Panel that the filing should be canceled.
9. In addition to the above, we hereby acknowledge that we have understood all contents of the Motorcycles — Four Stroke Cycle Engine Oils (**JASO T 903:2006**) Implementation Manual and we hereby agree to abide by them in all respects.

Date : _____ /Day /Month /Year

Company : _____

Responsible Person : _____

Title : _____

Signature : _____

Appendix 2
DUPLICATE

TABLE A

**NOTIFICATION AND WRITTEN CONSENT OF FILING BASED ON
THE MOTORCYCLE S—FOUR-STROKE CYCLE GASOLINE ENGINE OILS
(JASO T 903:2006)
[NOTIFICATION OF FILING]**

TO : _____ DATE : /Day /Month /Year

From :The JASO Engine Oil Standards
Implementation Panel

As shown below, we have filed the motorcycle four-cycle oil with the oil code reference number and performance classification indicated below, and hereby inform you as follows:

Receipt no. : _____
Product name or no. : _____
Trade name : _____
Viscosity grade : _____
Oil code reference no. : _____
Performance class : _____

DUPLICATE

TABLE B

**NOTIFICATION AND WRITTEN CONSENT OF FILING BASED ON
THE MOTORCYCLES—FOUR-STROKE CYCLE GASOLINE ENGINE OILS
(JASO T 903:2006)
[WRITTEN CONSENT OF FILING]**

TO : The JASO Engine Oil Standards Implementation Panel

Regarding the marketing of a motorcycles four-cycle oil filed by the JASO Engine Oil Standards Implementation Panel (the "Panel"), we hereby agree to the following items:

1. We shall classify and guarantee the quality and performance of the motorcycles four-cycle oil concerned as well as labeling thereof on our own responsibility.
2. We shall resolve, by ourselves, any problems associated with the use of the motorcycles four-cycle oil concerned in the market, and we agree that the Panel will not be held responsible in any way.

3. We hereby guarantee that the quality and performance described in the notification documents submitted for filing are data representing the physicochemical properties and performance of the motorcycle four-cycle oil that will be actually marketed. Also the description of quality and performance being submitted is representative of that which will be used.
4. We will widely publicize and educate consumers through our sales channels that the quality and performance of the motorcycle four-cycle oil and its description being submitted for filing have been classified and guaranteed on our own accountability.
5. We shall not use in our advertisement any expression that may lead to the misunderstanding that the Panel has approved or certified the performance of the motorcycle four-cycle oil concerned.
6. Upon receipt of a request from the Panel, we shall submit the original friction test results under **JASO T 904** without delay.
7. We will approve that the Panel may disclose oil code reference number, submitter name, product name and performance class, through communication media including internet, newspapers, magazines, and other publications. Further, where market survey is conducted by the Panel, we will approve that the Panel may disclose the results of the market survey in a form whereby the name of the submitter and the oils are not identifiable.
8. When the marketing of the motorcycle four-cycle oil concerned is discontinued, we will immediately notify the Panel that the filing should be canceled.
9. In addition to the above, we hereby acknowledge that we have understood all contents of the Motorcycles — Four-Stroke Cycle Engine Oils (**JASO T 903:2006**) Implementation Manual and we hereby agree to abide by them in all respects.

Date : _____ /Day _____ /Month _____ /Year

Company : _____

Responsible Person : _____

Title : _____

Signature : _____

Appendix 3

EXAMPLES OF SETTING UP OIL CODE REFERENCE NUMBERS AND THE NECESSITY FOR SUBMISSION OF DOCUMENTS FOR ALTERATION OF FORMULATIONS

Although the procedure of setting up oil code reference number is indicated in 4.6 of the Standards Implementation Manual, the following examples are shown for reference (Case 1 is the baseline).

Cs.	Country of Marketing	Product Name	Marketer			Manufacturer		Formulation			Example of Oil Code Number	Necessity for Renewal of Filing
			Company	Code	Country	Company	Country	Name	No.	Alteration		
1	Japan	α	A	ABC	Japan	A	Japan	a	001	Note(1)	M081ABC001	Yes
2	Japan	α	A	ABC	Japan	B	Japan	a	001	None	M081ABC001	None
3	Japan	α	A	ABC	Japan	A	Japan	a'	002	Note(2)	M081ABC001	None
4	Japan	α	A	ABC	Japan	A	Japan	a"	003	Note(3)	M081ABC002	Yes
5	Japan	α	A	ABC	Japan	A	Japan	a"	004	Note(4)	M081ABC003	Yes
6	Japan	β	A	ABC	Japan	A	Japan	a"	004	Note(4)	M081ABC004	Yes
7	Japan	β	A	ABC	Japan	A	Japan	a	001	None	M081ABC005	Yes
8	Japan	τ	A	ABC	Japan	A	Japan	b	005	Note(5)	M081ABC006	Yes
9	USA	α	A	ABC	Japan	A	Japan	a	001	None	M081ABC001	None
10	USA	α	A	ABC	Japan	C	USA	a	001	None	M081ABC001	None
11	USA	α	A	ABC	Japan	C	USA	a'	002	Note(2)	M081ABC001	None
12	USA	α	A	ABC	Japan	C	USA	a"	003	Note(3)	M081ABC002	Yes
13	USA	α	A	ABC	Japan	E	UK	a	001	None	M081ABC001	None
14	USA	δ	A	ABC	Japan	A	Japan	a	001	None	M081ABC007	Yes
15	USA	α	D	DEF	USA	A	Japan	a	001	None	M001DEF001	Yes
16	USA	ε	D	DEF	USA	A	Japan	a	001	None	M001DEF002	Yes
17	USA	α	D	DEF	USA	E	UK	a	001	None	M001DEF001	Yes
18	Japan	α	A	ABC	Japan	E	USA	a	001	None	M081ABC001	None
19	Japan	ζ	D	DEF	USA	A	Japan	a	001	None	M001DEF001	Yes
20	Japan	α	D	DEF	USA	E	UK	a	001	None	M001DEF001	Yes
21	USA	α	E	EFG	UK	G	Germany	a	001	None	M044EFG001	Yes
22	Japan	α	F	FGH	Japan	A	Japan	a	001	None	M081FGH001	Yes

NOTE(1) : Base for formulations subsequently filed

(3) : Outside the read-across range

(5) : Different formulation

(2) : Within the read-across range

(4) : Alteration of coloring agent and odorant only

Appendix 4

GUIDELINES FOR READ-ACROSS WHEN MODIFYING MOTORCYCLE FOUR-CYCLE OIL FORMULATIONS

The primary raw materials usually used for motorcycle four-cycle oil formulations may be classified into the following two categories :

- (1) Base Oil - Main base component. Mineral oil or synthetic oil, or a mixture of them is used.
- (2) Additives - To improve viscosity characteristics, anti wear and detergency of motorcycle four-cycle oils, additives such as VI Improvers, detergents, dispersants, anti wear agents, friction modifiers, oxidation inhibitors, pour point depressants, foam inhibitors, etc. are used.

Since either of these primary raw materials may affect the performance of motorcycle four-cycle oils, in the case where a modification of any of these primary raw materials or their blend ratio is made, the oil shall be regarded as a different formulation. As a consequence, the submitter is required to rerun and submit the **JASO T 904:2006** friction bench test data and specified documents for filing under a new oil code reference number.

If a reformulation is made within the following ranges, the oil is regarded as equivalent to its original formulation and renewal of the documents is exempted.

- (1) Base Oil - The case where a base oil of the same type and physical properties is used at the same blend ratio.
- (2) Additives - In principle, any alteration of additives is not approved. However, in the case of following minor changes, read-across of the friction bench test data is allowed. In this case, however, renewal of the documents is required.
 - Pour point depressant type and treatment level under the same viscosity grade
 - Foam inhibitor type and treatment level
 - Coloring agent or odorant type

Appendix 5

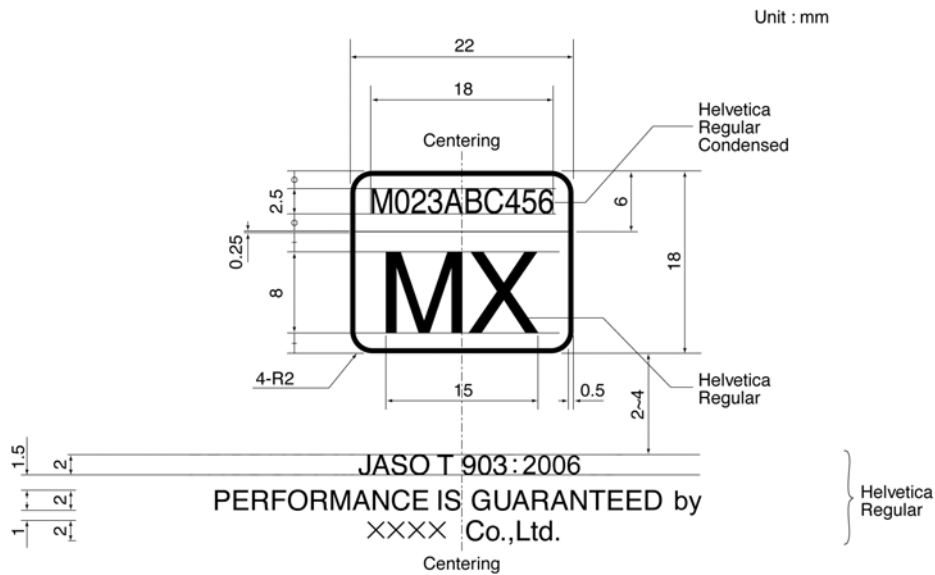
INSTRUCTIONS FOR LABELING OR PRINTING THE OIL CODE REFERENCE NUMBER AND PERFORMANCE CLASS

If the performance class and oil code reference number are indicated on product containers, they shall be depicted as follows:

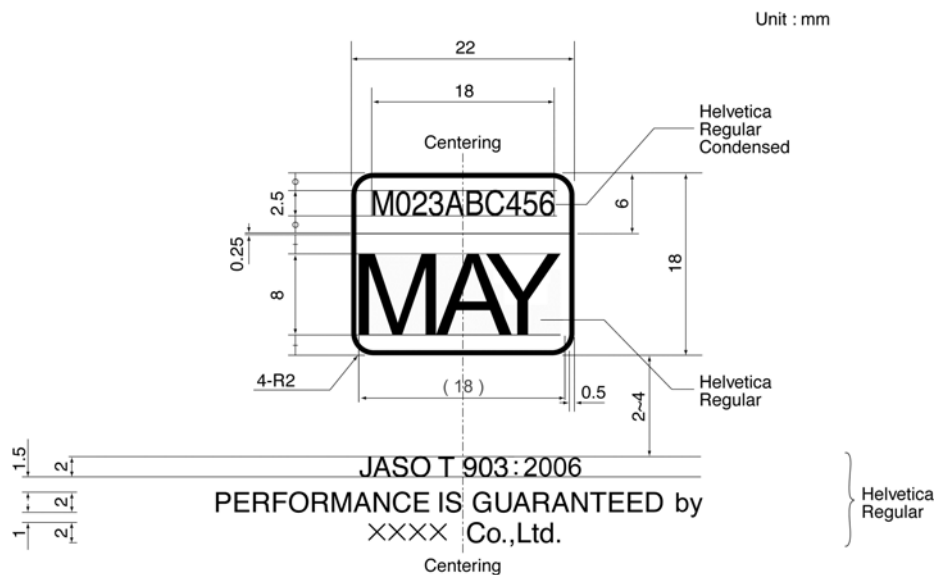
1. Required display format

1.1 Dimensions and form of characters

① In case of on-file as MA or MB (X = A or B)



② In case of on-file as MA1 or MA2 (Y = 1 or 2)



1.2 Notes

- 1) The designation of "M023ABC456" indicates the oil code reference number. Use Helvetica Regular Condensed font or Arial Narrow font with the size equivalent to the border with the specified dimensions.
- 2) Use one of the letters MX or MAY in place of above in accordance with the performance classification of the lubricating oil concerned. Use the Helvetica Regular font or Arial font for which the size should be equivalent to the border with the specified dimension.
- 3) Use the Helvetica Regular font or Helvetica Regular Condensed or Arial Narrow font for "JASO T903:2006", with the size equivalent to the specified dimensions. In the same way, use the Helvetica Regular font or Helvetica Regular Condensed or Arial Narrow font for "PERFORMANCE IS GUARANTEED by XXXX Co., Ltd.", and limit it to 2 or 3 lines.
- 4) Colors which contrast the letters and the rectangular lines with the background should be used.
- 5) For the sentence under the above mark, the marketer may use their own language indicating the same expression as that written in English. In this case, it is to be desired that the form of characters used and their size are as similar as possible to the exemplification in English.

2. Guidelines for indication of the designation mark

- 1) The dimension of the above mark indicates the reference size. The minimum size is limited to 0.8 times of reference dimensions. Depending upon the size of the product containers, the size above minimum dimensions can be used, but it is desirable not to exceed quadruple the size.
- 2) The marketer without constraint can decide the location of the mark on containers.
- 3) No permission of labeling of plural performance classifications.

3. Examples of the Designation Mark



JASO T 903:2006
PERFORMANCE IS GUARANTEED by
XXXX Co.,Ltd.

Mark with Dimensions
Specified in Item 1.1
of Appendix 5



JASO T 903:2006
PERFORMANCE IS GUARANTEED by
XXXX Co.,Ltd.

1.5 x Dimensions



JASO T 903:2006
PERFORMANCE IS GUARANTEED by
XXXX Co.,Ltd.
2 x Dimensions