

# Automobile Maintenance Inspection:Part3

& Syllabus Number

1K307

Special Subjects  
Elective 2 credit

AOKI, Akio

## 1. Course Description

The following contents will be learned.

(1) Process of exploration of failure cause.

(2) Failure cause inquiry concerning start device, engine electronic control device, fuel device, charging device, electronically controlled AT, and ABS.

In this lesson, knowledge, techniques and attitudes regarding DP 2, DP 3, DP 4, and DP 5 will be acquired.

Lessons are primarily lecture-style, but pair works will be carried out as appropriate according to the contents of each lesson.

## 2. Course Objectives

Students can apply the cause exploration process to concrete cases against faults related to basic functions and target functions of each part of automobiles.

## 3. Grading Policy

Your grade in the class will be decided on the exam (100%) which will be held in the 15th lesson. Its contents will be explained after the exam.

## 4. Textbook and Reference

### Textbook

Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Second grade gasoline car engine version Japan Automobile Service Promotion Association (JASPA)

Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Third grade gasoline engine Japan Automobile Service Promotion Association (JASPA)

Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Second grade gasoline car second grade diesel car chassis Japan Automobile Service Promotion Association (JASPA)

Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Third grade automobile chassis Japan Automobile Service Promotion Association (JASPA)

### Reference

Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Second grade diesel car engine version Japan Automobile Service Promotion Association (JASPA)

Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Third grade automobile diesel engine Japan Automobile Service Promotion Association (JASPA)

Textbook editorial committee of the Japan Automobile maintenance colleges association (Recommended by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Electric component structure Japan Automobile Maintenance Colleges Association (JAMCA)

## 5. Requirements(Assignments)

(1) As preparations for next lesson, please check the meaning of the proper noun and the contents of the relationship shown in the contents of the lesson, and come to the class. (90 minutes)

(2) As a review, please solve exercises applied to the items instructed during the lesson, so that you can cope with works in pair as appropriate in the next lesson. (90 minutes)

## 6. Note

◎ All the classes must be attended. Late arrivals, early leavings, and absences are strictly checked.

◎ Automobile Maintenance & Inspection: Part 3 is a compulsory subject (◆ mark) of the Automobile Technology Course [AT course].

## 7. Schedule

- [1] Scope of influence by occurrence level of failure cause.
- [2] Process of failure cause exploration.
- [3] Electrical operation related to starting device.
- [4] Exploring the cause of failure of the switch part concerning the starting device and exercises in pairs.
- [5] Exploring the cause of failure of motor part concerning starting device.
- [6] Electrical operation related to engine electronic control unit.
- [7] Exploring the cause of failure at the start of the engine electronic control unit and exercises in pairs.
- [8] Exploring the cause of failure of engine electronic control unit.
- [9] Exploring the cause of failure of fuel system.
- [10] Electrical operation related to charging device.

- [11] Exploring the cause of failure of the power generation unit on charging devices and exercises in pairs.
- [12] Exploring the cause of failure of three-phase full-wave rectifier circuits on charging device and exercises in pairs.
- [13] Failure modes in electric circuits and notes on diagnosis by oscilloscope and circuits tester.
- [14] Exploring the cause of failure of ABS and electronic control AT and exercises in pairs.
- [15] Final exam and summary