Vehicle inspection and maintenance program in Japan

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Our experience

<Tokyo, Iwaidabashi crossing (1958)>

- the most congested in Tokyo

Source: Japan Press Research Institute  http://jpri.kyodo.co.jp/158/

<Tokyo, Iwaidabashi crossing (2016)>

- limited to pedestrians, bicycles and a number of sightseeing buses from 10 a.m. to 4 p.m. every Sunday and holiday.

Source: Google map  https://www.google.co.jp/
Review/Reinforcement of Emission Regulation

Central Environmental Council (Atmospheric Environmental Committee) Report

Air Pollution Control Act (Controlled by MOE)

- Limit Values of vehicle emission gas
- Limit standards of fuel quality

Corresponding for ensuring limit values/standards

Road Transport Vehicle Act (Controlled by MLIT)
- Regulates safety and environment issues for vehicles driving on public road

Act on Regulation of emissions From Non-Road Special Motor Vehicles (Controlled by MLIT, METI and MOE)
- Regulates emission gas level for special vehicles driving on roads other than public road

Act on the Quality Control of Gasoline and Other Fuels (Controlled by METI)
- Regulates quality standard of gasoline and diesel fuel

MOE: Ministry of the Environment
MLIT: Ministry of Land, Infrastructure, Transport and Tourism
METI: Ministry of Economy, Trade and Industry
Air Quality Status in Japan

- **Air quality standards**

<table>
<thead>
<tr>
<th>Air Pollutants</th>
<th>Environmental Quality Standards (EQS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO₂ (Sulfur Dioxide)</td>
<td>Daily average values shall be 0.04 ppm or less, Hourly average values shall be 0.1 ppm or less</td>
</tr>
<tr>
<td>CO (Carbon Monoxide)</td>
<td>Daily average values shall be 10 ppm or less, Average of hourly values for any consecutive eight hour period shall be 20 ppm or less</td>
</tr>
<tr>
<td>SPM (Suspended particulate matter)</td>
<td>Daily average for hourly values shall be 0.10 mg/m³ or less, Hourly average values shall be 0.20 mg/m³ or less</td>
</tr>
<tr>
<td>Ox (Photochemical Oxidants)</td>
<td>-</td>
</tr>
<tr>
<td>NO₂ (Nitrogen Dioxide)</td>
<td>Daily average for hourly values shall be within the 0.04-0.06 ppm zone or below that zone, -</td>
</tr>
<tr>
<td>PM2.5 (Particulate Matter 2.5)</td>
<td>Daily average values shall be 35 μg/m³, Annual average values shall be 15 μg/m³</td>
</tr>
</tbody>
</table>

- **Achievement Status of Air Quality Standards** (Areas covered by the NOx/PM Law)

  - **Nitrogen dioxide (NO₂) at RAPMSs***
  - **Suspended particulate matter (SPM) at RAPMSs***

In FY2014, Environmental quality standards achievement rate for NO₂ is 99.1% and for SPM is 100% for RAPMSs (in FY2013, 98.6% for NO₂ and 92.3% for SPM).
### Vehicle Compliance Systems

Road Transport Vehicle Act provides vehicle compliance systems to ensure the safety and environmental performance of road vehicles.

#### Design

**Regulations**
- Expansion and enforcement of regulations
- International harmonization of vehicle regulations

Safety regulations: Engineering Policy Division (MLIT)

Environmental regulations: Environmental Policy Division (MLIT)

#### New vehicles

**Type approval**
- Compatibility check with regulation at process of manufacture

Type designation: Type Approval and Recall Division (MLIT)

Compatibility check, Technical verification: Automobile Type Approval Test Dept. (NALTEC)

#### In-use vehicles

**Inspection**
- Periodical and unannounced check compatibility with regulation an in-use phase

Inspection system: Maintenance Service Division (MLIT)

Compatibility check: Inspection office (NALTEC) or Designated garage

#### Recall

- Voluntarily implementation by manufacturers

Type Approval and Recall Division (MLIT)

**Check and maintenance**
- Maintenance Service Division (MLIT)
- Vehicle user, Garage
Emission Regulation

Emission Regulation of Heavy Duty Vehicle

○ The current emission limit values are 0.4g/kWh for NOX and 0.01g/kWh for PM, which has been applied.

○ More stringent regulation on NOx emissions based on WHTC is scheduled to come into force from Nov. 2016.

Emission Regulation of Passenger Vehicle

○ The current emission limit values for gasoline PV’s has been applied since 2005.

○ While the current emission limit values for diesel PV’s has been applied since 2009.

○ The new regulation for PVs based on WLTC is scheduled to come into force in 2018.
Motor Vehicle Type Certification System

Test Procedure

Passenger vehicle: JC08 mode

Heavy duty vehicle: JE05 mode

Test by Deteriorated vehicle
PV: 80,000km
HD: ~650,000km

Initial Inspection (Emission of presentation of motor vehicle)

Manufacturer

Type Designation System

Application (Pre-production)

Document examination

Actual motor vehicle examination
Exhaust gas performance inspection etc.

Quality management system review

Type Designation

Completion inspection by manufacturer

Registration
Emission Test for PVs

1. Road Load Measurement
   Measure road load resistance, consisting of air and tire rolling resistance etc., on road.

2. Chassis Dynamometer Load Setting
   Set the load equal to measured road load resistance on a chassis dynamometer.

3. Emission/Fuel Efficiency Measurement
   Cold Start and Hot Start JC08 Mode tests are conducted.
   Weighted Average of Cold (25%) and Hot (75%)

- The passenger vehicle emission and fuel efficiency is measured on a chassis dynamometer to ensure the repeatability and equity.
- JC08 Mode, which was developed based on the actual driving conditions, is applied for the emission and fuel efficiency test.
Emission Test for HDVs

- The heavy duty vehicle emission is measured on an engine dynamometer.
- JE08 Mode is converted to Engine Torque and Engine Speed based on the standard vehicle specifications and engine dynamometer test is conducted with the torque and speed charts.
Vehicle Inspection

Overview of Vehicle Inspection in Japan

- Vehicle user needs to have an annual check and the two-year check in accordance with law.
- And needs to equip check and maintenance record book in car and to write down the result of check and maintenance.
- If user detects a malfunction by checks, user need to maintains the vehicle by himself or brings to the designated or approved garages to maintain the vehicle to meet a regulations.
- In case of passenger car, user need to have a periodical technical inspection every two years except after initial inspection of new car.

The Cycle of Checks and periodical technical inspection

- New car
- Annual check
- Annual check
- Two year check
- Annual check
- Two year check
- Annual check
- Initial Inspection
- Three years
- Periodical Technical Inspection
- Two years
- Periodical Technical Inspection
- Two years

※This chart is a cycle for Passenger cars and motorcycle (<250cc)
Inspection equipment and main inspection items

Overview of a vehicle Inspection lane

**Block 1**
Confirmation of identity
- Chassis number, Engine type, Number plate, category, Configuration

External inspection
- Frame and body, Safety-related devices, Running system, Cabin equipment, Lamps

**Block 2**
Sideslip inspection
- Steering wheel alignment

Brake inspection
- Braking force measurement

Speedometer inspection
- Speedometer error

Headlight inspection
- Luminous intensity, Photometric characteristics

**Block 3**
Exhaust emission inspection
- Carbon monoxide (CO) and hydrocarbons (HC)

**Block 4**
Underbody inspection (Pit type)
- Steering system, Suspension system, Brake system, Engine Power train system
- Exhaust emission control system, Frame and body, Fuel system, Electric system

**Block 5**
Total Evaluation
Examination of documents and total evaluation

Entry signal Green: Enter Red: Wait

Vehicle category selection button
Re-inspection application button

Alignment tester
Brake tester
Speedometer tester
Headlight tester
Display

Source: NALTEC
Diesel Smoke

Proximity Stationary Noise

Exhaust Emission

Underbody
In the case of noncompliance with safety or environmental regulations, due to inferior design or the production process, vehicle manufacturers must conduct recall with beforehand notification to MLIT.

**Flow of recall notification**

- **Automobile manufacturers**
  - Obtaining information on deficiencies
  - Instructing manufacturers to carry out survey and report
  - Survey and study
    - Analysis and study
  - Case of noncompliance with safety or environmental standards due to inferior design or production process
    - Giving advice
    - Deciding to carry out recall
      - Recall
    - Obtaining information on progress of recovery

- **MLIT**
  - Obtaining information on deficiencies

**Transition in number of recall**

<table>
<thead>
<tr>
<th>Year</th>
<th>FY 2012</th>
<th>FY 2013</th>
<th>FY 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of reported automobile recall cases</td>
<td>308</td>
<td>303</td>
<td>355</td>
</tr>
<tr>
<td>(Internal number related to emission)</td>
<td>20</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Number of automobiles subject to recall</td>
<td>5,612,979</td>
<td>7,978,639</td>
<td>9,557,888</td>
</tr>
</tbody>
</table>

If manufacture do not carry out the recall, MLIT will recommend the manufacture to carry out the recall. If the manufacture neglect the recommendation, MLIT will disclose the negligence and order to carry out the recall.

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*1: MLIT performs the guidance and supervision by carrying out the audit for the manufacturers which obtain type certificate.

*2: MLIT requests the NALTEC to conduct technical verification if necessary.

*3: Violation Penalty: imprisonment of not more than one year or a fine of not less than 3,000,000 yen, and/or a corporate fine of not more than 200,000,000 yen.

*The Manufacture has to recall if the use of defeat device has been found.*
In the case of noncompliance with safety or environmental regulations, due to carelessness check or faulty maintenance by vehicle user and/or maintenance business, MLIT make special announcement or guideline for usurer and/or garages.
Type approval play a key role in technical specialty compliance. PTI perform the confirmation of not broken in deterioration or faulty maintenance mainly than rigorous inspection. So, PTI regulation should be simple and easy to check it.

### New Vehicle Type Approval
- Driving mode emission test
- Deterioration test
- OBD system test
- Off cycle emission test
- Evaporative emission test
- Idle test, Smoke test
  - (no broken check)

### In-use Vehicle Periodic Technical Inspection
- Idle test, Smoke test
- No broken check
Provider of Periodical Technical Inspection

Designated garage

Check and maintenance

Inspection

Approved garage:
Check and maintenance

About 70%

Self check by user:
Check and maintenance

About 10%

About 20%

National Agency for AUTOMOBILE and LAND TRANSPORT TECHNOLOGY

Safety Regulation Conformity Certificate

Provider of Periodical Technical Inspection

Choices

User
Designated garage can technical inspection only a vehicle which is Checked and Maintained by themselves.
Classification of Maintenance-Related Business

Maintenance-Related Business

• Lubricant oil change
• Tire change etc.
  (except disassembling service)

Vehicle Disassembling maintenance Business

About 92 thousand garages
(approved garages)

• Maintenance of engine, brake, etc.

Designated garage

About 30 thousand garages

• Private PTI service
In order to ensure that checks and maintenance such as periodical ones are carried out properly, it is imperative for motor vehicle maintenance businesses to have the necessary expertise and skills on structure and devices of motor vehicles and special equipment.

For this reason, following systems are established by the Road Vehicles Act.

① Approval system of motor vehicles disassembling maintenance businesses
② Designation system of motor vehicle Maintenance businesses (out of those approved)
The “disassembling maintenance” means specific repairs or modifications whereby the vital parts directly related to safety of a motor vehicle, such as engine, power train system, running system, control system, brake system, suspension system and connecting system, are disassembled.

A person who wants to run a motor vehicle disassembling repair business is required to obtain approval from the Director-General of the District Transport Bureau (regional branch of MLIT) (hereinafter referred to as “DTB”).

The criteria of approval are established by MLIT, concerning facilities, equipment and staff.
Vehicle maintenance business consist of wide diversity of services. Japanese authorities distinguish garages carrying out following activities between others, control them, and admit to involve periodic technical inspection.

1. Disassembly of a Engine

2. Disassembly of a clutch, a transmission, a propeller shaft or the differential gear

3. Disassembly of front axle shaft, independent suspension or rear axle shaft

4. Disassembly of the gearbox of the steering system, the connection part of the linkage or the steering fork

5. Disassembly of master cylinder, valves, a hose, a power device, brakes chamber, brakes drum or disk brakes caliper

6. Disassembly of the chassis spring

7. Disassembly of the connector of the trailer

Formal signboard
Examples of Motor Vehicle Disassembling Repair

Maintenance or modification of motor vehicle performed with engine;

Maintenance or modification of motor vehicle performed with master cylinder, valves, hoses, pipes, booster, brake chamber, brake drum or disc brake calipers of brake system;
Utilizing the private business capacities, the Director-General of the DTB gives designation to garages on request when:

① They have been approved as a motor vehicle disassembling maintenance business and;
② They are in compliance with the criteria concerning superior maintenance service and ability to carry out inspections.

A designated garage shall issue the Safety Regulation Conformity Certificate to a user of a motor vehicle when:

① The garage conducted the prescribed checks and carried out necessary maintenance accordingly and;
② The garage conducted a completion inspection, by which the motor vehicle was confirmed to be in conformity with the Safety Regulations.

To present the Safety Regulation Conformity Certificate to the Local Land Transport Office of the DTB enables the user to get the Motor Vehicle Inspection Certificate renewed without presenting the motor vehicle concerned.
<table>
<thead>
<tr>
<th></th>
<th>Approved garage</th>
<th>Designated garage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of mechanics</td>
<td>2 or more</td>
<td>4 or more</td>
</tr>
<tr>
<td>Chief engineer</td>
<td>1 or more</td>
<td>1 or more</td>
</tr>
<tr>
<td>(Qualified 2nd class or higher mechanics)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor vehicle inspectors</td>
<td>—</td>
<td>1 or more</td>
</tr>
<tr>
<td>(who should be appointed from chief</td>
<td></td>
<td></td>
</tr>
<tr>
<td>engineers who have completed the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>required course)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualified mechanics</td>
<td>1 or more (Ratio of qualified: 1/4 or more)</td>
<td>2 or more (Ratio of qualified: 1/3 or more)</td>
</tr>
<tr>
<td>(who passed the mechanic qualification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>test)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Note: The requirements related to space in this table are those to be applied to the garages serving for usual size cars.)
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Approved garage</th>
<th>Designated garage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor work space</td>
<td><strong>Work space for maintenance</strong>: 32 square meter or more (4m * 8m or more)</td>
<td><strong>Work space</strong>: 64 square meter or more</td>
</tr>
<tr>
<td></td>
<td><strong>Work space for checks</strong>: 32 square meter or more (4m * 8m or more)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Work space for repairing parts</strong>: 8 square meter or more</td>
<td><strong>Work space for repairing parts</strong>: 8 square meter or more</td>
</tr>
<tr>
<td>Completion inspection site</td>
<td>—</td>
<td>Enough space to conduct completion inspections</td>
</tr>
<tr>
<td>Motor vehicle park space</td>
<td>16.5 square meter or more</td>
<td>19.2 square meter or more (it should also be equal to or more than “indoor work space * 0.3”)</td>
</tr>
<tr>
<td>Equipment for service and inspection</td>
<td>27 items ex. Jack, Torque wrench, Circuit tester</td>
<td>38 items (including 27 items required for Approved garage) ex. Headlamp Tester, Brake Tester, Speed meter Tester</td>
</tr>
</tbody>
</table>

(Note: The requirements related to space in this table are those to be applied to the garages serving for usual size cars.)
### Working Machines, etc.

<table>
<thead>
<tr>
<th>Working Machines, etc.</th>
<th>Engine</th>
<th>Power train system</th>
<th>Running system</th>
<th>Control system</th>
<th>Brake system</th>
<th>Suspension system</th>
<th>Coupling Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Press</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>(2) Air compressor</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>(3) Chain block</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(4) Jack</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(5) Vice</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(6) Charger</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</table>

### Working Tools

<table>
<thead>
<tr>
<th>Working Tools</th>
<th>Engine</th>
<th>Power train system</th>
<th>Running system</th>
<th>Control system</th>
<th>Brake system</th>
<th>Suspension system</th>
<th>Coupling Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Slide caliper</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(2) Torque wrench</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tr>
</tbody>
</table>

### Checking Instruments & Devices

<table>
<thead>
<tr>
<th>Checking Instruments &amp; Devices</th>
<th>Engine</th>
<th>Power train system</th>
<th>Running system</th>
<th>Control system</th>
<th>Brake system</th>
<th>Suspension system</th>
<th>Coupling Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Circuit tester</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(2) Hydrometer</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(3) Compression gauge</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(4) Handy vacuum pump</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(5) Engine tachometer</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(6) Timing tester</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(7) Thickness gauge</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(8) Dial gauge</td>
<td>○</td>
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<tr>
<td>(9) Toe-in gauge</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(10) Camber &amp; caster gauge</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(11) Turning radius gauge</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(12) Tire gauge</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(13) Vehicle inspection device</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(14) Carbon monoxide (CO) measuring device</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>(15) Hydrocarbon (HC) measuring device</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<td>○</td>
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</tr>
</tbody>
</table>

### Tools

<table>
<thead>
<tr>
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<th>Power train system</th>
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<th>Suspension system</th>
<th>Coupling Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Wheel puller</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>(2) Bearing race puller</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>(3) Grease gun or Chassis lubricator</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>(4) Parts cleaning tank</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tbody>
</table>

In the cases where the subject motor vehicles for disassembling repair business for small-sized motor vehicles are small-sized two-wheeled motor vehicles, those enumerated in Items (1), (3) and (4) shall be excluded.

1. In the cases where the subject motor vehicles for disassembling repair business for ordinary-sized motor vehicles are large-sized special motor vehicles with caterpillar tracks, those enumerated in Items (9) through (12) shall be excluded.

2. In the cases where the subject motor vehicles for disassembling repair business for small-sized motor vehicles are small-sized three-wheeled motor vehicles and small-sized two-wheeled motor vehicles, and small-sized three-wheeled motor vehicles, those enumerated in Items (9) through (11) shall be excluded.

3. In the cases where the subject motor vehicles are small-sized two-wheeled motor vehicles, those enumerated in Items (9) through (11) and (13) shall be excluded.

### Remarks

Mark “○” indicates that a place of business where the devices enumerated in Item “Kind of Subject Device” are removed and subjected to disassembling repair shall be equipped with the working machines, etc., enumerated in the relevant columns.
Authorities audit a problem garage and impose an administrative punishment on them by a score decided depending on a misconduct.

【example of penalty point for Approved Garage】
Part of maintenance does not meet regulation 10 points /vehicle
(accident related 30points /vehicle)
apparent defect of maintenance 10 points /vehicle
(accident related 30points /vehicle)

【administrative penalty criterion】
More than 10 penalty points: business-suspension
example: 10~19 points 10 Days
20~29 points 15 Days etc.
More than 180 points: decertification of business
Audit Designated Garage

Authorities audit a designated garage regularly and inspect financial activity and documents established in a law.

If there are problems, Authorities impose an administrative punishment on them by a score decided depending on misconduct.

【Example of penalty point for Designated Garage】

- Pass PTI of illegal modified vehicle: 45 points/vehicle
  (more than 5 vehicles: decertification of PTI-business)
- Apparent defect of maintenance and/or inspection: 20 points/vehicle
  (accident related: 30 points/vehicle)
- No inspection at PTI: decertification of PTI-business

【Administrative penalty criterion】

- More than 20 penalty points: PTI-suspension
  example: 20~29 points 15 Days
  30~39 points 20 Days etc.

- More than 360 points: decertification of PTI-business
Competitive Environment for Maintenance Business

Garages number is Slight increasing constantly

Fleet number is marginal change

Number of Low running cost vehicles as K-car, Hybrid-car is increasing and vehicle life-span is expanding

Gross Sales revenue is marginal change

<table>
<thead>
<tr>
<th>Year</th>
<th>Approved garages (10 thousand)</th>
<th>Fleet number (10 millions)</th>
<th>Gross Sales (1 trillion JPY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>8.9</td>
<td>7.83</td>
<td>5.89</td>
</tr>
<tr>
<td>2005</td>
<td>8.93</td>
<td>7.9</td>
<td>5.96</td>
</tr>
<tr>
<td>2006</td>
<td>8.93</td>
<td>7.92</td>
<td>6.09</td>
</tr>
<tr>
<td>2007</td>
<td>9.04</td>
<td>7.91</td>
<td>5.95</td>
</tr>
<tr>
<td>2008</td>
<td>9.13</td>
<td>7.88</td>
<td>5.77</td>
</tr>
<tr>
<td>2009</td>
<td>9.17</td>
<td>7.87</td>
<td>5.47</td>
</tr>
<tr>
<td>2010</td>
<td>9.19</td>
<td>7.87</td>
<td>5.49</td>
</tr>
<tr>
<td>2011</td>
<td>9.2</td>
<td>7.91</td>
<td>5.6</td>
</tr>
<tr>
<td>2012</td>
<td>9.21</td>
<td>7.96</td>
<td>5.30</td>
</tr>
<tr>
<td>2013</td>
<td>9.22</td>
<td>8.03</td>
<td>5.42</td>
</tr>
<tr>
<td>2014</td>
<td>9.22</td>
<td>8.07</td>
<td>5.52</td>
</tr>
<tr>
<td>2015</td>
<td>9.22</td>
<td>8.09</td>
<td>5.51</td>
</tr>
</tbody>
</table>
PTI related sales is the biggest sales category of the maintenance business, and brings stable demand.

Because of contact with vehicle users regularly, PTI has many opportunity of spreading for other business such as vehicle and goods sales and Insurances.
Vehicle which passed PTI, is required to attach an inspection badge on a windshield.

Badge make easy to check PTI expiration from the outside.

**Current badge**

(3 cm Square)

**New badge**

2017.1~

(4 cm Square)

- Maximum size for Motor cycle
- The font and back-color for easy to distinguish from far away
- Improve visibility by changing the placement of the number year by year
Inspection of Motor Vehicles in Japan

- Inspection of motor vehicle is a system for checking conformity with Safety Regulations for Road Vehicles in order to keep the vehicles in a safe, pollution-free condition.
- No motor vehicle shall be used for operation unless it has undergone inspection conducted by MLIT and has been issued a valid Motor Vehicle Inspection Certificate according to Article 58 of Road Vehicles Act.

Vehicle Inspection Flow

Initial Inspection
- Model specification car
  - < about 2.8 million of cars>
- Designated garage (used car, etc.)
  - < about 0.33 million of cars>
- Others (bus, truck, etc.)
  - < about 0.65 million of cars>

Modification Inspection
- Self check by user / Approved garage
  - < about 0.06 million of cars>
- Designated garage
  - < about 5.33 million of cars>

Periodical Inspection
- Conformation of safety regulation
- Safety Regulations Conformity Certificate

Completion inspection completion certificate

Inspection Office (Authority)
- Conformation of the following
  - Payment of Inspection Service Charge
  - Vehicle Specifications
  - Payment of Motor Vehicle Weight Tax
  - Payment of Motor Vehicle acquisition Tax
  - Insurance of Motor Vehicle Liability Insurance
  - Payment of Parking Fines
  - Payment of Recycling fees

*The amount of cars is as of 2014.
**Private vehicles**

### Eco-car tax reduction (vehicle weight and acquisition taxes)

Vehicle weight and acquisition taxes for eco-friendly vehicles are reduced respectively.

<table>
<thead>
<tr>
<th>Requirements for tax reduction</th>
<th>Tax reduction rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust gas performance</td>
<td>Tax reduction rate</td>
</tr>
<tr>
<td>Fuel cost performance</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electric vehicles, fuel cell vehicles, plug-in hybrid vehicles, natural gas vehicles (10% reduction in exhaust gas regulations (NOx) in 2009☆), Clean diesel vehicles (conforming to exhaust gas standards in 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline-fueled vehicles, hybrid vehicles</td>
</tr>
</tbody>
</table>

#### Requirements for tax reduction

- **Exhaust gas performance**
  - Electric vehicles, fuel cell vehicles, plug-in hybrid vehicles, natural gas vehicles (10% reduction in exhaust gas regulations (NOx) in 2009☆), Clean diesel vehicles (conforming to exhaust gas standards in 2009)

#### Tax reduction rate

- **Vehicle weight tax**
- **Vehicle acquisition tax**
- **Tax exemption**

<table>
<thead>
<tr>
<th>Fuel cost standards in fiscal 2020 Achieved a rate exceeding 20%</th>
<th>75% CO₂ reduction (exhaust gas regulations in 2005) (☆☆☆☆)</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 75% tax reduction</td>
<td>Gasoline-fueled vehicles, hybrid vehicles</td>
</tr>
<tr>
<td>Fuel cost standards in fiscal 2020 Achieved a rate exceeding 10%</td>
<td>75% CO₂ reduction (exhaust gas regulations in 2005) (☆☆☆☆)</td>
</tr>
<tr>
<td>50% tax reduction</td>
<td></td>
</tr>
<tr>
<td>Fuel cost standards in fiscal 2015 Achieved a rate exceeding 10%</td>
<td>About 50% tax reduction</td>
</tr>
<tr>
<td>25% tax reduction</td>
<td></td>
</tr>
</tbody>
</table>

#### Greening special exception

Tax reduction of Vehicle tax for eco-friendly vehicles

Tax increase for vehicle used for a certain period or longer

<table>
<thead>
<tr>
<th>Requirements for tax reduction</th>
<th>Tax reduction rate</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<th>Electric vehicles, fuel cell vehicles, plug-in hybrid vehicles, natural gas vehicles (10% reduction in exhaust gas regulations (NOx) in 2009☆), Clean diesel vehicles (conforming to exhaust gas standards in 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline-fueled vehicles used for longer than 11 years, gasoline-fueled vehicles used for longer than 13 years, etc.*</td>
</tr>
</tbody>
</table>

### Special exception period:

- **From April 1, 2015 to March 31, 2017** (vehicle acquisition tax)
- **From May 1, 2015 to April 30, 2017** (vehicle weight tax)

*For vehicles registered/first inspected before March,2014: 50% reduction at 2nd vehicle inspection

**Special exception period:** From April 1, 2016 to March 31, 2017

**Tax breaks for environment-friendly vehicles**

**Private vehicles**

- **Eco-car tax reduction (vehicle weight and acquisition taxes)**
- **Greening special exception**

*1 Excluding electric vehicles, natural gas vehicles, gasoline-fueled hybrid vehicles, etc.
*2 About 10% for certain buses and trucks

**Special exception period:** From April 1, 2016 to March 31, 2017
### Example of ECO car incentives

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>HV</th>
<th>PHV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicle</strong></td>
<td>TOYOTA PRIUS</td>
<td>TOYOTA PRIUS PHV DLA-ZVW35</td>
</tr>
<tr>
<td><strong>Price</strong></td>
<td>Approximately \¥3,200,000</td>
<td>Approximately \¥4,500,000</td>
</tr>
<tr>
<td><strong>Grant</strong></td>
<td>-</td>
<td>For Commercial \¥380,000</td>
</tr>
<tr>
<td><strong>Tax Breaks</strong></td>
<td>\¥152,800 (original: \¥162,800) (after: \¥10,000)</td>
<td>\¥96,300 (original: \¥140,900) (after: \¥44,600)</td>
</tr>
</tbody>
</table>
Thank you for your attention!