

Vehicle Cleaning and Disinfection in Response to Coronavirus Disease 2019 (COVID-19)

Participate in the quiz
to earn **1** CPD hour



- **Technology of Lithium Battery for Electric Vehicles**
- **5S Good Housekeeping for Vehicle Maintenance Workshops**
- **Quality Customer Service**
- **Map of Registered Vehicle Maintenance Workshops Across Hong Kong**



Participate in online self-learning to earn **2** CPD hours



查詢

For enquiries



2808 3545

3968 7646

機電工程署
EMSD



In response to the COVID-19 transmission and infection cases in Hong Kong, apart from frequent cleaning and disinfection of public health facilities such as hospitals and clinics, maintaining the hygienic conditions of public transport or other vehicles is also equally important. In view of the transmission of COVID-19 virus by droplets, the disinfection of car air-conditioning systems is of the utmost importance. The procedures involved include spraying condensers, air outlets, etc., with 1 in 49 diluted household bleach (mixing 1 part of 5.25% bleach with 49 parts of clean water), and after disinfection, spraying with water for rinsing, and replacing air conditioner filters of the inlets regularly so as to reduce accumulation of bacteria and dust. Air-conditioning system as well as other equipment inside and outside the cabin, such as door handles, armrests, seats, etc., should be cleaned and disinfected regularly. Employees must wear appropriate personal protective equipment, such as gloves and surgical masks, when performing disinfection to ensure the safety at work.



Regularly replace air conditioner filters of the inlets



Spray condensers and air outlets with 1 in 49 diluted household bleach

The Centre for Health Protection of the Department of Health issued Health Advice on Prevention of Coronavirus Disease 2019 (COVID-19) for Drivers, Crews and Operational Staff of Public Transport on 7 January 2020. For details, please refer to:

https://www.chp.gov.hk/files/pdf/nid_health_advice_for_public_transport_eng.pdf



Commonly used in electric vehicles, lithium battery pack (battery pack) is the biggest factor affecting the cruising range and safe operation. First of all, let's see what the lithium battery cell is. Lithium batteries cannot be disassembled and are roughly classified according to their positive-electrode materials, shapes and packaging materials. Among the most common shapes are cylindrical (Figure 1), flake and prismatic (prismatic) (Figure 2). Cylindrical cells have thin steel shells. Sheet-shaped lithium batteries, also known as pouch batteries, are usually encapsulated with aluminum-plastic films. As for rectangular lithium cells, aluminum casings are often used. Cylindrical cells are commonly used in American electric vehicles, while pouch and cylindrical cells are mostly used in European and Japanese electric vehicles. Among the most common positive electrode materials are ternary (NCA / NCM) and lithium iron phosphate (LiFePO_4).

The battery pack, a highly integrated energy storage system, is usually composed of several to a few dozen modules. Each module is assembled from several to a few dozen battery cells (Figure 3), is commonly placed at the chassis or tail of the vehicle (Figure 4).



(Figure 1)

Cylindrical battery cell



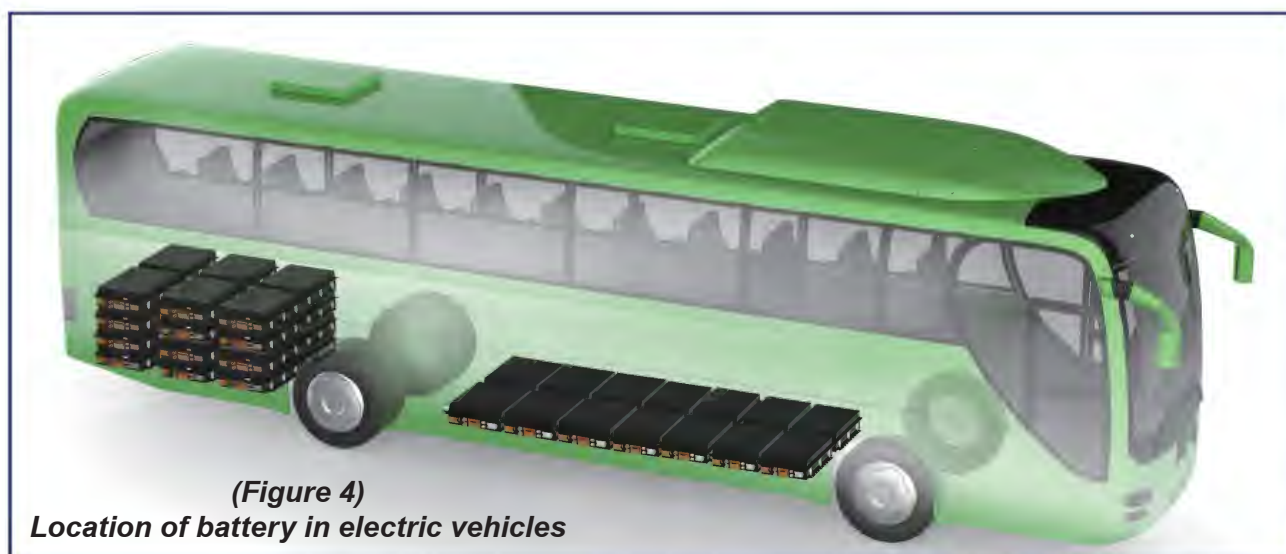
(Figure 2)

Flake and prismatic battery



(Figure 3)

Lithium battery modules



(Figure 4)

Location of battery in electric vehicles

There are also collector networks, wiring harnesses, battery management systems (BMS), relays, fuses, manual circuit breakers and cooling systems (Figure 5). Lithium batteries must be maintained at suitable operating temperatures, generally between 10°C and 40 °C, to ensure stable performance and safe operation. In this connection, some batteries are equipped with heaters. The design of most battery packs does not allow repair, so the battery cells are usually connected by laser welding or ultrasonic welding.

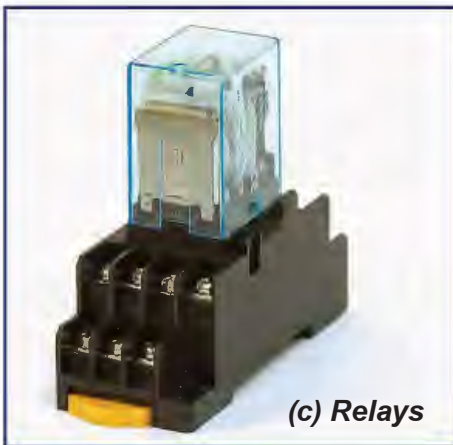
(Figure 5)



(a) Collector networks and wiring harnesses



(b) Battery management system



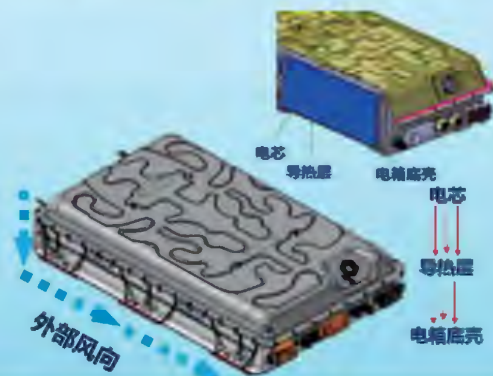
(c) Relays



(d) Manual circuit breaker

常温地区的散热设计

- 电芯到模组底部、再到电箱底壳，由导热材料+铝板构成导热层
- 电箱底部外面通风，将热量带走，同时保持IP67防水等级
- 散热效果：在25°C环境下，电池温度与外箱温差在15°C以内



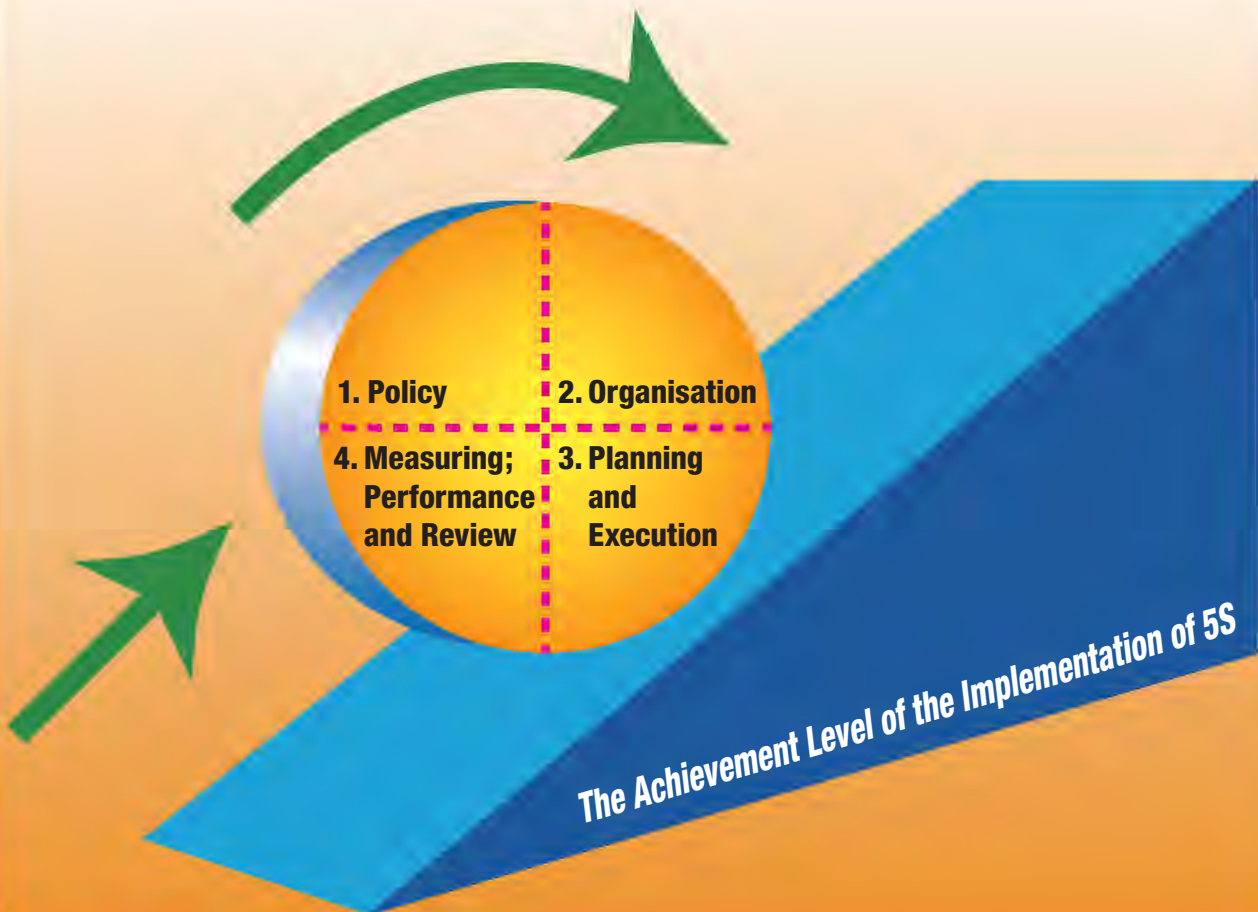
(e) Cooling system

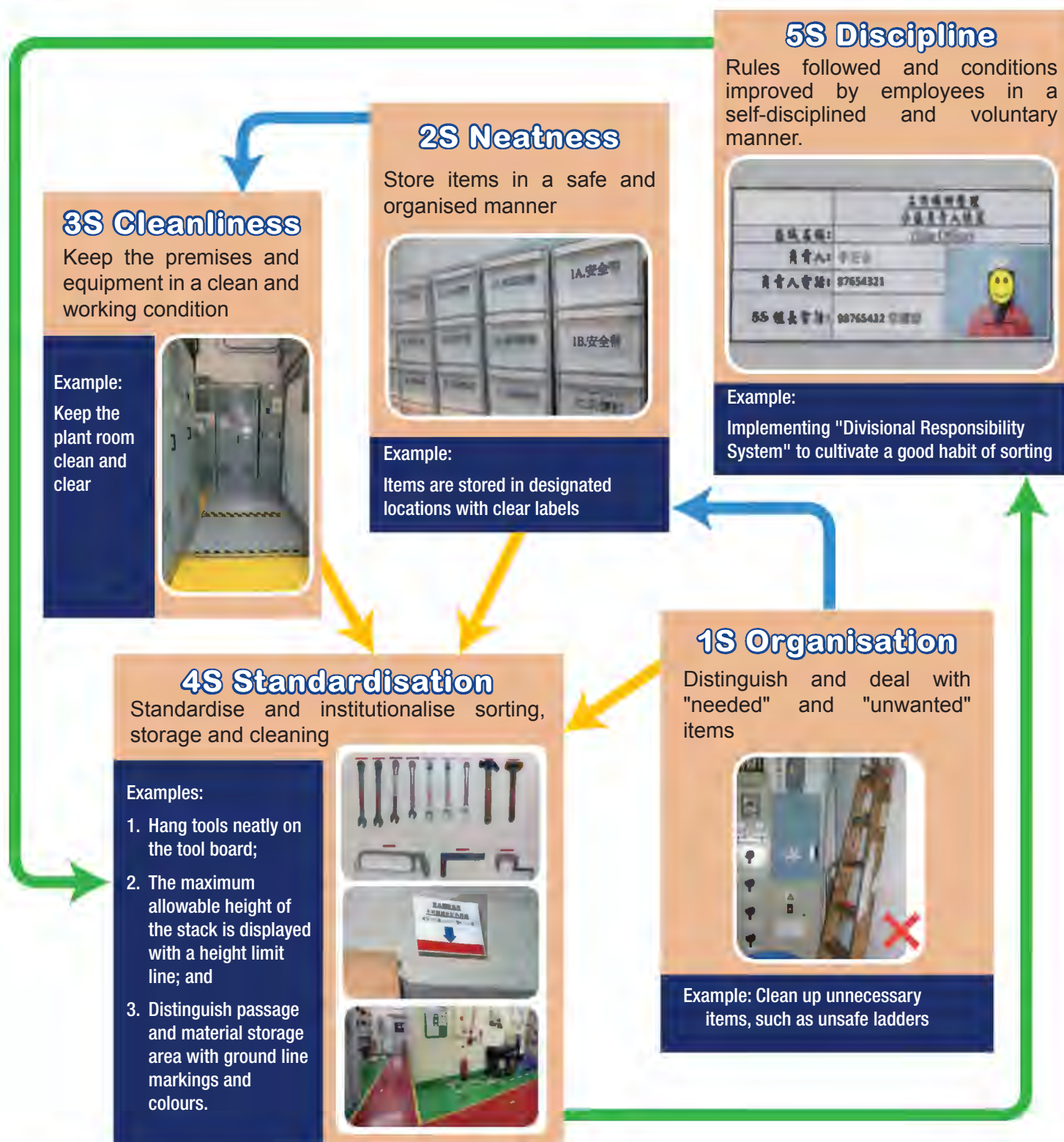
According to the statistics compiled by the Labour Department, “slip, trip or fall on same level” and “striking against fixed or stationary object” are common industrial accidents in recent years. To prevent these accidents from happening in E&M trade and vehicle maintenance service industry, the implementation of “5S” good housekeeping can play a paramount role. Good housekeeping serve the dual purpose of keeping the workplace organised and enhancing work efficiency.

“5S” Good Housekeeping is originating from Japan and derived from the initials of the five Japanese words, Seiri, Seiton, Seiso, Seiketsu and Shitsuke, which mean organisation, neatness, cleanliness, standardisation and discipline respectively. The “minimalism”, being actively promoted among the community, also carries these implications.

Each “S” has its own special features; nevertheless, all of them are closely linked. The first S “Organisation”, the second S “Neatness” and the third S “Cleanliness” are the practices of organising the workplace, controlling the quantity, order and quality of the items at the workplace. The fourth S “Standardisation” is the “standards” of practices, providing the norms and standards for the practices regarding the first three “S”. The fourth “S” is the backbone of 5S principle, which means it is the foundation on which the first three “S”s rely on and also the prerequisite for the fifth “S”. The fifth S “Discipline” is the key to practice. A tidy and safe workplace is made possible with the strong dedication and practices actively put forth by staff members. Having their persistent efforts to build up the habit of work safety and safety behaviours and to cultivate a safety culture at the workplace is essential.

Implementation of 5S Continuous Improvement Cycle





Good housekeeping not only helps prevent accidents, but also enhances work efficiency. Apart from saving time for searching, proper storage of items avoids wasting money on repurchasing if failing to find them. Furthermore, employees can also develop the habit of good housekeeping and cultivate a sense of self-discipline, which will bring positive effects on the safety culture in the organisation.

Occupational Safety and Health Council -

Good Housekeeping DIY Kit:

<https://bit.ly/2XYXlac>



職業安全健康局
OCCUPATIONAL SAFETY & HEALTH COUNCIL

Sharing on applicable documents (receipts) for vehicle maintenance industry.

The vehicle maintenance industry has been developing for more than half a century, and the applicable documents are constantly updated in line with market demands and changes in social regulations so as to keep pace with the times. Looking back on the service culture over the past few decades, the documents used between service providers and customers in transactions have also become increasingly complex and professional. The workflow of vehicle maintenance service is as follows:

Handling enquiries, offering quotations (or issuing quotations) → Confirmation (document / text agreement) → Offering service and conducting maintenance work → Issuing maintenance invoice → Collecting payment → Issuing receipt

Regardless of whether it is B-to-B (Business to Business) or B-to-C (Business to Customer), among the most commonly processed documents in the industry are quotations, maintenance invoices and receipts. These documents should contain the following basic information:

- (1) Customer name: (company name/customer name), contact phone number and email address
- (2) Vehicle information: vehicle model, registration number (abbreviated as licence plate number), chassis number, and even engine number
- (3) Vehicle operating condition: total mileage, fuel quantity and records of vehicle body damage
- (4) Others: document number, date of issue of invoice, date of delivery, etc.

As for “service content”, in terms of vehicle maintenance, except for maintenance packages that can be standardised, details of general maintenance will be filled in according to individual items of work. However, the details must clearly state the amount to be paid for the parts required for the work item, labour costs, etc. SME companies may also consider following the practices of some vehicle workshops, and adding “discount” and “deposit” items on the documents. For instance, if the inspection fee is \$1,000 and the customer agrees to engage maintenance service after going through inspection and quotation, the companies may consider offering discount by deducting this sum of \$1,000, and the customer will be willing to accept the offer. As for the “deposit”, it is a token of customers’ recognition on and trust in the companies. Some maintenance items require placing orders for some necessary spare parts, then a deposit is required (a deposit receipt needs to be issued), and the payment of the remaining amount will be collected upon completion of the maintenance work. This not only helps companies increase their cash flow, but also strengthens mutual trust with customers.

In addition, it is recommended to add in the document appropriate columns of “Remarks” that are mainly categorised as follows:

- (1) Note: explain/supplement service content, such as “R/R” (Remove/Re-install), which is commonly seen in agent’s documents, meaning dismantling /installing and replacement of parts, etc.;
- (2) Reminder: e.g. suggested next service appointment, suggested additional maintenance items, and those items that have been proposed to customer but have not commenced work are particularly worthy of prompting; and
- (3) Payment methods: Nowadays, many companies have provided a wide range of payment methods, such as cash, cheque, EPS, credit card, bank transfer (ATM, online banking), PayMe, FPS, etc. It is believed that customers may rest assured if companies clearly set out payment methods.

Issuing relevant documents is not only an operational responsibility that vehicle maintenance workshops should perform, but also an important bridge for communication with customers. A clear document can demonstrate your professionalism and compliance with the requirements on commodity description. Competing for advancements will surely attract today's savvy consumers.



Mr. Raymond Yeung Ka -wo,
Hong Kong Vehicle Repair Merchants Association Ltd.


Name of Workshop
Business Hours of the Workshop
Photo of Workshop Main Entrance
Types of Services Provided by the Workshop
Types of Vehicles Serviced
**Free of
Charge**


Map of Registered Vehicle Maintenance Workshops Across Hong Kong

**EMSD Webpages Offer
Free Publicity
for your Business**

The EMSD webpages incorporate information on registered vehicle maintenance workshops across Hong Kong, enabling members of the public to better understand the business of individual workshops, including address, telephone number, business hours, scope of services provided and types of vehicles serviced, at anytime and anywhere. Users can also get the recommended driving routes to selected workshops at their fingertips with mobile phones or web maps.

The information is also available on the websites including "Data.gov.hk" (<https://data.gov.hk>), "GeoInfo Map" (<https://www.map.gov.hk>) and "Hong Kong GeoData Store" (<https://geodata.gov.hk>). Members of the public can obtain the information of workshops by different means.

If you are interested in providing your information, please complete the Form (Form A) and send it to the Vehicle Maintenance Registration Unit of the Electrical and Mechanical Services Department by fax, by e-mail or by post.

Fax No.: 3968 7646

Email Address : vmru@emsd.gov.hk

Postal Address : 3 Kai Shing Street, Kowloon, Hong Kong
(Attention: EMSD Vehicle Maintenance Registration Unit)

The form can be downloaded from the following webpage:

https://www.emsd.gov.hk/filemanager/en/content_651/Application_FormA_EMSD_VMA_en.pdf



For enquiries, please call the Vehicle Maintenance Registration Unit at 2808 3545.



- 1** Registered vehicle mechanics who have switched to work in another vehicle maintenance workshop should **notify the VMRU by e-mail (vmru@emsd.gov.hk) or fax (3968 7646)** the name, address and telephone number of the new workshop.
- 2** If there is any change in the information of the vehicle maintenance workshop (such as name of the workshop, registration number of the workshop, address, contact number and business registration certificate, etc.) or alteration in the type of workshop being registered, the person-in-charge of the workshop must, within **14 working days** from such change, notify the VMRU of the change in writing, and submit the relevant documents for processing.

Information on the Voluntary Registration Scheme for Vehicle Mechanics:

Total number of vehicle mechanics	10 303 (Note 1)
Number of registered vehicle mechanics (as at end-April 2020)	8 665

Information on the Voluntary Registration Scheme for Vehicle Maintenance Workshops:

Total number of vehicle maintenance workshops	2 783 (Note 2)
Number of registered workshops (as at end-April 2020)	2 051

Note 1: 2019 Manpower Survey Report (updated on 13 January 2020) by the VTC and the Automobile Training Board.

Note 2: Database of the VMRU (updated in July 2019).

If you wish to help protect our environment by receiving the electronic version of RVM Newsletters and leaflets, please send us the completed reply slip by **e-mail: vmru@emsd.gov.hk** or **WhatsApp: 9016 3185**. We will contact you by means of e-mail or mobile communication as far as possible.

Reply Slip

I/My company would like to receive the RVM Newsletters and other information leaflets by

☐ e-mail / ☐ WhatsApp.

Please provide the relevant contact details based on the above selected means of communication:

E-mail address: _____ WhatsApp: _____

The electronic version of RVM Newsletters is also available at the EMSD website:

https://www.emsd.gov.hk/en/supporting_government_initiatives/registration_scheme_for_vehicle_maintenance/publications_and_circulars/rvm_newsletter/index.html



Online Continuing Education

In view of the overwhelming response from the online self-learning in the last issue, the Vehicle Maintenance Registration Unit has been releasing more online reading materials to further promote online self-learning. For this issue, a two-tier system will be tried out. Participants who answer 5 questions correctly will earn one hour of continuing professional development (CPD). Participants answering all questions correctly will earn two CPD hours. Vehicle mechanics who have not registered or whose registration has expired can also participate to obtain CPD hours for registration purpose.

Vehicle mechanics may read the Practice Guidelines for Registered Vehicle Maintenance Mechanics, and then log on to the following website (<https://forms.gle/m9rR82dFA8vPoyq89>) via the QR code, answer the questions to obtain CPD hours by means of online self-learning.

- Participants who answer 5 to 9 questions correctly can earn one CPD hour.
- Participants who answer all the questions correctly can earn two CPD hours.
- The Vehicle Maintenance Registration Unit (VMRU) will notify the successful participants individually.
- Only registered vehicle maintenance mechanics or relevant working personnel in vehicle maintenance industry may participate, each not more than once.
- If there are duplicate submissions, only the last submitted before the end of the quiz will be accepted.
- The decision of the VMRU on the quiz will be final.

The event will end on July 31, 2020.

The Code of Conduct for Registered Vehicle Mechanics is available at the following website:

https://www.emsd.gov.hk/filemanager/tc/content_648/Code_of_Conduct_C_8-2007.pdf



- Q1** Which of the following is the ratio of household bleach to water for disinfecting condensers and air outlets?
- A** 1:1 (i.e. mixing 1 part of 5.25% household bleach with 1 part of clean water)
B 1:61 (i.e. mixing 1 part of 5.25% household bleach with 61 parts of clean water)
C 1:33 (i.e. mixing 1 part of 5.25% household bleach with 33 parts of clean water)
D 1:49 (i.e. mixing 1 part of 5.25% household bleach with 49 parts of clean water)
- Q2** Which of the following is the suitable operating temperature that lithium battery should be kept to ensure stable performance and safe operation?
- A** Generally between 5°C and 30°C
B Generally between 10°C and 40°C
C Generally between 22°C and 66°C
D Generally between 0°C and 100°C
- Q3** What does 5S stand for?
- A** Organisation, Neatness, Cleanliness, Standardisation and Discipline
B Straightening, Neatness, Repair, Sweeping and Standardisation
C Neatness, Disinfection, Cleansing, Cleaning and Standardisation
D Organisation, Neatness, Cleanliness, Sick Leave and Discipline
- Q4** As mentioned in an article, which of the following website(s), apart from EMSD website, will publish the information about the newly registered vehicle maintenance workshops
- A** GeoInfo Map
B Hong Kong GeoData Store
C Data.gov.hk
D All of the above
- Q5** As mentioned in an article, the most commonly processed documents in the vehicle maintenance trade are quotations, _____ and receipts.
- A** Electricity bills
B Maintenance orders
C Fixed penalty notices
D Water bills

How to participate (Issue No.29)

Please submit the answers directly at the following website <https://forms.gle/Z4vVSw4qA52Qh4ZS8> by scanning the QR code. Vehicle mechanics may also complete the form below, circle the correct answers, and send it to the VMRU by fax or e-mail (fax: **3968 7646** or e-mail: **vmru@emsd.gov.hk**).



Deadline: 30 July 2020

Question	Answer			
Q1	A	B	C	D
Q2	A	B	C	D
Q3	A	B	C	D
Q4	A	B	C	D
Q5	A	B	C	D

Name: _____

Vehicle Mechanic Registration No.: VM _____

E-mail Address: _____

Contact Tel. No.: _____

- Participants who answer all the questions correctly will earn one CPD hour and be notified by the VMRU individually.
- Only registered vehicle mechanics with valid registration may participate, each not more than once in each quiz.
- If there are duplicate submissions, only the last submitted answers before the deadline will be accepted.
- The decision of the VMRU on the quiz will be final.
- The correct answers will be announced in the next issue of the RVM Newsletter.

The answers in RVM Newsletter Issue No. 28 are as follows:

Question	1	2	3	4	5
Answer	B	D	D	B	B

Providing Continuing Professional Development Courses for Vehicle Mechanics (in random order)

Name of Training Institute	Website/Contents	Enquiry Tel. No.	QR Code
Traffic Services Employees Association	http://www.facebook.com/tseahk	2575 5544	
Pro-Act Training and Development Centre (Automobile)	http://www.pro-act.edu.hk/automobile The Certificate in Vehicle Mechanical Repair programme# run by the Pro-Act Training and Development Centre (Automobile) may serve as another means for qualifying as registered vehicle mechanics. Mechanics who are interested in enrolling in the above programme may visit the Centre's website. # For details and latest developments of the programme, the information issued by the Pro-Act Training and Development Centre shall prevail.	2449 1310	
The Institute of the Motor Industry Hong Kong	http://www.hkimi.org.hk The Institute of the Motor Industry Hong Kong (IMIHK), formerly known as the Institute of the Motor Industry (IMI) - Hong Kong Branch, brings the mission and vision of the IMI to the Hong Kong automobile industry. After the handover in 1997, the IMI - Hong Kong Branch applied to be renamed the IMIHK in Hong Kong. Eligible members of the trade are welcome to join the IMIHK or enrol in its courses or talks.	2625 5903	
Hong Kong Vehicle Repair Merchants Association Limited	https://www.facebook.com/HKVRMA/	2399 7977	
Hong Kong Vehicle Repairing Industry Employee General Union	http://www.vrunion.hk	2393 9955	
Occupational Safety and Health Council	http://www.oshc.org.hk The Safety Handling of Chemicals course aims to provide employees with basic knowledge of the safe handling of chemicals. The course content includes hazards of chemicals, labelling of chemicals, safety precautions, personal protective equipment, emergency procedures, etc. For more course details, please contact the Occupational Safety and Health Training Centre.	2311 3322	
The Society of Operations Engineers (Hong Kong Region)	http://www.soe.org.hk/	2617 0311	
Qualifications Framework recognised courses	http://www.hkqr.gov.hk	2836 1700	

Gentle Reminder

The contents in each issue help you catch up on the development of the registration schemes and enhance the quality of service. Please stay tuned!

Each issue can be downloaded from the EMSD website at:

https://www.emsd.gov.hk/en/supporting_government_initiatives/registration_scheme_for_vehicle_maintenance/publications_and_circulars/rvm_newsletter/index.html



For enquiries on the contents of the RVM Newsletter, please contact the VMRU of the EMSD.

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Tel.: 2808 3545

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