RVM Newsletter

November 2021

35th Issue

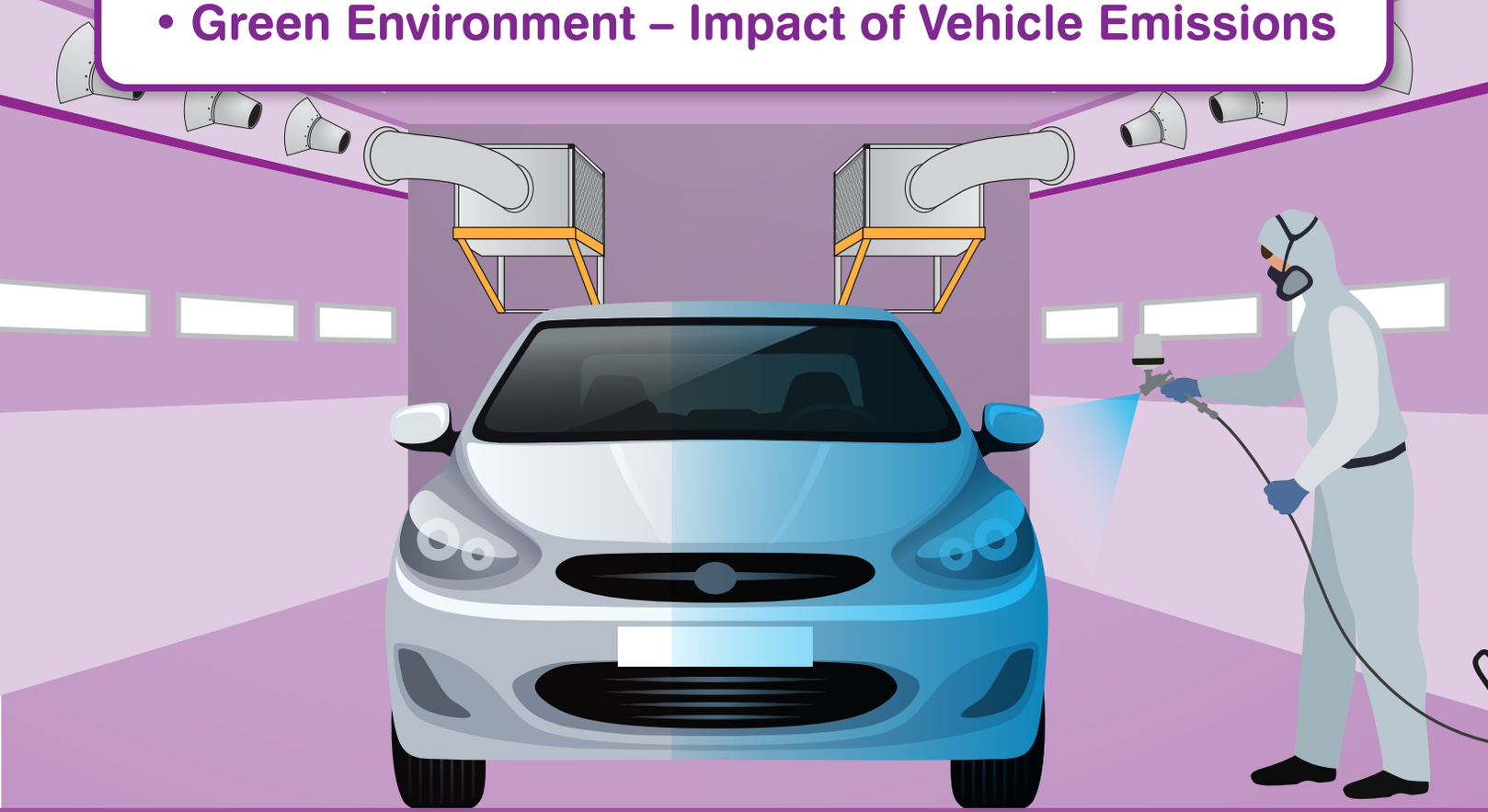
New

Online Continuing Education Platform

Participate in the quiz to earn 1 CPD hour

How can the Environmental Pollution caused by Paint Spraying of Vehicles be Minimised

- Tips for Purchasing Car Batteries
- Green Environment – Impact of Vehicle Emissions



For enquiries

☎ 2808 3545 3968 7646

機電工程署 EMSD

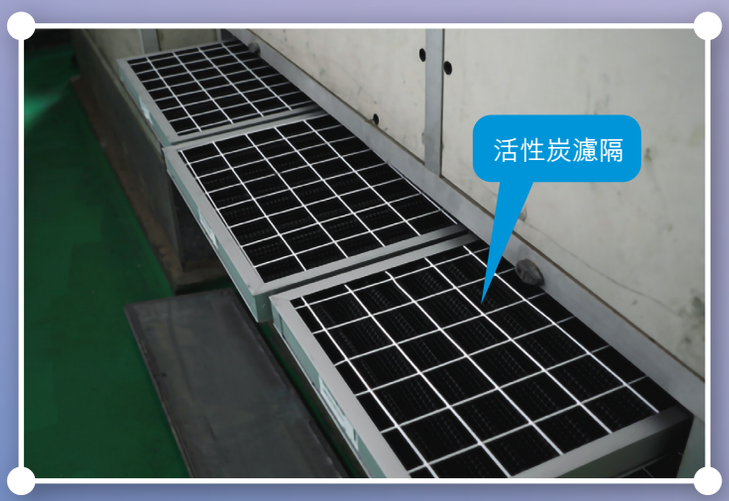
2 How can the Environmental Pollution caused by Paint Spraying of Vehicles be Minimised

To promote green messages to the trade in an innovative and interesting way, the Environmental Protection Department (EPD) has created a series of five videos which will be introduced in this newsletter. The first video is about odour nuisance caused by paint spraying. The nuisance is one of the most common types of complaints. Please scan the following QR code to watch the video:

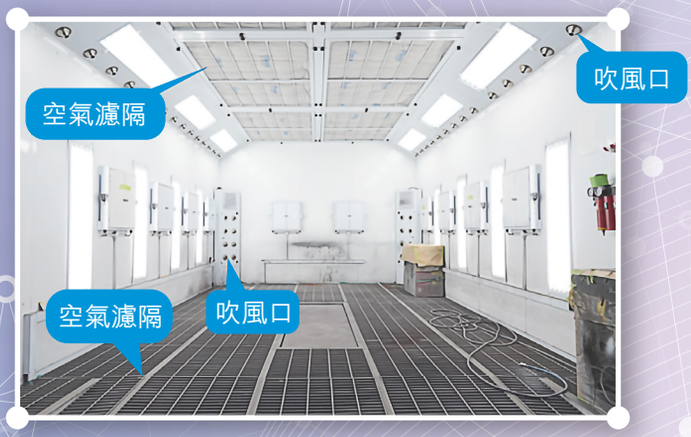
3 How can the Environmental Pollution caused by Paint Spraying of Vehicles be Minimised

As mentioned in the video narration, odour and paint particles are emitted during paint spraying. To minimise the impact of paint spraying on the environment and nearby residents, practitioners should pay attention to the following

- Paint spraying should not be carried out in non-industrial buildings.
- Paint spraying should be carried out in a paint spray booth or workshop, and the air pollution control equipment in the paint spray booth should be properly maintained.
- For workshops with no paint spray booth, a designated compartment should be set up, with appropriate exhaust fans and air pollution control equipment installed therein.
- During paint spraying, the door of the paint spray booth should be closed to avoid leakage of odor and paint particles.



- Use suitably designed activated carbon absorbers to filter air pollutants.
- Use low-pressure-high-volume environmentally friendly spray guns to reduce paint usage.
- Use water-based or low volatile organic compound (VOC) vehicle coatings/paints.



Please visit the following link for more relevant information at the EPD's dedicated webpage "Green Garage":

https://www.epd.gov.hk/epd/english/greengarage/index.html

Environmental Protection Department
The Government of the Hong Kong Special Administrative Region

機電工程署 EMSD

4 Tips for Purchasing Car Batteries

With the continuous development of private cars, many all-electric cars have been available on the market. The battery of an all-electric car is on the chassis of the vehicle to power the motor. Currently, most cars using this type of batteries are still under the manufacturers' warranty. Manufacturers will be responsible for repair and replacement in case of any damages. Therefore, this article will not focus on power battery.

As for batteries equipped with engine devices, they are generally categorised into those with the start-stop function and those without such function. Cars with the start-stop function must use batteries using the AGM (Absorbent Glass Mat) technology or EFB (Enhanced Flooded Battery) technology. The vast majority of European cars use the AGM batteries. Individual low-emission cars use the EFB batteries. Most Japanese cars use the EFB batteries meeting Japanese standard (JIS).

The AGM batteries with the start-stop function are mainly of the European standard (DIN Type), and their energy storage (20-hour reserve capacity) are 60Ah, 70Ah, 80Ah, 90/95Ah or 105Ah. The lengths are 242mm, 278mm, 315mm, 353mm or 393mm while the width and height are set at 175mm and 190mm respectively. The market share of the above-mentioned AGM batteries has exceeded 90%.

The EFB batteries are of either the European standard or Japanese standard (JIS), with different sizes and hold-downs, energy storage and CCA (Cold Cranking Amperes), as well as different dimensions and positions of battery connection terminals. The European-standard battery connection terminals do not protrude from the surface of the battery, as shown in **Figure 1**. The JIS battery is shown in **Figure 2**.

The energy storage of European-standard EFB batteries are 60Ah, 65Ah, 70Ah, 75Ah and 80Ah respectively, and the lengths and heights are 242mm x 190mm, 278mm x 175mm, 278mm x 190mm, 315mm x 175mm, or 315mm x 190mm. The hold-down at the bottom of the battery can ensure the battery is secured in place, as shown in **Figure 1**.

The energy storage, length and width of JIS EFB batteries are as follows:

187mm x 127mm for 30Ah-battery, 197mm x 128mm for 34Ah-battery, 238mm x 128mm for 43Ah-battery, 232mm x 173mm for 54Ah-battery, 260mm x 173mm for 59Ah-battery, and 305mm x 173mm for 64Ah-battery. The height is set at 227mm. Please pay special attention to the placement of the positive and negative terminals of the battery, as shown in **Figure 3**.

Cars without the start-stop function use traditional batteries of two types, batteries requiring regular topping up with water and those do not. Except for individual models of commercial vehicles, most private cars use Maintenance Free (MF) batteries.

Regardless of the types of battery used, a battery can be replaced by one of the same dimension but with a larger energy storage and CCA value. However, if a smaller though new battery is used for replacement, the car may not be able to start or the battery life may be shortened. In addition, some new models of the Japanese cars use European chassis and European-standard batteries. Consumers should pay special attention when purchasing such models.

As for the price, the AGM batteries of the same brand is about 20% to 30% more expensive than the EFB batteries. The price of the EFB batteries is about 15% to 25% higher than that of the traditional batteries. The prices of Japanese-standard batteries are similar, but vary, depending on the places of production.

Mr Cheung Kam-fai
President of Association of Auto Batteries and Tyres Industry

5 Tips for Purchasing Car Batteries

35th Issue

1

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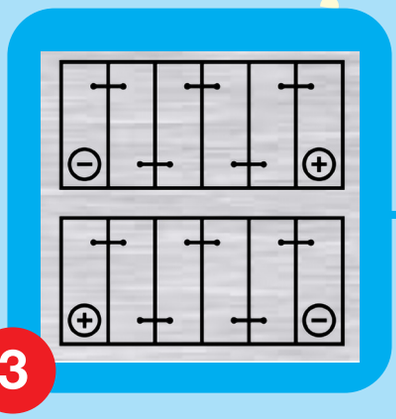

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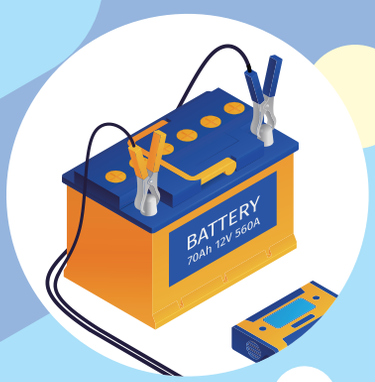
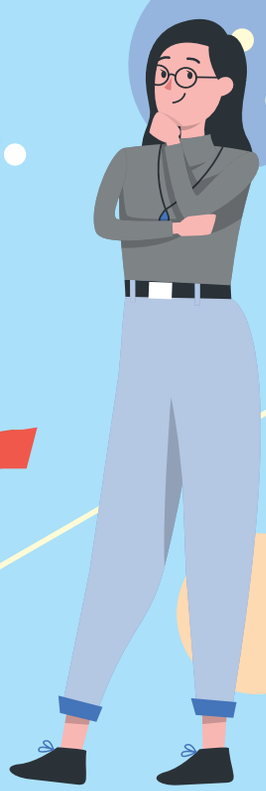




機電工程署
EMSD

6 Green Environment – Impact of Vehicle Emissions

Pollutants Emitted by Vehicles in Hong Kong

The air quality of Hong Kong is mainly affected by the rapid economic growth and the expansion of different trades. Vehicle emissions are the major source of air pollution in Hong Kong. Fuel-engined vehicles, i.e. petrol vehicles and diesel vehicles, running on our busy local road network, account for a large proportion of the total number of registered private vehicles and commercial vehicles. The main sources of street level air pollution are nitrogen oxide (NOx), volatile organic compounds (VOC), carbon monoxide (CO), respirable suspended particulates (RSP) and fine suspended particulates (FSP) emitted by vehicles. These emissions cause serious environmental pollution.

Objectives of the Jockey Club Heavy Vehicle Emissions Testing and Research Centre

As an open platform, the Centre supports the automobile trade in conducting various tests and measurements for different types of vehicles and assists the Government in formulating new policies to control pollutant emissions. To help improve Hong Kong's skyscape and air quality, the Centre also provides quality educational activities to students and members of the public to enhance public knowledge of emission requirements and standards, awareness of the impact of air pollution, as well as understanding of preventive measures to be adopted.

The Centre is equipped with the following facilities to conduct various tests:

Electric and hybrid vehicle engine testing facilities **(Photo 1 and Photo 2)**, four-wheel drive chassis dynamometer **(Photo 3)**, suspended particulates counter **(Photo 4)**, heavy vehicle dynamometer **(Photo 5)**, and optical particles counter and portable emission measurement system **(Photo 6)**.

Recent projects and work of the Centre:

1) Conducting emission tests with the chassis dynamometer for about 70 diesel medium goods vehicles which weigh 9 to 24 tonnes and run on the roads in Hong Kong **(Photo 7)**;
2) Making measurement and conducting analysis of the emissions of outboard spark ignition (petrol) engines commonly used by local vessels in order to provide data for reference by the Environmental Protection Department for formulating new policies on emissions to the ocean **(Photo 8, Photo 9 and Photo 10)**;
3) Providing assistance to a project funded by the Environment and Conservation Fund (ECF) and conducted by the University of Hong Kong, using the biodiesel fuel provided by the Hong Kong and China Gas Company Limited to conduct emission tests for biodiesel fuel of different ratios (B5, B20 and B100), including measurement of fuel consumption and emissions of NOx, THC, CO, CO2 and PM **(Photo 11 and Photo 12)**;
4) Conducting a study on eco-driving for a ECF project with PEMS, including the research on the relationship between different driving methods and emissions and fuel consumption **(Photo 13 and Photo 14)**;
5) Offering short courses or workshops, including the Basic Private Vehicle Maintenance and Emission Testing Courses for members of the public (some were held in July and October 2020 and June 2021 respectively); and One-day Short Courses on Principles of Electric Vehicle and Battery Technology held in June and July 2021 for technical staff of the EMSD **(Photo 15, Photo 16 and Photo 17)**.

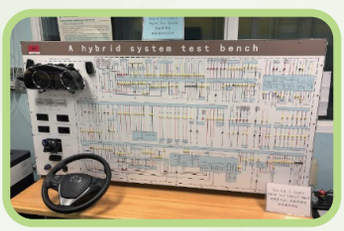


Photo 1

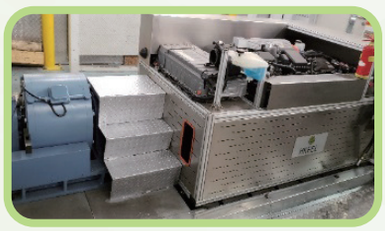


Photo 2


Photo 3


Photo 4


Photo 5


Photo 6


Photo 7


Photo 8


Photo 9

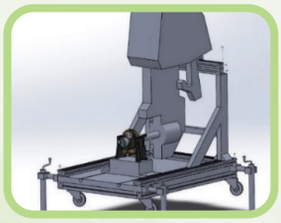


Photo10


Photo 11

7 Green Environment – Impact of Vehicle Emissions

Photo 12

Photo 13

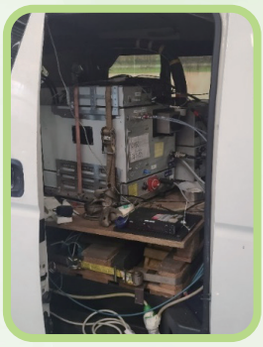


Photo 14

Photo 15

Electric Vehicles as the Future Development Direction

While the Centre will continue to conduct testing and research on fuel-engined vehicles, its goal is to become a testing centre for electric vehicles. The Centre will carry out energy consumption tests for electric vehicles, utilising the existing dynamometers and the Worldwide Harmonised Light Vehicles Test Procedure (WLTP) cycle. It will also collaborate with local universities to develop new algorithm suitable for the road condition and environment of Hong Kong for application of the transient dynamometer in future electric vehicle tests. The Centre has also applied for and received funding from the Innovation and Technology Fund to co-develop an "automatic portable electric vehicle charging installation" with the trade **(Photo 18, Photo 19, Photo 20 and Photo 21)**. It is estimated that the installation will be about 83 cm in length, 39 cm in width and 89 cm in height with high DC output power of DC-DC: 28kW to provide to an electric vehicle 8kWh of electricity (for running distance of about 36 to 56 km) in 17 minutes. Alternatively, it can complete charging an AMEVC battery in 3 hours and 10 minutes (charging the battery to 90% in 1 hour and 35 minutes) with an AC-DC:13A household socket.

Photo 16

Photo 17

Established in 2011, the Jockey Club Heavy Vehicle Emissions Testing and Research Centre (JCEC) received donations from the Hong Kong Jockey Club Charities Trust to raise the standards of the vehicle emission testing system and equipment to meet the Euro VI standards.

For enquiry or collaboration opportunities, please email us at ty-jcec@vtc.edu.hk. To receive the latest information from the JCEC, please like our Facebook page at https://bit.ly/jcecfb.

Photo 18

Photo 19

Photo 20

Photo 21

Dr Joe Lo, Centre Manager
Jockey Club Heavy Vehicle Emissions Testing and Research Centre

Application made by Registered Vehicle Mechanics to Become a Competent Person of Class 6

Vehicle mechanics can make application to the Electrical and Mechanical Services Department (EMSD) to become a Competent Person of Class 6 (CP6) upon completion of the LPG Vehicle Servicing Programme provided by the Vocational Training Council and relevant practical training. CP6s are qualified to maintain and repair the fuel system of LPG vehicles (mainly taxi and mini-bus), including (1) replacement of LPG fuel tank, or (2) maintenance, repair or replacement of vaporizer, pipework, regulator, mixer and associated components.

Arrangement for Renewal of CP6 Certificate/Identification Card

The EMSD has started to notify CP6s to renew their certificates and identification cards in March this year. The certificates and identification cards are still classified into two types, namely Gold and Silver, with a validity period of 3 years. The persons concerned may renew their certificates and identification cards at any time in the **6 months before they expire** by the EMSD's "Online CP6 Renewal in 4 Steps" (https://cp6renewal.emsd.gov.hk/). CP6s can easily complete the renewal processes, which include: 1. Revisiting the replacement steps of LPG fuel tank; 2. Catching up on necessary safety measures; 3. Answering 10 related questions; and 4. Updating the personal particulars. Upon verification in regard of the application, the certificates and identification cards will be sent to the registered contact address of the applicants via registered mail.

Online CP6 renewal in 4 steps

1 Step 1: Watch the video to refresh memory.

氣體安全監督 機電工程署

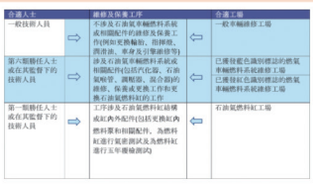
完成短片重溫，按此跳到下頁

9 Latest Updates of Vehicle Maintenance Registration Unit

2 Step 2: Go over the safety measures again.

維修及保養石油氣車輛的合適人士和工場

<更多>



安裝及拆卸石油氣車輛燃料缸需由合資格的第六類勝任人士 (CP6) 在合適的燃氣車輛燃料系統維修工場 (紅牌/藍牌車房) 進行。

合資格的 CP6 及紅牌/藍牌車房名單已載列於機電工程署的網頁。

「第六類勝任人士」證書及證明卡

<更多>

「第六類勝任人士」可以保養及維修石油氣車輛的石油氣燃料系統，包括
(i) 更換石油氣燃料缸
(ii) 為氣化器、管道、調壓器、混合器及相關配件進行保養、修理或更換工作

完成安全措施重溫，按此跳到下頁

3 Step 3: Finish the multiple choice test.

請回答以下 10 條問題，8 題以上答對即符合續證要求

問題 1 石油氣燃料缸最大注氣量是多少？

回答 1
- ○A 80%
- ○B 85%
- ○C 90%

問題 2 車用石油氣其中兩種主要成份是什麼?

回答 2
- ○A 丙烷及丁二烯
- ○B 丁烷及丁二烯
- ○C 丙烷及丁烷

問題 3 石油氣燃料缸溢流控制閥安裝在哪裡？

回答 3
- ○A 近入氣手動閥門
- ○B 近出氣手動閥門
- ○C 近回氣手動閥門

4 Step 4: Complete and update personal information.

恭喜! 你已符合 CP6 的續證要求

請填寫並提交以下續證資料

CP6 號碼 (例子: CP6-00001)

CP6- 00001

名稱

CHAN TAI MAN

出生日期

01-01-1960

身份證號碼 (例子: A123456(7))

A123456 (7)

10 Latest Developments of the Registration Schemes

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** of 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 Note1
Total number of vehicle mechanics	8 241
Information on the Voluntary Registration Scheme for Vehicle Maintenance Workshops:	
Total number of vehicle maintenance workshops	2 783 Note2
Number of registered workshops (as at end-October 2021)	2 058

Note1: 2019 Manpower Survey Report (updated on 13 January 2020) by the VTC and the Automobile Training Board
Note2: 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 for the above selected means of communication:

E-mail address:_____ WhatsApp:_____

The electronic version of the RVM Newsletter is also available on the EMSD website:
https://www.emsd.gov.hk/en/supporting_government_initiatives/registration_scheme_for_vehicle_maintenance/publications_and_circulars/rvm_newsletter/index.html

Note

Starting from 15 July 2018, new application for registration as Type Four workshop (i.e. a workshop situated at a residential building or a composite building with domestic part) is no longer accepted. Furthermore, requests for conversion from a registered Type One, Type Two or Type Three workshop to a Type Four workshop will not be entertained.

New Online Self-learning Continuing Professional Development Platform

New training materials has been released via the Online Self-learning Continuing Professional Development Platform on 1 November. By reading training materials and answering questions, vehicle mechanics can earn continuing professional development (CPD) hours online for registration or renewal purposes. The quizzes for this quarter have been uploaded to the CPD platform and is available to vehicle mechanics, regardless of whether the registration is valid, expired or not yet completed. The quizzes for this quarter will close on 31 January 2022.

Mechanics can visit the following website or scan the QR code to access the CPD platform
https://sites.google.com/view/vmru-cpd

Prize Quiz Issue No.35

Q1. Which of the following equipment should not be used to minimise the leakage of odor and paint particles during paint spraying?

A. Regular mesh filters
B. Paint mist filtering facilities
C. Activated carbon absorbers
D. Low-pressure-high-volume spray guns

Q2. Which of the following is not a characteristic of the low-pressure-high-volume environmentally friendly spray guns?

A. Reduce paint usage
B. Reduce discharge of pollutants
C. Reduce paint mist
D. Operators are not required to wear appropriate personal protective equipment

Q3. Which type(s) of batteries should be used for cars with the start-stop function?

A. Batteries using the AGM (Absorbent Glass Mat) technology
B. Batteries using the EFB (Enhanced Flooded Battery) technology
C. Both A and B
D. Neither A nor B

Q4. Which of the following is/are the main source(s) of vehicle emission contributing to street level air pollution?

A. Nitrogen oxide (NOx)
B. Carbon monoxide (CO)
C. Respirable suspended particulates (RSP) and fine suspended particulates (FSP)
D. All of the above

Q5. Which of the following is not a facility of the Jockey Club Heavy Vehicle Emissions Testing and Research Centre?

A. Motorcycle chassis dynamometer
B. Four-wheel drive chassis dynamometer
C. Electric and hybrid vehicle engine testing facilities
D. Suspended particulates counter

How to participate (Issue No.35)

Please scan the QR code and submit the answers directly on the following website https://forms.gle/sWiL8jYexoPLyf3U7

Vehicle mechanics may also complete the form below, circle the correct answers, and send it to the VMRU by fax (3968 7646) or e-mail (vmru@emsd.gov.hk).

Deadline: 31 January 2022

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 answers submitted 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 for RVM Newsletter Issue No. 34 are as follows:

問題	1	2	3	4	5
答案	C	C	D	A	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)	https://www.proact.edu.hk/proact/html/en 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/en/ 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:

http://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.

Fax: 3968 7646 / E-mail: vmru@emsd.gov.hk / Tel.: 2808 3545

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