

Application of remote sensing technology in vehicle exhaust test ①

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Abstract: Auto Exhaust Remote Sensing monitoring technology as an advanced science and Technology , Enables Quick inspection of motor vehicle exhaust without contacting drivers , because of superiority , The is used by more and more relevant testing units in the urban vehicle exhaust gas detection work . in the light of this,This paper focuses on the application of remote sensing technology in vehicle exhaust inspection related applications , by analyzing the specific application of remote sensing technology in vehicle exhaust test , Combine the author's practical experience at the same time , Follow-up optimizations for remote sensing monitoring technology put forward some recommended measures , for reference .

Keywords: Remote Sensing technology application of vehicle exhaust test

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today's rapid urbanization process , exhaust of motor vehicles as influence The key factors for air pollutants , even exceeds the pollution from industrial emissions to dye . This is due to exhaust emissions from motor vehicles , with tail gas concentration , nitrogen oxide The proportion of the component of the object is also gradually Gao , and nitrogen oxides have a set hurt , It also destroys the atmosphere environment . and Remote sensing technology can be very good complete The inspection and detection of automobile exhaust , shows , Remote sensing technology in mobile The plays an important role in the regulation of vehicle exhaust emissions .

1. Specific application of remote sensing technology in vehicle exhaust test

1.1 pollutant emission data for motor vehicles

differs from traditional detection methods , Exhaust Remote sensing technology can be used without the the direct contact of the motor vehicle to complete the detection of the exhaust data . through Collection and analysis of exhaust data for motor vehicles on the road , To identify different vehicle emission levels and emissions, etc. .

using remote sensing monitoring techniques in real-world operations , can complete a real-time supervisor test , and automation Gao does not affect traffic operation ,To Avoid traffic Create blocked , ensure road patency . general Operation , Implementing Detection to detect completion time is generally 0.8 s , can complete in such a short time carbon dioxide in vehicle exhaust emissions , Carbon monoxide , Total pollution indicators for nitrogen oxides and hydrocarbons ^[1].

1.2 using remote sensing technology for detection can be intelligent screening vehicles

(1) Smart screen yellow green flag vehicles and green flag vehicles . Our country has a policy on the environmen-

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tal protection of vehicles , To check the tail gas pollution index , to ensure city air quality . Our country is now strictly

enforced " yellow " color green flag " Vehicle elimination policy , and Remote sensing technology can implement the tail gas check connect to vehicle environmental inspection data , in the same for remote sensing monitoring of exhaust gas to complete a query on the environmental inspection data for the vehicle , through Control , will not conform to rules on " Yellow tagged car" and no sign car screened out , To implement the vehicle effective control over environmental protection .

(2) using remote sensing technology for testing can be intelligent screen cleaning vehicles . view Current urban air pollution problem , except environmental flag , The government has also introduced the the policies for vehicle annual warranty periodic , and encouraging people to use Gao performance car car . and remote sensing for vehicle exhaust test , can also check out clean vehicle and exempt operation . See , Apply remote sensing technology to machine motor vehicle Exhaust test go to the , to share a certain amount of motor cycle inspection work , from to effectively mitigate the pressure on the relevant staff of the motor Vehicle Inspection organization ; , also

indicates direction for motor vehicle annual Inspections , To bring business completion efficiency Gao .

1.3 Check vehicle speed and record license

(1) control of vehicle speed using remote sensing technology . taking a remote sense technology for motor vehicle exhaust testing can be done while detecting motor vehicle exhaust , trigger device Other data detection , This includes motor vehicle speed . borrow Help Remote sensing technology , enables control of car speed , and speeding Supervision ; second , Remote sensing technology can also detect car engine working status is no normal , Once an exception is found , can alert you immediately ,To avoid some of the reasons traffic accident caused by engine problem .

(2) use of remote sensing technology to complete license plate information acquisition and comparison detection . Remote sensing configuration of devices via digital cameras , can achieve vehicle license comparison control . The camera device can photograph a motor vehicle's license plate and body front and rear , then with image recognition technology , combining license plate management system , the data to be surveyed with the vehicle Identity Correspondence , and display on the electronic display , provides convenience for monitoring admin .

1.4 objective detection using remote sensing technology

(1) The input of remote sensing technology has greatly GAO the wisdom of motor vehicle inspection work AutoFit and automatic . compared to traditional exhaust detection , Using remote sensing technology Motor Train exhaust inspection efficiency is significantly more Gao . Contrast traditional technology , New Remote Sensing monitoring the degree of automation and intelligence is relatively GAO , and during instrumentation , No parking , So the detection speed is also greatly accelerated . at the same time , use automation remote Sensing technology can instantly sense the details of motor vehicle exhaust emissions , thereby real Full Control of the current motor vehicle engine specific operation .

(2) using remote sensing monitoring technology , Check results are more objective . due to remote sense technology is using hidden point detection mode , operators and machines for instrumentation no Direct communication between drivers , detect content Don't bother drivers also complete , to circumvent human factors (motor driver for detection knot Fruit or procedure generates dissatisfaction , thus causing quarrels and disputes etc) 's intervention and deviations from the accuracy of the detected results . Because detection data does not exist Anthropogenic interference effect , the use of remote sensing technology for vehicle exhaust testing test results are relatively objective , more authentic , also make machine Drivers of motor vehicles have a positive attitude towards remote sensing monitoring technology ^[2].

2. The Development of remote sensing technology in vehicle exhaust test

2.1 Science and Technology innovation Herald

The actual application technology in detection is still immature , So it is difficult to conquer this application dot , first need to increase research on professional research :degree .

All large remote sensing equipment manufacturers should target the remote sensing monitoring of vehicle exhaust technology for extensive exhaust emissions test ;collect test data , and sets a variety of emissions condition Test , divide specific data from test to other exhaust detection method Parse contrast , analyzing its pros and cons, to Find out if the remote sensing monitoring technology itself exists. Foot , and optimizing research on this issue , Continuous improvement of remote sensing monitoring technology , make remote sensing results less accurate due to vehicle condition changes '

2.2 strengthen communication between departments , achieve further improvement in remote sensing monitoring technology

(1) An organic combination of remote sensing monitoring technology and motor vehicle exhaust inspection is a vapor a great leap-forward breakthrough in vehicle detection technology , Introduction of remote sensing technology make Auto Exhaust monitoring work goes more smoothly , Overall expression : excellent [emission statistics features ,, survey data with objectivity , At the same time, the control of emissions degree is also in place , The is therefore widely used in the field of automotive exhaust detection .

(2) strengthen communication between departments . Current vehicle Remote sensing exhaust inspection technology have some limitations . because, in actual operation,, All around a will only be based on the local motor vehicle exhaust detection work for remote sensing technology related probing application , and less communication between departments , Professional grinding of all aspects not fit again , further enhanced .^[4].

2.3 Solicit user comments , Improve measurement accuracy for instrumentation devices

(1) for the consumer side : The requirements of users are the first for Applied technology improvements driver . detect workers as users of remote sensing devices , can be directed to problems with as they occur , associate it with work requirements , To turn off Optimization Recommendations for the remote sensing instrumentation device itself .

(2) for Manufacturers , : Manufacturers of remote sensing monitoring equipment should live Industrial Technology

Use the Data collection feature , periodically or irregularly investigate the phase of a remote sensing monitoring device Close user experience , widely heard users ' recommendations and requirements , to make the device hard and soft update , constantly lift GAO instrument quality , To achieve remote Sensing monitoring technologyOverall elevation of stability .

3. Epilogue

because of the accelerating process of urban construction , The amount of motor vehicles in China is in a The has been in a continuously increasing state for a period of time . to maintain good city people living Environment , you must implement the detection and control of automobile exhaust . and When this is ,, with the power of today's science and technology , Professional scientists will draw remote sensing technology into motor vehicle exhaust inspection work , because of its advanced scientific advantages , not only So that the accuracy of the exhaust detection and monitoring efficiency greatly increased , also have effect reduces the configuration of human resources , Promoting environmental protection development .

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