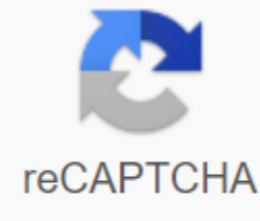




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## Vehicle testing on chassis dynamometer pdf

The roller assembly used to test chassis A, sometimes referred to as a mobile road, is a device used to test and develop vehicles. It uses roller assembly to simulate a road in a controlled environment, usually inside a building. All wheel-wheeled chassis Dynamometer types there are many types of chassis dynamometer according to the target application - for example, emissions measurements, miles of build-up of chassis dynamometer (MACD), noise-vibration-harshness (NVH or Acoustic) Application, Electromagnetic Compatibility (EMC) testing, end of line (EOL) tests, performance measurements and settings. Another basic division by vehicle type - motorcycles, cars, trucks, tractors or roller size - is basically 25, 48, 72, but also any other. Modern dynamometers used for development are basically one roller for the design of the wheel, and the wheel of the car is placed at the top of the roller. Older construction solutions of the two rollers into the wheel and the vehicle are between these rollers - this design solution is cheaper and simpler, however, due to requirements for accuracy and strict limits is no longer used for the development of new vehicles, but only as a test dynamometer at the end of the line or to measure the performance of the engine without dismantling, or tuning performances in garage companies. The main modes of Saab 96 on the mobile dynamometer Tractive force control/Force constant - in this mode, the dynamometer retains the installed force regardless of speed or other parameters. This Force can be evenly distributed between the axis or in different quantities between different axis in the case of several axis of the chassis dynamometers. Speed/speed control is constant - the dynamometer holds the set speed regardless of force or other parameters. For example, if a vehicle tries to accelerate in this mode, the dynamometer uses the opposite force to maintain the set constant speed. This mode is used, for example, in static power measurement. Road load modeling - dynamometer simulates the road according to the established parameters (according to the desired parameters of modeling - F0, F1, F2 or ABC, simulated inertia and gradient). Measured variables on the roller dynamometer Directly measured variables are only a force on the torque obstacle (i.e. load selles) and revolutions measured on the role encoder dynamometer. All other variables are calculated on the basis of a known design (i.e. the radius of the roller and the mounting loads). Measuring power on the chassis dynamometer due to friction and mechanical losses in different parts of the power train, the measured power on the wheels is about 15-20 percent lower than the power measured directly at the exit of the crank shaft (the measuring device for this purpose is called the engine test site). The principle of modeling the road load on the chassis dynamometer, because the vehicle is fixed to the chassis chassis prevents variables such as wind resistance from changing the data set. The chassis dynamometer is designed to add the amount of all forces that apply to the vehicle when driven on an actual road course that will be modeled through the tires and calculated in the test results. The increase in air resistance at speed on the road is manifested as an increase in the braking power of the vehicle's wheels. The goal is to make the car on the dynamometer speed up and slow down just like on a real road. First, you need to know the parameters of the behavior of the vehicle on the real road. In order to get the road options, The vehicle must drive on a perfect flat road without wind from any direction, the equipment is tuned to neutral and the time it takes to slow down without braking is measured at certain intervals, such as 100-90 km/h, 90-80 km/h, 80-70 km/h 70-60 km/h, etc. These parameters are later installed in the dynamometer of the workstation, along with the inertia of the vehicle. The vehicle is discreet and the so-called adaptation of the vehicle must be performed. During the adaptation of the car, the dynamometer automatically slows down from the set speed, changing its own dynamo parameters and trying to get the same slowdown in these intervals as on the real road. These options are then valid for this type of vehicle. Changing the set of simulated inertia can simulate the ability of the vehicle to accelerate at full load, when installing a gradient can simulate force if the vehicle goes downhill, etc. There is a chassis-dynamometer for the climate camera, where you can change the temperature in the range of -40 to -50 degrees Celsius or a high-altitude camera, where you can check the fuel consumption with different temperature or pressure and simulate the movement of the mountain. Dynoteg Chassis Manufacturers - Dutch chassis manufacturer dyno and Kart Engine Dyno Dürr\_AG - German company producing at D'rr Assembly Products GmbH in Piuttlingen Burke Porter G Group - American company with more than 30 locations worldwide Ono Sokki - Japanese companyAVL - Austrian company with production plant in Storage located near Hannover Horiba, a Japanese company that manufactures maha-AIP near Olomouc, a German company, TeSys Co.,Ltd, a South Korean company specializing in the production of various types of dynamometer chassis, made specifically for Mustang Advanced Engineering, an American company called DynomerK. - Indian multinational company SAJ Test Plant. - Indian SuperFlow Industries - American company owned by Power Test Incorporated Power Test Dynamometers - American company based in Sussex, Wi [www.powerstestdyno.com](http://www.powerstestdyno.com) Link Related Articles Load Cell Dynamometer Fuel Economy in Car Links Links 2016-12-03 on Wayback Machine (en) - Tobias Deser, Hans Olms, Anita Haase, Roland von Gevel, Christoph Schmidt, Uwe Schmidt, Vehicle Chassis Dynamometer, Division in Test, (S'ddeutscher Verlag onpact, Munich 2011) page 7. Automotive Institute - Our Equipment - Chassis Dynamometer

for Cars - Company that makes displaying ECU and measuring power on 2WD chassis dynamometer John Dinkel, Chassis Dynamometer, Road and Track Illustrated Automotive Dictionary, (Bentley Publishers, 2000) page 46. Extracted from the Power Vehicle testing method and the chassis of the vehicle dynamometer Technical field This invention refers to the vehicle integrated power measurement technique, relate, in particular, to the kind of method of vehicle power testing and vehicle chassis dynamometer. Reference technology Measuring tests that tradition of resistance to the transport load wasted power, vehicle chassis power, etc. is to conduct a state of actual road test, in actual road tests, repeatedly conducting a test of the car load dynamic properties, accumulating a test figure, in a test figure, look for deviations, get a change in the vehicle power model. For example: certain test miles at each interval, repetitive dynamic properties, economy test on test roads, search for car loading engine power exported from a variation of the test figure. The existing method of integral testing the power of the vehicle is poor performance, the chassis power of the vehicle, which receives is inaccurate, be easily exposed to uncertain factors such as different weather conditions and manual work. Summary invention Invention provides a kind of vehicle power testing method and vehicle chassis dynamometer, a large defective impact of the vehicle's inaccurate power, which are exposed to an uncertain factor of measurement in order to decide before the art, the accuracy of what the implementation of the vehicle's power increase is measured, easily and simply in circulation reduced the impact of an unspecified factor. The invention provides a kind of method of testing the power of the vehicle, including: the vehicle's chassis dynamometer conducts a positive test for testing the vehicle, receives a power limit of the drive of the described test vehicle; The vehicle's described chassis dynamometer is under the unloaded state of forward rotation on the engine of the vehicle's chassis dynamometer, and the test gets a dynamometer machine Resistance wasted; The described vehicle chassis dynamometer conducts negative testing of the test vehicle, receives tires on the drive wheels of resistance to the rolling wasted power; Described the vehicle's chassis dynamometer according to the described power limit driving force, tires on drive wheels resistance rolling wasted power and dynamometer machine internal resistance wasted wasted By turns, calculate the power output of the chassis described by the test vehicle, the described power of the chassis output is described by the marginal power of the driving force, the tires on the drive-wheeled resistance to rolling wasted power and the dynamometer of the internal resistance machine wasted the amount of power in turn. The invention provides a kind of vehicle dynamometer chassis, including: engine, rotary drum cylinder and test module; The described engine is used to advance and drags the test vehicle or reverse drive test vehicle; The described rotary drum cylinder is used to simulate the state of the road of the described test vehicle; The described test module includes a wheel limit driving power power test submodule, internal resistance to the submodule test, a drag power loss test submodule and a chassis power output calculation of the sub-module, in which, the described limit of the driving force of the power test submodule is taken in turns used for the described test vehicle is tested positive, receives the wheel limit driving force force of the described test vehicle; Described internal resistance to the submodule test, the engine that is used in the described vehicle chassis dynamometer is under the unloaded state of rotation forward, the test gets a dynamometer machine of internal resistance wasted power; Described drag loss power test submodule used to test the vehicle performed negative testing, gets tires on wheel drive resistance to rolling wasted power; Described the output power of the chassis calculation submodule to be used to match the described power-driving limit, the tires on the wheel of the wheel is the resistance of wasted power and the dynamometer of the internal resistance machine wasted power in turn, calculate the power output of the chassis described by the vehicle's test vehicle, described the power output of the chassis described as the limit power of the driving force, the tires on the drive-wheeled force to the rolling power and the rolling power of the vehicle , takes the vehicle chassis dynamometer, can carry to the power change of the exporting vehicle engine test of the vehicle experiment test of the experiment, uncertain factors such as external environment and manual operation have been reduced to impact of the vehicle power test, the accuracy of the power output of the test vehicle chassis that receives, and simple and easy to handle, to realize easily. Description of drawings In order to be illustrated more clearly in the incarnation or the technical scheme of the previous art, the following will make one to the accompanying drawing of the necessary use in the incarnation or description of the previous art and enter a simple, apparently accompanying drawing in the following describes some incarnations of this invention , for those with the usual skills, under the premise of not paying creative work, work, also get in line with these accompanying drawings another accompanying drawing. Fig. 1 presents 1 diagram of the flow of the process of the way the vehicle is controlled to test the first incarnation of this invention; Fig. 2 presents 2 model synoptic diagram that tests the vehicle travels on the vehicle's chassis dynamometer among the vehicle's power method testing the first incarnation of this invention; Fig. 3 represents 2 diagrams of the flow of the vehicle's power method to test the second incarnation of this invention; Fig. 4 presents the 1st scheme of the flow of vehicles by force method of testing the third incarnation of this invention; Fig. 5 represents the 1st curve of the synoptic wheel power restriction chart of a particular sample of the car's power-testing 3rd incarnation table 1 of the present invention; Fig. 6 represents the 1st curve of the anti-Tugbot synoptic diagram, limited by the driving force of a particular sample of the power mode car to test the 3rd incarnation table of the 2 matches of the present invention; Fig. 7 is a limitation of the wheel force of a certain sample of the vehicle's power method to test the 3rd incarnation of Table 3 matching the present invention and the synoptic diagram of the anti-tug power limit curve; Fig. 8 is the synoptic circuit of the car's chassis dynamometer, the first embodiment of this invention; Fig. 9 is a synoptic circuit of the car's chassis dynamometer, the second incarnation of this invention. Incarnation In order to make the purpose, technical solutions and advantages of this invention clearer, below in combination with the accompanying drawing in the embodiment of the invention, the technical scheme in the embodiment of the invention is clearly and fully described, obviously the described incarnation is part of the embodiment of this invention, not the whole embodiment. Based on the embodiment among the present invention, those of the usual skills relate to the sphere of protection of invention, without making any other incarnation, which receives under creative work prerequisites. Fig. 1 is a diagram of the process of vehicle flow force method testing the first incarnation of this invention, and as shown in Figure 1, this method of power vehicle testing includes can the following steps: Step 101, the vehicle chassis dynamometer conduct a positive test to test the vehicle, get the wheel restriction driving force of the described test vehicle; When taking the vehicle's dynamometer chassis that the test vehicle conducted an experiment car load shop, the force of the moment torsion transmission power The vehicle's chassis can include: engine pure power, transmission resistance wasted power, tires on wheel drive resistance rolling wasted power, limiting wheel driving power and dynamo-machine internal resistance wasted power. Relationship The aforementioned of each power may be the following formula: (1) the power output of the chassis (forward) wheel limit driving power/tire on the resistance of the drive wheels to rolling wasted power dynamo machine internal resistance wasted power; (2) Resistance to the transmission wasted power (as opposed to) the anti-tugboat limit driving the power of the tire to the resistance drive wheels rolling wasted power-dynamo machine internal resistance wasted power; (3) The engine is pure power chassis power output and resistance transfer wasted power. According to the formula (1) and formula (2), can carry out the transformation into a formula (3), can be obtained in theory: the engine is pure power/wheel the limit of the driving force of the force of the anti-tugboat limit of the driving force of the force. As shown in Figure 2, to test the vehicle among vehicles the power method testing the first incarnation of this invention on the model is a synoptic diagram that the car chassis dynamometer of travel, can simulate the direction that the aforementioned each power transmits. During the tests, use the kinematic train 21 of the 11 pairs of test vehicles 2 chassis engine chassis dynamometer 1 to perform the moment and load, make the test car 2 stay at a stabilizing speed under a certain transmission. Change the moment the engine load 11 chassis of the car dynamometer 1, you can measure such parameters as the test of the vehicle 2 transmissions, the speed of rotation and the limitation of the power of the wheel. In this case, the test car test bits that the simulation test relies on the vehicle's chassis dynamometer 1, the vehicle's wheel to limit the force of driving force sensing for the pressure sensor to pull on the chassis of the car dynamometer 1 equipment. In this case, vehicle tests are carried out in the process of positive tests on the chassis of the vehicle dynamometer, the test vehicle is the source of energy output terminal, the vehicle's chassis dynamometer is an energy-intensive edge, the power output of the chassis of the test vehicle satisfies the formula (1), at the moment, can measure the power limitation of the wheel's power. In particular, in the course of step 101 of the wheel power measurements the ultimate power of driving can for: When described vehicle chassis dynamo the road analogy pattern is described, the driving wheel forward of the described test vehicle drags under the position of the electric rotation of the vehicle chassis dynamic described, and the vehicle chassis dynamometer described it receives a described vehicle test in the wheel limit power comparable to the installation of the vehicle's speed of the gear; The vehicle's described chassis dynamometer is set to restrict the wheels by a driving force corresponding to the the vehicle, in accordance with the described test vehicle on the test equipment, calculates the described test vehicle on the wheel limit of the power of the driving force, corresponding to the speed of the vehicle test equipment. Step 102, the vehicle's chassis dynamometer conducts negative testing of the test vehicle, gets a tire on the drive wheels of resistance resistance wasted power, in step 102, buses on the resistance of the wheel of drive to the rolling wasted power can get an experimental formula that the resistance of the ship roll calculates, negative test can also be on the vehicle chassis dynamo full floating axis car being removed by a half free draws, perhaps takes the equivalent of weighing the nonpowered axis replacement method to get to the non-fully floating axis car, concrete grammar specific : Example one, described a test ship full of floating axis ship, Then the vehicle chassis dynamometer carries out a measure of resistance to the tyre of the described test vehicle, the concrete grammar that receives the bus on the resistance of the wheel of the drive to the rolling power can pludge: the removal of half of the shaft, the transmission for the vehicles of the place neutral, under the condition that the parking brake is weakened and the transmitter of the flame, the engine of the described vehicle chassis dynamometer rotates in accordance with the wheel of the vehicle The test equipment drive, and the test receives the described test vehicle on the tire on the drive wheels resistance to rolling wasted power, corresponding to the speed of installation of vehicle test equipment; Or example of the second, described test vehicle is not a fully floating axis of the vehicle, the car chassis dynamometer carries out a measure of the resistance of the tire described test vehicle, concrete grammar, which receives tires on the drive wheels resistant to rolling wasted power can include: the infirm load axis is regulated and loaded driving the shaft load installation installed mass and equate, place on the described rotary drum , transmission for vehicles places neutrally, under the position that the parking brake is weakened and the transmitter flame-out, the motor of the described vehicle chassis dynamometer turns according to the non-driving wheel of the described test vehicle on the described test vehicle to set the speed of the reverse test vehicle, and the test receives a described vehicle test on the bus on the vehicle's clotting force . Step 103, the vehicle's chassis dynamometer are under the unloaded state of forward rotation on the engine of the vehicle's described dynamometer chassis, and the test gets a dynamometer internal resistance machine wasted; In Step 103, the method that the test receives The internal resistance machine wasted power specifically as follows: to be a constant speed mode on the chassis of the car dynamometer, and the engine of the described dynamometer of the vehicle's chassis is under the unloaded state of rotation forward, and the numerical value that described the vehicle vehicle The dynamometer test gets a dynamometer machine of internal resistance wasted power. In this case, the dynamometer of the internal resistance machine wasted power can also be under the vehicle chassis dynamometer light condition of the engine counter drags the acquisition, usually determined by the dynamometer of the machine's performance. The aforementioned step 101,102 and 103 may not have a consistent relationship, while performing in a certain order, after a full step of 101,102 and 103, a record limit of wheels driving power, tires on drive-wheeled resistance rolling wasted power and dynamo machine internal resistance wasted power, and then in step 104. Step 104, the vehicle's chassis dynamometer according to the described power limit driving force, tires on wheel resistance to rolling wasted power and dynamometer machines internal resistance wasted power in turn, calculate the power output of the chassis described by the test vehicle, described the limitation of the power of the driving force, tires on the wheel resistant to rolling wasted power and dynamometer machine internal resistance Present embodiment takes the vehicle's dynamometer , can carry to the power change of the exporting vehicle engine the store experiment test, uncertain factors such as external environment and manual operation have been reduced to the impact of the vehicle power test, the accuracy of the landing gear power of the test vehicle that receives, and easily and simply to handle, to take place easily. Fig. 3 is a diagram of the process of the flow of the vehicle force method testing the second incarnation of this invention, as shown in Figure 3, based on the method of powering the vehicle testing the first incarnation of this invention, if necessary to obtain resistance transfer wasted power test vehicle, can directly use tires on wheel drive resistance rolling wasted power and dynamometer machine internal resistance wasted power, which calculate among the first incarnation , and further, this method of vehicle power testing may also include: Step 201, the vehicle's chassis dynamometer to conduct negative testing of the test vehicle, obtain an anti-tugboat limit driving the driving force described by the test vehicle; This is the specific grammar of Step 201 may include: When describing the vehicle's chassis dynamometer is a road analogy pattern, while the driving wheel of the described test vehicle rear-wheel drive described dynamometer of the vehicle's chassis rotates, described dynamometer the chassis of the vehicle receives described Vehicle at the anti-traction limit of the driving force corresponding to the set speed of the test vehicle; The described vehicle chassis dynamometer is set to anti-tugboat the ultimate driving power corresponding to the speed of the vehicle according to described described The vehicle on test equipment, calculates the described test vehicle on the anti-tug limit power of the driving force, corresponding to the set speed of the vehicle test equipment. In this case, Step 201 can be implemented after Step 104, which performs the vehicle power method testing the first incarnation of the present invention, can also be carried out after Step 101 and up to Step 102, possibly perform at another time, not limit the successive step 201 in the incarnation of the invention, can set according to a specific test scene. Step 202, the vehicle's chassis dynamometer according to the described anti-tugboat limit driving force, tires on wheel-drive resistance rolling wasted power and dynamo machine internal resistance wasted power, calculate the resistance of the transfer of wasted power described by the test vehicle, described the resistance to the transfer of wasted power is what is described as the anti-tugboat limit driving power deducts described tires on the wheel if it is necessary to obtain the pure power of the test vehicle's engine, then this method of testing the vehicle's power may also include: According to the described chassis output power and described transmission resistance power wasted, calculate the pure engine power of the described test vehicle, described the pure power of the engine described by the power of the chassis output and the described power of transmission resistance wasted; Or according to the described driving force limit and described the anti-tugboat limit driving power by turns, calculate the pure engine power described by the test vehicle, described the engine of pure power described as the limit of driving power and described the anti-tug boat limit driving the amount of the total in turn. In particular, the test vehicle is carried out in the process of negative testing on the chassis of the vehicle dynamometer, the vehicle's chassis dynamometer is the terminal of the energy source, and the test vehicle is an energy-insolent. At this point, referring to the formula in the above incarnation (2), one can get an anti-anti-tugboat limit driving the vehicle's driving force, which drags equal tires on drive wheels the resistance of rolling wasted power, dynamometer machines of internal resistance wasted power and resistance transfer wasted amount of power. Let's say in the anti-drag vehicle drag test vehicle test test and vehicle chassis dynamometer, the test gear of the test vehicle is identical, the speed of the engine is identical, the speed of the wheel of the disk is identical, it is possible that then tires on the drive wheels resistance to rolling wasted power, the dynamometer of the internal resistance machine wasted power identical in the aforementioned positive test , a negative testing process. In which, when testing the vehicle, negative testing is carried out, preferably in Test the situation of the engine transmission of the engine of the vehicle engine and conduct negative tests, prevent that the engine of the test vehicle that the reverse loading of the engine chassis dynamometer can cause is disturbed, the general preferred taking in the situation of stepping on the clutch with the engine idle, resist dragging the putting in the gear. Thus, the power of the system when the numerical value of the anti-tour limit the power of the driving force that negative testing receives is the vehicle transmission system oncoming traffic can calculate the resistance of the transfer of wasted vehicle load test power by formula (2). Because the moment when the power train test vehicle forward, the back going is transferred is different, so the anti-tugboat limit driving power that negative testing gets is different from the wheel limit driving power that a positive test gets. And in a situation identical to the resistance of the transmission wasted power back comes from the resistance of the transfer of wasted power, when the assumption of the vehicle forward travel, the engine pure power/chassis output power and the transmission resistance wasted power/wheel limit driving the power-tugboat limit of the driving force. Therefore, it is still possible to fully calculate the power of each part at the time of the engine transfer process by dynamometer, to calculate the engine power in the test for the loading of the car. The real incarnation takes the vehicle's chassis dynamometer that the change in the power export of the test engine of the vehicle is being tested by the test shop, uncertain factors such as external environment and manual operation have been reduced to the impact of the vehicle power test, the power output output of the chassis power of the test vehicle that receives, and the testing method is simple and easy to handle, understands easily. Fig. 4 is a diagram of the process of the vehicle flow force method testing the 3rd incarnation of this invention, in the testing of the experiment, and can be referring to the following points for attention: When the first, testing, guarantee the hot state of the car consistency, because the hot state of the car is huge on the impact of the drag transmission, usually traveling a hot car after one hour , can ensure that the overall resistance of transmission is in the basic balance; Consider that simultaneously dragging tires is exposed to temperature, it is necessary to use the tires of a cool fan blower when testing at every turn, as well as an unsuitable excessively hot car. Second, the vehicle's chassis dynamometer is the internal resistance of each test certain differences in the different temperatures of the situation, affects the test results, can be at every step to the chassis of the vehicle dynamometer internal resistance measure, thereby accurately calculate the resistance of the transfer of the test vehicle. First, when testing negative test test Does not fit for a long time, for example: to get stable data about 15s. As shown in Figure 4, in a specific use process, this method of powering vehicle testing may also include steps: Step 301 before conducting an experiment, adjusting the testing facility environment and preparing test equipment. First, it can control the site's environmental humidity experiments no more than 85%; 0 to 40 degrees Celsius in the environment; Atmospheric pressure is 90-110kPa, and the confirmed functions of equipment testing are normal; The accuracy of the vehicle's chassis dynamometer control using the variable electro-power-list rotary drum cylinder is no less than the technical requirement of the GB/T 18276-2000 A application; Use a normal data collection system (DAS) (containing sensor), an engine speed device, a data measurement system function installed on a vehicle supported by the vehicle's chassis dynamometer. In addition, the General Requirements test vehicle carried out on-site road checks and obtained exactly real road resistance to the tax equation; To conduct an experimental inspection of the model, states such as engine, wheel box, transmission shaft, rear axle, tires, machine oil confirmation to enable vehicle testing meet the testing requirements, while recording the air pressure value of the wheel, the appropriate weight of the load, the aforementioned parameter can be inserted into the table of the reference record of the test vehicle. Before the test, according to the load parameters of the car Train, which provides, calculate the limit size of the force of the wheel a nominal power point, the maximum torque point under each transmission and the speed of the car score. Step 302, the vehicle's chassis dynamometer and test vehicle are warmed up. First, referring to the target resistance factor of the approximate vehicle, set the drag factor of the road analogy of the vehicle's chassis dynamometer. Secondly, the vehicle's chassis dynamometer is arranged according to the road analogy scheme, take a test vehicle to drive the front test model of the rotation of the electric vehicle dynamometer chassis of the vehicle, properly use the gradient adjustment method that the test vehicle kinematic train loads, make the engine and power train test vehicle reach The working temperature, the recommended acceptance performance curve carries a warm-up for the vehicle; Be monitored in about half an hour for the entire heating time. Then, the vehicle neutral idle organizes the dynamometer of the car under the anti-drag mode formula of constant speed, at a speed of 50 km/h, moving 5 minutes with an anti-vehicle that drags the vehicle's chassis and the image data will determine whether resistance to transmission is a wasted force sustainable. How to observe the resistance of power without a lot of variety, namely can start to prepare a test. Finally, the goal resistance equation that the entrance of the test car real road slides carries the counter dragging the vehicle's chassis dynamometer and slides, and determines the equation of the vehicle's drag load dynamometer of the vehicle's chassis. Step 303, the vehicle's chassis dynamometer is measured by the force limit of the test vehicle's wheel. For example: first, according to the parameters of the train measurement results, the test car hung straight high, and transmission for every 100 or 200 in the range of speeds between the nominal power point and the maximum torque point is a test point (also may be in accordance with the requirements of testing adjustments, preferably include at least five rotating speeds). The vehicle's chassis dynamometer is set according to the road load simulate, the open-degree accelerator is the maximum, the speed of the supertron engine control of the degree of the test vehicle (preferably the accuracy of control 30 rpm), stabilizing speed and record data for two minutes to close the nominal power of measuring the torque. Then adjust the gradient, stable the next test point, the maximum level of the open accelerator, stabilizing speed and record data for two minutes after elevation. Repeat sequentially until the institute's selected rotating speed is complete. The number of test processes can be taken a record data output in the activity of the power table of the wheel limit. It may also include in the activity of the power table the restriction of driving wheels: parameters such as transmission, ambient temperature, environmental humidity, atmospheric pressure, engine speed, vehicle speed, restriction of wheels of driving force, restriction of wheel strength, force correction of the wheel. In this case, the power limit of the wheel satisfies the motion force formula (1):  $P_i F_i v_i / 3600$  (1) In which,  $P_i$  is limiting the wheels by the driving force of the force, and the  $F_i$  is the limiting of the wheels driving force, and  $v_i$  is the speed of the vehicle; The wheel limit the ability of the force of driving correction  $P_i \cdot P_i$ , in which- is the correction factor. Step 304, the vehicle's chassis dynamometer is measured by tires on the resistance of the drive wheels to the rolling wasted power. Mode one, fully floating axis vehicle Pull down the first driving wheel semi-axis, test vehicle variator Neutral gear, loosen the parking brake, and with the engine to kill. The vehicle's chassis dynamometer engine then rotates in accordance with the driver's wheel at the speed of a negative test vehicle, corresponding to the test speed of the test equipment in the aforementioned invention table 2, each test point is consistently recorded in two minutes, the test figure is recorded in the bus on the drive drag wheels to the movable wasted power table. Which Which The tires on the drive wheels the resistance rolling satisfies the following formula (2):  $F R_i F$  prevents i-FD I (2) In which,  $P_{et}$  is a tire on the drive wheels resistant to rolling, and  $P$  is a tire on wheel resistance to rolling, and  $FD$  is a dynamometer of the machine of internal resistance, and  $F$  resistance I tires on the drive wheel resistance rolling and dynamometer of the machine internal resistance. Tires on the wheel of resistance rolling school  $F R_i$  '  $F R_i$  ' (1k (t-25)), in which, truck tires tires for cars and load factor 121:  $k \cdot 0.01$ ; Load factor factor truck buses 121:  $k \cdot 0.006$  Can get, buses on the resistance of drive wheels to rolling wasted power formula satisfies (3):  $P R_i F R_i v_i / 3600$  (3) In which, the  $P R_i$  tires on the resistance drive wheels rolling wasted power, and  $v_i$  is the speed of the vehicle. Tires on drive wheels resistant to rolling wasted power proofreaied and properly and satisfied formula (4):  $P R_i F R_i v_i / 3600$  (4) In what, the  $P R_i$  is a tire on wheel drive resistance rolling wasted power, and  $v_i$  is the speed of the vehicle. Mode 2, not fully floating axis of the vehicle This type of vehicle can not conduct tire dragging tests by removing the semi-axis, can test a weak alternative to the axis. For example: The vehicle is carried by antero rear axle weigh, and then adjust the load and make the infirm load axis equal to the weight of the kerb or equal to the load driving the shaft load under certain mounted massive M1 states, as well as replaceable front and rear tires. The vehicle's wheel is then placed on the rotary drum cylinder of the vehicle's chassis dynamometer, the test vehicle mounts a neutral transmission with a test vehicle variator, loosens the parking brake, with the engine killing. The vehicle's recycling chassis dynamometer rotates each test point of a stable record of 15 minutes according to an undesirable wheel at the speed of the vehicle's negative testing vehicle, matching the speed of the test of the rotating test equipment in the aforementioned table 2.Data are recorded in the tire on the drive wheels resistant to rolling wasted power table. Step 305, the vehicle's chassis dynamometer is measured by the dynamometer of the internal resistance machine wasted power. For example: the installation of the vehicle's chassis dynamometer is a constant state of speed, the engine of the vehicle's chassis dynamometer starts, at a idling speed of 60min 50 km/h. Turn each test point of a stable recording of two minutes on an anti-usable wheel that drags the speed of the vehicle corresponding to the speed of the vehicle. The rotating velocity in table 2.Test the figure is recorded in the dynamometer of the internal resistance machine. In this case, the dynamometer of the internal resistance machine wasted power satisfies the following formula (5):  $P D_i F D_i v_i / 3600$  (5) In which,  $P D$  I dynamometer machine internal resistance wasted wasted and  $FD$  I is a dynamometer machine of internal resistance, and  $v_i$  is the speed (equal to the speed of the vehicle) that the rotating cylinder of the drum rotates. Step 306, limit the power of the wheel drive, resist tires to the movable wasted power are proofreaied and correct. In this case, you can keep in mind the calibration of the wheel-power bearing power limit of the driving force of the GB/T 18276-2000 Bench power test methods and the Index Evaluation Appendix C to correct the power drive power limit of the wheels. Proofread and correctly and carry out a resistance correction to rolling with reference to resistance correction 8.3 to rolling values among GB/T 18861-2002 the car bus crashing test method for resistance to the rolling power spent, thus receives a resistance correction to the rolling power spent. Step 307, calculate the power output of the chassis, the transmission resistance wasted power and the engine power of the pure test vehicle respectively. In this and not, the chassis power output wheel limit driving power/tire on the resistance drive wheels to rolling wasted power/dynamometer machine internal resistance wasted power test vehicle; Resistance transmission wasted power/anti-tugboat limit driving power tires to resistance drive wheels for rolling wasted power dynamo machine internal resistance wasted power; Engine clean power According to the test figure, which is tested at the aforementioned stage 303 304 305 receives, the calculation can get the output power of the chassis, following the formula (6):  $P V_i - P_i - P D_i - P R_i$  (6) In which, the  $P V_i$  is the power output of the chassis, and the  $P_i$  is the limiting of the wheels driving the force of the force, and the  $P D$  I dynamometer machine internal resistance wasted power, and the  $P R_i$  is a tire on the resistance drive wheels rolling wasted power. If correct and correct, then get a power correction of the chassis output and satisfy the following formulas (7):  $P V_i / P_i - P D_i - P R_i$  (7) In which,  $P V_i$  proofreaies and correct for the power output of the chassis, and  $P_i$  is that the dynamometer of the machine's internal resistance wasted power proofreaied and correct to correct the force force limit of power,  $P D$  I , and  $P R_i$  is that the tires on the drive wheels resistance rolling wasted power correctly and correctly. Take the method of vehicle power testing in the embodiment of the invention you need to test the vehicle reliability, opacing through experimental tests of certain mileage intervals, you can with a test shape, get the output of the vehicle's chassis loading vehicle, changing the pattern of transmission resistance wasted. Such as the next table is 1.2, the third, of these are conducted indoor failure-test, consistently perform the results of tests 5 tests. Wheel Wheel the result of the power driving test (forward) of Table 1, some model car Anti-tugboat limit driving the result of the power test of the power of the two table 2, some sample car Wheel power drive table 3, some sample car and anti-tugboat limit driving the amount of power Wherein, figure 5 is a synoptic wheel restriction chart driving the power of a particular vehicle model of the vehicle of the vehicle's power invention, rice. 6 is a change in the curve of the synoptic diagram anti-tugboat limit driving the force of some vehicle vehicle power samples method testing the 3rd incarnation of Table 2 correspondence of this invention, pic. 7 is the limitation of the wheels driving the force of some vehicle vehicle power method testing the 3rd incarnation of Table 3 correspondence of the present invention and changing the synoptic diagram of the anti-tugboat limit driving the amount, combined with the aforementioned rating formula, the power output of the chassis to this test model of the car, the resistance to the transmission wasted power, etc. is analyzed, and the result follows the following rule: As shown by the next rule: As shown by the next rule: As shown, the result is Along with increased mileage, limiting the wheels driving the power, working on the exit of the chassis to take the lead in growth, and then be mostly stable in some test miles, finally along with the expertise of Cheng Tsengji shape down. As shown in Figure 6, along with increased mileage, the anti-tugboat limit driving force, the vehicle transmission system drag the loss of power to descend the first rear growth. As shown in Figure 7, along with the increase in mileage, on a certain scale the mileage that the engine's pure power (namely by turns limit the power driving force and anti-tugboat limit driving power amount) begins with a break-in, with no obvious upward trend, the latter along with the increase in mileage is on the downward curve. The real incarnation takes the vehicle's chassis dynamometer that the change in the power export of the test engine of the vehicle is being tested by the test shop, uncertain factors such as external environment and manual operation have been reduced to the impact of the vehicle power test, the power output output of the chassis power of the test vehicle that receives, and the testing method is simple and easy to handle, understands easily. Fig. 8 is a synoptic diagram of the vehicle's chassis dynamometer, the first incarnation of this invention, and as shown in Figure 8, this vehicle chassis dynamometer includes: engine 41, rotating drum cylinder 43 and test module 45; In this case, engine 41 is used to advance and drags the test vehicle or reverse Test vehicle; Rotary drum cylinder 43 is used to simulate the state of the road traffic described test vehicle; Test module 45 includes limiting the wheel driving force of the power test submodule 51, internal resistance test submodule 52, drag power loss test submodule 53 53 chassis output power calculation sub-module 54. In this case, the restriction of the wheel driving force of the power test submodule 51 is used for the described test vehicle is tested positive test, receives the wheel limit driving force force of the described test vehicle; Internal resistance test submodule 52, the engine that is used in the described dismeter of the vehicle chassis is under the unloaded state of rotation forward, the test gets a dynamometer machine internal resistance wasted power; Drag power loss test submodule 53 used to test the vehicle is tested negatively, gets tires on the drive wheels resistant to rolling wasted power; The power of the sub-module power calculation 54, to be used in accordance with the described power limit driving force, tires on wheeled vehicles resistance to rolling wasted power and dynamometer of the machine internal resistance wasted power in turn, calculate the power output of the chassis described by the vehicle's test test, described the chassis output power described as the limit power of the driving force, the tires on the wheel resistant to rolling wasted power and the dynamometer of the machine internal resistance in this case the test unit of the vehicle's dynamometer receives a specific Driving force, tires on drive-wheeled resistance to movable wasted power and dynamometer machine internal resistance wasted the power of the described test vehicle, can be referring to the associated description and pic. 2 among the first, second incarnation of the vehicle's power test method of this invention. The real incarnation of the vehicle chassis dynamometer conducts an experiment store test on the power export changes of the vehicle's test engine, uncertain factors such as external environment and manual operation have been reduced to the impact of the vehicle's power test, the power of the chassis output test vehicle, which gets, simple and easy to handle, to realize easily. Fig. 9 is the synoptic diagram of the vehicle's chassis dynamometer the second incarnation of this invention, as shown in Figure 9, based on the vehicle's dynamometer chassis first incarnation of this invention, the wheel limit driving power of the power test submodule 51 can include: the wheel driving power limit of the test cell 511 and the wheel driving limit of the power calculation unit 512. In this case, the wheel restriction is the driving force of the test cell 511, when is the road analogy model for the vehicle chassis dynamometer, the driving wheel ahead of the described test the vehicle is dragged under the rotation state of the electric vehicle of the vehicle's chassis dynamometer, and the described vehicle chassis dynamometer receives the described test vehicle in the wheel force limit corresponding to the speed of the vehicle's test equipment; Wheel limit driving force unit calculating power 512 is used to set the wheel limit driving force force to the speed of the motor vehicle in accordance with the described test vehicle on the test equipment, calculates the described test vehicle on the wheel the limit power of the driving force, corresponding to the established speed of the vehicle test equipment. Concrete grammar can be referring to a related description among the first, second incarnation of the vehicle's power test method of this invention. In addition, the test module 45 may also include: negative testing of submodule 55 and resistance to transmission wasted power calculation submodule 56. In this case, the negative test submodule 55 is used to test the vehicle being tested negatively, receives the anti-tug boat limit driving the driving force of the described test vehicle; Drag power loss calculation submodule 56, will be used to match the described anti-tugboat limit driving force, tires on wheel drive resistance rolling wasted power and dynamometer machine internal resistance wasted power, calculate the resistance transfer wasted power described by the test vehicle, described the resistance to the transfer of wasted power is what described the anti-tugboat limit driving power power deducts described tires on the drive-wheel resistance , negative tests submodule record anti-tugboat limit driving force, and specific grammar drag power loss calculation submodul calculation of resistance transfer of wasted power, may be referring to a related description among the first, second incarnation of the vehicle power method testing the present invention. Again further, the vehicle's chassis dynamometer can also consist of: Computing module 47 is used to match the described chassis output power and described transmission resistance power wasted, calculates the pure engine power of the described test vehicle, and the described pure engine power is described by the chassis output power and the amount of transmission resistance power described; Or according to the described driving force limit and described the anti-tugboat limit driving power by turns, the calculation of the engine's pure power described by the test vehicle, described the engine of pure power described as the limit of driving power and described the anti-tug boat limit driving the force of the amount in turn. In this case, the computational formula for using a computational module may be referring to formula (1) among the vehicle's power method for testing the first incarnation of this invention, (2) and (3). The real embodiment of the vehicle chassis dynamometer conducts an experiment store test power Changes to the vehicle's test engine, uncertain factors such as external environment and manual operation have been reduced to the impact of the vehicle's power test, the power of the chassis output test vehicle that receives, method method Easy and easy to handle, understands easily. One of the usual skills in art will appreciate this: all or part of the step that implements said the method of embodiment can be completed by the appropriate equipment of programmed learning, the aforementioned program can be stored in a computer read/write memory environment, this program is carried out by a step that includes a said method of embodiment when performing; And the aforementioned storage tool includes: various media that can be code stored, such as ROM, RAM, magnetic disk or CD. It should be noted that, finally, the above incarnation is only to ensure that the technical scheme of this invention to be described is not intended to be limited; Although with reference to the previous incarnation of the present invention has been described in detail, those of the usual skills in art should understand that: it can still be amended to the technical scheme that the aforementioned each incarnation puts in writing, and perhaps part of the technical characteristics in which the replacement is equal; And these modifications or replacements do not make the essence of the appropriate technical decision to break away from the spirit and scope of various incarnations of the current invention of the technical scheme. Scheme.

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