MINISTERIO
DE INDUSTRIA, COMERCIO Y
TURISMO

SECRETARÍA GENERAL DE INDUSTRIA Y
DE LA PEQUEÑA Y MEDIANA EMPRESA

DIRECCIÓN GENERAL DE INDUSTRIA Y
DE LA PEQUEÑA Y MEDIANA EMPRESA

E9



Comunicación relativa a (1) / *Communication concerning the* (1):

- *la concesión de homologación / approval granted*
- ~~la extensión de homologación~~ / ~~*extension of approval*~~
- ~~la denegación de homologación~~ / ~~*refusal of approval*~~
- ~~la retirada de homologación~~ / ~~*approval withdrawn*~~
- ~~el cese definitivo de homologación~~ / ~~*production definitely discontinued*~~

de un tipo de vehículo en aplicación del Reglamento UN Nº 101R01/11 / *of a vehicle type pursuant to UN Regulation No. 101R01/11*

Nº de homologación / *Approval No. :* E9*101R01/11*11125*00
Nº de extensión / *Extension No.* : 00

1. Marca de fábrica o comercial del vehículo / *Trade name or mark of the vehicle:* JETOUR

2. Tipo de vehículo / *Vehicle type*: JC1(1.6T+7DCT)

3. Categoría del tipo de vehículo / *Vehicle category*: M1

4. Nombre y dirección del fabricante / *Manufacturer's name and address*:
Chery Commercial Vehicle (Anhui) Co. Ltd
No. 8 Building, Science and Technology Industrial Park, No.717,Zhongshan South Road Yijiang District 241100 Wuhu ANHUI(CHINA)

5. Nombre y dirección del representante del fabricante (si es preciso) /*If applicable, name and address of manufacturer's representative*: ---

6. Descripción del vehículo / *Description of the vehicle*

6.1. Masa del vehículo en orden de marcha / *Mass of the vehicle in running order:*
Ver documentación aportada por el fabricante/ *See technical documentation*

6.2. Masa máxima autorizada del vehículo / *Maximum permitted mass of the vehicle:*
Ver documentación aportada por el fabricante/ *See technical documentation*

6.2.1. Tipo de carrocería / *Type of body*:

6.3.1. Para $M_1$: ~~berlina,~~ ~~con portón trasero,~~ ~~familiar,~~ ~~cupé~~, ~~descapotable o~~ monovolumen (1) / *for $M_1$: ~~saloon~~, ~~hatchback~~, ~~station wagon~~, ~~coupé~~, ~~convertible~~, multipurpose vehicle*~~(1)~~

6.3.2. ~~Para $N_1$: camión, camioneta (1) / for $N_1$: lorry, van (1)~~

(1) Tachar lo que no proceda / *Strike out what does not apply*
(2) Inscribir los valores para gasolina y para carburante gaseoso en el caso de un vehículo que pueda ser alimentado bien con gasolina o con gas./ *Repeat for petrol and gaseous fuel in the case of a vehicle that can run either on petrol or on a gaseous fuel.*
(3) para vehículo GN, la unidad l/100 km se reemplaza por $m^3$/km./ *For vehicles fuelled with NG the unit l/100 km is replaced by $m^3$/km.*

6.4. Ruedas motrices / *Wheel drive*: delantera, ~~traseras, cuatro ruedas~~ (1)/ *front, ~~rear, four-wheel~~* (1)

6.5. Vehículo puramente eléctrico: ~~sí~~/ no (1) / *Pure electric vehicle: ~~yes~~/no* (1)

6.6. Vehículo eléctrico híbrido: ~~sí~~/ no (1) / *Hybrid electric vehicle: ~~yes~~/no* (1)

6.6.1. ~~Categoría de vehículo eléctrico híbrido: Recargable desde el exterior/ No recargable desde el exterior (1) /Category of Hybrid Electric vehicle: Off Vehicle Charging/Not Off Vehicle charging (1)~~

6.6.2. ~~Conmutador de modo de funcionamiento: con / sín (1)/ Operating mode switch: with/without (1)~~

6.7. Motor de combustion interna / *Internal combustion engine.*

6.7.1. Cilindrada/ Cylinder *capacity*: 1598 $cm^3$

6.7.2. Alimentación: ~~carburador~~ / inyección (1) / *Fuel feed*: ~~*carburettor*~~ / *injection* (1)

6.7.3. Carburante recomentdado por el fabricante / *Fuel recommended by the manufacturer*: Gasolina / *Petrol*

6.7.4. En el caso de GLP/GN (1), carburante de referencia utilizado par el ensayo (ex.G20,G25) / *In the case of LPG/NG* (1) *the reference fuel used for the test (e.g. G20, G25)*: ---

6.7.5. Poténcia máxima / *Maximum engine power*: 140 kW a/*at* 5500 $min^{-1}$

6.7.6. Sobrealimentación: si / ~~no~~ (1) / *Turbo-charger*: *yes / ~~no~~* (1)

6.7.7. Encendido: ~~por compresión~~ / encendido provocado (~~mecánico o~~ electrónico) (1) / *Ignition: ~~compression ignition~~/positive ignition (~~mechanical or~~ electronic)* (1)

6.8 ~~Grupo Motriz (para vehículo puramente eléctrico o vehículo eléctrico híbrido) (1) / Power train (for pure electric vehicle or hybrid electric vehicle) (1)~~

6.8.1.1 ~~Potencia máxima neta/*Maximum net power*: --- kW, entre/*at* --- y/*and* --- min-1~~

6.8.1.2 ~~Potencia máxima en 30 minutos/*Maximum thirty minutes power*: --- kW~~

6.8.1.3 ~~Principio de funcionamiento/ *Working principle*:~~

6.9 ~~Batería Tracción: (para vehículo puramente eléctrico o vehículo eléctrico híbrido) (1) / *Traction battery (for pure electric vehicle or hybrid electric vehicle*) (1)~~

6.9.1 ~~Tensión nominal/ *Nominal voltage*: --- V~~

6.9.2 ~~Capacidad (relación en 2 horas)/ *Capacity (2 h rate):* --- Ah~~

6.9.3 ~~Potencia máxima de la batería en 30 minutos/ *Battery maximum thirty minutes power*: --- kW~~

(1) Tachar lo que no proceda / *Strike out what does not apply*
(2) Inscribir los valores para gasolina y para carburante gaseoso en el caso de un vehículo que pueda ser alimentado bien con gasolina o con gas./ *Repeat for petrol and gaseous fuel in the case of a vehicle that can run either on petrol or on a gaseous fuel.*
(3) para vehículo GN, la unidad l/100 km se reemplaza por $m^3$/km./ *For vehicles fuelled with NG the unit l/100 km is replaced by $m^3$/km.*

6.9.4 ~~Cargador: a bordo/externo/*Charger: on board/external*~~ (1)

6.10. Transmisión /*Transmission*

6.10.1. Caja de cambios ~~manual~~ o automática, ~~o de variación continua~~ / ~~*Manual or automatic*~~ ~~or~~ ~~continuously~~ ~~transmission~~

6.10.2. Número de relaciones de la caja de cambios / *Number of gear ratios:*
Ver documentación aportada por el fabricante/ *See technical documentation*

6.10.3. Relaciones globales de transmission (incluyendo la circunferencia efectiva de rodadura de los neumáticos bajo carga): velocidades en (km/h) por 1.000min$^{-1}$ de motor / *Overall gear ratios (including tyre tread circumference under load): road speeds (km/h) per1,000 engine speed (min-1)*: Ver documentación aportada por el fabricante/ *See technical documentation*

6.10.4. Relación final / *Final drive ratio*: 3.842 / 3.042

6.11. Neumáticos / *Tyres*

Tipo / *Type*: Radial

Dimensiones / *Dimensions*: 235/55 R19

Circunferencia de rodadura dinámica/*Dynamic rolling circumference*: 2229.4~2292.2 mm

7. Resultados del ensayo / *Type-approval values*

7.1. Vehículo con motor de combustión interna y vehículo eléctrico híbrido no recargable desde el exterior (1) / *Internal combustion engine vehicle and not externally chargeable (NOVC) hybrid electric vehicle* (1)

7.1.1. Emisiones en masa de $CO_2$ / *$CO_2$ mass emissions*:

7.1.1.1. Condiciones urbanas / *Urban conditions*: 261 g/km

7.1.1.2. Condiciones extraurbanas / *Extra-urban conditions*: 160 g/km

7.1.1.3. Mixto / *Combined*: 197 g/km

7.1.2. Consumo de carburante (2) (3) / *Fuel consumption* (2) (3)

7.1.2.1. Consumo de carburante (condiciones urbanas) / *Fuel consumption (urban conditions):* 11.0 L/100 km

7.1.2.2. Consumo de carburante (condiciones extraurbanas) / *Fuel consumption (extra-urban conditions):*
6.7 L/100 km

7.1.2.3. Consumo de carburante (mixto)/ *Fuel consumption (combined):* 8.3 L/100 km

(1) Tachar lo que no proceda / *Strike out what does not apply*
(2) Inscribir los valores para gasolina y para carburante gaseoso en el caso de un vehículo que pueda ser alimentado bien con gasolina o con gas./ *Repeat for petrol and gaseous fuel in the case of a vehicle that can run either on petrol or on a gaseous fuel.*
(3) para vehículo GN, la unidad l/100 km se reemplaza por m³/km./ *For vehicles fuelled with NG the unit l/100 km is replaced by m³/km.*

7.1.3. Para los vehículos propulsados con un motor de combustión interna con un dispositivo de regeneración discontinua com se define en el párrofo 2.16 del presente Reglamento, los resultados del ensayo deben multiplicarse por el coeficiente $K_i$ determinado según el Anexo 10. / *For vehicles powered by an internal combustion engine only which are equipped with periodically regenerating systems as defined in Paragraph 2.16. of this Regulation, the test results must be multiplied by the factor Ki obtained from Annex 10.*

7.2 ~~Vehículos puramente eléctricos/ *Pure electric vehicles*~~ (1)

7.2.1 ~~Medida del consumo de energía eléctrica/ *Measurement of electric energy consumption*:~~

7.2.1.1 ~~Consumo de energía eléctrica/ *Electric energy consumption*:~~ --- Wh/km

7.2.1.2 ~~Tiempo total durante el cual *no* se respetan las tolerancias en la ejecución del ciclo/ *Total time out of tolerance for the conduct of the cycle*~~: --- s/*sec*

7.2.2 ~~Medida de la autonomía/ *Measurement of range*~~:

7.2.2.1 ~~Autonomía/ *Range*: --- km~~

7.2.2.2 ~~Tiempo total durante el cual *no* se respetan las tolerancias en la ejecución del ciclo/ *Total time out of tolerance for the conduct of the cycle*~~: --- s/*sec*

7.3. ~~Vehículo eléctrico híbrido recargable desde el exterior */ externally chargeable (OVC) hybrid electric vehicle*~~: ---

7.3.1 ~~Emisiones en masa de $CO_2$ (condición A, ciclo combinado)/ *$CO_2$ mass emission (Condition A, combined)*(4):~~ g/km

7.3.2 ~~Emisiones en masa de $CO_2$ (condición B, ciclo combinado)/ *CO2 mass emission (Condition B, combined)*(4):~~ g/km

7.3.3 ~~Emisiones en masa de $CO_2$ (ponderadas, ciclo combinado)/ *CO2 mass emission (weighted, combined)*(4):~~ g/km

7.3.4 ~~Consumo de carburante (condición A, ciclo combinado)/ *Fuel consumption (Condition A ,combined)*~~(4): 1/100 km

7.3.5 ~~Consumo de carburante (condición B, ciclo combinado)/ *Fuel consumption (Condition B ,combined)*~~(4): 1/100 km

7.3.6 ~~Consumo de carburante (ponderado, ciclo combinado)/ *Fuel consumption (weighted, combined)*~~(4): 1/100 km

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(1) Tachar lo que no proceda / *Strike out what does not apply*
(2) Inscribir los valores para gasolina y para carburante gaseoso en el caso de un vehículo que pueda ser alimentado bien con gasolina o con gas./ *Repeat for petrol and gaseous fuel in the case of a vehicle that can run either on petrol or on a gaseous fuel.*
(3) para vehículo GN, la unidad l/100 km se reemplaza por $m^3$/km./ *For vehicles fuelled with NG the unit l/100 km is replaced by $m^3$/km.*

E9



7.3.7 ~~Consumo de energía eléctrica (condición A, ciclo combinado)/ *Electric energy consumption (Condition A, combined)*~~ (4)*:* Wh/km

7.3.8 ~~Consumo de energía eléctrica (condición B, ciclo combinado)/ *Electric energy consumption (Condition B, combined)* ~~(4): Wh/km

7.3.9 ~~Consumo de energía eléctrica (ponderado, ciclo combinado)/~~ Electric ~~*energy consumption (weighted and combined)* ~~(4): Wh/ km

7.3.10 ~~Autonomía en modo eléctrico/ *Electric range*~~: km

8. Fecha de presentación del vehículo para homologación / *Vehicle submitted for test on:* 09.09.2022

9. Servicio técnico encargado de las pruebas de homologación /*Technical service responsible for conducting approval tests*: IDIADA

10. Número del acta expedida por este Servicio / *Number of report issued by that service:* CN22090953

11. Fecha del acta expedida por este servicio / *Date of report issued by that service:* 18.11.2022

12. La homologación se concede/ ~~deniega~~/ ~~extiende~~/ ~~retira~~ (1) / *Approval granted/ ~~refused~~/ ~~extended~~/ ~~withdrawn~~* (1)

13. Motivos de la extensión (en su caso) / *Reasons for extension (if applicable):* Ver informe / *See report* CN22090953

14. Observaciones / *Remarks*: válido tanto para vehículos de conducción izquierda como derecha / *valid for both LHD and RHD vehicles*

15. Emplazamiento sobre el vehículo de la marca de homologación/ *Position of approval mark on vehicle:* Ver documentación aportada por el fabricante/ *See technical documentation*

16. Lugar / *Place*: Madrid

17. Fecha / *Date:* Ver firma electrónica */ See digital signature*

18. Firma / *Signature:*

EL SUBDIRECTOR GENERAL DE CALIDAD Y SEGURIDAD INDUSTRIAL
Resolución P.D. del DIRECTOR GENERAL DE INDUSTRIA Y DE LA PYME de 25-10-2012

(1) Tachar lo que no proceda / *Strike out what does not apply*
(2) Inscribir los valores para gasolina y para carburante gaseoso en el caso de un vehículo que pueda ser alimentado bien con gasolina o con gas./ *Repeat for petrol and gaseous fuel in the case of a vehicle that can run either on petrol or on a gaseous fuel.*
(3) para vehículo GN, la unidad l/100 km se reemplaza por $m^3$/km./ *For vehicles fuelled with NG the unit l/100 km is replaced by $m^3$/km.*

## Anexo - Información adicional sobre esta Homologación de tipo

**Condiciones de la autorización y pie de recurso**

Los vehículos, sistemas, componentes o unidades técnicas independientes fabricados en virtud de esta homologación de tipo deben estar identificados y portar las marcas correspondientes según la reglamentación aplicable.

La producción en serie de vehículos, sistemas, componentes y unidades técnicas independientes debe realizarse de acuerdo con la documentación de homologación. Todo cambio en la producción individualizada requerirá autorización expresa previa por parte de la Autoridad de Homologación Española.

Cualquier modificación en los datos incluidos en el certificado de homologación, como el nombre de la empresa, representante en la UE, dirección y las plantas de fabricación deben ser comunicados inmediatamente a la Autoridad de Homologación Española.

La homologación perderá su validez cuando la misma haya sido retirada o el tipo ya no cumpla con los requisitos legales. La retirada tendrá lugar siempre que hayan dejado de cumplirse los requisitos necesarios para la concesión y mantenimiento de la misma, cuando el fabricante no pueda demostrar a la Autoridad de Homologación el cumplimiento con los requisitos y procedimientos para garantizar la conformidad de la producción, en caso de que el titular no cumpla con sus obligaciones inherentes a la homologación o cuando se determine que el tipo homologado no cumple con los requisitos de seguridad y medio ambiente.

La Autoridad de Homologación de Tipo española podrá verificar el cumplimiento de las obligaciones del fabricante en cualquier momento. En particular, se podrá comprobar la correspondencia del producto con el tipo homologado, así como las medidas establecidas para garantizar la conformidad de la producción. A tal efecto se podrán tomar o solicitar las muestras necesarias. Se permitirá el acceso sin trabas a las instalaciones de producción y almacenamiento a los empleados o representantes de la Autoridad de Homologación Española.

La autorización objeto de esta resolución de homologación de tipo no es transferible. Los derechos de marca de terceros no se encuentran afectados por esta homologación.

Contra la presente Resolución, que no pone fin a la vía administrativa, podrá interponerse recurso de alzada [1] ante la Dirección General de Industria y de la Pequeña y Mediana empresa, o ante la Secretaría General de Industria y de la Pequeña y Mediana empresa, en el plazo de un mes a partir del día siguiente a su notificación, de conformidad con los artículos 121 y 122 de la Ley 39/2015, de 1 de octubre, del Procedimiento Administrativo Común de las Administraciones Públicas.

[1] Nota: Para interponer recurso de alzada deberá acceder al siguiente enlace:
https://sede.serviciosmin.gob.es/es-es/procedimientoselectronicos/Paginas/detalle-procedimientos.aspx?IdProcedimiento=157

## *Annex - Additional Information on this Type Approval*

***Collateral clauses and right to appeal (Courtesy translation)***

*All vehicles, systems, components or separate technical units which correspond to the approved type are to be identified and marked according to the applied regulation.*

*The serial fabrication of vehicles, systems, components or separate technical must be in exact accordance with the approval documents. Changes in the individual production are only allowed with express consent of the Spanish Type Approval Authority.*

*Changes in the data included in the approval certificate, such as the name of the company, EU representative, address and the manufacturing plant are to be immediately disclosed to the Spanish Type Approval Authority.*

*The approval expires if it is withdrawn or if the type approved no longer complies with the legal requirements. The revocation can be made if the demanded requirements for issuance and the continuance of the approval no longer exist, if the manufacturer cannot demonstrate to the Type Approval Authority that it comply with the requirements and procedures to guarantee the conformity of production, if the holder of the approval violates the duties involved in the approval or if it is determined that the approved type does not comply with the requirements of traffic safety or environmental protection.*

*The Spanish Type Approval Authority may check the proper exercise of the conferred authority taken from this approval at any time. In particular, this means the compliant production as well as the measures for conformity of production. For this purpose, samples can be taken or have taken. The employees or the representatives of the Spanish Type Approval Authority may get unhindered access to the production and storage facilities.*

*The authorization contained with issuance of this approval is not transferable. Trade mark rights of third parties are not affected with this approval.*

*This approval does not conclude the administrative channel and can be appealed [2] within one month after notification, according to articles 121 and 122 of Ley 39/2015, de 1 de octubre, del Procedimiento Administrativo Común de las Administraciones Públicas. The appeal is to be addressed to Dirección General de Industria y de la Pequeña y Mediana empresa, or Secretaría General de Industria y de la Pequeña y Mediana empresa.*

[2] *Note: Appeal on the following link:*
*https://sede.serviciosmin.gob.es/es-es/procedimientoselectronicos/Paginas/detalle-procedimientos.aspx?IdProcedimiento=157*

China Office:

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201315 Shanghai - China

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**INFORME Nº / *REPORT No.* CN22090953**

REGLAMENTO UN Nº 101R01/11 RELATIVO A LAS EMISIONES DE DIÓXIDO DE CARBONO Y AL CONSUMO DE COMBUSTIBLE DE LOS VEHÍCULOS A MOTOR /
*UN REGULATION No. 101R01/11 RELATING TO CO2 EMISSIONS AND FUEL CONSUMPTION OF MOTOR VEHICLES*

| | | |
|---|---|---|
| Solicitante / *Applicant* | : | Chery Commercial Vehicle (Anhui) Co. Ltd. |
| Fabricante / *Manufacturer* | : | Chery Commercial Vehicle (Anhui) Co. Ltd.<br>No. 8 Building, Science and Technology Industrial Park, No.717,Zhongshan South Road Yijiang District 241100 WuHu ANHUI(CHINA) |
| Marca / *Make*<br>OMODA | : | JETOUR |
| Tipo / *Type* | : | JC1(1.6T+7DCT) |
| Categoría / *Category* | : | M1 |
| Lugar y fecha de emisión del informe /<br>*Place and date of test report issue* | : | L'Albornar, Santa Oliva (Tarragona), 18.11.2022 |

CONCLUSIONES / *CONCLUSIONS*: Este vehículo ha sido sometido a los ensayos previstos en el Reglamento UN Nº 101R01/11 habiéndose obtenido los siguientes resultados declarados de emisiones de $CO_2$ y consumo. / *This vehicle has been tested according to specifications from UN Regulation No. 101R01/11 with the following declared results.*

| **Emisiones de $CO_2$ / *$CO_2$ emissions*:** | |
|---|---|
| En ciudad / *On urban cycle* | **261** g/km |
| En carretera / *On extra-urban cycle* | **160** g/km |
| Media / *Average* | **197** g/km |

| **Consumo de combustible / *Fuel consumption*:** | |
|---|---|
| En ciudad / *On urban cycle* | **11.1** L/100 km |
| En carretera / *On extra-urban cycle* | **6.8** L/100 km |
| Media / *Average* | **8.4** L/100 km |

Realizado / *Performed*:

Vº. Bº. / *Revised*:

Shuo (oscar) Yang
INGENIERO DE ENSAYOS
*TEST ENGINEER*

Josep Masip Gomez
JEFE DE DEPARTAMENTO
*DEPARTMENT MANAGER*

**ANEXO AL INFORME /**
***ANNEX TO THE REPORT***

1. CARACTERÍTICAS DEL VEHÍCULO ENSAYADO / *CHARACTERISTICS OF THE TESTED VEHICLE*

1.1. **Vehículo / *Vehicle***

| | | |
|---|---|---|
| Marca / *Make* | : | JETOUR |
| Tipo / *Type* | : | JC1(1.6T+7DCT) |
| Categoría / *Category* | : | M1 |
| Nº de bastidor / *Frame No.* | : | Pressure charger K03.3: HJRPBGGB5NB470217<br>Pressure charger VT02: HJRPBGGB5NB470217<br>(Same vehicle, installed twice different pressure chargers) |
| Fecha de recepción de la muestra / *Sample received on* | : | 09.09.2022 |

1.2. **Motor / *Engine***

| | | |
|---|---|---|
| Marca / *Make* | : | Chery Automobile Co. Ltd. |
| Tipo / *Type* | : | SQRF4J16 |
| Cilindrada / *Capacity* | : | 1598 (cm³) |
| Categoría / *Category* | : | Gasolina 4 tiempos / *Petrol four strokes* |

1.3. **Cambio de velocidades / *Gearbox***

| | | |
|---|---|---|
| Tipo / *Type* | : | 7DCT |
| Rel. de la caja de cambios / *Gear ratios*: | : | 1st 4.214<br>2nd 3.105<br>3rd 1.724<br>4th 1.268<br>5th 1.27<br>6th 1.049<br>7th 0.891<br>Rev 1.18 |

1.4. **Relación de puente / *Final drive ratio*** : 3.842 / 3.042

1.5. **Neumáticos / *Tyres***

| | | |
|---|---|---|
| Dimensiones / *Size* | : | 235/55 R19 |
| Circunferencia de rodadura dinámica / *Dynamic rolling circumference* | : | 2229.4~2292.2 |

## 2. ENSAYO CICLO DE FUNCIONAMIENTO / *CYCLE TEST*

### 2.1. **Condiciones del banco de pruebas / *Test bench conditions***

Masa equivalente del sistema de inercia / Inertia : 1700 kg

Pa = F * v
F = Fo + F1 * v + F2 * vn
Fo = 7.9 [N] F1 = 0 [N/kph] F2 = 0.0536[N/kph^2] n = 2

| Velocidad del dinamómetro / *Dynamometer speed* (km/h): | Potencia absorbida / *absorbed power* (kW): |
|---|---|
| 80 | 7.8 kW |

### 2.2. **Condiciones atmosféricas del ensayo / *Test conditions***

Opción 1: Cargador de presión K03.3 / *Option 1: Pressure charger K03.3*

| | | |
|---|---|---|
| Humedad relativa/*Relative humidity* (%) | : | 50.73 |
| Humedad absoluta / *Absolute humidity* (g/kg) | : | 8.97 |
| Temperatura húmeda / *Wet temperature* (ºC) | : | 18.34 |
| Temperatura seca / *Dry temperature* (ºC) | : | 23.32 |
| Presión barométrica / *Barometric pressure* (kPa) | : | 101.84 |

Opción 2: Cargador de presión VT02 / *Option 2: Pressure charger VT02*

| | | |
|---|---|---|
| Humedad relativa/*Relative humidity* (%) | : | 49.66 |
| Humedad absoluta / *Absolute humidity* (g/kg) | : | 8.80 |
| Temperatura húmeda / *Wet temperature* (ºC) | : | 17.96 |
| Temperatura seca / *Dry temperature* (ºC) | : | 23.15 |
| Presión barométrica / *Barometric pressure* (kPa) | : | 100.58 |

### 2.3. **Combustible de referencia utilizado / *Reference fuel used***

Marca / *Mark*: REFERENCE ENERGY(DALIAN) Report No.: ST22-70418.001

3. RESULTADOS DEL ENSAYO / *TEST RESULTS*

Opción 1: Cargador de presión K03.3 / *Option 1: Pressure charger K03.3*

| **Emisiones de $CO_2$ / *$CO_2$ emissions*: (*)** | | |
|---|---|---|
| En ciudad / *On urban cycle* | 258 | g/km |
| En carretera / *On extra-urban cycle* | 160 | g/km |
| Media/ *Average* | 196 | g/km |
| **Consumo de combustible / *Fuel consumption:* (*)** | | |
| En ciudad / *On urban cycle* | 11.2 | l/100 km |
| En carretera / *On extra-urban cycle* | 6.9 | l/100 km |
| Media / *Average* | 8.5 | l/100 km |

Opción 2: Cargador de presión VT02 / *Option 2: Pressure charger VT02*

| **Emisiones de $CO_2$ / *$CO_2$ emissions*: (*)** | | |
|---|---|---|
| En ciudad / *On urban cycle* | 260 | g/km |
| En carretera / *On extra-urban cycle* | 159 | g/km |
| Media/ *Average* | 196 | g/km |
| **Consumo de combustible / *Fuel consumption:* (*)** | | |
| En ciudad / *On urban cycle* | 11.5 | l/100 km |
| En carretera / *On extra-urban cycle* | 7.0 | l/100 km |
| Media / *Average* | 8.7 | l/100 km |

3.1. Valores declarados por el fabricante y validados según el Reglamento UN Nº 101R01/11 / *Values declared by the manufacturer and validated according to UN Regulation No.101R01/11.*

| **Emisiones de $CO_2$ / *$CO_2$ emissions*: (*)** | | |
|---|---|---|
| En ciudad / *On urban cycle* | 261 | g/km |
| En carretera / *On extra-urban cycle* | 160 | g/km |
| Media/ *Average* | 197 | g/km |
| **Consumo de combustible / *Fuel consumption:* (*)** | | |
| En ciudad / *On urban cycle* | 11.1 | l/100 km |
| En carretera / *On extra-urban cycle* | 6.8 | l/100 km |
| Media / *Average* | 8.4 | l/100 km |

Lugar de ensayo / *Test place*: CATARC (Tianjin, China)
Fecha de ensayo / *Test date*: 09.09.2022~16.09.2022

Shuo (oscar) Yang
INGENIERO DE ENSAYOS
*TEST ENGINEER*

DOCUMENTACIÓN TÉCNICA /
*TECHNICAL DOCUMENTATION*

# ECE R101.01 Cosolidated to Supplement 11

# Fuel Consumption & CO2 Emissions

**CONCERNING THE ADOPTION OF UNIFORM TECHNICAL PRESCRIPTIONS FOR WHEELED VEHICLES, EQUIPMENT AND PARTS WHICH CAN BE FITTED AND/OR BE USED ON WHEELED VEHICLES AND THE CONDITIONS FOR RECIPROCAL RECOGNITION OF APPROVALS GRANTED ON THE BASIS OF THESE PRESCRIPTIONS**

## APPLICATION FOR NEW APPROVAL

Subject : Emissions
Approval No. (EU/EC/ECE) : ECE R101.01
Date : 2022/11/2
Existing approval No. :
Extension No. :
Reason for extension :

## APPROVAL HISTORY

| Update | Extension | Revision | Date | Job number | Reason |
|---|---|---|---|---|---|
| 1 | 00 | 00 | 2022/11/2 | CN22090953 | First issue |
| | | | | | |
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| | | | | | |

The following information, when applicable, shall be supplied in triplicate and include a list of contents.

If there are drawings, they shall be to an appropriate scale and show sufficient detail; they shall be presented in A4 format or folded to that format. Photographs, if any, shall show sufficient detail.

If the systems, components or separate technical units have electronic controls, information concerning their performance shall be supplied.

**CONTENTS**

0. General ..... 5
1. General construction characteristics of the vehicle ..... 6
2. Masses and dimensions (c) ..... 6
3. Description of energy converters and power plant (f) ..... 7
4. Transmission (h) ..... 12
6. Suspension ..... 13
9. Bodywork ..... 14
Annex 1 - Appendix 1 - INFORMATION ON TEST CONDITIONS.....

## 0.General

| | | |
|---|---|---|
| 0.1. | Make (name of undertaking): | JETOUR |
| 0.2. | Type | Type：JC1(1.6T+7DCT)<br>Variant：FPL4BL<br>Version：50E010A<br>See Annex 1 |
| 0.2.1. | Commercial name(s), if available: | DASHING |
| 0.3. | Means of identification of type, if marked on the vehicle (a) : | VIN |
| 0.3.1. | Location of that mark: | Refer to drawing NO.0.3.1 |
| 0.4. | Category of vehicle (b) : | M1 |
| 0.5. | Name and address of manufacturer: | Chery Commercial Vehicle (Anhui) Co. Ltd.<br>No. 8 Building, Science and Technology Industrial Park, No.717,Zhongshan South Road Yijiang District 241100 WuHu ANHUI(CHINA) |
| 0.8. | Name and address of assembly plant(s): | Chery Commercial Vehicle (Anhui) Co., Ltd.<br>No.16, Changchun Road, Wuhu Economy & Technology Development Zone, 241009, Wuhu, ANHUI (CHINA) |
| 0.9. | Name and address of manufacturer's authorized representative where appropriate: | --- |

## 1.General construction characteristics of the vehicle

| | | |
|---|---|---|
| 1.1. | Photographs and/or drawings of a representative vehicle: | See Drawing NO.1.1 |
| 1.3.3. | Powered axles (number, position, interconnection): | 1axle/front layout |

## 2.Masses and dimensions (c)

(in kg and mm) (refer to drawing where applicable)

| | | |
|---|---|---|
| 2.6. | Mass of the vehicle with bodywork and, in the case of a towing vehicle of a category other than M1, with coupling device, if fitted by the manufacturer, in running order, or mass of the chassis or chassis with cab, without bodywork and/or coupling device if the manufacturer does not fit the bodywork and/or coupling device (including liquids, tools, spare wheel, if fitted, and driver and, for buses and coaches, a crew member if there is a crew seat in the vehicle) (d) (maximum and minimum for each variant): | 1655 |
| 2.8. | Technically permissible maximum laden mass as stated by the manufacturer (e) (*) : | see table 1 |

## 3.Description of energy converters and power plant (f)

(In the case of a vehicle that can run either on petrol, diesel, etc., or also in combination with another fuel, items shall be repeated (**))

| | | |
|---|---|---|
| 3.1. | Engine manufacturer: | CHERY AUTOMOBILE CO., LTD. |
| 3.1.1. | Manufacturer's engine code (as marked on the engine or other means of identification): | SQRF4J16 |
| 3.2. | Internal combustion engine | |
| 3.2.1. | Specific engine information | |
| 3.2.1.1. | Working principle: positive ignition/compression ignition (1) Cycle: four stroke/two stroke/rotary cycle (1) | Positive ignition/ Four stroke |
| 3.2.1.2. | Number and arrangement of cylinders: | 4 cylinders, in-line |
| 3.2.1.2.1. | Bore (l): …… mm | 77 |
| 3.2.1.2.2. | Stroke (l): …… mm | 85.8 |
| 3.2.1.2.3. | Firing order: | 1-3-4-2 |
| 3.2.1.3. | Engine capacity (m): …… cm3 | 1598 |
| 3.2.1.4. | Volumetric compression ratio (2): | 9.9:1 |
| 3.2.1.5. | Drawings of combustion chamber, piston crown and, in the case of positive ignition engines, piston rings: | Drawing NO.3.2.1.5 |
| 3.2.1.6. | Normal engine idling speed (2): …… min-1 | 700±50 |
| 3.2.1.6.1. | High engine idling speed (2): …… min-1 | 2500±200 |
| 3.2.1.7. | Carbon monoxide content by volume in the exhaust gas with the engine idling (2): % as stated by the manufacturer (positive ignition engines only) | 0.40% |
| 3.2.1.8. | Maximum net power (n): . . . . . kW at . . . .. . . min-1 (manufacturer's declared value) | 140kW/5500min-1 |
| 3.2.1.9. | Maximum permitted engine speed as prescribed by the manufacturer: ……min-1 | 6200min-1 |
| 3.2.1.10. | Maximum net torque (n): . . . . Nm | 275 Nm/2000-4000min-1 |

| | | |
|---|---|---|
| | at . . . . min-1 (manufacturer's declared value) | |
| 3.2.2. | Fuel: diesel/ petrol/ LPG/ NG-Biomethane/ Ethanol (E85)/ Biodiesel/ Hydrogen | Petrol |
| 3.2.2.1.1. | Research octane number (RON), unleaded: | 92# & above |
| 3.2.2.3. | Fuel tank inlet: restricted orifice/label (1) | standard |
| 3.2.2.4. | Vehicle fuel type: Mono fuel, Bi fuel, Flex fuel (1) | Mono fuel |
| 3.2.2.5. | Maximum amount of biofuel acceptable in fuel (manufacturer's declared value): . . . . . % by volume | N/A |
| 3.2.4. | Fuel feed | |
| 3.2.4.2. | By fuel injection (compression ignition only): yes/no (1) | N/A |
| 3.2.4.3. | By fuel injection (positive ignition only): yes/no (1) | yes |
| 3.2.4.3.1. | Working principle: intake manifold (single-/multi-point)/direct injection (1) /other (specify): | Direct injection |
| 3.2.4.3.4. | System description (In the case of systems other than continuous injection give equivalent details): | See drawing NO.3.2.4.3.1 |
| 3.2.4.3.4.1. | Make and type of the control unit (ECU): | See drawing NO.3.2.4.3.1 |
| 3.2.4.3.4.2. | Make and type of fuel regulator: | See drawing NO.3.2.4.3.1 |
| 3.2.4.3.4.3. | Make and type of air-flow sensor: | See drawing NO.3.2.4.3.1 |
| 3.2.4.3.4.6. | Make and type of micro switch: | N/A |
| 3.2.4.3.4.8. | Make and type of throttle housing: | See drawing NO.3.2.4.3.1 |
| 3.2.4.3.4.9. | Make and type of water temperature sensor: | See drawing NO.3.2.4.3.1 |
| 3.2.4.3.4.10. | Make and type of air temperature sensor: | N/A |
| 3.2.4.3.5. | Injectors: Opening pressure (kPa) or characteristic diagram | 400KPa |
| 3.2.4.3.5.1. | Make: | United Automotive Electronic Systems Co., Ltd. |
| 3.2.4.3.5.2. | Type: | HDEV5 |

| | | |
|---|---|---|
| 3.2.4.3.6. | Injection timing: | Controlled by ECU |
| 3.2.4.3.7. | Cold start system | |
| 3.2.4.3.7.1. | Operating principle(s): | Controlled by ECU |
| 3.2.4.3.7.2. | Operating limits/settings (1) (2): | Controlled by ECU |
| 3.2.4.4. | Feed pump | |
| 3.2.4.4.1. | Pressure (2): ……kPa or characteristic diagram (2): | 550 |
| 3.2.5. | Electrical system | |
| 3.2.5.1. | Rated voltage: …… V, positive/negative ground (1) | DC12V, negative ground |
| 3.2.5.2. | Generator | Alternator |
| 3.2.5.2.1. | Type: | 3701AAU |
| 3.2.5.2.2. | Nominal output: …… VA | 14V/140A |
| 3.2.6. | Ignition | |
| 3.2.6.1. | Spark Plug Make(s): | Federal-Mogul Dong-Suh (Qingdao) Piston Co., Ltd<br>Weichai Torch Technology Co., Ltd. |
| | Ignition harness Make(s)： | N/A |
| | Ignition Coil Make(s)： | United Automotive Electronic Systems Co., Ltd<br>Zhejiang Wodeer Technology Group Co., Ltd. |
| 3.2.6.2. | Spark Plug Type(s): | 3707AAG |
| | Ignition harness Type(s)： | N/A |
| | Ignition Coil Type(s): | F4J16-3705110AB<br>F4J16-3705110AC |
| 3.2.6.3. | Working principle: | See drawing NO.3.2.4.3.1 |
| 3.2.6.4. | Ignition advance curve: | See drawing NO.3.2.6.4 |
| 3.2.6.5. | Static ignition timing (2): . . . .. . . . . . degrees before TDC | N/A |
| 3.2.7. | Cooling system: liquid/air (1) | liquid |
| 3.2.7.3. | Air | N/A |
| 3.2.8. | Intake system | |
| 3.2.8.1. | Pressure charger: yes/no (1) | yes |
| 3.2.8.1.1. | Make(s): | BorgWarner Automotive Components (Ningbo) Co., Ltd. Yinzhou First Branch |

| | | |
|---|---|---|
| | | VÖFON Boosting Systems (Ningbo) Co., Ltd. |
| 3.2.8.1.2. | Type(s): | K03.3/VT02 |
| 3.2.8.1.3. | Description of the system (e.g. maximum charge pressure: . . . . . kPa; waste-gate if applicable): . . . | 150Kpa relative, waste gate |
| 3.2.8.2. | Inter-cooler: yes/no (1) | yes |
| 3.2.8.4. | Description and drawings of inlet pipes and their accessories (plenum chamber, heating device, additional air intakes, etc.): | See Drawing NO.3.2.8.4.2 |
| 3.2.8.4.1. | Intake manifold description (include drawings and/or photos): | See Drawing NO.3.2.8.4.1 |
| 3.2.8.4.2. | Air filter, drawings:… or | See Drawing NO.3.2.8.4.2 |
| 3.2.8.4.2.1. | Make(s): | Shanghai Jiyi Automobile Fittings Co., Ltd/ Hengbo Holdings Co.,Ltd |
| 3.2.8.4.2.2. | Type(s): | 1109AB9 |
| 3.2.8.4.3. | Intake silencer, drawings: | See Drawing NO.3.2.8.4.3 |
| 3.2.8.4.3.1. | Make(s): | Hengbo Holdings Co., Ltd /Shanghai Jiyi Automobile Fittings Co., Ltd |
| 3.2.8.4.3.2. | Type(s): | F08-1109210HD |
| 3.2.9. | Exhaust system | |
| 3.2.9.1. | Description and/or drawing of the exhaust manifold: | Refer to Drawing NO.3.2.9.2 |
| 3.2.9.2. | Description and/or drawing of the exhaust system: | Refer to Drawing NO.3.2.9.2 |
| 3.2.12. | Measures taken against air pollution | |
| 3.2.12.1. | Device for recycling crankcase gases (description and drawings): | Refer to Drawing NO.3.2.12.1 |
| 3.2.12.2. | Additional pollution control devices (if any, and if not covered by another heading) | N/A |
| 3.2.12.2.1. | Catalytic converter: yes/no (1) | Yes |
| 3.2.12.2.1.1. | Number of catalytic converters and elements (provide the information below for each separate unit): | 1 |

| | | |
|---|---|---|
| 3.2.12.2.1.2. | Dimensions, shape and volume of the catalytic converter(s): | Refer to Drawing NO.3.2.12.2.1.2-Exhaust system |
| 3.2.12.2.1.3. | Type of catalytic action: | Three way catalyst |
| 3.2.12.2.1.4. | Total charge of precious metals: | 1.3913g |
| 3.2.12.2.1.5. | Relative concentration: | Pt:Rh:Pd=0:4.56:34.72 |
| 3.2.12.2.1.6. | Substrate (structure and material): | Ceramic monolith |
| 3.2.12.2.1.7. | Cell density: | 600CPSi |
| 3.2.12.2.1.8. | Type of casing for the catalytic converter(s): | Stainless steel |
| 3.2.12.2.1.9. | Positioning of the catalytic converter(s) (place and reference distance in the exhaust system): | Refer to Drawing NO.3.2.9.2-Exhaust system |
| 3.2.12.2.1.10. | Heat shield: yes/no (1) | yes |
| 3.2.12.2.1.11. | Regeneration systems/method of exhaust after-treatment systems, description: | |
| 3.2.12.2.2. | Oxygen sensor: yes/no (1) | YES |
| 3.2.12.2.2.1. | Type: | LSU4.9（FRONT）<br>LSF4（REAR） |
| 3.2.12.2.2.2. | Location of oxygen sensor: | See drawing NO.3.2.4.3.1 |
| 3.2.12.2.2.3. | Control range of oxygen sensor: | 0.65~air（FRONT）<br>0~1V（REAR） |
| 3.2.12.2.2.4. | Make of oxygen sensor: | United Automotive Electronic Systems Co., Ltd. |
| 3.2.12.2.2.5. | Identifying part number: | LSU4.9（FRONT）<br>LSF4（REAR） |
| 3.2.12.2.3. | Air injection: yes/no (1) | N/A |
| 3.2.12.2.3.1. | Type (pulse air, air pump, etc.): | N/A |
| 3.2.12.2.4. | Exhaust gas recirculation (EGR): yes/no (1) | N/A |
| 3.2.12.2.4.1. | Characteristics (flow rate, etc.): | N/A |
| 3.2.12.2.4.2. | Water-cooled system: yes/no (1) | N/A |
| 3.2.12.2.5. | Evaporative emissions control system: yes/no (1) | YES |
| 3.2.12.2.5.1. | Detailed description of the devices and their state of tune: | Refer to Drawing NO.3.2.12.2.5.1 |
| 3.2.12.2.5.2. | Drawing of the evaporative control system: | Refer to Drawing NO.3.2.12.2.5.1 |
| 3.2.12.2.5.3. | Drawing of the carbon canister: | Refer to Drawing NO.3.2.12.2.5.3 |
| 3.2.12.2.5.5. | Schematic drawing of the fuel tank with indication of capacity | Refer to Drawing NO.3.2.3.1.2 |

| | | |
|---|---|---|
| | and material: | |
| 3.2.12.2.6. | Particulate trap (PT): yes/no (1) | Yes |
| 3.2.12.2.7. | On-board-diagnostic (OBD) system: yes/no (1): | Yes |
| 3.2.12.2.7.1. | Written description and/or drawing of the malfunction indicator (MI): | see attached OBD document |
| 3.2.12.2.7.2 | List and purpose of all components monitored by the OBD system | see attached OBD document |
| 3.2.15. | LPG fuelling system: yes/no (1) | N/A |
| 3.2.16. | NG fuelling system: yes/no (1) | N/A |
| 3.4. | Engine or motor combination | |
| 3.4.1. | Hybrid electric vehicle: yes/no (1) | |

## 4. Transmission (h)

| | | |
|---|---|---|
| 4.3. | Moment of inertia of engine flywheel: | 0.135/0.110kg • m2 |
| 4.3.1. | Additional moment of inertia with no gear engaged: | N/A |
| 4.4. | Clutch (type): | N/A |
| 4.4.2. | Maximum torque conversion: | N/A |
| 4.5. | Gearbox: | |
| 4.5.1. | Type (manual/automatic/CVT (continuously variable transmission)) 1/: | DF727A automatic |
| 4.6. | Gear ratios: | See the table below |

DF727A

| Gear | Internal gearbox ratios (ratios of engine to gearbox output shaft revolutions) | Final drive ratio(s) (ratio of gearbox output shaft to driven wheel revolutions) | Total gear ratios |
|---|---|---|---|
| 1st | 4.214 | (1/3/4) : 3.842 | 16.192 |
| 2nd | 3.105 | (2/5/6/7) : 3.042 | 9.445 |
| 3rd | 1.724 | (R) : 11.931 | 6.624 |

| | | | |
|---|---|---|---|
| 4th | 1.268 | | 4.873 |
| 5th | 1.27 | | 3.864; |
| 6th | 1.049 | | 3.19 |
| 7th | 0.891 | | 2.711 |
| Reverse | 1.18 | | 14.078 |
| Continuously Variable Transmission | | | |

## 6. Suspension

| | | |
|---|---|---|
| 6.6. | Tyres and wheels | |
| 6.6.1. | Tyre / wheel combination(s)<br>(a)for all tyre options indicate size designation, load-capacity index, speed category symbol;<br>(b)for tyres of category Z intended to be fitted on vehicles whose maximum speed exceeds 300 km/h equivalent information shall be provided; for wheels indicate rim size(s) and off-set(s) | See table 2 |
| 6.6.1.1. | Axles | |
| 6.6.1.1.1. | Axle 1: | |
| 6.6.1.1.2. | Axle 2: | |
| 6.6.1.1.3. | Axle 3: | N/A |
| 6.6.1.1.4. | Axle 4: | N/A |
| 6.6.2. | Upper and lower limit of rolling rad5ii/circumference 5/: | |
| 6.6.2.1. | Axles | |
| 6.6.2.1.1. | Axle 1: | See table 2 |
| 6.6.2.1.2. | Axle 2: | See table 2 |

| | | |
|---|---|---|
| 6.6.2.1.3. | Axle 3: | N/A |
| 6.6.2.1.4. | Axle 4: | N/A |
| 6.6.3. | Tyre pressure(s) recommended by the manufacturer: kPa | See table 2 |

## 9.Bodywork

| | | |
|---|---|---|
| 9.1. | Type of bodywork (i): | AF |
| 9.10.3 | Seats | |
| 9.10.3.1. | Number: | five |

## Annex 1

Example:

| Type | Variant | | | | | Version | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JC1 | F | P | L4 | B | L | 7 | 0 | E0 | 1 | 0 | T |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |

| | | |
|---|---|---|
| (1) | Type | The type consists of vehicle flat code and extended code<br>Vehicle flat code:<br>Specified by CHERY. A same platform means the engine compartment, front floor structure & front suspension are the same or have no significant differences.<br>Extended code:<br>A same extension code means the structure and size of the part of the upper body which positing front of 'R' point is same or similar. The code changes from 1, 2... 9, A, B ... in order. |
| (2) | Vehicle body type | Defined by the ISO 3833 standard<br>A - Sedan<br>B- coupe<br>C - Convertible<br>D - hatchback<br>E - Station wagon<br>F - Multi-purpose passenger vehicle |
| (3) | Powertrain energy supply type code | P - Positive ignition vehicle<br>C - Compression ignition vehicle<br>H - Hybrid electric vehicle<br>E - Pure electric vehicle<br>F - Fuel cell vehicle |
| (4) | Powertrain characteristic code | L3 - internal-combustion, 3 cylinders arranged in line layout.<br>L4 - internal-combustion, 4 cylinders arranged in line layout.<br>V6 - internal-combustion, 6 cylinders arranged in V-type layout.<br>00 - pure electric or fuel cell powered vehicle. |
| (5) | Driving type code | A - 2 front -wheel drive layout, 0 powered axle.<br>B – 2 front-wheel drive layout, 1 powered axle.<br>C – 2 rear-wheel drive layout, 0 powered axle.<br>D – 2 rear-wheel drive layout, 1 powered axle<br>E – 4 wheels drive layout, 0 powered axle.<br>F – 4 wheels drive layout, 1 powered axle.<br>G - 4 wheels drive layout, 2 powered axle. |
| (6) | Steering type code | L - Left hand of drive;<br>R - Right hand of drive |

| | | |
|---|---|---|
| (7) | seating positions number code | 2 for two seating positions; 3 for three seating positions; 4 for four seating positions; 5 for five seating positions; 6 for six seating positions; 7 for seven seating positions; 8 for eight seating positions; 9 for seating positions. |
| (8) | Technically permissible Maximum laden mass code | The technically permissible maximum laden mass in the first declaration is expressed as 0, after variation exceed ±3% is expressed as 1, 2, …, 9, A,B,… and so on. |
| (9) | Powertrain parameter code | a) For conventional vehicle and hybrid electric vehicle with in internal-combustion engine<br>The first letter represents the fuel nature code as:<br>E - Gasoline, D - Diesel, P - Petroleum gas, N - Natural gas, M - Methanol, K-Diethyl ether, F – Flexfuel, H - Hydrogen, A - ethyl alcohol, C-Gasoline+LPG, G-Gasoline+CNG.<br>The 2nd digit represents the engine capacity / rated power. The first declaration is expressed as 0, after variation about the engine capacity or the maximun engine power exceed ±30% is expressed as 1, 2, … , 9, A, B,… and so on. |
| | | b) For pure electric vehicles, the first letter is B, and the 2nd digit represents the maximum rated power of electric motor.<br>The maximum rated power of electric motor in the first declaration is expressed as 0, after variation exceed ±20% is expressed as 1, 2, …, 9, A, B,… and so on. |
| | | c) For fuel cell vehicles<br>The first letter represents the fuel nature code as:<br>E - Gasoline, D - Diesel, P - Petroleum gas, N - Natural gas, M - Methanol, K-Diethyl ether, F – Flexfuel, H - Hydrogen, A - ethyl alcohol, C-Gasoline+LPG, G-Gasoline+CNG.<br>The 2nd digit represents the maximum rated power of electric motor. The maximum rated power of electric motor in the first declaration is expressed as 0, after variation exceed ±20% is expressed as 1, 2, …, 9, A, B,… and so on. |
| (10) | Emission level code | The emission level code of the pure electric vehicles and the fuel cell vehicle is expressed as 0.<br>The emission level code of the conventional vehicle and hybrid electric vehicle in the first declaration is expressed as 1, after variation is expressed as 2, 3, …, 9, A, B,.. and so on. |
| (11) | Energy consumption code | The energy consumption code in the first declaration is expressed as 0, after variation is expressed as 1, 2, …, 9, A, B,… and so on. |
| (12) | Gearbox type code | M - manual gearbox<br>A - automatic gearbox<br>T - automatic gearbox with manual mode |

Table 1

| Type | | 2.6（in running order） | 2.6.1（Distribution of 2.6） | 2.8（Technically permissible maximum laden） | 2.8.1（Distribution of 2.8） | 2.9（Technically permissible maximum mass on each axle） |
|---|---|---|---|---|---|---|
| JC1 (1.6T+7DCT) | | 1655kg | F: 943<br>R: 712 | 1955kg | front:1015kg<br>rear:940kg | front:1053kg<br>rear:947kg |

## Table 2 （235/60 R18）

| | | Axle 1 | Axle 2 | Temporary |
|---|---|---|---|---|
| Maker | | ①GITI TIRE (ANHUI) COMPANY LTD<br>②Sailun Group Co.,Ltd. | | ①Sailun Group Co.,Ltd.<br>②Zhongce Rubber Group Company Limited |
| E-mark | | ①E4*30R02/18*110076*00<br>E4*117R02/09*10146*00<br>②E4*30R02/20*89531*01<br>E4-117R-027615 S2WR2 | | ①E4-30R-02104136<br>②E4*30R02/21*128194*00 |
| Tyre Size | | 235/60 R18 | 235/60 R18 | ①T125/80 R17<br>②T125/80 D17 |
| Load Capacity Index | | 103 | 103 | 99 |
| Speed Capacity symbol | | H | H | M |
| Rim | Size | 18x7J | 18x7J | 17×4T |
| | Offset (mm) | +38 | +38 | +7 |
| Tyre Pressure (kpa) | | F：230kPa；R：230kPa | | 420KPa |
| Rolling radii | | 354-364mm | 354-364mm | / |

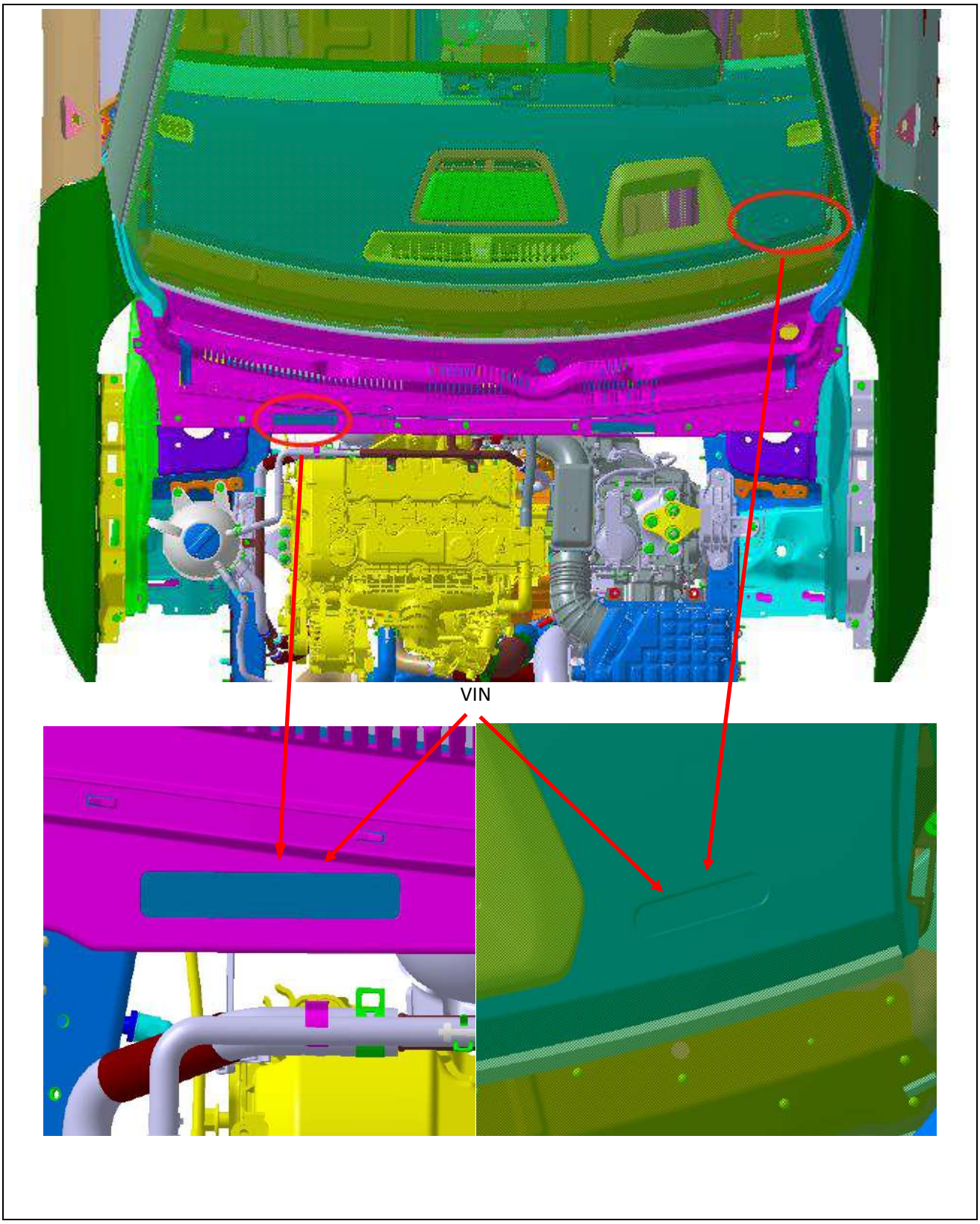
## Table 2 （235/55 R19）

| | | Axle 1 | Axle 2 | Temporary |
|---|---|---|---|---|
| Maker | | ①Sailun Group Co.,Ltd.<br>②Wanli Tire Corporation Limited | | ①Sailun Group Co.,Ltd.<br>②Zhongce Rubber Group Company Limited |
| E-mark | | ①E4-117R-027615 S2WR2 Ext.08<br>E4*30R02/22*130557*00<br>②E4-117R-024268 S2WR2<br>E4-30R-02103476 | | ①E4-30R-02104136<br>②E4*30R02/21*128194*00 |
| Tyre Size | | 235/55 R19 | 235/55 R19 | ①T125/80 R17<br>②T125/80 D17 |
| Load Capacity Index | | 101 | 101 | 99 |
| Speed Capacity symbol | | ① H<br>② V | ① H<br>② V | M |
| Rim | Size | 19×7 1/2J | 19×7 1/2J | 17×4T |
| | Offset (mm) | +38 | +38 | +7 |
| Tyre Pressure (kpa) | | F：230kPa；R：230kPa | | 420KPa |
| Rolling radii | | 355-365mm | 355-365mm | / |

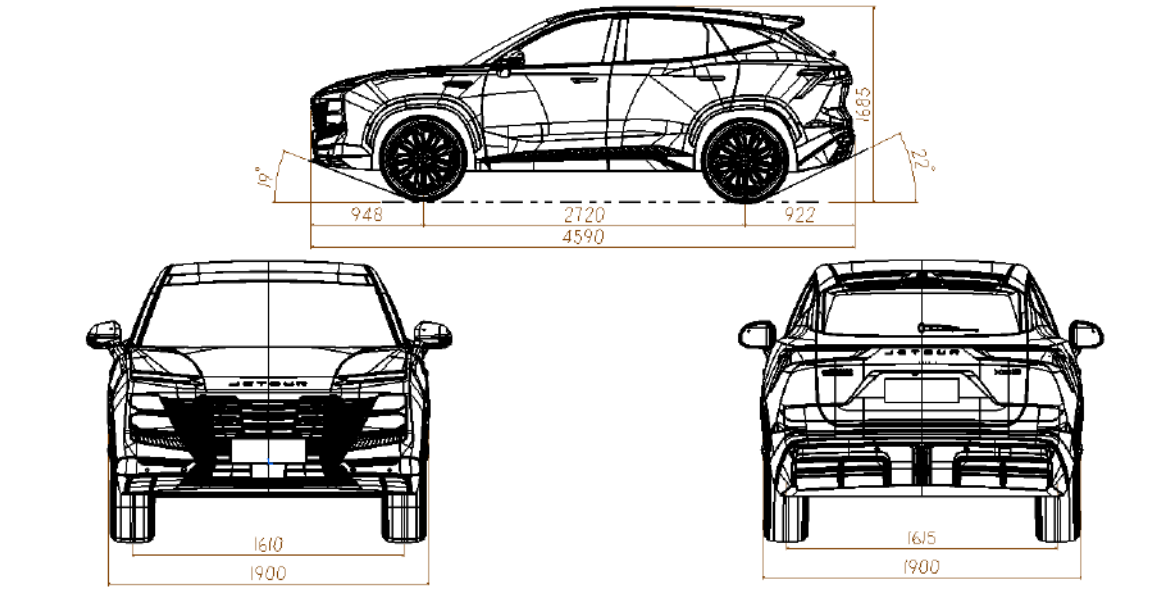
**Table 2 （255/45 R20）**

| | | Axle 1 | Axle 2 | Temporary |
|---|---|---|---|---|
| Maker | | ①GITI TIRE (ANHUI) COMPANY LTD<br>②Sailun Group Co.,Ltd. | | ①Sailun Group Co.,Ltd.<br>②Zhongce Rubber Group Company Limited |
| E-mark | | ①E4*30R02/21*124820*00<br>E4*117R02/10*10681*05<br>②E4*30R02/20*116508*01<br>E4-117R-027615 S2WR2 Ext.08 | | ①E4-30R-02104136<br>②E4*30R02/21*128194*00 |
| Tyre Size | | 255/45 R20 | 255/45 R20 | ①T125/80 R17<br>②T125/80 D17 |
| Load Capacity Index | | 101 | 101 | 99 |
| Speed Capacity symbol | | ① H<br>② V | ① H<br>② V | M |
| Rim | Size | 20×8 1/2J | 20×8 1/2J | 17×4T |
| | Offset (mm) | +38 | +38 | +7 |
| Tyre Pressure (kpa) | | F：230kPa；R：230kPa | | 420KPa |
| Rolling radii | | 353-363mm | 353-363mm | / |

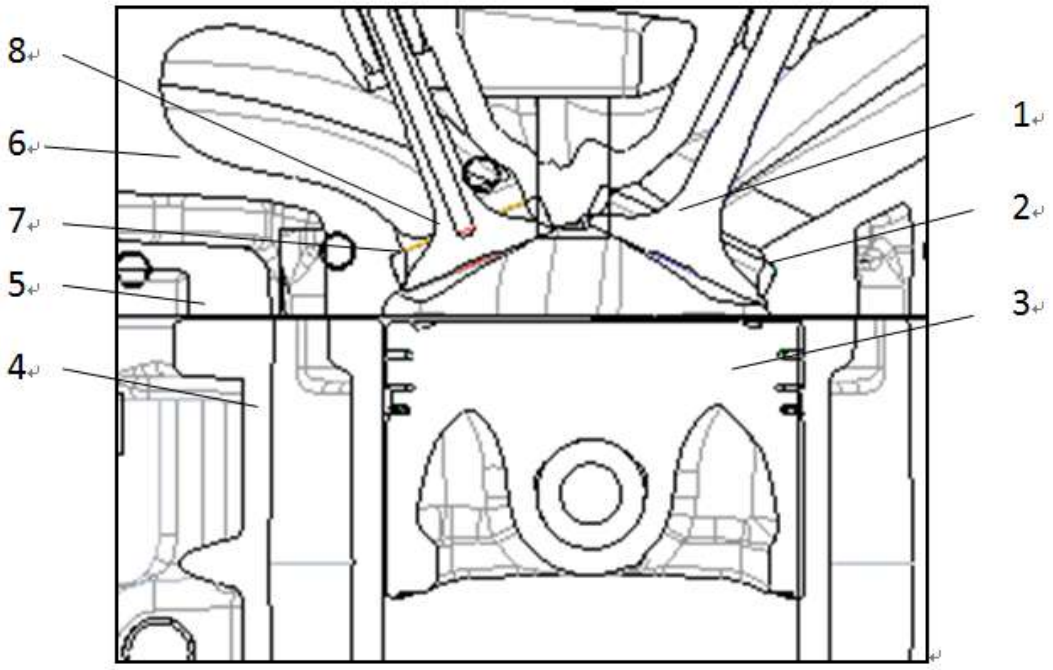
**Drawing NO.0.3.1 Location of VIN**



**Drawing NO.1.1 overview of vehicle**



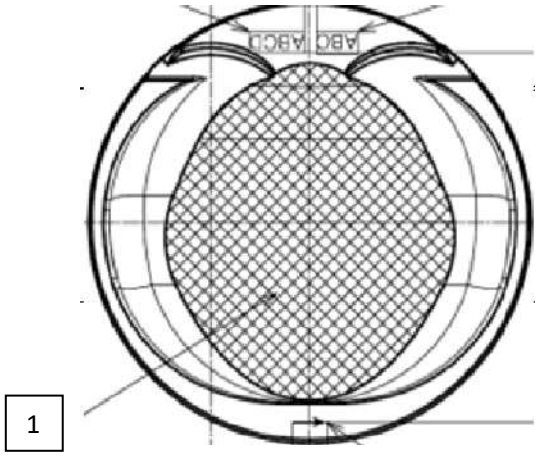
## Drawing NO.3.2.1.5 combustion chamber

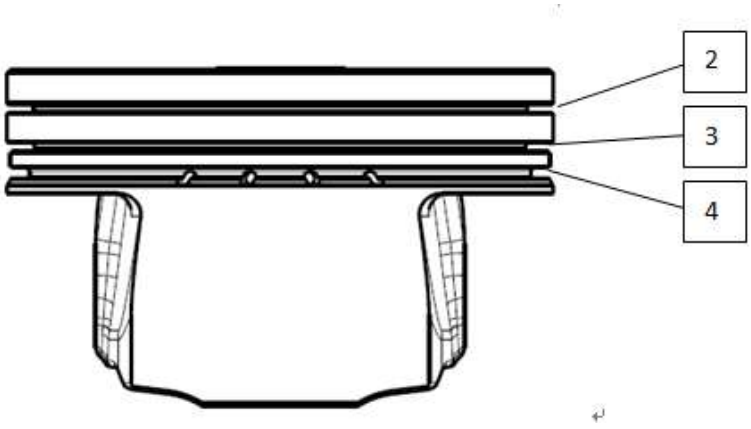



DESCRIPTION OF TECHNICAL SYSTEM:

1— VALVE INTAKE
2— VALVE-SEAT INSERT INTAKE
3— PISTON
4— CYCLINDER BLOCK
5— CYCLINDER HEAD GASKET
6— CYCLINDER HEAD
7— VALVE-SEAT EXHAUST
8— VALVE EXHAUST

| Name | Combustion chamber | Number | / |
|---|---|---|---|
| Manufacturer | / | Date | / |

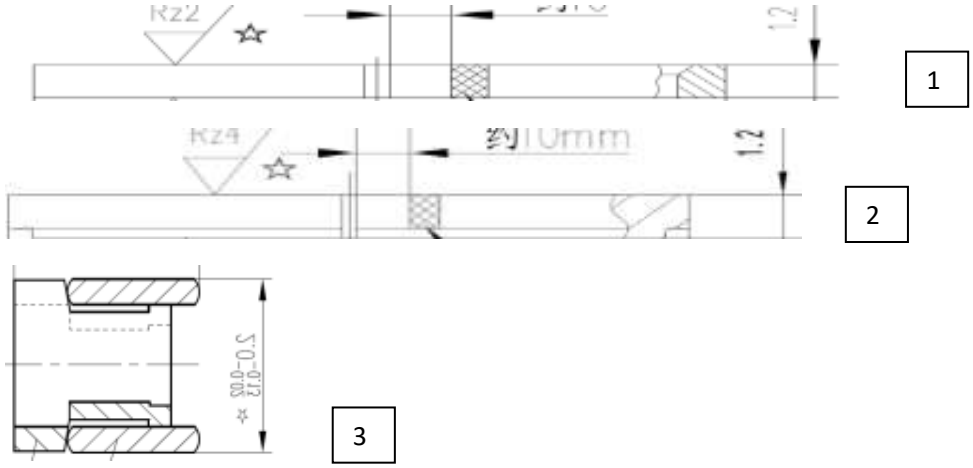



DESCRIPTION OF TECHNICAL SYSTEM:

1. PISTON HEAD
2. TOP RING GROOVE
3. 2ND RING GROOVE
4. OIL RING GROOVE

| | | | |
|---|---|---|---|
| Name | Piston top | Number | / |
| Manufacturer | / | Date | / |




DESCRIPTION OF TECHNICAL SYSTEM:

1. TOP RING
2. 2ND RING
3. OIL RING

| | | | |
|---|---|---|---|
| Name | Piston ring | Number | / |
| Manufacturer | / | Date | / |

## Drawing NO.3.2.4.3.1 engine management system

**1.System description**

Engine Management System (EMS) is usually composed of sensors, Electric Control Units and actuators, EMS controls air mass, injection time, ignition angle and so on when engine is running. Base configuration refers to Fig1.

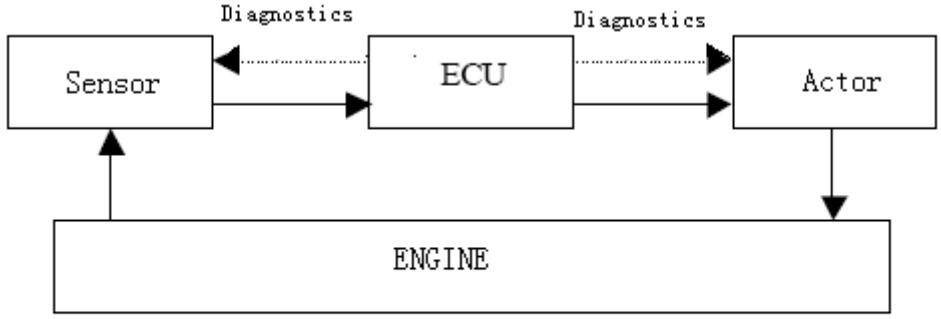
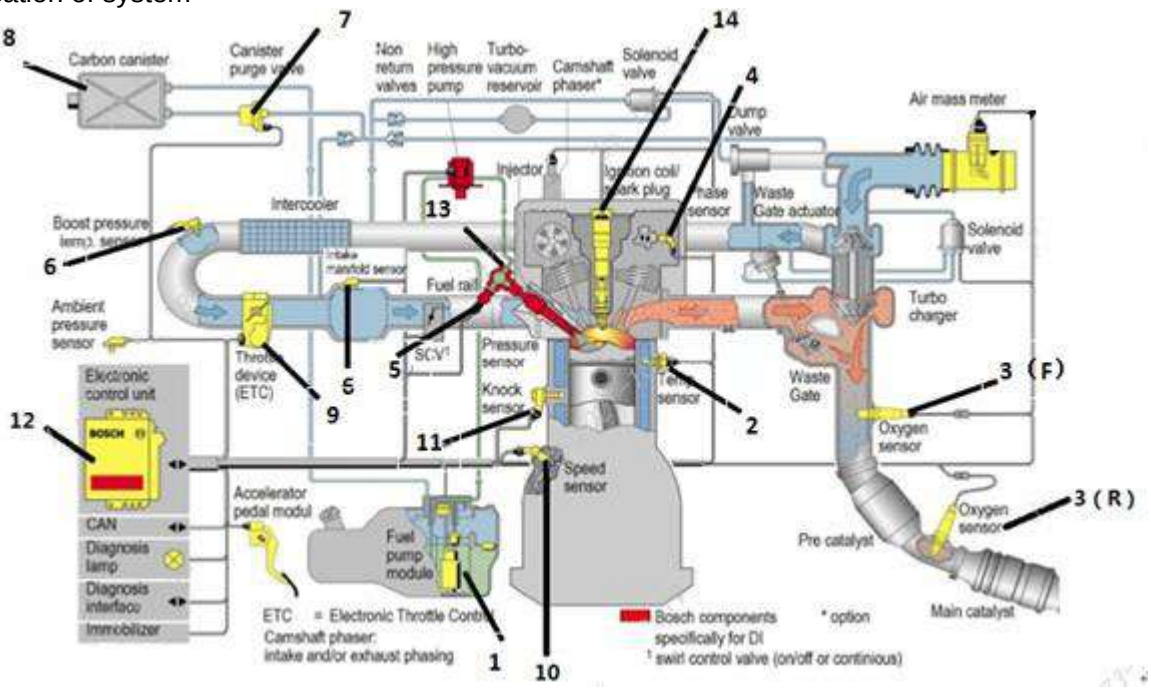



Fig 1 structure of EMS

In EMS, sensors are used as input components for measuring physics signal and changing them into electrical signal; the function of ECU is to receive the signal from sensor, the signal will be calculated by a program that was designed in advance to create a control signal, which we can use to drive actuators to do different actions by some drive circuits, so that engine can work correctly; at the same time, diagnostics system for ECU will check all the parts of EMS, the troubles will be recorded and memorized as soon as they appears until they are removed.

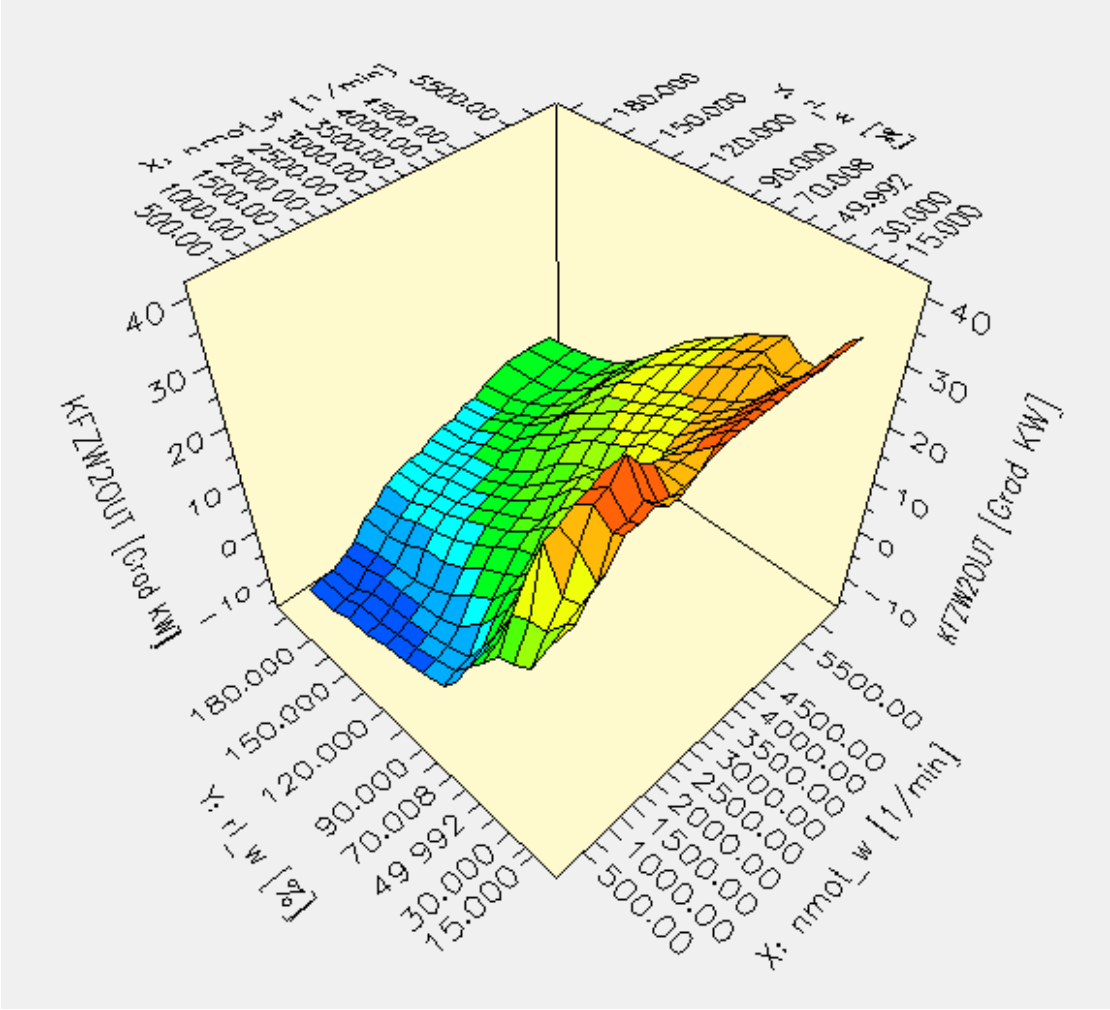
2.Location of system



## Drawing NO.3.2.4.3.1 engine management system

| No. | Part name | Manufacturer | Type (ID No.) |
|---|---|---|---|
| 1 | Fuel Pump | Ningbo Rocket Automobile Parts Co., Ltd./Chongqing Wanli Lianxing (Holding) Co., Ltd. | F01-1106010GA |
| 2 | Water Temperature Sensor | United Automotive Electronic Systems Co.,Ltd/ Shanghai Haihua Sensor Co.,Ltd | 0 280 130 113<br>WC-16 |
| 3 | Oxygen Sensor | United Automotive Electronic Systems Co., Ltd. | Type: F:LSU4.9 / R:LSF4<br>Part No.:<br>F:0 258 017 591<br>/ R: F 01R 00C 095 |
| 4 | Phase Sensor | Electricfil Engine Components ( Wuhan ) Co. Ltd<br>United Automotive Electronic Systems Co.,Ltd | E4G15B-3611011<br>CPS21 |
| | | Sensata Technologies Baoying Co., Ltd | D4G15B-3611011 |
| 5 | Fuel Rail Assembly | United Automotive Electronic Systems Co., Ltd. | F4J16-1121010AB |
| 6 | Pressure/Temperature Sensor | United Automotive Electronic Systems Co., Ltd.<br>Shanghai Baolong Sales Co., Ltd | F 01R 00E 009<br>E4T15B-3611017 |
| 7 | solenoid valve | United Automotive Electronic Systems Co., Ltd. | F 01R 00Q 032 |
| 8 | Canister | HENGBO HOLDINGS CO., LTD. | F01-1208010HD |
| | | DONGFENG-FUJI-THOMSON THERMOSTAT CO.,LTD. | F08-1208010HD |
| 9 | Throttle body Assembly | United Automotive Electronic Systems Co.,Ltd. | F01R00Y104 |
| 10 | Engine Speed Sensor | United Automotive Electronic Systems Co., Ltd.. | F 01R 00F 048 |
| 11 | Knock Sensor | United Automotive Electronic Systems Co., Ltd. | 0 261 231 204 |
| 12 | ECU | United Automotive Electronic Systems Co., Ltd. | MED17 |
| 13 | Fuel injector | United Automotive Electronic Systems Co., Ltd. | HDEV5 |
| 14 | Ignition coil | United Automotive Electronic Systems Co., Ltd./ | TYPE:ZSK 1X1<br>Part NO:<br>F4J16-3705110AB<br>F4J16-3705110AC |
| | | Zhejiang Wodeer Technology Group Co.,Ltd. | |

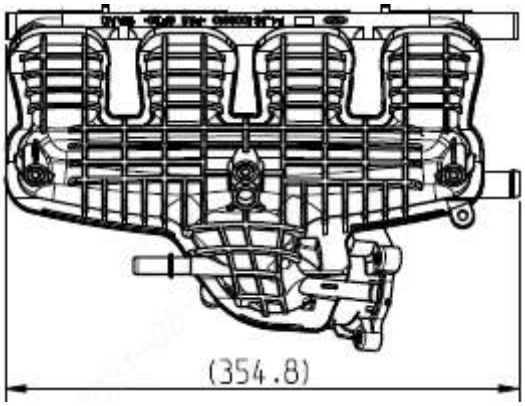
**Drawing NO.3.2.6.4 Ignition Advance Curve**

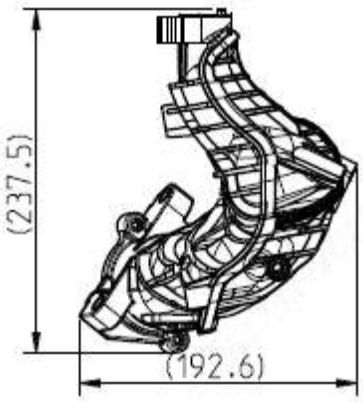



KFZW2OUT <Map变量组> [Grad KW] x: nmot_w [1/min] y: rl_w [%]

| y \ x | 500.00 | 750.00 | 1000.00 | 1250.00 | 1500.00 | 1750.00 | 2000.00 | 2250.00 | 2500.00 | 2750.00 | 3000.00 | 3250.00 | 3500.00 | 3750.00 | 4000.00 | 4250.00 | 4500.00 | 5000.00 | 5500.00 | 6000.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15.000 | 24.00 | 24.00 | 27.00 | 28.50 | 32.25 | 32.25 | 33.00 | 31.50 | 31.50 | 33.00 | 33.75 | 34.50 | 34.50 | 34.50 | 34.50 | 34.50 | 34.50 | 34.50 | 34.50 | 34.50 |
| 19.992 | 21.00 | 22.50 | 24.00 | 25.50 | 31.50 | 31.50 | 33.00 | 30.75 | 30.00 | 30.00 | 30.75 | 33.00 | 33.75 | 33.75 | 33.75 | 33.75 | 33.75 | 33.00 | 33.00 | 33.00 |
| 30.000 | 14.25 | 18.75 | 22.50 | 28.50 | 33.75 | 34.50 | 37.50 | 34.50 | 33.00 | 30.00 | 30.00 | 30.00 | 30.75 | 30.75 | 30.75 | 30.75 | 30.75 | 30.00 | 28.50 | 27.00 |
| 40.008 | 12.00 | 18.00 | 29.25 | 30.00 | 31.50 | 32.25 | 33.00 | 33.00 | 30.75 | 29.25 | 28.50 | 27.75 | 27.75 | 28.50 | 28.50 | 28.50 | 28.50 | 31.50 | 27.00 | 27.00 |
| 49.992 | 10.50 | 16.50 | 21.00 | 24.00 | 24.75 | 24.75 | 23.25 | 23.25 | 23.25 | 22.50 | 21.75 | 22.50 | 24.75 | 25.50 | 26.25 | 26.25 | 27.00 | 29.25 | 29.25 | 29.25 |
| 60.000 | 6.75 | 8.25 | 11.25 | 13.50 | 15.00 | 15.75 | 18.75 | 19.50 | 20.25 | 20.25 | 20.25 | 21.75 | 24.00 | 24.75 | 25.50 | 25.50 | 25.50 | 27.75 | 27.75 | 27.75 |
| 70.008 | 3.00 | 3.75 | 5.25 | 8.25 | 10.50 | 11.25 | 13.50 | 15.75 | 18.00 | 18.75 | 18.75 | 19.50 | 21.75 | 22.50 | 24.00 | 24.00 | 24.75 | 26.25 | 26.25 | 26.25 |
| 79.992 | -3.00 | -2.25 | 0.00 | 3.75 | 6.75 | 8.25 | 10.50 | 13.50 | 15.00 | 17.25 | 18.00 | 17.25 | 20.25 | 21.00 | 22.50 | 22.50 | 23.25 | 24.75 | 24.75 | 24.00 |
| 90.000 | -6.75 | -6.00 | -5.25 | 0.00 | 3.00 | 6.00 | 9.00 | 10.50 | 11.25 | 13.50 | 15.00 | 16.50 | 18.75 | 19.50 | 21.00 | 21.00 | 22.50 | 23.25 | 23.25 | 22.50 |
| 105.000 | -8.25 | -7.50 | -6.75 | -4.50 | 0.00 | 3.75 | 6.00 | 7.50 | 8.25 | 9.75 | 11.25 | 13.50 | 15.75 | 16.50 | 18.00 | 19.50 | 20.25 | 20.25 | 20.25 | 19.50 |
| 120.000 | -9.75 | -9.00 | -8.25 | -6.75 | -3.75 | 0.00 | 3.00 | 5.25 | 6.00 | 6.75 | 7.50 | 9.00 | 11.25 | 12.75 | 15.00 | 15.00 | 16.50 | 16.50 | 16.50 | 14.25 |
| 135.000 | -10.50 | -9.75 | -9.00 | -7.50 | -6.00 | -2.25 | 0.75 | 3.00 | 3.75 | 4.50 | 5.25 | 6.00 | 9.00 | 9.75 | 10.50 | 10.50 | 11.25 | 11.25 | 12.00 | 11.25 |
| 150.000 | -12.00 | -11.25 | -9.75 | -8.25 | -7.50 | -3.00 | -0.75 | 0.75 | 1.50 | 2.25 | 3.00 | 3.75 | 5.25 | 6.00 | 7.50 | 7.50 | 8.25 | 8.25 | 8.25 | 8.25 |
| 165.000 | -12.00 | -11.25 | -10.50 | -9.00 | -8.25 | -5.25 | -2.25 | -0.75 | 0.00 | 1.50 | 2.25 | 3.00 | 3.75 | 4.50 | 5.25 | 5.25 | 6.00 | 6.00 | 6.75 | 6.75 |
| 180.000 | -14.25 | -13.50 | -13.50 | -10.50 | -9.00 | -6.75 | -4.50 | -3.00 | -1.50 | -0.75 | 0.00 | 0.75 | 1.50 | 2.25 | 3.00 | 3.00 | 4.50 | 5.25 | 6.00 | 6.00 |
| 199.992 | -14.25 | -13.50 | -13.50 | -12.00 | -10.50 | -7.50 | -6.00 | -3.75 | -2.25 | -1.50 | -1.50 | 0.00 | 0.75 | 0.75 | 2.25 | 2.25 | 3.75 | 5.25 | 5.25 | 5.25 |

**Drawing NO.3.2.8.4.1 Intake Manifold**

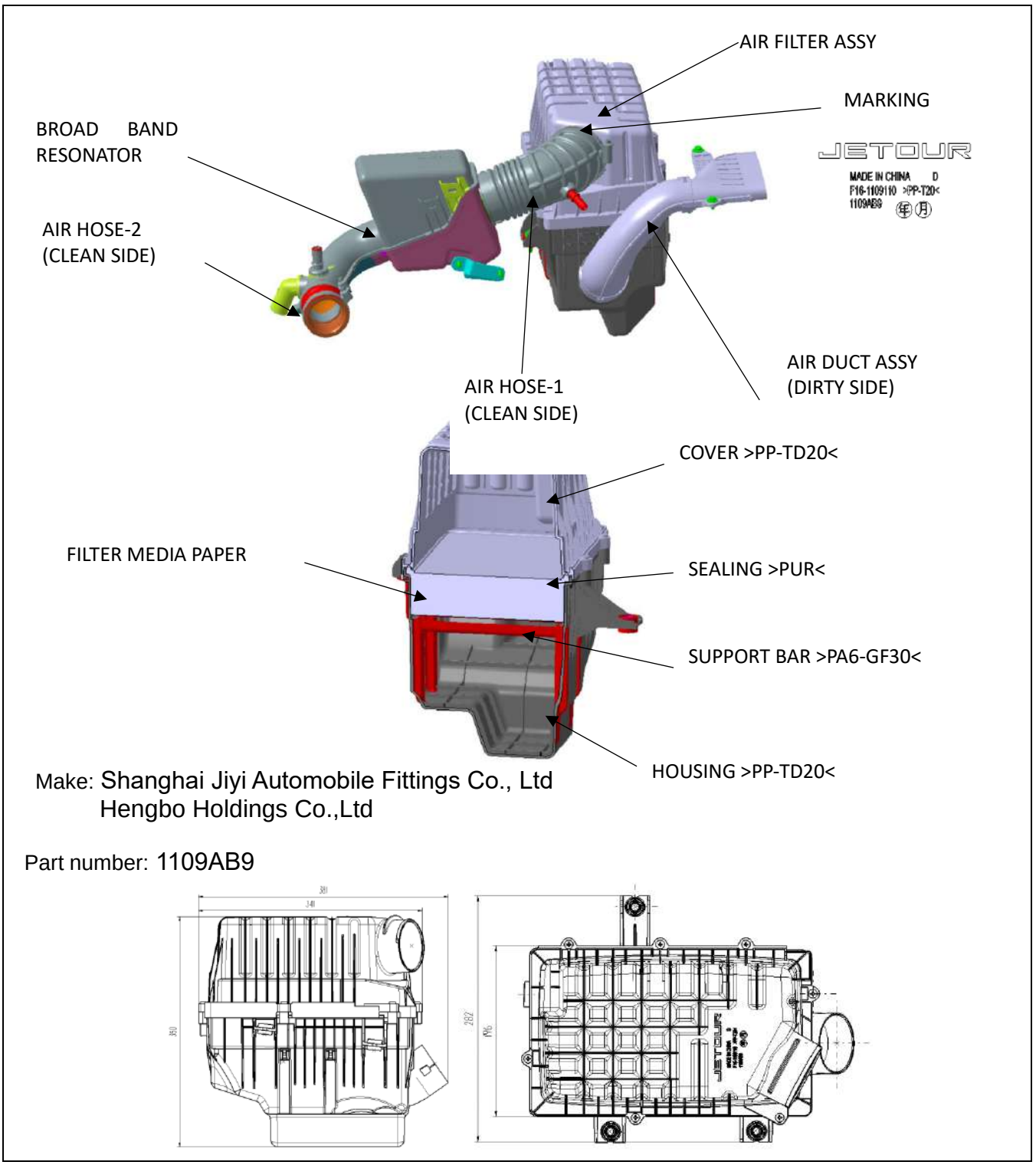



**MAKE:** Hefei Hengxin Powertrain Technology Co.,Ltd.
Suzhou Inzi Automotive Co.,Ltd.

**PART NUMBER:** 111AAD

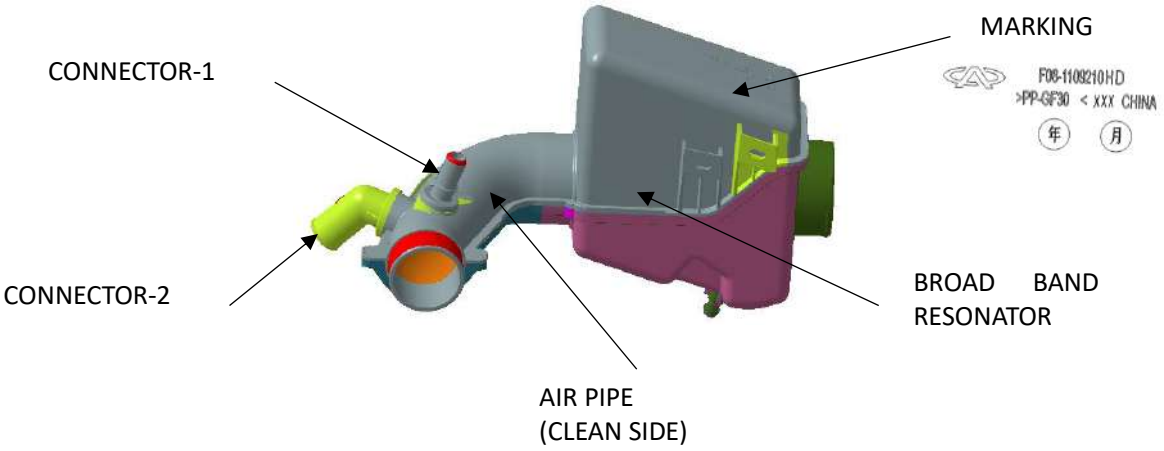
**Drawing NO.3.2.8.4.2 air filter**

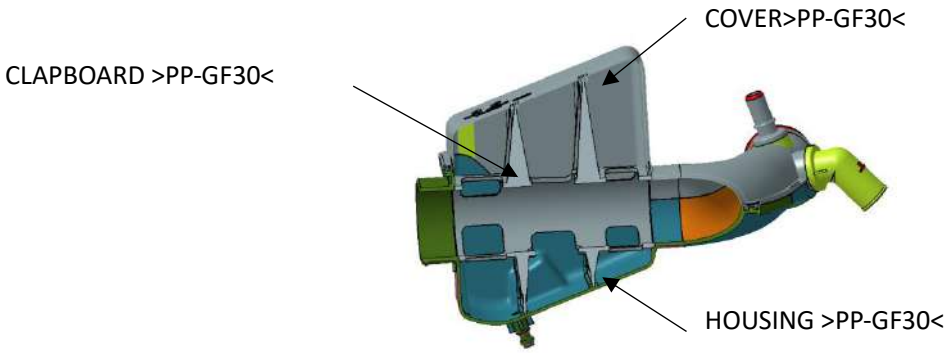



Make: Shanghai Jiyi Automobile Fittings Co., Ltd
Hengbo Holdings Co.,Ltd

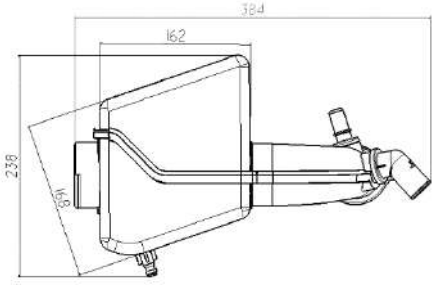
Part number: 1109AB9

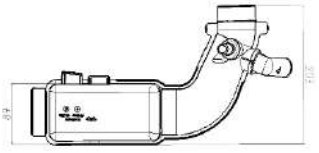
**Drawing NO.3.2.8.4.3 Intake silencer**



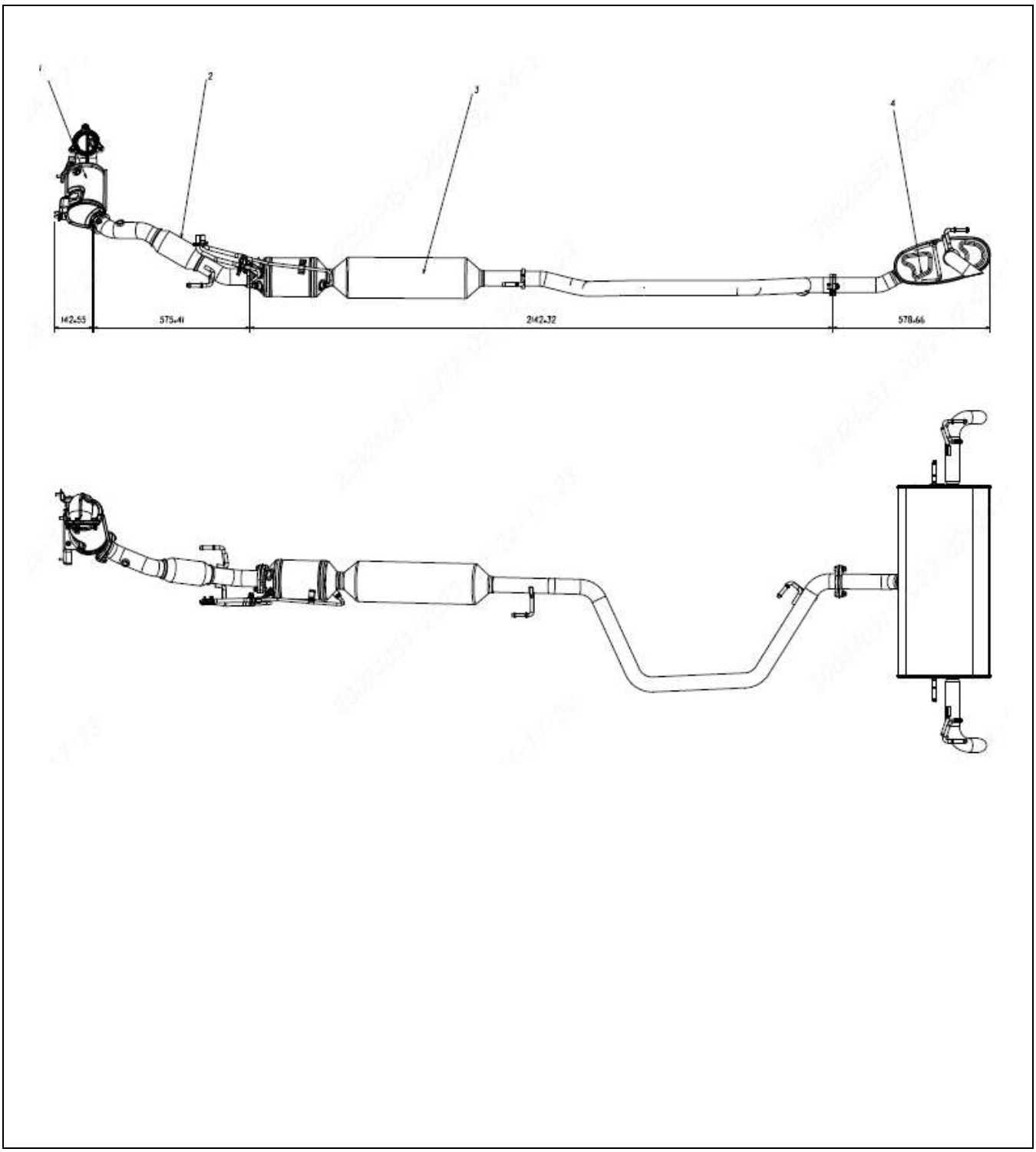




Make: Hengbo Holdings Co.,Ltd /Shanghai Jiyi Automobile Fittings Co.,Ltd
Part number: F08-1109210HD

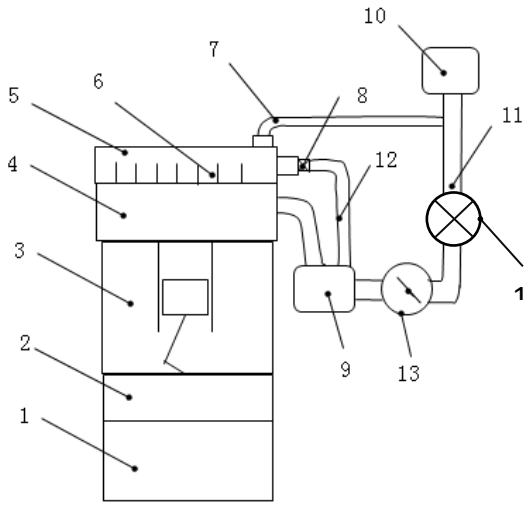


**Drawing NO.3.2.9.2 exhaust system**



**Drawing NO.3.2.12.1 crankcase ventilation system**

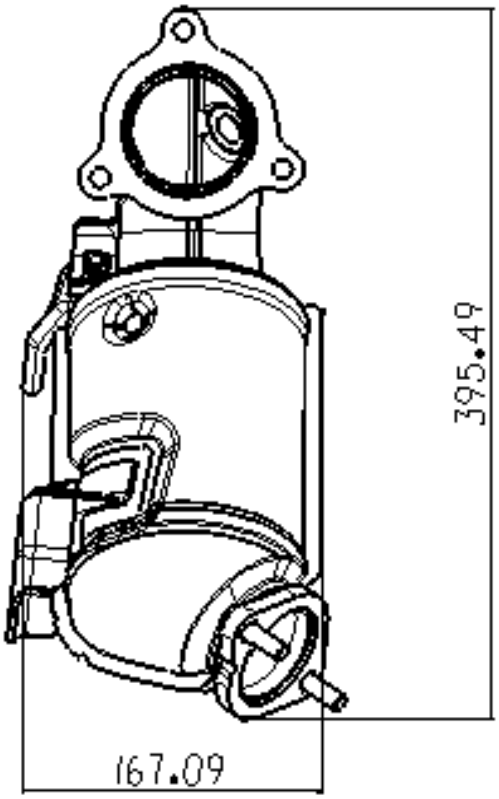



DESCRIPTION OF TECHNICAL SYSTEM:

| | |
|---|---|
| 1.Oil Pan | 8.PCV |
| 2. Frame | 9. Intake manifold |
| 3.Block | 10. Air cleaner |
| 4.Cylinder head | 11.Intake pipe |
| 5.Cylinder head cover | 12.Hose(PCV-intake manifold) |
| 6.Labyrinth | 13. Throttle valve Air cleaner |
| 7.Hose(cylinder head cover-intake pipe) | 14.Turbocharger |

The exhaust gas seperated from blow-by when passing cylinder head cover goes down to the intake system, and then to the combustion chamber to burn. With the control of PCV and two other hoses, the crankcase pressure can stay in proper range.

**Drawing NO.3.2.12.2.1.2 catalytic converter**

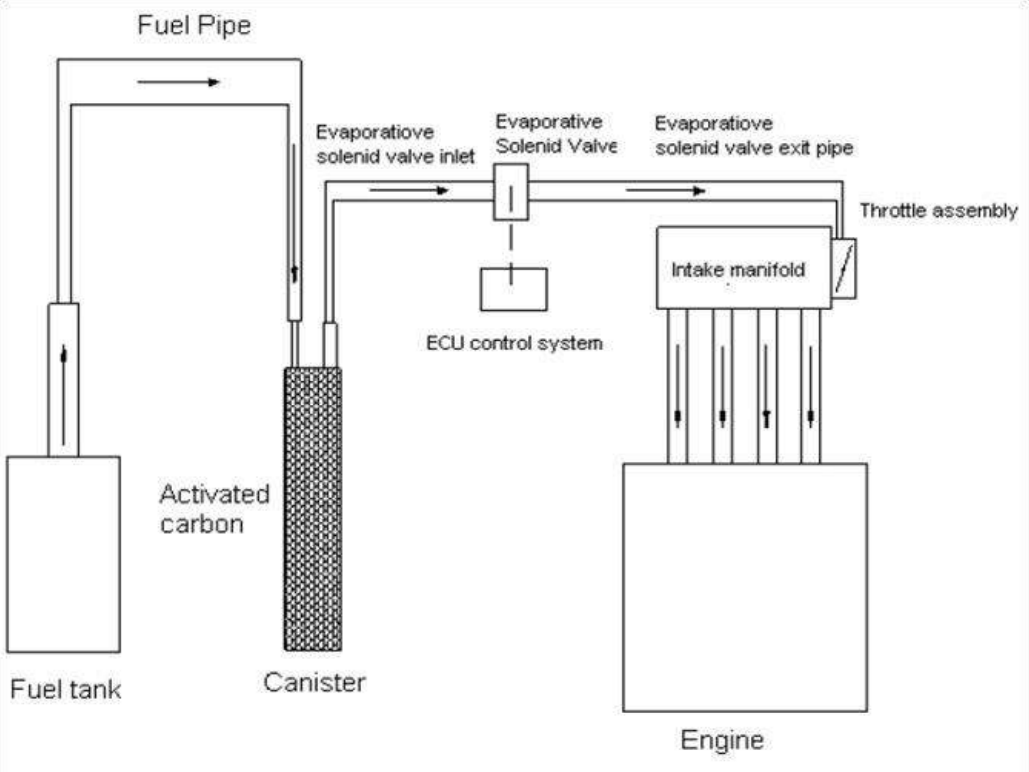



Pre-catalytic converter

Make: JAPHL POWERTRAIN SYSTEMS CO., LTD.
Part number: 1205AC5

Volume: 1.003L

## Drawing NO.3.2.12.2.5.1 CANISTER ASSY

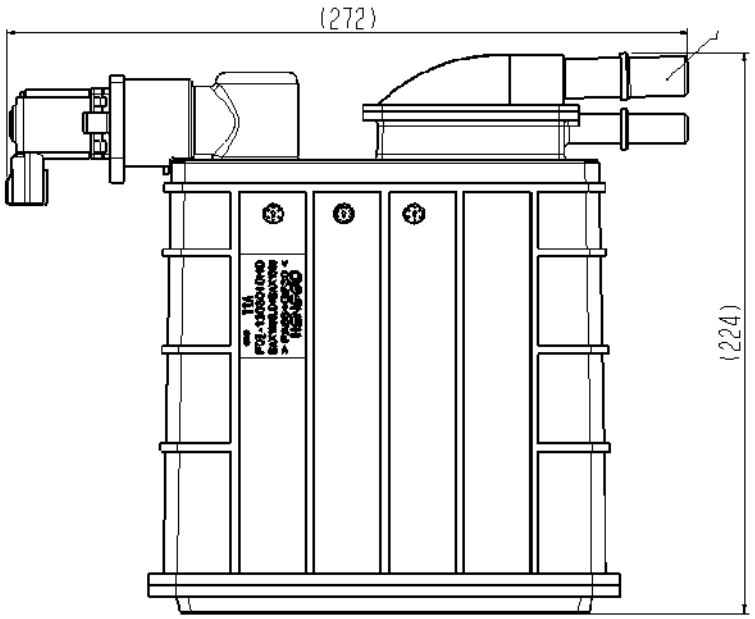


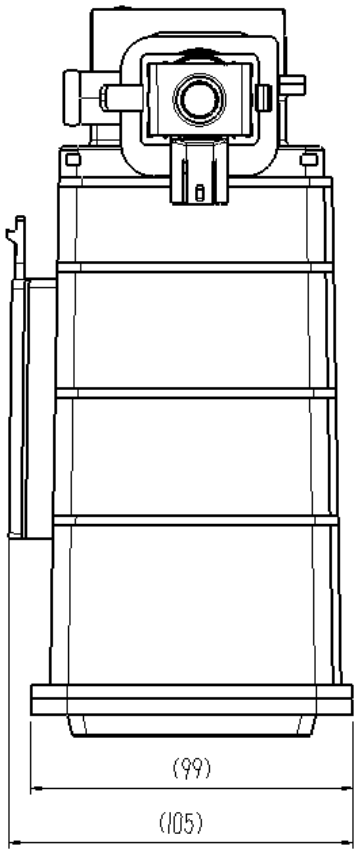

When the engine works, the ECU controls the opening of the solenoid valve of the carbon tank according to different working conditions, and the clean air enters the carbon tank from the air port of the carbon tank. The gasoline molecules adsorbed on the activated carbon particles are washed away by the negative pressure generated by the engine, and the fuel steam is transferred to the engine to participate in combustion.

## Drawing NO.3.2.12.2.5.3 CANISTER ASSY

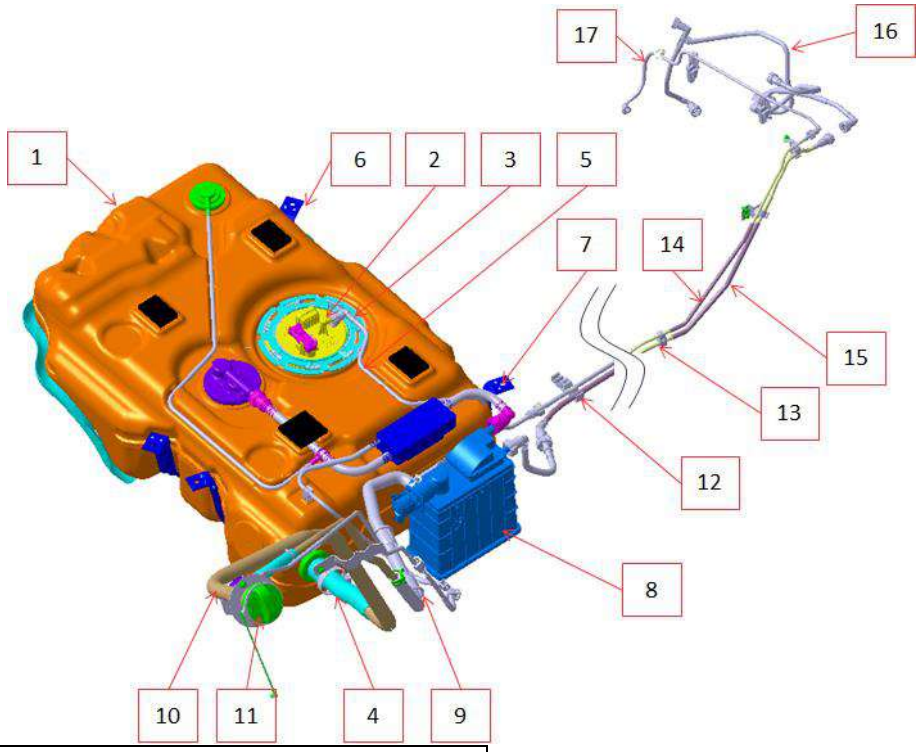
HENGBO HOLDINGS CO.,LTD.:


DONGFENG-FUJI-THOMSON THERMOSTAT CO.,LTD.:



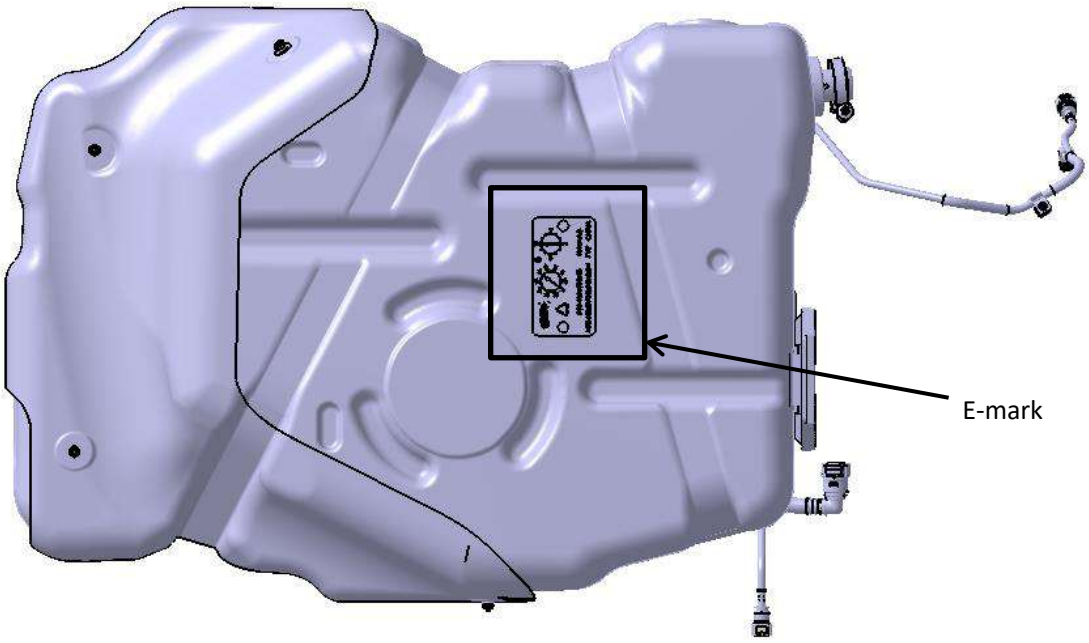



## Drawing NO.3.2.3.1.2 Fuel tank




| | |
|---|---|
| 1 | FUEL TANK ASSY |
| 2 | ELECTRICAL FUEL PUMP ASSY |
| 3 | CAP OF FUEL TANK |
| 4 | FILLING HOSE |
| 5 | FUEL FEED PIPE I |
| 6 | FIXED BELT ASSY I FUEL TANK |
| 7 | FIXED BELT ASSY II FUEL TANK |
| 8 | CANISTER ASSY |
| 9 | VENT HOSE CARBON CANISTER |
| 10 | CHERY STARTMODEL METAL PART |
| 11 | CAP ASSY FULE TANK |
| 12 | CLIP |
| 13 | CLIP DUAL PIPE |
| 14 | FUEL FEED PIPE II |
| 15 | INLET PIPE CANISTER VALVEⅡ |
| 16 | VENT HOSE　CARBON CANISTER |
| 17 | FUEL FEED PIPEⅢ |

| | | | |
|---|---|---|---|
| Name | Fuel SYSTEM | Number | / |
| Manufacturer | / | Date | |




Supplier：Hebei Shichang Auto Parts Co., Ltd.

Type：1101AA6

Materials：HDPE，EVOH，LLDPE

Nominal Volume：57L

# OBD Certification Declaration for JC1_F4J16_EU 6B 1.6T+7DCT

ANNEX 2

**EOBD Homologation Material**

Description of MIL

A The figure of the MIL (with the color of orange)：

B Working mode of the MIL：

Altogether 3 types：Off, On, Blink.

C Condition for MIL turning on, blinking and turning off：

System without EOBD turns on the MIL immediately if there is OBD1 faults confirmed, turns off the MIL immediately when the fault disappears. System with EOBD turns on the MIL immediately if there is OBD1 faults but no relationship with EOBD and turns off the MIL immediately when the fault disappear; But if the fault is related to EOBD diagnosis, the MIL turns on after 3 continuous fault trip and turns off after 3 continuous OK trip.

The MIL turns on when key on but not cranking the engine, after cranking if no fault detected the MIL turns off.

When there is misfire that causing catalyst damage, the MIL blinks.

When the system detects the same faults that results the emission over EOBD threshold during 3 continuous driving cycles, the MIL turns on. When the system detects no faults causing emission out of EOBD threshold in 3 continuous driving cycle, the MIL turns off.

Including：

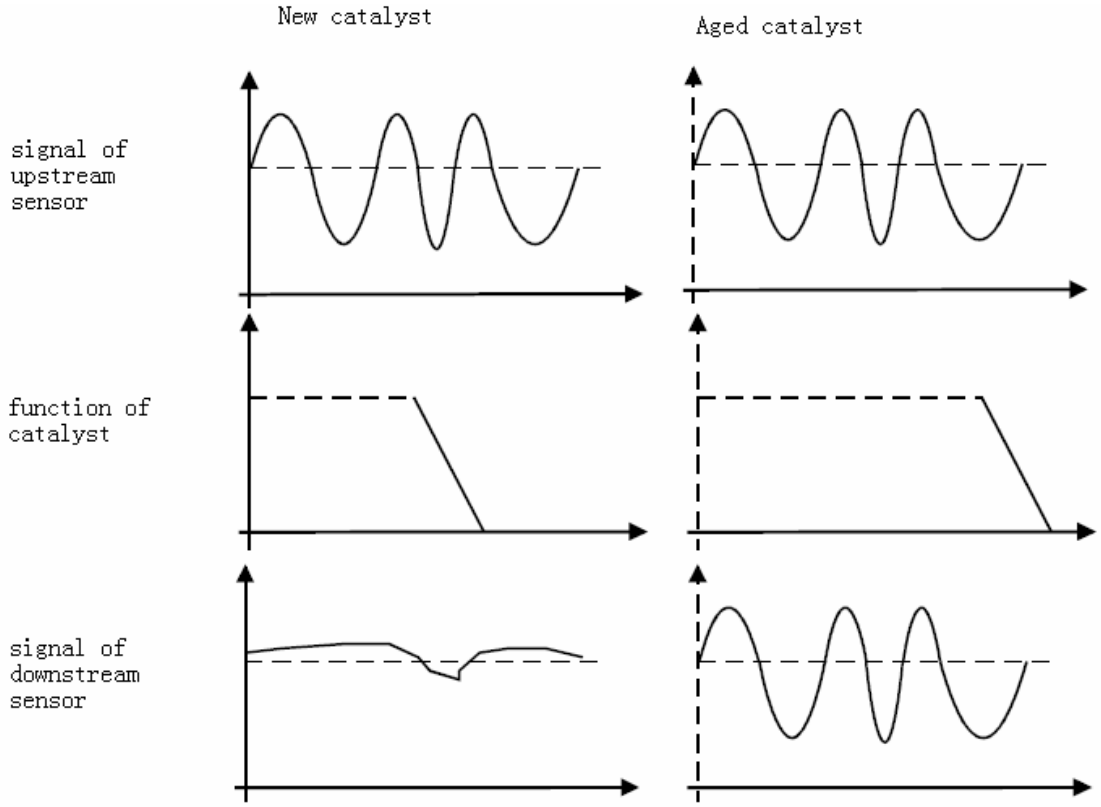
Catalyst diagnosis

Misfire diagnosis

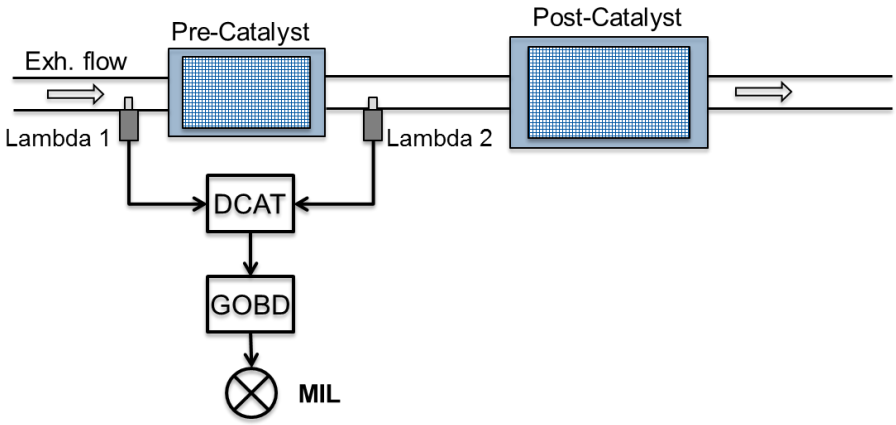
Lambda sensor diagnosis

EOBD diagnosis working principle

Catalyst diagnosis
Catalysts produce the following reaction: Oxidation for CO and HC and Reduction for NOx.
In LEAN condition the substrate store oxygen
In RICH condition the substrate release oxygen necessary or HC oxidation.
The ageing or poisoning of catalyst (especially the lead) reduces the efficiency to reduce emissions. The diagnosis is done by evaluating the oxygen storage capacity (OSC) by comparing the oxygen sensor signals from both upstream and downstream oxygen sensors.
Typical signal comparison of the oxygen sensors from a new catalyst and an aged catalyst can be found in the following figure:

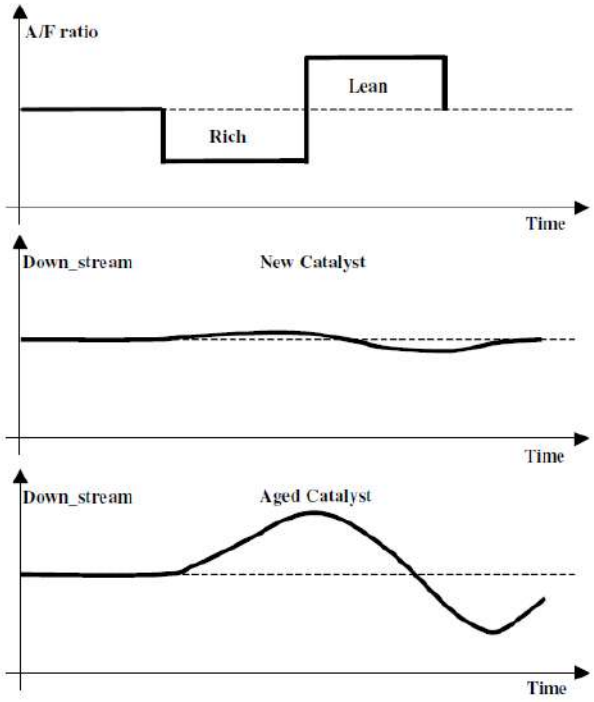


**Diagnosis principle graph：**




**Diagnosis principle brief introduction：**

Quick pass test:
Before the evaluation of catalyst OSC, quick pass test need to be performed.
Following a rich request (A/F <1), if downstream probe not reach THRERICH into QUICKTIMER millisecond then Catalyst is declared OK for “Quick Pass on Rich Phase”.
Otherwise as the lean request is set (A/F>1), if downstream probe signal remain limited for a calibration timer (QUICKTIMER) then Catalyst is declared OK (“Quick-Pass on Lean Phase”) and Catalyst Diagnosis finished. Else if downstream probe signal became lower than THRELEAN after a T time (DELTA_TIME)<QUICKTIMER it is possible esteem the OSC:




OSC calculation:
The OSC of the catalyst can be calculated based on the following equation in condition where diagnosis is enabled:

$$OSC \cong \int_{to}^{tf} Qah \cdot 0.23 \cdot \frac{|\lambda - 1|}{\lambda} d\tau$$

Which can be simplified as:

$$OSC \cong Qah \bullet 0,23 \bullet \frac{|\lambda - 1|}{\lambda} \bullet \Delta t$$

The averaged OSC (OSCDCAT) can be obtained by averaging the AVGSTEP samples of above calculated OSC. This averaged OSC will be compared with the calibrated borderline OSC (minimum value of OSC to declared catalyst OK).
if OSC average >= OSCBORD, the catalyst is declared OK and diagnosis finished, else above mentioned process is repeat but after a second set of AVGSTEP samples if OSC average result < OSCBORD diagnosis is finished and catalyst is declared KO.

**EOBD diagnosis disable conditions：**
From EOBD legislation: diagnosis is inhibited for engine coolant temperature less than -7℃ and for an altitude higher than 2500 m (sea level).

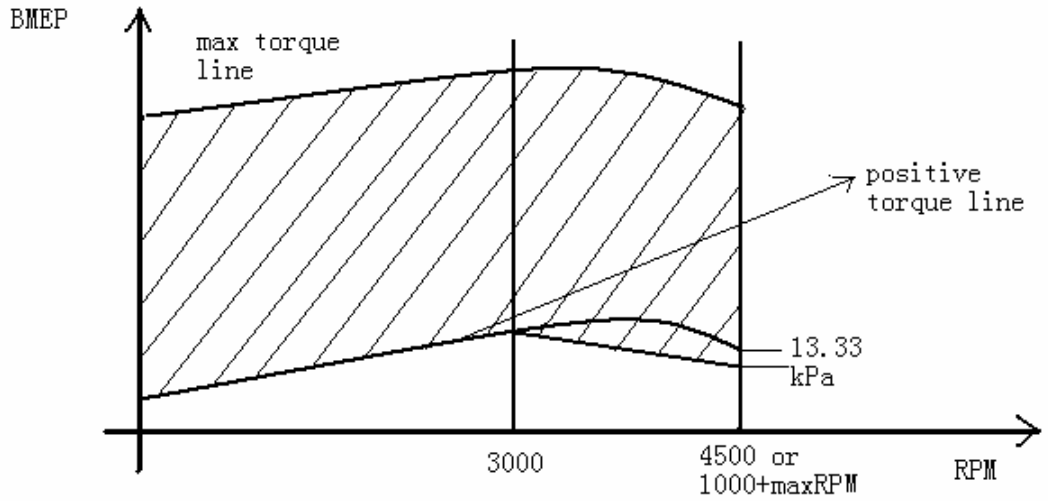
Diagnosis completed: the diagnosis must be inhibit after the diagnosis it-self during one trip only.
Other fault: if other relevant faults are present the catalyst diagnosis must be inhibit. (for example the sensor heater diagnosis). The diagnosis is disable setting a specific bit of Recovery-Activation byte in the GSEC module.
Full canister tank: the diagnosis is inhibit in case of high fuel vapor in the canister tank. The air and fuel mass flow from canister circuit represent a disturbances for A/F control.
Engine coolant temperature: the index is calculated only when the engine has finished his warm-up phase. The engine coolant temperature is greater than a threshold.
Catalyst temperature: the index calculation is enabled only when the catalyst temperature is higher than a threshold that represents the minimum catalyst working temperature. The catalyst temperature is estimated by a model. And the estimated temperature is always lower than the real one to avoid false alarm.
Engine speed: the diagnosis is inhibited if engine speed is greater than a threshold.
A/F control: the diagnosis is enabled only if first control loop is in closed-loop condition and also second control loop is in closed loop condition.
Steady state: the diagnosis is enabled in steady-state condition. Engine speed variations and manifold pressure variations must be less than a threshold during 100 ms. In idle the strategy is enable. The diagnosis is enabled if the A/F control is in steady-state condition. The control parameter fLcM must have stable and constant amplitude oscillations. The fLcM must be near neutral value.
Down-stream sensor: the diagnosis is enabled if the mean value of downstream sensor voltage output is in a right range. This guarantees the control is working in order to have maximum catalyst efficiency.
Engine zone: the diagnosis is active only in certain engine zone where the OSC calculation produce results stable and repeatable. These conditions are defined in function of air mass flow (QACPMS) and engine speed (RPM).
The diagnosis result would not be sent to MIL management function if the fuel level is less than 20%.

Misfire diagnosis

**Definition**

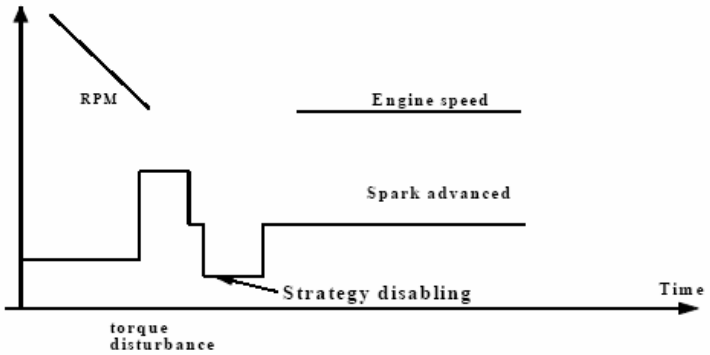
Means lack of combustion in the cylinder of a positive ignition engine due to absence of spark, poor fuel metering, poor compression or any other cause. In terms of OBD monitoring it is that percentage of
misfires out of a total number of firing events that would result in emissions exceeding the limits or that percentage that could lead to an exhaust catalyst, or catalysts overheating causing irreversible damage.
Two kinds of Misfire are detected:
**Misfire200**: calculates the misfire number in a **200 revolutions window** and if the percentage of misfire is greater than a threshold, the MIL will blink to advise the driver in order to avoid a **catalyst destruction.**
**Misfire1000**: calculates the misfire number in a **1000 revolutions window** and if the percentage of misfire is greater than **normative limits** (European Community) advise the driver.
MIL for Misfire 200: the MIL will blink immediately if the misfire percentage is too high to damage the catalyst and shut off immediately if the percentage is lower than threshold.
MIL for Misfire 1000: similar to the other EOBD diagnosis, the MIL will turn on if in 3 continuous trip the misfire percentage is higher than the threshold that leads to emission level higher than EOBD threshold. And the MIL will turn off if in 3 continuous trip the misfire percentage is lower than the threshold that can make emission more than EOBD threshold.

**Diagnosis area**
According the European normative this strategy has to be active in the following range:
a) A maximum speed of 4500 rpm or 1000 rpm greater than the highest speed occurring during a
Type I test cycle (emission cycle), whichever is the lower;
b) The positive torque line;
c) A line joining the following engine operating points: the positive torque line at 3000 rpm and a point
on the maximum speed line in (a) above the engine's manifold vacuum at 13.33 KPa lower than that at the positive torque line. The map below shows the area:




**Diagnosis Disable conditions**

1. It's not yet performed the asymmetric flywheel learning;
2. The air flow rate in the collector is lower than an applicable threshold. A low air flow rate could generate a so low torque value that could be detected as a misfire;
3. Cut-off phase: in this condition no torque is generated;
4. Fast opening angle gradients of the throttle valve: in this situation fast transitory are generated that can influence the index calculation;
5. Fault injection phase: in this case the misfire are generated to calibrate the strategy;
6. Losing the flywheel synchronism;
7. From EOBD legislation: diagnosis is inhibited for engine coolant temperature less than -7℃ and for an altitude higher than 2500 m (sea level).
8. Fault presence that makes the misfire diagnosis not reliable. (i.e. water temperature or pressure sensor).
9. Cranking phase.
10. Entering in idle closed loop condition for a certain PMS. In the first phase of the idle closed loop control it is imposed an high spark advanced. This operative condition could generate not regular combustion and so false alarm.




11. Gear shift in progress.
12. Not smooth road: this kind of road generates a great index oscillations.
13. Fuel tank level lower than 20%

**MIL for MISIFRE200 – blinking mode**

Misfire percentage threshold（%）

| Catalyst Damage Misfire Rate | | | | | | |
|---|---|---|---|---|---|---|
| Engine Speed (rpm) / Relative Load (%) | **2000** | **2720** | **3400** | **3800** | **4200** | **4520** |
| **18** | 25% | 23% | 20% | 17% | 15% | 15% |
| **30** | 23% | 20% | 17% | 16% | 14. 3% | 14% |
| **40** | 23% | 19% | 15% | 14% | 12% | 12% |
| **50** | 20% | 17% | 10% | 12. 5% | 11% | 8. 5% |
| **60** | 14. 3% | 12. 5% | 10% | 8% | 7. 5% | 8. 5% |
| **70** | 14. 3% | 11. 1% | 10% | 10% | 9. 1% | 10% |

If misfire percentage lower than threshold MIL turn off immediately.

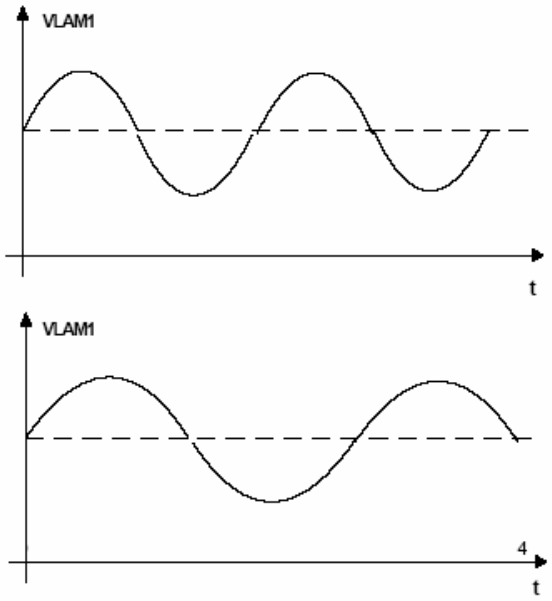
**MIL for MISIFRE1000 – on mode** (after 3 continuous trip) Misfire percentage threshold （3.5%）:

Upstream Lambda Sensor Diagnosis

Aged or damaged upstream lambda sensor could cause the unfavorable emission level which could exceed EOBD threshold, and the diagnosis can detect lambda sensor error to inform the driver replace the sensor and confirm emission inside EOBD threshold.

**Diagnosis principle：**

The diagnosis is done in by evaluating the sensor frequency.
The sensor response time can become slow symmetrically (rich to lean and lean to rich commutation).
In this case the effect on sensor signal is to have a slow control. This means that the closed loop oscillation frequency is reduced which can cause an emission problem.




**Diagnosis Disable conditions：**
EOBD legislation: inhibit the diagnosis for engine coolant temperature less than -7℃ and for an altitude higher than 2500m (sea level).
Diagnosis completed: the diagnosis must be inhibit after completing the diagnosis it-self during one trip only.
Other fault: if other relevant faults are present the oxygen sensor diagnosis must be inhibit.
Full canister tank: the diagnosis is inhibited in case of high fuel vapor in the canister tank. The air and fuel mass flow from canister circuit represent disturbances for A/F control.
Engine coolant temperature: the index is calculated only when the engine has finished his warm-up phase. The engine coolant temperature is greater than a threshold.
Engine speed: the diagnosis is inhibit if engine speed is greater than a threshold. This threshold represents a physical limit for diagnosis validity for all EOBD diagnosis.

A/F control: the diagnosis is enable only if first control loop is in closed-loop condition and also second control loop is in closed loop condition (I do not know why need second loop, maybe to keep the same as catalyst diagnosis).
Steady state: engine speed variations and manifold pressure variations must be less than a threshold during last 100ms. In idle the strategy is enabled.
Engine zone: the diagnosis is active only in certain engine zone where the index calculation produces results stables and repeatable. These conditions are defined in a spot map function of air mass flow and engine speed.
Fuel tank level lower than 20%

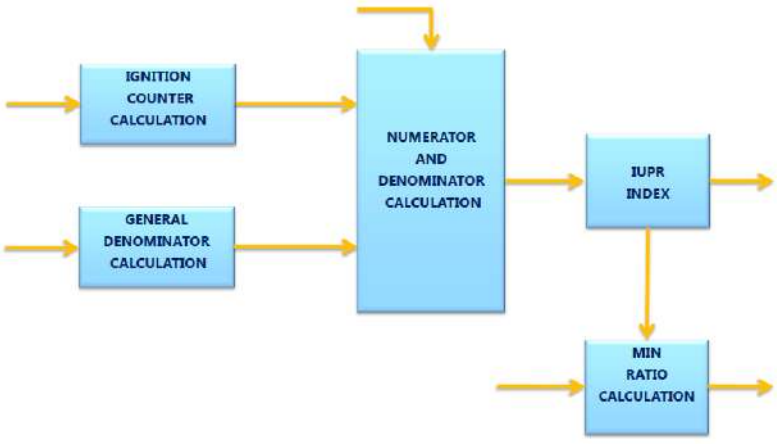
IUPR

**Definition**

**IUPR** (In Use Performance Ratio), due to the Euro5+ and Euro 6 EOBD legislation requires, as mandatory, a minimal monitoring frequency activation of EOBD diagnostic lines. In order to satisfy this requirement, the ECM shall calculate and store in memory specific indexes, which give the indication of how often a specific monitor is active, relative to vehicle operation.

**$IUPR_M$ = $Numerator_M$ / $Denominator_M$**

**IUPR MODEL**




**Ignition Counter**

The ignition cycle counter indicates the number of ignition cycles a vehicle has experienced. The ignition counter may not be incremented more than once per driving cycle. This means that

Engine speed greater than an applicable threshold for a time out and No engine recovery present.

**Numerator$_M$**

The numerator of a specific monitor is a counter measuring the number of times a vehicle has been operated such that all monitoring conditions necessary for the specific monitor to detect a malfunction in order to warn the driver, as they have been implemented by the manufacturer, have been encountered. The numerator shall not be incremented more than once per driving cycle, unless there is reasoned technical justification.

**Demoninator$_M$**

The denominator is to provide a counter indicating the number of vehicle driving events, taking into account special conditions for a specific monitor. The denominator shall be incremented at least once per driving cycle, if during this driving cycle such condition are met and the general denominator is incremented as specified below unless the denominator is disabled according the disable conditions.

**General Denominator Conditions**

The general denominator is a counter measuring the number of times a vehicle has been operated. It shall be incremented within 10 second, if and only if, the following criteria are satisfied on a single driving cycle:
cumulative time since engine start is greater than or equal to 600 seconds while at an elevation of less than 2440m above sea level and at an ambient temperature of greater than or equal to -7 ℃.
cumulative vehicle operation at or above 40 km/h occurs for greater than or equal to 300 seconds while at an elevation of less than 2440m above sea level and at an ambient temperature of greater than or equal to -7℃.
continuous vehicle operation at idle (i.e. accelerator pedal released by driver and vehicle speed less than or equal to 1.6 km/h) for greater than or equal to 30 seconds while at an elevation of less than 2440m above sea level and at an ambient temperature of greater than or equal to -7℃.

**Monitor principle**

Due to the ISO 15031-5 specifications, the OBD system shall report the ignition cycle counter and general denominator as well as separate numerators and denominators for the following monitors:

— Catalysts (each bank to be reported separately)

— Oxygen/exhaust gas sensors, including secondary oxygen sensors (each sensor to be reported separately)
— EGR system
— VVT system

**Disablement of Numerators and Denominators and of the General Denominator**

Within 10 seconds of a malfunction being detected, which disables a monitor required to meet the monitoring conditions of this Annex (i.e. a pending or confirmed code is stored), the OBD system shall disable further incrementing of the corresponding numerator and denominator for each monitor that is disabled. When the malfunction is no longer detected (i.e., the pending code is erased through self-clearing or through a scan tool command), incrementing of all corresponding numerators and denominators shall resume within 10 seconds.

Within 10 seconds of the start of a power take-off operation (PTO) operation that disables a monitor required to meet the monitoring conditions of this Annex, the OBD system shall disable further incrementing of the corresponding numerator and denominator for each monitor that is disabled. When the PTO operation ends, incrementing of all corresponding numerators and denominators shall resume within 10 seconds.

The OBD system shall disable further incrementing of the numerator and denominator of a specific monitor within 10 seconds, if a malfunction of any component used to determine the criteria within the definition of the specific monitor's denominator (i.e. vehicle speed, ambient temperature, elevation, idle operation, engine cold start, or time of operation) has been detected and the corresponding pending fault code has been stored. Incrementing of the numerator and denominator shall resume within 10 seconds when the malfunction is no longer present (e.g. pending code erased through self-clearing or by a scan tool command).

The OBD system shall disable further incrementing of the general denominator within 10 seconds, if a malfunction has been detected of any component used to determine whether the criteria are satisfied (i.e. vehicle speed, ambient temperature, elevation, idle operation, or time of operation) and the corresponding pending fault code has been stored. The general denominator may not be disabled from incrementing for any other condition. Incrementing of the general denominator shall resume within 10 seconds when the malfunction is no longer present (e.g., pending code erased through self-clearing or by a scan tool command).

**All relative information and components list monitored by EOBD system**

| Component | P code | Monitoring strategy introduction | Fault detection regulation | MIL activation regulation | Relative parameters | Pre conditioning | Demonstration |
|---|---|---|---|---|---|---|---|
| **catalyst** | **P0420 00** | Oxygen storage capacity exceed minmum limit | Oxygen storage capacity of the catalyst | 1 driving cycles | RPM, engine load, water temperature, A/F mode, catalyst efficiency | driving cycles of test Ⅰ | Type-I driving cycle |
| **oxygen sensor upstream aging** | **P0133 00** | oxygen sensor upstream aging of Period duration | difference between Period duration measured and Period duration calculated | 2 driving cycles | - | driving cycles of test Ⅰ | driving cycles of test Ⅰ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Carbon canister control valve control circuit open circuit** | **P0444 00** | **ECU detects open circuit of control terminal pin** | **When the drive stage switch is closed, the output voltage uce = 6V is detected** | 2 driving cycles | RPM,The battery voltage is 8~12V | driving cycle | Driving cycle |
| **misfire(catalyst damage)** | **P0300 00** | Random/Multiple Cylinder Misfire | misfire rate of catalyst damaging misfiring of all cylinders | 1) MIL-blinking at present driving cycle & MIL-blinking off after ti-cutoff 2) If pending fault code | RPM signal and phase signal | 1 driving cycle | Driving cycle |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **P0301 00** | Cylinder 1 Misfire Detected( catalyst damage) | misfire rate of catalyst damaging misfiring of NO.1 cylinders | has been stored for misfire and in this drving cycle misfire rate more than threshold for catalyst damaging misfires, the confirmin g fault is stored and MIL blinking. MIL on after misfiring ceases. | RPM signal and phase signal | 1 driving cycle | Driving cycle |
| | **P0302 00** | Cylinder 2 Misfire Detected( catalyst damage) | misfire rate of catalyst damaging misfiring of NO.2 cylinders | | RPM signal and phase signal | 1 driving cycle | Driving cycle |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **P0303 00** | Cylinder 3 Misfire Detected( catalyst damage) | misfire rate of catalyst damaging misfiring of NO.3 cylinders | | RPM signal and phase signal | 1 driving cycle | Driving cycle |
| | **P0304 00** | Cylinder 4 Misfire Detected( catalyst damage) | misfire rate of catalyst damaging misfiring of NO.4 cylinders | | RPM signal and phase signal | 1 driving cycle | Driving cycle |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **misfire(deteriorate emission)** | **P0300 00** | Random/ Multiple Cylinder Misfire Detected | misfire rate that deteriorate emission of all cylinders | 2 driving cycles | RPM signal and phase signal | 1 driving cycle | driving cycles |

| | | | | | | |
|---|---|---|---|---|---|---|
| **P0301 00** | Cylinder 1 Misfire Detected | misfires of NO.1 cllinder / misfires of all cllinders | 2 driving cycles | RPM signal and phase signal | 1 driving cycle | driving cycles |

| | | | | | | |
|---|---|---|---|---|---|---|
| **P0302 00** | Cylinder 2 Misfire Detected | misfires of NO.2 cllinder / misfires of all cllinders | 2 driving cycles | RPM signal and phase signal | 1 driving cycle | driving cycles |

| | | | | | | |
|---|---|---|---|---|---|---|
| **P0303 00** | Cylinder 3 Misfire Detected | misfires of NO.3 cllinder / misfires of all cllinders | 2 driving cycles | RPM signal and phase signal | 1 driving cycle | driving cycles |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **P0304 00** | Cylinder 4 Misfire Detected | misfires of NO.4 cllinder / misfires of all cllinders | 2 driving cycles | RPM signal and phase signal | 1 driving cycle | driving cycles |
| **EMS, Immobilizer** | **P0633 00** | Immobilizer key not programmed-ECM/PCM | Immo-Learning State | off | - | 1 driving cycle | Driving cycle |
| | **P0513 00** | Incorrect immobilizer key | Incorrect immobilizer key | off | - | 1 driving cycle | Driving cycle |

| | | | | | | |
|---|---|---|---|---|---|---|
| **P1610 00** | No response received by ECM/PCM after challenge sent | Number of total EMS challenge due to busy or no response from immobilizer exceeds 200s and Last immobilizer's response is timeout sentresponse from immobilizer | off | - | 1 driving cycle | Driving cycle |
| **P1611 00** | Unexpected initial value in eeprom ECM eeprom | Immo-Learning State | off | - | 1 driving cycle | Driving cycle |
| **P1612 00** | Internal error when writing datas to eeprom | EEP store status error | off | - | 1 driving cycle | Driving cycle |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **P1613 00** | This symbol means that ECM and vehicle | Vechile line IMMOPIN is TRUE | off | - | 1 driving cycle | Driving cycle |
| **CAN bus** | **U0101 87** | Lost Communication with TCM | Time lost communication with TCM for more than 20* cycle time | 2 driving cycles | - | 1 driving cycle | Driving cycle |
| | **U0122 87** | Lost Communication With Vehicle Dynamics Control Module | Time lost communication with ESP for more than 20* cycle time | 2 driving cycles | - | 1 driving cycle | Driving cycle |

| | | | | | | |
|---|---|---|---|---|---|---|
| **U0164 87** | Lost Communication With Climate Module | Time lost communication with CLM for more than 20* cycle time | 2 driving cycles | - | 1 driving cycle | Driving cycle |
| **U0128 87** | Lost Communication With EPB | Time lost communication with EPB for more than 20* cycle time | off | - | Idling | Idling |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **U0140 87** | Lost Communication With FBCM | Time lost communication with FBCM for more than 20* cycle time | off | - | Idling | Idling |
| | **U0155 87** | Lost Communication With ICM | Time lost communication with ICM for more than 20* cycle time | off | - | Idling | Idling |
| | **U0422 81** | Invalid Data Received From Body Control Module | Time invalid message received from BCM | off | - | Idling | Idling |
| | **U1187 87** | Lost Communication With MFS | Time lost communication with MFS for more than 20* cycle time | off | - | Idling | Idling |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **A/C compressor control relay** | **P0645 00** | A/C Clutch Relay Control Circuit | Output Voltage | MIL off | - | Idling | Idling |
| | **P0647 00** | A/C Clutch Relay Control Circuit High | Output Current | MIL off | - | Idling | Idling |
| | **P0646 00** | **A/C Clutch Relay Control Circuit Low** | **Output Voltage** | MIL off | - | Idling | Idling |
| **Ignition Coil Powerstage** | **P0351 00** | Ignition Coil "A" Primary Control Circuit/Open | Output Voltage | 2 driving cycles | - | Idling | Idling |
| | **P0353 00** | Ignition Coil "C" Primary Control Circuit/Open | Output Voltage | 2 driving cycles | - | Idling | Idling |

| | | | | | | |
|---|---|---|---|---|---|---|
| **P0354 00** | Ignition Coil "D" Primary Control Circuit/Open | Output Voltage | 2 driving cycles | - | Idling | Idling |
| **P0352 00** | Ignition Coil "B" Primary Control Circuit/Open | Output Voltage | 2 driving cycles | - | Idling | Idling |
| **P2301 00** | Ignition Coil “A” Primary Control Circuit High | Output Voltage | 2 driving cycles | - | Idling | Idling |
| **P2307 00** | Ignition Coil “C” Primary Control Circuit High | Output Voltage | 2 driving cycles | - | Idling | Idling |
| **P2310 00** | Ignition Coil “D” Primary Control Circuit High | Output Voltage | 2 driving cycles | - | Idling | Idling |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **P2304 00** | Ignition Coil “B” Primary Control Circuit High | Output Voltage | 2 driving cycles | - | Idling | Idling |
| | **P2300 00** | Ignition Coil “A” Primary Control Circuit Low | Output Voltage | 2 driving cycles | - | Idling | Idling |
| | **P2306 00** | Ignition Coil “C” Primary Control Circuit Low | Output Voltage | 2 driving cycles | - | Idling | Idling |
| | **P2309 00** | Ignition Coil “D” Primary Control Circuit Low | Output Voltage | 2 driving cycles | - | Idling | Idling |
| | **P2303 00** | Ignition Coil “B” Primary Control Circuit Low | Output Voltage | 2 driving cycles | - | Idling | Idling |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Fuel Injector Powerstage** | **P0262 00** | Cylinder 1 Injector "A" Circuit High | Cylinder 1 Injector "A" Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P0261 00** | Cylinder 1 Injector "A" Circuit Low | Cylinder 1 Injector "A" Circuit Low | 2 driving cycles | - | Idling | Idling |
| | **P0201 00** | Cylinder 1 Injector "A" Circuit | Cylinder 1 Injector "A" Circuit | 2 driving cycles | - | Idling | Idling |
| | **P0268 00** | Cylinder 3 Injector "A" Circuit High | Cylinder 3 Injector "A" Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P0267 00** | Cylinder 3 Injector "A" Circuit Low | Cylinder 3 Injector "A" Circuit Low | 2 driving cycles | - | Idling | Idling |
| | **P0203 00** | Cylinder 3 Injector "A" Circuit | Cylinder 3 Injector "A" Circuit | 2 driving cycles | - | Idling | Idling |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **P0271 00** | Cylinder 4 Injector "A" Circuit High | Cylinder 4 Injector "A" Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P0270 00** | Cylinder 4 Injector "A" Circuit Low | Cylinder 4 Injector "A" Circuit Low | 2 driving cycles | - | Idling | Idling |
| | **P0204 00** | Cylinder 4 Injector "A" Circuit | Cylinder 4 Injector "A" Circuit | 2 driving cycles | - | Idling | Idling |
| | **P0265 00** | Cylinder 2 Injector "A" Circuit High | Cylinder 2 Injector "A" Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P0264 00** | Cylinder 2 Injector "A" Circuit Low | Cylinder 2 Injector "A" Circuit Low | 2 driving cycles | - | Idling | Idling |
| | **P0202 00** | Cylinder 2 Injector "A" Circuit | Cylinder 2 Injector "A" Circuit | 2 driving cycles | - | Idling | Idling |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Canist Vent Valve** | **P0499 00** | EVAP System Vent Valve Control Circuit High | EVAP System Vent Valve Control Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P0498 00** | EVAP System Vent Valve Control Circuit Low | EVAP System Vent Valve Control Circuit Low | 2 driving cycles | - | Idling | Idling |
| | **P0447 00** | EVAP System Vent Control Circuit Open | EVAP System Vent Control Circuit Open | 2 driving cycles | - | Idling | Idling |
| **Powerstage Intake Camshaft** | **P2089 00** | "A" Camshaft Position Actuator Control Circuit High Bank 1 | "A" Camshaft Position Actuator Control Circuit High Bank 1 | 2 driving cycles | - | Idling | Idling |
| | **P2088 00** | "A" Camshaft Position Actuator Control Circuit Low Bank 1 | "A" Camshaft Position Actuator Control Circuit Low Bank 1 | 2 driving cycles | - | Idling | Idling |
| | **P0010 00** | "A" Camshaft Position | "A" Camshaft Position Actuator | 2 driving cycles | - | Idling | Idling |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Actuator Control Circuit Open Bank 1 | Control Circuit0Open Bank 1 | | | | |
| **Powerstage Exhaust Camshaft** | **P2091 00** | "B" Camshaft Position Actuator Control Circuit High Bank 1 | "B" Camshaft Position Actuator Control Circuit High Bank 1 | 2 driving cycles | - | Idling | Idling |
| | **P2090 00** | "B" Camshaft Position Actuator Control Circuit Low Bank 1 | "B" Camshaft Position Actuator Control Circuit Low Bank 1 | 2 driving cycles | - | Idling | Idling |
| | **P0013 00** | "B" Camshaft Position Actuator Control Circuit0Open Bank 1 | "B" Camshaft Position Actuator Control Circuit0Open Bank 1 | 2 driving cycles | - | Idling | Idling |
| **Primary HO2S Heating Powerstage** | **P0032 00** | HO2S Heater Control Circuit High Bank 1 Sensor 1 | HO2S Heater Control Circuit High Bank 1 Sensor 1 | 2 driving cycles | - | Idling | Idling |
| | **P0031 00** | HO2S Heater Control Circuit Low Bank 1 Sensor 1 | HO2S Heater Control Circuit Low Bank 1 Sensor 1 | 2 driving cycles | - | Idling | Idling |

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| | **P0030 00** | HO2S Heater Control Circuit Bank 1 Sensor 1 | HO2S Heater Control Circuit Bank 1 Sensor 1 | 2 driving cycles | - | Idling | Idling |
| **Secondary HO2S Heating Powerstage** | **P0038 00** | HO2S Heater Control Circuit High Bank 1 Sensor 2 | HO2S Heater Control Circuit High Bank 1 Sensor 2 | 2 driving cycles | - | Idling | Idling |
| | **P0037 00** | HO2S Heater Control Circuit Low Bank 1 Sensor 2 | HO2S Heater Control Circuit Low Bank 1 Sensor 2 | 2 driving cycles | - | Idling | Idling |
| | **P0036 00** | HO2S Heater Control Circuit Bank 1 Sensor 2 | HO2S Heater Control Circuit Bank 1 Sensor 2 | 2 driving cycles | - | Idling | Idling |
| **Fuel Pump Relay** | **P0629 00** | Fuel Pump Module "A" Control Circuit High | Fuel Pump Module "A" Control Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P0628 00** | Fuel Pump Module "A" Control Circuit Low | Fuel Pump Module "A" Control Circuit Low | 2 driving cycles | - | Idling | Idling |

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| | **P0627 00** | Fuel Pump Module "A" Control Circuit Open | Fuel Pump Module "A" Control Circuit Open | 2 driving cycles | - | Idling | Idling |
| **Canist Purge Valve** | **P0459 00** | Evaporative Emission System Purge Control Valve Circuit High | Evaporative Emission System Purge Control Valve Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P0458 00** | Evaporative Emission System Purge Control Valve Circuit Low | Evaporative Emission System Purge Control Valve Circuit Low | 2 driving cycles | - | Idling | Idling |
| | **P0444 00** | Evaporative Emission System Purge Control Valve Circuit Open | Evaporative Emission System Purge Control Valve Circuit Open | 2 driving cycles | - | Idling | Idling |
| **Vaccum Pump** | **P258D 00** | Vacuum Pump Control Circuit High | Vacuum Pump Control Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P258C 00** | Vacuum Pump Control Circuit Low | Vacuum Pump Control Circuit Low | 2 driving cycles | - | Idling | Idling |

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| | **P258A 00** | Vacuum Pump Control Circuit/Open | Vacuum Pump Control Circuit/Open | 2 driving cycles | - | Idling | Idling |
| **Thermostat Heater** | **P0597 00** | Thermostat Heater Control Circuit Open | Thermostat Heater Control Circuit Open | 2 driving cycles | - | Idling | Idling |
| | **P0599 00** | Thermostat Heater Control Circuit High | Thermostat Heater Control Circuit High | 2 driving cycles | - | Idling | Idling |
| | **P0598 00** | Thermostat Heater Control Circuit Low | Thermostat Heater Control Circuit Low | 2 driving cycles | - | Idling | Idling |
| **Thermostat Heater** | **P0597 00** | Thermostat Heater Control Circuit Open | Thermostat Heater Control Circuit Open | 2 driving cycles | - | Idling | Idling |
| | **P0599 00** | Thermostat Heater Control Circuit High | Thermostat Heater Control Circuit High | 2 driving cycles | - | Idling | Idling |

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| | **P0598 00** | Thermostat Heater Control Circuit Low | Thermostat Heater Control Circuit Low | 2 driving cycles | - | Idling | Idling |
| **Throttle Actuator** | **P2103 00** | Throttle Actuator "A" Control Motor Circuit High | Throttle Actuator "A" Control Motor Circuit High | 2 driving cycles | - | 1 driving cycle | driving cycle |
| | **P2118 00** | Throttle Actuator "A" Control Motor Current Range/Performance | Throttle Actuator "A" Control Motor Current Range/Performance | 2 driving cycles | - | 1 driving cycle | driving cycle |
| | **P2106 00** | Throttle Actuator Control System Forced Limited Power | Throttle Actuator Control System Forced Limited Power | 2 driving cycles | - | 1 driving cycle | driving cycle |
| **Electrical Waste Gate Motor** | **P2100 00** | Throttle Actuator "A" Control Motor Circuit/Open | Throttle Actuator "A" Control Motor Circuit/Open | 2 driving cycles | - | 1 driving cycle | driving cycle |

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| | **P124A 00** | Wastegate Actuator "A" Control Circuit Shorted | Wastegate Actuator "A" Control Circuit Shorted | 2 driving cycles | - | Idling | Idling |
| | P2ABD 00 | Turbocharger /Supercharger Wastegate Actuator "A" Driver Current/Temperature Too High | Turbocharger/ Supercharger Wastegate Actuator "A" Driver Current/Temperature Too High | 2 driving cycles | - | Idling | Idling |
| | **P124B 00** | Electric waste gate(E-WG) actuator control chip SPI bus error | Electric waste gate(E-WG) actuator control chip SPI bus error | 2 driving cycles | - | Idling | Idling |
| **knock sensor** | **P0243 00** | Turbocharger /Supercharger Wastegate Solonoid "A" | Turbocharger/ Supercharger Wastegate Solonoid "A" | 2 driving cycles | - | Idling | Idling |

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| **knock sensor brake switch sensor Accelerator position sensor 1** | **P0325 00** | Knock/Combustion Vibration Sensor 1 Circuit Bank 1 or Single Sensor | Knock/Combustion Vibration Sensor 1 Circuit Bank 1 or Single Sensor | 2 driving cycles | - | 1 driving cycle | driving cycle |
| | **P0328 00** | Knock/Combustion Vibration Sensor 1 Circuit High Bank 1 or Single Sensor | Knock/Combustion Vibration Sensor 1 Circuit High Bank 1 or Single Sensor | 2 driving cycles | - | 1 driving cycle | driving cycle |
| | **P0327 00** | Knock/Combustion Vibration Sensor 1 Circuit Low Bank 1 or Single Sensor | Knock/Combustion Vibration Sensor 1 Circuit Low Bank 1 or Single Sensor | 2 driving cycles | - | 1 driving cycle | driving cycle |
| | **P1510 00** | Knock/Combustion Vibration Control System Error | Knock/Combustion Vibration Control System Error | 2 driving cycles | - | 1 driving cycle | driving cycle |

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| **brake switch sensor** | **P0571 00** | Brake Switch "A" Circuit | Brake main signal and brake redundant signal | No mil | | | |
| | **P2123 00** | Throttle/Pedal Position Sensor/Switch “D” Circuit High | Throttle/Pedal Position Sensor/Switch “D” Circuit High | 2 driving cycles | - | 1driving cycle | Idling |
| | **P2122 00** | Throttle/Pedal Position Sensor/Switch “D” Circuit Low | Throttle/Pedal Position Sensor/Switch “D” Circuit Low | 2 driving cycles | - | 1driving cycle | Idling |
| | **P2138 00** | Throttle/Pedal Position Sensor/Switch “D”/ “E” Voltage | Throttle/Pedal Position Sensor/Switch “D”/“E” Voltage Correlation | 2 driving cycles | - | 1 driving cycle | driving cycle |
| **Accelerator position sensor 2 Deviation f boost control** | **P2128 00** | Throttle/Pedal Position Sensor/Switch “E” Circuit High | Throttle/Pedal Position Sensor/Switch “E” Circuit High | 2 driving cycles | - | 1driving cycle | Idling |

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| | **P2127 00** | Throttle/Pedal Position Sensor/Switch “E” Circuit Low | Throttle/Pedal Position Sensor/Switch “E” Circuit Low | 2 driving cycles | - | 1driving cycle | Idling |
| | **P0234 00** | Boost pressure is too high | Boost pressure is too high | 2 driving cycles | - | 1 driving cycle | driving cycle |
| **Accelerator position sensor 2 Cruise control lever diagnosis** | **P0118 00** | Engine Coolant Temperature Sensor 1 Circuit High | Engine Coolant Temperature Sensor 1 Circuit High | 2 driving cycles | - | 1 driving cycle | driving cycle |
| | **P0117 00** | Engine Coolant Temperature Sensor 1 Circuit Low | Engine Coolant Temperature Sensor 1 Circuit Low | 2 driving cycles | - | 1 driving cycle | driving cycle |
| **Deviation f boost control** | **P0119 00** | Engine Coolant Temperature Sensor 1 Circuit Intermittent | Engine Coolant Temperature Sensor 1 Circuit Intermittent | 2 driving cycles | - | 1 driving cycle | driving cycle |

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| | **P0128 00** | Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature) | Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature) | 2 driving cycles | - | 1 driving cycle | driving cycle |
| **Gasoline Particular Filter dp sensor** | **P2455 00** | Particulate Filter Pressure Sensor "A" Circuit High | Particular Filter Uptream Pressure Sensor Error Status | 2 driving cycles | - | Type-I driving cycle | Type-I driving cycle |
| | **P2461 00** | Particulate Filter Pressure Sensor "B" Circuit High | Particular Filter Downstream Pressure Sensor Error Status | 2 driving cycles | - | Type-I driving cycle | Type-I driving cycle |
| | **P2454 00** | Particulate Filter Pressure Sensor "A" Circuit Low | Particular Filter Uptream Pressure Sensor Error Status | 2 driving cycles | - | Type-I driving cycle | Type-I driving cycle |
| | **P2460 00** | Particulate Filter Pressure Sensor "B" Circuit Low | Particular Filter Downstream Pressure Sensor Error Status | 2 driving cycles | - | Type-I driving cycle | Type-I driving cycle |
| **Engine Collant temperature sensor 1** | **P0072 00** | Ambient Air Temperature Sensor Circuit | Ambient Air Temperature Sensor Circuit | 2 driving cycles | - | 1 driving cycle | driving cycle |

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| **P0073 00** | Ambient Air Temperature Sensor Circuit | Ambient Air Temperature Sensor Circuit | 2 driving cycles | - | 1 driving cycle | driving cycle |
| **P0070 00** | Ambient Air Temperature Sensor Circuit | Ambient Air Temperature Sensor Circuit | 2 driving cycles | - | 1 driving cycle | driving cycle |

# Reg 101.01 Fuel Consumption & CO2 Emissions

Fuel consumption and CO2 emission

| DECLARED FUEL CONSUMPTION FIGURES | | | | | | |
|---|---|---|---|---|---|---|
| Vehicle type | Litres/100km | | | $CO_2$ emissions g/km | | |
| | Urban | Extra Urban | Combined | Urban | Extra Urban | Combined |
| JC1 | 11.1 | 6.8 | 8.4 | 261 | 160 | 197 |