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| **Glossary** |
| **KDI 2504TCR / KDI 2504TCRE5 Workshop Manual (Rev. 17.7)** |



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# Glossary

## Glossary

***A***

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| **ACACT:** | After Charge Air Cooler Temperature |
| **Air gap:** | Distance to respect between a fixed component and one in movement. |
| **Alternator:** | A component that transforms mechanical energy into AC electrical energy. |
| **Authorised workshop:** | **KOHLER** authorised service centre. |
| **Authorised service station:** | **KOHLER** authorised workshop. |
| **ATS:** | After Treatment System - Post-treatment system, referred to the exhaust gases produced by the engine. |

***B***

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| **Balancer device:** | A device that reduces vibrations caused by movement of the alternating weights (Crankshaft - Connecting rods - Pistons). |
| **Base configuration:** | Engine having components represented in **Par. 1.4 - 1.5** . |
| **BDC:** | Bottom Dead Centre; a moment in which the piston is at the start of its stroke. |
| **Bore:** | Internal diameter of the cylinder in combustion engines. |

***C***

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| **CAN:** | "Controller Area Network" - also known as CAN-bus, is a data communication standard for ECUs. |
| **Catalyst:** | see " **DOC** " |
| **Combustion:** | Chemical reaction of a mixture composed of fuel and fuel (air) inside a combustion chamber. |
| **Common Rail:** | A high-pressure "Common Duct" that produces a constant supply of fuel directly to the Electronic injectors. |
| **Crankshaft:** | A component that transforms straight operation into rotary operation, and vice-versa. |

***D***

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| **DOC** **:** | Diesel Oxidation Catalyst - Catalyst for diesel engines that reduces harmful exhaust gas emissions produced by the engine. |
| **DPF** **:** | Diesel Particulate Filter - A filter that captures particles of carbonaceous origin emitted by diesel engines. |

***E***

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| **EC:** | "European Community". |
| **ECS:** | Emission Control System |
| **ECU:** | Electronic Control Unit; an electronic device in charge of electronically detecting and controlling other electronic control devices. |
| **EGR:** | Exhaust Gas Recirculation, in internal combustion engines; a system that enables recirculation of combusted gas by means of taking it in once again, which enables it to break down  a part of the pollutants present in the exhaust gas. |
| **EGR Cooler:** | Recirculated exhaust gas cooling; a system that is able to cool recirculated gas (EGR) from the exhaust. This enables the temperature to remain constant inside the intake manifold,  thus improving combustion inside the cylinders and breaking down pollutants further. |
| **EGR-T:** | "Exhaust Gas Recirculation Temperature" - temperature sensor for EGR |
| **EGTS:** | "Exhaust Gas Temperature Sensor" |
| **EGR valve:** | Electronically-controlled device that adjusts the entrance of exhaust gas recirculated inside the intake manifold. |
| **Electronic Injector:** | An electronically activated component able to inject jets of atomised fuel inside the cylinders. |
| **EPA:** | Environmental Protection Agency. The United States' authority that safeguards the environment; its duty is to govern and control polluting emissions. |
| **ETB:** | Electronic Throttle Body - This is controlled by the ECU upon request of the accelerator pedal, and its function is crucial for the correct regeneration of the ATS system. |

***F***

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| **Fig.:** | Figure. |
| **Functional units:** | Component, or group of main components, able to carry out specific functions on the engine. |

***G***

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| **Galvanised:** | Material that has undergone surface protection treatment. |
| **Grinding (valves and seats):** | Cleaning operation of the valves and seats carried out with an abrasive paste (refer to an authorised service station for this type of operation). |

***H***

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| **Heater:** | A device that heats the intake air by means of an electrical resistor. |
| **Heavy conditions:** | Type of extreme condition referred to the work environment in which the engine is used (very dusty - dirty area, or in a contaminated environment due to various types of gas). |

***I***

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| **Idle speed operation:** | Operation of a running engine with the vehicle stopped and on idle speed. |
| **Intercooler:** | Air-cooling element under pressure from the turbo situated between the turbine and intake manifold. |

***K***

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| **KDI:** | "Kohler Direct Injection" |

***M***

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| **Maintenance - periodic:** | A group of maintenance actions that have the sole objective to control and replace elements on their expiry, without modifying or improving the functions carried out by the system, neither increasing the value nor improving performance. |
| **MAX:** | Maximum. |
| **Methyl ester:** | It is a mixture of products by means of a chemical conversion of oils and animal and/or vegetable fat, which is used to produce Biofuel. |
| **Min.:** | Minutes. |
| **MIN:** | Minimum. |
| **Model:** | Model, engine identification plate, which indicates the engine's model. |

***N***

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| **N/C:** | Normally Closed, referred to switches (oil-pressure switch). |

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| **Oil Cooler:** | Small radiator used to cool the oil. |

***P***

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| **Par.:** | Paragraph. |
| **Paraffin.:** | Fatty and solid substance that may form inside the diesel. |
| **Pipe cleaner:** | An instrument having a metal cylindrical body with bristles that jut outwards. It is similar to a brush and is used to clean areas that are not easily accessible manually (e.g. oil ducts inside an engine). |
| **Poly-V:** | Poly-V, the name associated with a service belt, which derives from the profile of its section that is constructed with joined Vs. |
| **Power operation:** | Operation of the engine at high speeds. |
| **PTO:** | Power Take Off - a point provided to take advantage of alternative operation transmission. |
| **Pump Learning:** | Automatic procedure carried out by **ECU** (by means of a diagnostics instrument - **ST\_01** ) to discover the operating characteristics of the fuel feeding pump (should the injection pump or **ECU** be replaced). |

***Q***

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| **QR:** | Quick Response (code) - QR Code, a two-dimensional matrix bar code composed of black modules placed inside a squareshaped structure. |

***R***

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| **Ref.:** | Reference. |
| **Rpm:** | Rounds per minute. |

***S***

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| **s/n:** | Serial number (engine identification name plate) indicating the engine identification series/chassis number. |
| **SCV:** | Suction Control Valve - it is situated on the high-pressure injection pump and is directly controlled by the **ECU** adjusting the intake of fuel to send to the **Common Rail** . |
| **Spec.:** | Specification, (engine identification name plate) indicating the engine version. |
| **STD:** | (Standard), base configuration of a component, or a group of components. |

***T***

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| **Tab.:** | Table. |
| **Target Wheel:** | A wheel that is a part of a device to control angular operation by means of teeth placed on the circumference, which enable to determine and transmit the speed and position of the crankshaft to a sensor. |
| **TCR:** | Turbo Common Rail. |
| **TDC:** | Top Dead Centre; a moment in which the piston is at the end of its stroke. |
| **Thermostatic valve:** | A valve that adjusts the flow of coolant liquid; it is able to operate by means of temperature variation. |
| **Tightening torque:** | A term indicated for installation of threaded components and which is determined by means of a unit of measurement **Nm** . |
| **T-MAP:** | T-MAP (sensor), measures the temperature and absolute pressure inside the intake collector. |
| **Torque:** | Force applied to an object that rotates on an idler shaft. |
| **Trochoid:** | Rounded toothed profile (also known as "lobes"). |
| **Turbocharger:** | Device that compresses air intake by sending it to the intake manifold by means of a turbine. |

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| **Used oil:** | Oil altered by operation or time, which is no longer compliant for correct lubrication of the components. |

***W***

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| **Waste-Gate valve:** | A device, which is directly or automatically controlled, used to limit the pressure of exhaust gas inside the turbine. |
| **Warning Lamp:** | A warning light (usually red) that indicates a serious anomaly during engine operation. |

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| **SYMBOLS AND UNITS OF MEASUREMENT** | | | |
| **SYMBOL** | **UNIT OF MEASUREMENT** | **DESCRIPTION** | **EXAMPLE** |
| α | degree | Rotation/inclination angle | 1° |
| cm 2 | square centimetre | Area | 1 cm 2 |
| Ø | millimetre | Circumference | Ø 1 mm |
| Nm | newton-metre | Torque | 1 Nm |
| mm | millimetre | Length | 1 mm |
| µm | 1/1000 of a millimetre (micron) | 1 µm |
| H | hour | Time | 1 h |
| g/kW | grammes per kilowatt per hour | Specific consumption | 1 g/kWh |
| kg/h | kilogramme per hour | Max. flow rate | 1 kg/h |
| Lt./min. | litres per minute | Flow rate | 1 Lt./min. |
| Lt./h | litres per hour | 1 Lt./h |
| ppm | parts per million | Percentage | 1 ppm |
| N | newton | Force | 1 N |
| A | Ampere | Intensity of electrical current | 1 A |
| gr. | gramme | Weight | 1 gr. |
| kg | kilogramme | 1 kg |
| W | Watt | Power | 1 W. |
| kW | kiloWatt | 1 kW |
| pa | pascal | Pressure | 1 pa |
| KPa | Kilopascal | 1 KPa |
| bar | barometric pressure | 1 bar |
| mbar (1/1000 bar) | barometric pressure | 1 mbar |
| R | Resistance | Resistance to electrical current (referred to a component) | 1 Ω |
| Ω | ohm | Resistance of electrical current | 1 Ω |
| Rpm | revs per minute | Rotation of an axis | 1 Rpm |
| Ra | average roughness expressed in microns | Roughness | 1 Ra |
| °C | degree centigrade | Temperature | 1°C |
| V | Volt | Electrical voltage | 1 V |
| eagonale.png | millimetre | Hex-head capscrew | eagonale.png 1 mm |
| cm 3 | cubic centimetre | Volume | 1 cm 3 |
| Lt. | litre | 1 Lt. |

