

The image of BMW is very strongly associated to high power, sports biased, luxury cars in the premium car segment, however, particularly in the United States and some parts of Asia, the combination of a car in this segment with a diesel engine was up until now almost unthinkable. I feel sure that many people in the USA are not even aware that BMW produces diesel-powered cars. In Europe there is a completely contrary situation which, driven by the relative high fuel price, and the noticeable difference between gasoline and diesel prices, there has been a continuous growth in the diesel market since the early eighties. During this time BMW has accumulated more then 20 years experience in developing and producing powerful diesel engines for sports and luxury cars. BMW started the production of its 1st generation diesel engine in 1983 with a 2,4 l, turbocharged IDI engine in the 5 series model range. With a specific power of 35 kW/l, this was the most powerful diesel engine on the market at this time. In 1991 BMW introduced the 2nd generation diesel engine, beginning with a 2,5 l inline six, followed in 1994 by a 1,7 l inline four. All engines of this 2nd BMW diesel engine family were turbocharged and utilized an indirect injection combustion system. With the availability of high-pressure injection systems such as the common rail system, BMW developed its 3rd diesel engine family which consists of four different engines. The first was the 4-cylinder for the 3 series car in the spring of 1998, followed by the 6-cylinder in the fall of 1998 and then in mid 1999 by the worlds first V8 passenger car diesel with direct injection. Beginning in the fall of 2001 with the 4-cylinder, BMW reworked this DI engine family fundamentally. Key elements are an improved core engine design, the use of the common rail system of the 2nd generation and a new engine control unit with even better performance. Step by step, these technological improvements were introduced to production for all members of this engine family and in all the different vehicle applications. In the next slide you can see the production volume of diesel engines by BMW. From the 1st family we produced {approx} 260,000 units over eight years and from the 2nd family {approx} 630,000 units were produced also during an eight year period. How successful the actual engine family with direct injection is can be seen in the increase of the production volume to 330,000 units for the year 2002 alone. The reason for this is that, in addition to the very low fuel consumption, this new engines provide excellent driving characteristics and a significant improvement in the level of noise and vibration. Page 2 of 5 In 2002, 26% of all BMW cars worldwide, and nearly 40% in Europe, were produced with a diesel engine under the hood. In the X5 we can see the biggest diesel success rate. Of all the X5 vehicles produced, 35% Worldwide and 68% in Europe are powered by a diesel engine. The BMW 3 Series (F30, F31, F34) Service Manual: 2012-2015 contains in-depth maintenance, service and repair information for the BMW 3 Series from 2012 to 2015. The aim throughout has been simplicity and clarity, with practical explanations, step-by-step procedures and accurate specifications. Whether you're a professional or a do-it-yourself BMW owner, this manual helps you understand, care for and repair your 3 Series. Engines (Gasoline): N20 engine: 320i, 328i, including xDrive N26 (SULEV) engine: 328i including xDrive N55 engine: 335i, including xDrive BMW 4 Series (F32, F33, F36) Service Manual

740i, 740iL, 750iL: 1995, 1996, 1997, 1998, 1999, 2000 2001
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BMW Z3 and Z4