

BMW Group
University

Product Training

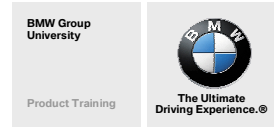


The Ultimate
Driving Experience.®



BMW TECHNOLOGY GUIDE

2015



BACKGROUND

BMW's 2015 vehicles are increasingly more technologically advanced, and there has been a proliferation of features and models that cater to a wider range of Customers.

The BMW Technology Guide provides an overview of many BMW technology features and the corresponding Customer benefits. The Guide has the following layout: Feature/Technology name, brief explanation of the function, a representative picture, its availability on 2015 BMW models, the benefit to the driver and passengers, and finally the typical Customer need.

It is the role of the Sales Consultant to assess the Customer's needs and to conduct a focused walk-around using simple explanations of BMW technologies.

Please use the most recent Product Guide and Product Ordering Information to check the availability of the systems described in this Guide, standard or optional.

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PERFORMANCE AND EFFICIENCY



BMW EfficientDynamics.

Diverse and innovative leading-edge technologies working together with the aim to deliver maximum driving pleasure while using less fuel and releasing fewer emissions. Applications start from lighter construction materials, low-friction components and improved aerodynamics to sophisticated energy management and fuel combustion control.

Available on: All models.

Benefit.

Extracting maximum driving pleasure from every drop of fuel.

Customer need.

Maximum fuel efficiency with no compromise in performance.



Brake Energy Regeneration.

Part of the braking energy that would otherwise be wasted is now used efficiently, converted into electricity by the vehicle's generator and stored in the battery. The generator doesn't require engine's power while driving unless it is strictly necessary.

Available on: All models.

Benefit.

Fuel efficiency is increased without any sacrifice in performance.

Customer need.

Driving enjoyment with enhanced fuel efficiency.



Double VANOS.

This system varies the camshaft timing to optimize power output throughout the rev range. Whatever the speed, the engine is tuned for the best performance.

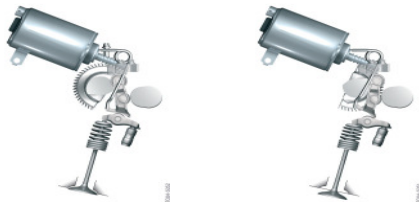
Available on: All models except diesel engines

Benefit.

Ensures smoother idling, more progressive response in stop-and-go traffic and reduced fuel consumption.

Customer need .

Flexible engine with high performance in any situation.



Valvetronic.

This highly advanced technology replaces the conventional throttle with an electrical mechanism that controls the amount of lift of the individual intake valves on each cylinder.

Available on: All models except diesel engines

Benefit.

The engine is able to breathe freely, delivering better performance while using less fuel.

Customer need.

Adaptive engine, responsive, with enhanced fuel efficiency.

Turbocharger.

A turbocharger compresses the air that is channelled into the cylinders, increasing the amount of oxygen available for combustion. Without increasing the engine's displacement or maximum speed, output is increased and emissions are lowered.

Available on: All models except i3



Benefit.

Improves fuel economy and engine's maximum power and torque. It also helps to reduce the emissions.

Customer need.

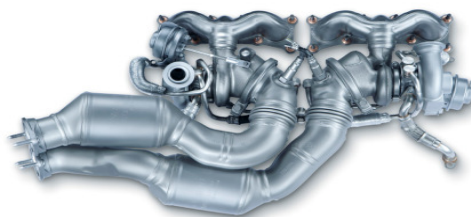
An engine with high output, quick response and good fuel efficiency.

Twin Turbochargers.

A single turbo often has an unacceptable "turbo lag" – the lag after the driver presses the accelerator pedal before the turbo responds. This is at its worst at low engine speeds.

By using two small turbos – each serving three/four cylinders – BMW reduces the inertia that creates turbo lag.

Available on: 550i, 650i, 750i/Li, 760Li, X5/X6 50i, M3/M4, M5/M6



Benefit.

Creates enthusiasm with responsive turbocharged engines and sustained torque from very low to high engine speed ranges.

Customer need.

Responsive engine with great fuel efficiency.

"I want a powerful, fast responding engine but I don't want to spend too much on gas."

Twin Scroll Turbocharger.

Exhaust gas flows from the cylinders are grouped in pairs up to the turbine. Inside the turbocharger, two separate channels help improve the energy exchange between the exhaust gases and turbine.

Available on: 2 Series, 3 Series, 4 Series, 5 Series except 550i, 6 Series except 650i, 7 Series except 750i/Li, M5/M6, X1,X3,X4,X5/X6 35i, Z4



Benefit.

The fastest and most direct response characteristics of any turbo engines worldwide.

Customer need.

High performance engine for passionate driving.



Intercooler.

Intake air that has been heated in the compressor is channelled to lower its temperature before it is introduced into the combustion chamber. Cold air contains a significantly higher proportion of oxygen than warm air.

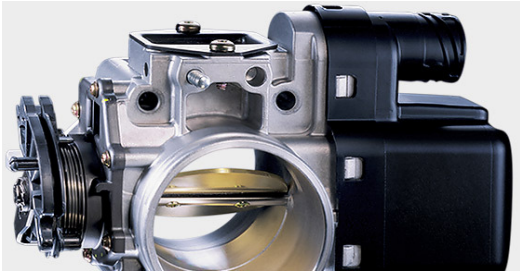
Available on: All engines except i3

Benefit.

Increases engine output for a high-pressure turbocharged engine with lower fuel consumption and emissions.

Customer need.

High performance engine for a more passionate driving experience.



Fully Electronic "drive-by-wire" Throttle System.

The movement of the accelerator pedal is converted to a digital signal that is sent to the Engine Management System. The position of the throttle is then quickly and precisely adjusted by an electric motor.

Available on: All models.

Benefit.

Ensures precise control of engine output with smoother, steadier power delivery, plus lower emissions and improved fuel efficiency.

Customer need.

Responsive engine with good fuel efficiency.



High Precision Injection.

High-pressure, electronically controlled injectors precisely spray gasoline directly into the combustion chamber. A cone-shaped cloud of fuel the size of a thumb nail, is directed onto the spark and combusts.

Available on: All gasoline engine models

Benefit.

A significant reduction in fuel consumption and greater engine performance due to a more efficient combustion process.

Customer need.

Driving enjoyment with higher fuel efficiency.



Catalytic Converter.

Using the oxygen present in exhaust gases, gasoline engines use a three-way system to reduce the amount of nitrogen oxides (NOx), carbon monoxide (CO) and unburned hydrocarbons (HC). BMW diesel engines use a specific type to reduce the amount of unburned hydrocarbons and carbon monoxide. Nitrogen oxides are treated separately.

Available on: All models.

Benefit.

Dynamic performance with cleaner running: cleans out exhaust gases and reduces emissions.

Customer need.

Environmentally responsible driving enjoyment. Cleaner environment.

Variable Vane Turbine Technology (Diesels)

Latest Diesel engines (4 cylinder and 6 cylinder) feature a single turbocharger with variable vane turbine technology, which improves low-end torque, and facilitates precise control of the boost pressure. The exhaust gas treatment system meets strict US emission standards by having a NO_x catalyst storage and Selective Catalytic Reduction (SCR) system (H₂S trap catalyst) that traps the majority of H₂S and NO_x emissions before being released into the air.

Available on: All diesel engine models



Benefit.

More efficient and more environmentally friendly with fewer emissions.

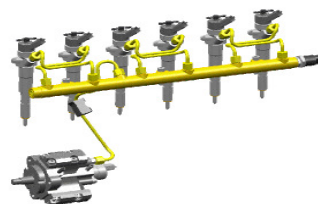
Customer need.

A no-compromise engine with excellent performance, great fuel economy and emits low emissions

Diesel common rail injection.

This system uses one central high-pressure pump and electronically-controlled injectors that is extremely fast and precise. Very high pressure fuel-injection produces fine droplets in the combustion chamber, resulting in better combustion and low noise.

Available on: All diesel engine models



Benefit.

Quieter, smoother, and more efficient BMW diesel performance.

Customer need.

Quiet engine delivering excellent torque that ensures great acceleration while keeping the fuel cost low.

Diesel particle filter.

Removes almost all diesel-specific, soot particulates from the exhaust. They are eliminated by burning within the filter.

Available on: All diesel engine models



Benefit.

Dynamic performance and cleaner running. The driver can enjoy a highly fuel efficient vehicle, with low emissions.

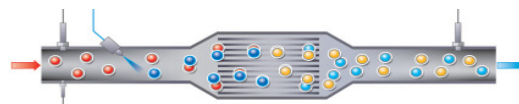
Customer need.

Environmentally responsible driving enjoyment and high fuel efficiency.

Selective catalytic reduction with AdBlue.

To meet the strictest US emission standards, a special catalytic converter reduces the important diesel emissions of nitrogen oxides (NO_x). To ensure that the chemical reactions take place inside this catalytic converter, Diesel Exhaust Fluid (DEF), an urea-based solution, is injected into the exhaust.

Available on: All diesel engine models

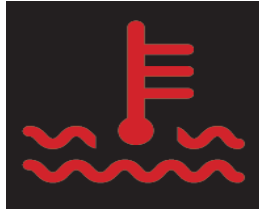


Benefit.

The driver can enjoy a highly fuel efficient vehicle.

Customer need.

Environmentally responsible driving enjoyment and high fuel efficiency.



Electronically Controlled Engine Cooling.

Activates the electric coolant pump only when it is needed and controls the thermostat in response to a complexity of data rather than just coolant temperature.

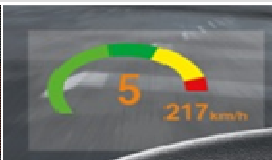
Available on: All models

Benefit.

Engine temperature is optimized for best performance, warm-up is faster, heating capacity is increased, and fuel consumption is reduced.

Customer need.

Fuel efficiency and driving comfort.



Gear Shift Indicator.

Digital Engine Management System monitors the current driving conditions and calculates which gear offers the best performance. Through either the Head Up Display or odometer display, the system shows the driver the best moment for shifting gears.

Available on: Models with manual transmission or sports automatic transmission.

Benefit.

By shifting gears at the recommended moment, you ensure the best engine performance.

Customer need.

Manual shifting for a more passionate driving experience.



Electric Power Steering.

An electric motor assists steering. The system is lighter in weight than conventional hydraulic power steering and uses less fuel. Consumes energy only when needed, requires less space and is remarkably low-maintenance.

Available on: All models except X1

Benefit.

The driver benefits from varying levels of power assistance, and the system instantly adjusts to suit the current driving conditions. The Sports mode enhances this experience with a tighter feel.

Customer need.

Precise steering in any driving situation and increased fuel efficiency.



BMW ActiveHybrid.

BMW ActiveHybrid is the term used for all BMW hybrid vehicles. The word "active" indicates the brand-specific emphasis on the dynamic performance of BMW hybrid models.

Through the combination of an internal combustion engine and an electric motor, the BMW ActiveHybrid offers a significant increase in dynamic performance and a reduction in fuel consumption and emissions.

Available on: BMW ActiveHybrid 3, 5, 7

Benefit.

Enhanced driving pleasure and fuel efficiency.

Customer need.

Environmentally responsible driving enjoyment.

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DRIVING ENJOYMENT

**Six-speed manual transmission.**

Six speed manual gearbox provides crisp, short throws between gears. A fast, self-adjusting clutch ensures the full potential of the engine's torque output is transformed efficiently into drive power.

Available on: 2 Series, 3 Series Sedan (except 335d), 4 Series Coupe (except 428xi), M3/M4, M5/M6, Z4 28i/35i.

Benefit

Enables a particularly dynamic driving experience with its razor-sharp precision and short gear throws, providing total power control in every driving situation.

Customer need

Spirited driving.

**Double Clutch Transmission (DCT).**

The DCT is able to shift quicker than a manual transmission because the DCT engages two clutches - one clutch engages odd-numbered gears, while the other clutch engages the even-numbered gears and reverse. While in operation, one gear is engaged, while the other is pre-selected.

Available on: M3/M4, M5/M6, Z4 35i/35is

Benefit.

A high performance transmission that combines the technology used in Motorsport with all the requirements of everyday driving.

Customer need.

Quicker upshifts and downshifts

**Steptronic.**

This feature quickly allows BMW eight-speed automatic transmission into to be shifted manually When the gear selector lever is moved to "manual," you can shift gears up and down similar to a manual transmission.

Available on: All Models

Benefit.

Shifting gears in a BMW with an automatic transmission becomes more dynamic and sporty.

Customer need.

"I like to feel in control of the vehicle's gear selections."

Dynamic Driving Control (DDC).

A more complex version of the Sport button, provides different modes for engine throttle response, transmission shift characteristics, shock-absorber firmness, power-steering assist and Dynamic Stability Control settings. The DDC settings can vary between Eco Pro, Comfort, Sport and Sport Plus, depending on each model.

Available on: All models



Benefit.

Increases the sport-style characteristics of the vehicle and provides an even closer connection with the road.

Customer need.

A versatile vehicle suited for daily driving but capable of sportier runs.

xDrive.

Permanently adapts the torque split between the front and rear axles to the road surface or driving conditions. Acting instantaneously and seamlessly, the system can direct up to 100% of torque to one axle.

Available on: All models except M3/M4, M5/M6 and Z4.



Benefit.

Ensures the vehicle has the best possible traction for all wheels at all times, enhancing agility and keeping the Driver safely on track.

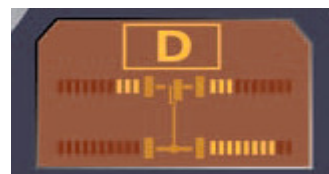
Customer need.

"I like to ski and I want to feel confident while traveling to the ski hill in all kinds of weather!"

Dynamic Performance Control (DPC).

Switches power between the left rear and right rear wheels to stabilize the vehicle within milliseconds and help increase traction and lateral acceleration.

Available on: X4, X5, X6, X5M, X6M.



Benefit.

Allows the Driver to corner at higher speeds with greater precision and higher levels of safety. Provides more responsive steering, increased stability, and more traction, especially when accelerating out of corners.

Customer need.

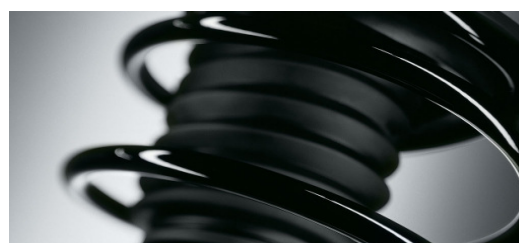
Excellent stability and safety during performance driving.

Sport Suspension.

Sport suspension includes:

- Lowered ride height
- Firmer springs and shock absorbers

Available on: All models

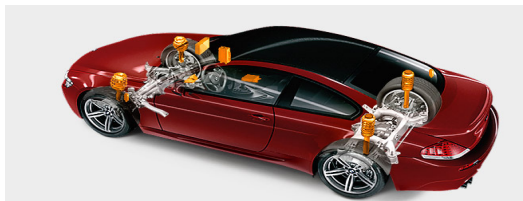


Benefit.

Enhances handling at some loss in ride comfort.

Customer need.

"I like to feel the road!"



Dynamic Damper Control (DDC).

Adapts the shock absorbers' firmness to changing road, load, and driving conditions. Brake dive and body movement on bumps, in bends, or when accelerating, are reduced significantly.

Available on: 6 Series, 7 Series, M5, M6, X4

Benefit.

Combines supreme driving comfort with outstanding safety on the road. Body movement is suppressed regardless of the vehicle's load or the current road surface.

Customer need.

Comfortable and safe driving on all road surfaces.
Low vibration and noise inside passenger cabin.



Dynamic Drive (Active Roll Stabilization).

Active stabilizers on the front and rear axles counteract the vehicle's tendency to roll in a corner.

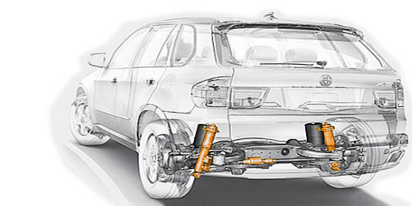
Available on: 7 Series

Benefit.

Minimizes body roll when cornering and ensures "flat cornering." Comfortable ride for all occupants.

Customer need.

Comfortable ride and stability when cornering.



Adaptive Drive.

The innovative chassis control systems Dynamic Drive (Active Roll Stabilization) and Dynamic Damper Control (DDC) work together to deliver an outstandingly smooth ride and enhanced agility.

Available on: 535i/d, 550i, 5GT, 6 Series, 7 Series, X5, X6

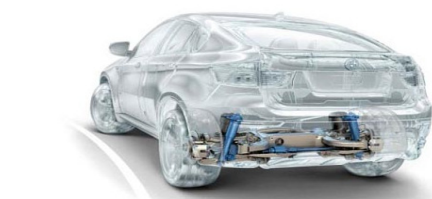
Benefit.

Body roll is practically eliminated and winding roads can be enjoyed with maximum stability and safety.

Customer need.

Comfortable ride and agility on all kinds of roads.

Spirited drive.



Dynamic Adaptive Suspension

Combines the elements from the Adaptive Drive system (Dynamic Damping Control and Active Roll Stabilization) with Dynamic Performance Control (DPC).

Available on: X5, X6

Benefit.

Minimizes body roll, adapts suspension to driving conditions plus increased agility and increased driver feedback when accelerating out of corners for increased safety

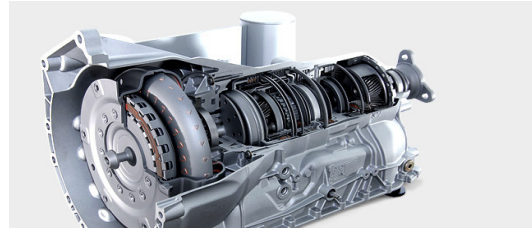
Customer need.

"A vehicle with a flexible suspension that provides class-leading dynamics"

Adaptive Transmission Management (ATM) / Route-Ahead Assistant

Analyzes the prevailing driving conditions: in winter, in mountainous areas, stop-and-go traffic or winding roads. This results in fewer and more precise gear shifts, letting the driver focus on the dynamic performance. If the vehicle is equipped with Navigation (GPS), the upcoming road conditions based on the user's destination would be analyzed, and both the ATM with the GPS would work in concert to pre-select the gear for optimal motoring performance

Available on: All models with automatic transmission.



Benefit.

Recognizes the driver's individual style and automatically selects the right gear at the right moment, eliminating unnecessary shifts.

Customer need.

Individually adapted, comfortable driving.



50:50 weight distribution.

Great agility and outstanding traction without any oversteering or understeering behavior. Supported by Dynamic Stability Control (DSC), the vehicle remains stable and controllable even in extreme situations.

Available on: All models.

Benefit.

The ideal distribution of weight between the front and rear axles provides the perfect balance of performance and precision.

Customer need.

"A vehicle with great handling in the turns."

SAFETY AND SECURITY

Adaptive Brake Lights.

Additional brake lighting or brighter illumination appears under heavy braking or anytime the ABS goes into action.

Available on: All models.



Benefit.

Provides surrounding vehicles in proximity a better indication that the vehicle is braking hard.

Customer need.

Safe driving in city and highway traffic.

Adaptive Headlights.

Small electric motors turn the headlights in accordance with the vehicle's steering angle, and this facilitates the headlight beams to continue following the road.

Available on: All models except 320i, X1 xDrive28i



Benefit.

Makes nighttime driving safer by helping the driver to spot obstructions and recognize dangerous situations earlier. The headlight beams turn to follow the direction of the road.

Customer need.

Increased confidence driving at night

"I drive on a lot on winding roads ,especially at night."

High Beam Assistant

High-Beam Assistant automatically switches between high and low beams at night. A camera is mounted on the inner side of the rear-view mirror that monitors approaching vehicles and light conditions and adjusts the high/low beams accordingly.

Available on: All models except 320i, X1 xDrive28i, Z4



Benefit.

Makes nighttime driving safer by having the vehicle automatically modulate high and low beams.

Customer need.

Additional vision when driving at night

"I drive at night in rural or not well-lighted areas."

LED Headlights

LED lights are Brighter, Whiter, have a longer service life and have less power emissions compared to Bi-Xenon headlights

Available on: All models except 2 Series, 3 Series, X1, Z4



Benefit.

More efficient and brighter than Bi-Xenon lights

Customer need.

Greater visibility when driving at night

"I want maximum vision with my headlights at night"



Automatic headlights.

Automatically switches on the headlights and all related lighting when ambient light drops below a certain level.

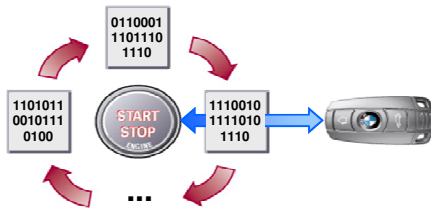
Available on: All models.

Benefit.

Increases the comfort and safety when driving along alternating bright and dark stretches of road, when driving at dusk or dawn or in deteriorating weather conditions.

Customer need.

Comfortable and safe driving. Less operating controls.



Coded drive-away protection.

The key or non-key remote stores an electronic code transmitted by an antenna at the ignition switch or slot. Each time the key is removed, this code is changed; the next time, the car can be started only if the key matches the new code.

Available on: All models.

Benefit.

Reduces the frequency of theft of BMW vehicles.

Customer need.

A vehicle that is less likely to be stolen.



Run-Flat Tires (RFT).

Maintains handling and safety standards expected from performance tires. The RFTs continue to perform their function even if all air pressure is lost. The range is 80 kms, at 80 km/h.

Available on: All models, standard or optional.

Benefit.

Instead of an unpleasant and unsafe roadside tire change, the Customer can continue driving to their destination safely.

Customer need.

Worry-free driving.

"I need to reach my destination on time, every time I drive."



Tire Pressure Warning.

This is especially important with the use of Run-flat tires as it is not always possible to detect a loss of pressure. Pressure in each individual tire is measured directly and monitored. If pressure in any tire drops below a defined level, this is indicated by a warning in the instrument cluster. Thus even if all tires lose pressure in unison, the driver will be warned.

Available on: All models.

Benefit.

Provides the driver with an early warning that helps prevent uneven tire wear and reduces the risk of tire damage.

Customer need.

Worry-free driving.

Crash Sensor.

Upon collision, the vehicle's crash sensor overrides the central locking system, and unlocks all the doors. It also switches on the cabin lights and activates the hazard warning lights to alert other vehicles of this collision. The BMW Assist Response Center would be notified via an emergency signal.

Available on: All models.



Benefit.

Helps the vehicle's occupants to get out of the cabin as swiftly as possible by unlocking all doors.

Customer need.

Maximum safety for the occupants in the case of a collision.

Crumple Zones.

The front and rear ends of each current BMW model are carefully engineered to manage impact energy in a controlled manner.

Available on: All models.



Benefit.

In a frontal or rear-end collision, the energy is absorbed smoothly and the forces on occupants' bodies (with safety belts fastened) are minimized.

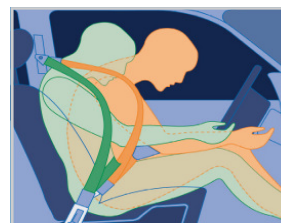
Customer need.

Maximum safety for the occupants in the case of a collision.

Seatbelt Pretensioners and Force Limiters.

Automatic tensioners tighten the front belts in a collision, optimizing occupants restraint. Once the belts are tensioned, the maximum amount of force they can exert on the occupant's body is limited.

Available on: All models.



Benefit.

In certain frontal collisions, this safety system helps restrain and reduce the risk of injury to front seat occupants.

Customer need.

Maximum safety for the occupants in the case of a collision.



Safety Battery Terminal.

Within milliseconds of a collision, whenever an airbag deploys, the starter cable is pyrotechnically detached from the battery.

Available on: All models.

Benefit.

Reduces the risk of fire in the event of a collision.

Customer need.

Maximum safety for the occupants in the case of a collision.



Advanced Head Protection System (AHPS).

Front-to-rear curtain airbags combine the advantages of an inflatable tubular structure head airbag with a "sail" spanning between the tube and the ceiling as it deploys to cover areas likely to be impacted by an occupant's head. It remains inflated up to 7 seconds in the event of a secondary crash.

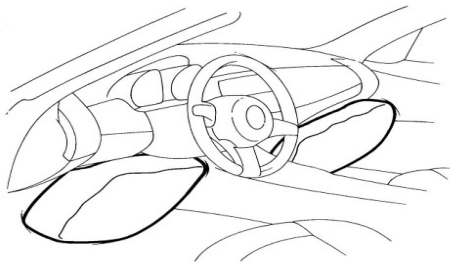
Available on: All models.

Benefit.

In a side impact, passengers are protected by the very stable body and intelligently placed head cushioning.

Customer need.

Maximum safety in case of a side-impact collision for front and rear passengers.



Active Knee Protection

Knee airbags deploy to meet occupants' knees in a frontal impact, which helps protect the occupants' knees, lower legs, ankle and feet

Available on: All models.

Benefit.

In a frontal impact, the lower part of the front occupants' body is well-protected

Customer need.

Maximum safety for the occupants in the case of a collision



Active Anti-whiplash Front Headrests.

Employs fast-reacting pyrotechnic activation. A rear-end collision causes the front head restraints to pivot forward into close proximity with the occupants' heads.

Available on: All models

Benefit.

Occupants are able to adjust the head restraints away from direct contact with their heads, yet gain whiplash protection in the case of a rear-end collision.

Customer need.

Maximum safety for the occupants in the case of a collision.

Driving Assistant Plus

This package significantly enhances Driver and Passenger active safety, and includes the following systems: Active Cruise Control with stop-and-go, Lane Departure Warning and Frontal Collision Warning

Available on: ActiveHybrid 5, 550i Gran Turismo/Sedan, 6 Series, 7 Series, M5, M6, X5, X6



Benefit.

Active safety systems that prevent potential collisions in the city or on the highway

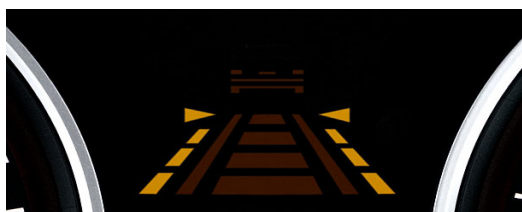
Customer need.

Feel safe while in traffic or on the open road

Lane Departure Warning.

The system identifies lane markings, and continuously tracks their position. If the vehicle strays from the current lane, the system would alert the driver by vibrating the steering wheel, which allows the driver to take corrective actions.

Available on: All models except 320i, X1 and Z4



Benefit.

Prevents drivers from inadvertently moving out of their current lane, often caused by in-vehicle distractions, fatigue, or long, monotonous journeys.

Customer need.

Longer driving on the highways or after long work/meeting hours.

"I work long hours and I want to feel safe on long drives."

Active Blind Spot Detection

Two radar sensors are located under the rear bumper to monitor the rear and side of the vehicle to provide continuous blind spot detection. A light will illuminate on either the driver's or front passenger's side mirror depending on which blind spot is being occupied.

Available on: All models except 2 Series, 320i, X1 and Z4



Benefit.

Provides the Driver feedback if the vehicle's blind spot is being occupied

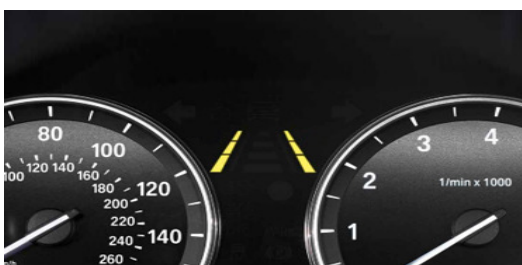
Customer need.

A comfortable vehicle, easy to drive in city traffic or when parking, with good stability at higher speeds.

Frontal Collision Warning

This system helps prevent a possible rear-end collision by engaging both City Collision Mitigation and Pedestrian Protection systems, which would brake the vehicle when an imminent collision is 1 second away

Available on: 5 Series, 6 Series, 7 Series, X3, X4, X5, X6

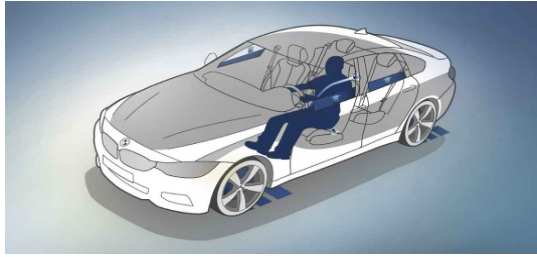


Benefit.

Passive safety system that helps secure passengers when there is an imminent collision

Customer need.

Maximum safety for the occupants in the case of a collision.



Active Protection

When the vehicle's Active Protection System determines that a collision is imminent:

- Seatbelts are pre-tensioned
- Windows are closed
- Moonroof (if present) is closed
- Vehicle comes to complete stop after collision

Available on: 5 Series, 6 Series, 7 Series, X5, X6

Benefit.

Passive safety system that helps secure passengers when there is an imminent collision

Customer need.

Maximum safety for the occupants in the case of a collision.



Intelligent Safety Button

This button allows the Driver or Passenger to control the Frontal Collision Warning, Blind Spot Detection and Lane Departure Warning systems.

- The green light indicates all systems are on.
- While the orange light allows for customization—one or more systems can be on, while other systems can be turned off
- No light indicates that all systems are off

Available on: 5 Series, 6 Series, 7 Series, X3, X4, X5, X6

Benefit.

Passive safety system that can be customized to the Customer's needs

Customer need.

At certain times, the Customer may choose to turn on/off certain safety systems



Dynamic Stability Control (DSC).

In conjunction with the engine management system, brakes can be applied to individual wheels as required to maintain vehicle stability.

Available on: All models

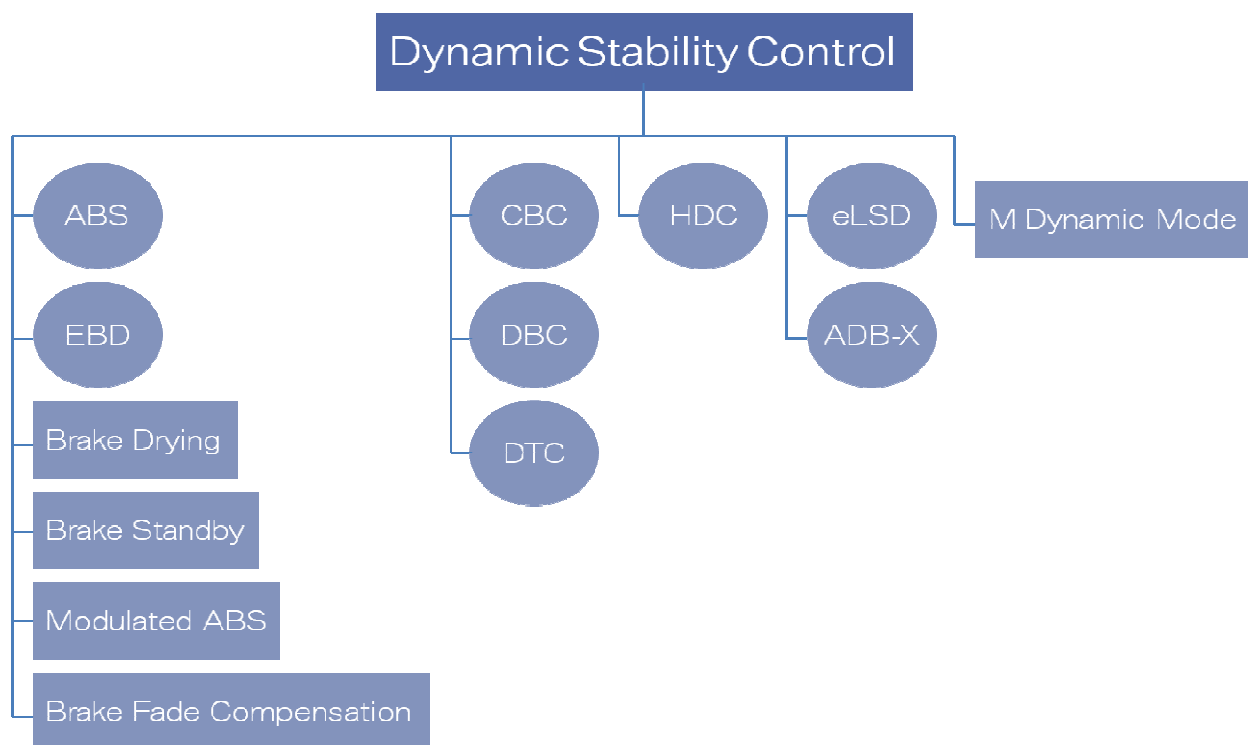
Benefit.

Enhances overall driving stability and improves control on a variety of surfaces.

Customer need.

Excellent vehicle stability in all driving situations.

DSC comprises of multiple systems that work together. The following chart illustrates these various systems:



Anti-lock Brake System (ABS).

During braking, anytime a wheel begins to lock up (slide), the system releases and re-applies (cyclic) the individual wheel brakes to prevent this from occurring. Only a rotating wheel can ensure effective braking and steering.

Electronic Brake force Distribution (EBD)

When the driver applies the brakes, vehicle's front end becomes more heavily loaded and the rear gets "lighter." Front-to-rear distribution of braking force is electronically varied according to braking severity.

Benefit.

Even when hard braking, the vehicle remains under the driver's complete control.

Customer need.

Ability to brake and steer to avoid obstacles.

Additional braking functions:



Brake Drying

Acting on input from the rain sensor, the pads are periodically brought up to the rotors – just enough to eliminate any film of water between pads and rotors.

Brake Standby

When the driver lifts off the accelerator pedal abruptly, DSC recognizes that sharp braking may be about to occur and applies just enough pressure in the brake system to snug up the pads against the rotors.

Modulated ABS function

Makes the anti-lockup function (ABS) smoother. Instead of simply being fully applied and released, these actions are modulated.

Brake Fade Compensation

- “Brake fade” is the loss of effectiveness when brakes heat up under hard use. As the brake temperature rises, Brake Fade Compensation automatically increases the hydraulic pressure in the brake system relative to pedal application, so the driver doesn’t need to press harder on the pedal.

Benefit.

Even after long and frequent braking, the stopping power remains unchanged.

Customer need.

Reliable braking performance in all driving conditions.



Cornering Brake Control (CBC).

The system detects any deviation (understeer or oversteer) from the normal cornering path and gently applies individual wheel brakes to help the driver keep the vehicle on the intended path.



Dynamic Brake Control (DBC).

It recognizes when the driver has made a “panic” brake application and increases the level of assistance.



Dynamic Traction Control (DTC).

Controls engine power and brakes to limit wheel spin and thereby improves the driver's control of the vehicle, primarily on slippery roads.

Benefit.

Allows for sporty driving dynamics even when DSC is controlling stability.

Customer need.

Sporty driving capabilities and control on any road surface.



Hill Descent Control (HDC)

- AWD models only. The system gently applies the brakes as necessary to keep the speed to a walking pace when driving on changeable, loose or slippery downhill surfaces, such as gravel, snow or grass.

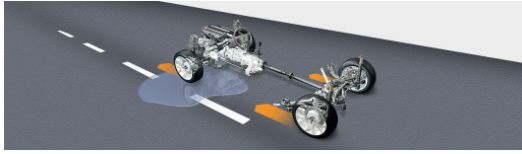
Benefit.

Helps the driver maintain reduced speed and stability when coasting on slippery surfaces.

Customer need.

Comfortable driving on steep hills.

"My cottage is at the top of a steep hill."



Electronic limited slip differential (eLSD) - RWD.

DSC simulates a traditional mechanical limited-slip differential by judicious application of the individual rear wheel brakes while cornering. This ensure a better torque distribution between the two rear wheels, improving traction.

Automatic Differential Brake (ADB-X) - AWD.

If a drive wheel loses grip, it is braked individually. Torque is then directed to the other wheels, which guarantees optimum drive power.

Benefit.

Ensures that the vehicle remains stable when driving on uneven road surfaces or in poor driving conditions.

Customer need.

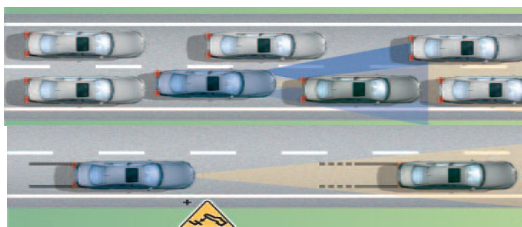
Confident driving on all kinds of road surfaces.



M Dynamic Mode - M models only.

Allows more oversteer and wheel spin, which can be useful to an expert driver on a race track.

DRIVER'S ASSISTANCE



Active Cruise Control w/ stop-and-go.

The Active Cruise Control with stop-and-go system can bring the vehicle to a complete stop if traffic stops. Then, when the driver presses the throttle, the system accelerates the vehicle back to the set cruise control speed, or maintains the set following distance.

Available on: All models except 2 Series, 320i, X1 and Z4

Benefit.

Can maintain a set speed or match it with the leading vehicle up to a complete stop.

Customer need.

More comfort from congested city streets to long highway trips.



Night Vision with Pedestrian Detection.

A thermal imaging camera helps automatically detect people/animals. After an evaluation of distance and direction of movement, a symbol on the central information display and in the head-up display, warns the driver of any persons at risk.

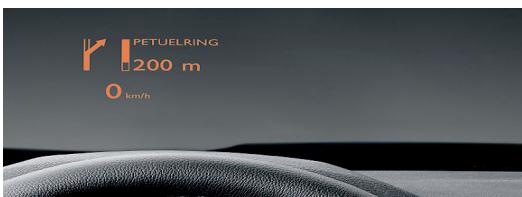
Available on: ActiveHybrid 5, 550i Gran Turismo/Sedan, 6 Series, 7 Series, M5, M6, X5, X6

Benefit.

Enhanced capability to detect roadside pedestrians when driving at night.

Customer need.

Early identification of the unexpected during night driving.



Head-up Display.

Enables the Driver to see important information from various systems without taking his/her eyes from the road. A virtual image is projected onto the windshield, near the end of the hood in Driver's sight

Available on: All models except 2 Series, 320i, X1 and X4

Benefit.

Provides essential information about the vehicle's performance while the Driver keeps focus on the road.

Customer need.

Less distraction from vehicle controls.

"I like to keep my eyes on the road."



Hill-start Assistant.

Hill-start Assistant holds the vehicle for approx 1 second by applying the brakes while stationary on an incline, and this feature allows the driver to switch from pressing the brake pedal to pressing the gas pedal without the vehicle rolling backwards. Available for manual and automatic transmission.

Available on: All models

Benefit.

Prevents the vehicle from rolling backwards when starting uphill while the driver moves the foot from brake pedal to accelerator.

Customer need.

"I live in a hilly area."



Servotronic.

Provides high levels of power assistance when parking and maneuvering at low speeds, followed by a gradual reduction of power assistance as the vehicle's speed increases.

Available on: All models except X1 and Z4

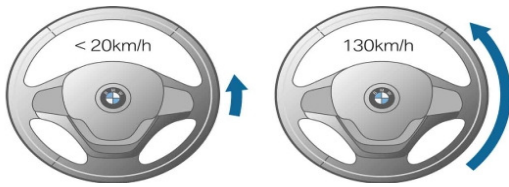
Benefit.

Enhances Driver's comfort by optimizing the effort needed to turn the steering wheel. Adjusts the amount of steering assistance to suit the current speed.

Customer need.

Maneuvers easily with driving stability.

"A vehicle that is easy to park in a crowded parking lot and tighter on the highway."



Variable Sport Steering

Steering ratio is electromechanically varied according to vehicle speed via the steering unit's rack and pinion's gear teeth. Therefore there is less steering input required for cornering at low speeds. Thus, lock-to-lock steering inputs decreases by 25%. Conversely, there is more input required for cornering at high speeds. If Variable Sport Steering is combined with Servotronic, it allows for an agile driving experience with minimal steering effort

Available on: All models except X1 and Z4

Benefit.

Decreases amount of steering input to make steering maneuvers in a low-speed evasive situation, while providing stability during higher speeds

Customer need.

Sporty quick responsive steering with low speeds, and stable steering at higher speeds



Active Steering.

An electric motor in the steering column adjusts the front wheels' steering angle according to the vehicle's speed. DSC uses this system to overcome an instability situation while driving.

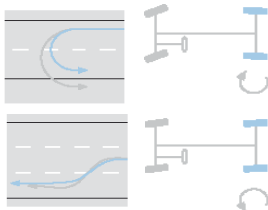
Available on: 760Li. Optional on: X5, X6

Benefit.

Parking is easier and agility is enhanced at lower speeds while at higher speeds the steering is more precise for greater stability and more comfort.

Customer need.

Excellent stability at higher speeds and easy maneuvering when parking.



Integral Active Steering.

Via a motor, the rear wheels are turned slightly. At low speeds they move the opposite way from the front wheels to aid cornering. At high speeds they move in the same direction for increased stability.

Available on: 760Li

Benefit.

Increases driving comfort. The vehicle seems shorter, with a tighter turning radius at lower speeds. At high speeds, the vehicle seems longer and more stable and comfortable.

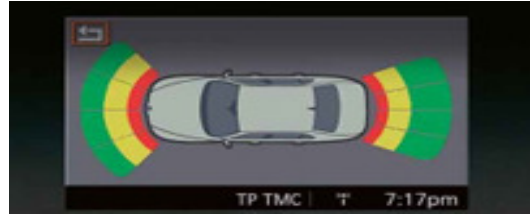
Customer need.

A comfortable vehicle, easy to drive in city traffic or when parking, with good stability at higher speeds.

Park Distance Control (PDC).

Ultrasound sensors integrated into the bumper measure the distance to the nearest large object behind the vehicle. An image is shown on the iDrive display or notifies driver using beeps of increasing frequency.

Available on: All models



Benefit.

Entering or leaving tighter parking spaces becomes much easier. Helps drivers to avoid colliding with unseen obstacles.

Customer need.

Comfortable parking maneuvers.

"I want a car that's easy to park."

Parking Assistant

When parallel parking, the vehicle will assist parking maneuvers by steering the vehicle, while the Driver controls the throttle and brakes (all models equipped with Parking Assistant excluding X5 and X6). The X5, X6, and i3 have a fully automated system that controls not only steering inputs, but also gear changes, throttle and braking inputs

Available on: All models except X1 and Z4



Benefit.

Assists the Driver with parallel parking maneuvers.

Customer need.

Assists Customers who need to parallel park

"I want a car that's easy to parallel park."

Side View Cameras

Side View Cameras are mounted ahead of the front side wheel wells to provide an additional view in front of the Driver's compartment. It is particularly useful when the Driver is pulling into unseen traffic. On the X5 and X6, the cameras are located behind the vehicle's front grille.

Available on: All models except 2 Series, X1, Z4



Benefit.

Pulling away from a street that has obstacles on either side

Customer need.

Better visibility when approaching an intersection

"I want excellent visibility at an intersection"

Surround View

Working in conjunction with both the rear view and front side mirror cameras, the Surround View function stitches the images from all three cameras together to provide 270 degree view of the vehicle's surroundings

Available on: All models except 2 Series, X1, Z4



Benefit.

Entering or leaving tighter parking spaces becomes much easier. Helps drivers to avoid colliding with unseen obstacles.

Customer need.

Comfortable parking maneuvers.

"I want a car that's easy to park."

COMFORT AND CONVENIENCE



BMW Key fob.

A Customer can lock/unlock, start/turn-off vehicle and open/close the trunk without touching the key. This key fob additionally stores vehicle service history and can open/close windows and moonroof/sunroof from the fob.

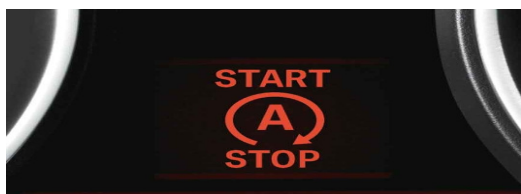
Available on: All models

Benefit.

The owner can lock, unlock and start the engine without using the key or remote control.

Customer need.

Comfort and security.



Auto Start/Stop

The Auto Start Stop function switches off the engine when the vehicle is stopped or if in neutral. The engine will start again when the driver presses the clutch or brake.

Available on: All models except X1 xDrive35i and Z4

Benefit.

More efficient use of fuel, while emitting less emissions

Customer need.

Better fuel economy and fewer emissions



Electromechanical Parking Brake (EPB).

Electromechanical operated brake cables support the function of the conventional handbrake.

Available on: All models

Benefit.

The vehicle remains at a reliable standstill on a slope or a flat surface whether the engine is switched on or off.

Customer need.

Worry-free standstill.



Sun Reflective Technology.

Leather is treated with a special pigment, which slows the accumulation of heat from direct sunlight. As a result, the surfaces maintain a pleasantly lower temperature.

Available on: All cabriolets

Benefit.

Guarantees a lower leather surface temperature even after exposure to strong direct sunlight.

Customer need.

A comfortable convertible.

"I love convertibles but the seat get so hot in the summer when the roof is down."

Driver Profiles

A USB stick can hold up to 160 different settings including seat preferences, favorite radio stations, navigation destinations, contacts, temperature preferences, etc.

Available on: All models



Benefit.

Easy to transfer personalized settings to other BMW vehicles

Customer need.

Seamless transition to memorize various settings from one BMW vehicle to another

Favorite buttons. (Programmable memory keys).

Easy to reach buttons for both the Driver and Front Passenger with pre-assigned functions to reduce distractions.

Available on: All models



Benefit.

Fast and convenient access to frequently used functions, customized to individual preferences.

Customer need.

Customized controls. Keeps handy the favorite entertainment selections and frequent used functions.

Active Seats

The lower seat cushion has continual minor adjustments to minimize front seat fatigue. The front passenger's pelvis is continually slightly tipped, resulting in movement of the lower spinal column, which reduce fatigue.

Available on: 5 Series, 6 Series, 7 Series, M5/M6



Benefit.

Reduces front seat fatigue

Customer need.

Enhanced front seat comfort on long driving trips

BMW ConnectedDrive

A system that uses both software and hardware to blend Safety, Entertainment and Productivity features into one product offering. Customers can choose among multiple services, apps and driver assistance safety systems

Available on: All models



Benefit.

Allows the Customer to be connected to the outside world using multiple touch points.

Customer need.

Be able to be connected with all incoming (car sensors, networks, external devices) and outgoing (car status, route data, etc.) data

Sources:

- BMW Canada Product Guides.
- BMW Canada Product Bulletins.
- BMW Product Knowledge on Demand - <http://www.bmwpkod.com/default.aspx>
 - Glossary
 - Library
- BMW Technology Guide | BMW Canada - http://www.bmw.ca/ca/en/insights/technology/technology_guide/start.html



NOTES

Lined area for notes, consisting of multiple horizontal dashed lines.

Handwriting practice lines consisting of multiple sets of three horizontal dashed lines for tracing and writing practice.

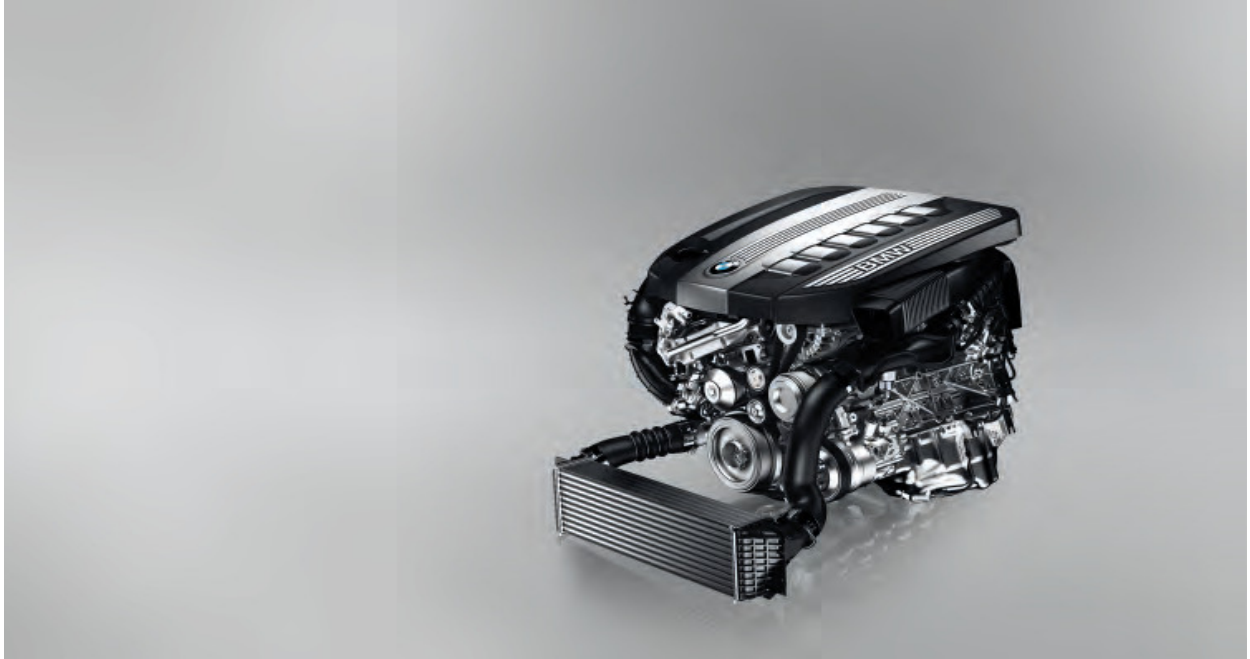
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Handwriting practice lines consisting of 28 horizontal dashed lines.

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Handwriting practice lines consisting of multiple sets of three horizontal dashed lines for tracing and writing practice.

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