BMW Group
Aftersales Training

E46 M3 CSL
Participant Manual

NOTE
The information contained in this participant's manual is intended for participants of the Aftersales Training.
Refer to the relevant "BMW Service" information for any changes/ supplements to the Technical Data.

VS-12/VS-42 MFP-HGK-BRK-E46M3CSL_0100-0400

Contents

Introduction

- History and Production Launch

Following a long BMW tradition, the designation CSL stands for Coupé, sports and lightweight.
As far back as 1938, the legendary 328 Mille Miglia Coupé was built with all-aluminium body panels.

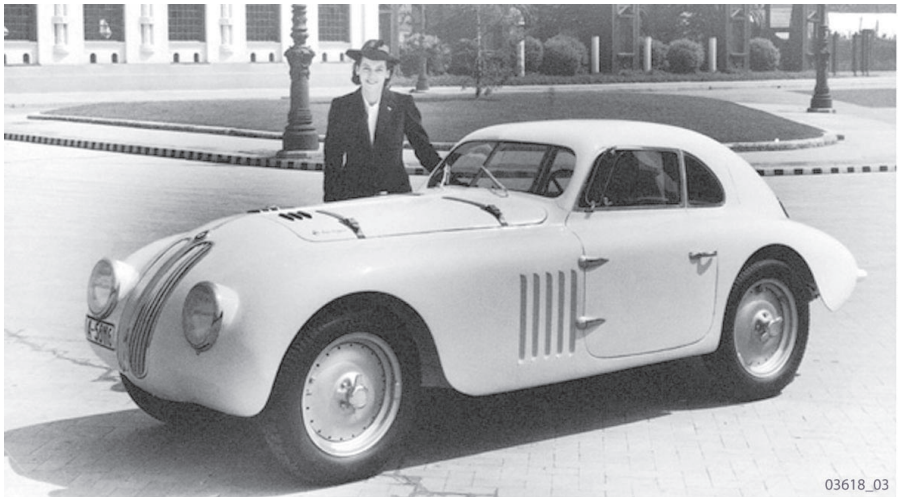

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Fig. 1: 328 Mille Miglia Coupé

In the 1970s, a lightweight sports car based on the 3-litre Coupé of the time was produced in small numbers.

KT-12408

Fig. 2: 3.0 CSL

At the 2001 IAA show in Frankfurt, an M3 CSL concept car was presented.

In June 2003, the M3 CSL went into series production.

In spite of the cost and production-related difficulties, it has been possible to retain a large proportion of the weight-saving design features of the concept car on the production version of the M3 CSL.

And it goes without saying that the legendary CSL qualities – unbridled power, astounding agility and outstandingly precise handling – are possessed in full measure by the 4-seater M3 CSL sports Coupé.

KT-12409

Fig. 3: M3 CSL

On the famous "northern loop" of the Nürburgring for example, the M3 CSL has recorded lap times below the magic 8-minute barrier.
The 20.8 kilometer stretch of tarmac in Germany's Eifel region is the traditional test of a car's handling characteristics and has always been a required part of the development programme for any BMW M model.

KT-12410

Fig. 4: M3 CSL on the Nürburgring

- Equipment and special features

Equipment and functions specific to the M3 CSL include:

- CFRP roof with visible-weave finish (see section "Body")
- Bucket seats (see section "Body")
- M Track Mode (DSC)
- SMG Launch Control with automatic upshift (see section "Engine/Drivetrain")
- Electronic oil-level detection and display (see section "Engine/Drivetrain")
- M3 CSL wheels and Cup tyres (see section "Wheels, suspension and steering")
- CSL insignia on both sill trim strips, the side gills and on the boot lid
- CFRP air intake duct with visible-weave finish (see section "Engine/ Drivetrain")

The M3 CSL will only be available in either metallic silver grey or metallic black sapphire.

The following equipment will not be offered on the M3 CSL due to design modifications:

- Electric glass sunroof and mounting points for roof rack (due to CFRP roof)
- Seat/mirror memory and thorax airbags
- Front fog lamps, automatic headlights and daytime lights (due to absence of front fog lamps, different light switch cluster that does not incorporate above functions)
- Middle 3-point seatbelt on rear seat (4-seater)
- Normal oil dipstick (due to air intake duct)
- Display of average speed by on-board computer (function replaced by oil level display, see section "Drivetrain")

Because of the purist design considerations and also partly for weight-saving reasons, the following functions and equipment have also been dispensed with:

- Multifunction steering wheel
- Navigation
- Manual gearbox without SMG
- Cruise control
- Tool kit
- Heated seats
- Automatic air conditioning
- Radio

However, radio and automatic air conditioning are available as options.

- M Track Mode

On the right spoke of the steering wheel there is a switch for the M Track Mode function.

KT-12411

Fig. 5: M3 CSL steering wheel with M Track Mode button

This is a special racing-based operating mode for the Dynamic Stability Control (DSC) which allows the driver to fully utilize linear and lateral slip within the physically determined limits. The DSC does not intervene until the vehicle is at the absolute limit.
The function is automatically deactivated when the ignition is switched off and has to be reactivated by the driver afterwards.

M Track Mode is indicated by a new yellow symbol in the lower left section of on the instrument cluster.

KT-12544

Fig. 6: M Track Mode indicator lamp

- Indicator lamp permanently lit: M Track Mode is switched on
- Indicator lamp is permanently on and DSC indicator lamp is flashing: M Track Mode is active and is controlling power transmission and braking
- DSC indicator lamp permanently lit:
  DSC and M Track Mode are switched off

To switch the function off:
Press the M Track Mode button (indicator lamp will go out) – or
Press the DSC button (DSC indicator lamp comes on and M Track Mode indicator lamp goes out):
DSC and M Track Mode are then both switched off.

- Supplementary pages to contract of sale

When ordering this model, customers will be informed of the greater risk of aquaplaning and the higher rate of wear of the Cup tyres and will be asked to confirm their acceptance of those risks on a supplementary page to the contract of sale.

If customers do not wish to accept those additional risks, they can choose the M3 option 792 consisting of the M double-spoke 67, 19-inch wheels.

On another supplementary page, customers may also agree to the removal of the factory-set maximum speed limit if they intend to use the M3 CSL in motor-racing events. Proviso: The customer must have a racing licence.

- Intelligent lightweight design

As long ago as the 17th century, the British physicist and astronomer, Sir Isaac Newton, discovered and defined the fundamental equation of dynamics as F = m x a.
Expressed in words, that means that force [F] is equal to mass [m] multiplied by acceleration [a]. If we resolve Newton's equation for acceleration [a], we can say that a = F/m, which means that the greater the force [F] and the smaller the mass [m], the greater the acceleration.

A lack of power is not something that is a problem for any of the M3 models; what is interesting, however, is the optimization of mass which, due to the constant demand for greater comfort and the associated conglomeration of equipment, is continually increasing on the standard production models.

An increase in power – the M3 CSL has an extra 17 bhp – on its own primarily improves straight-line performance. The car can accelerate faster and under the right circumstances may reach a slightly higher top speed.

But a lower mass has benefits for both linear and lateral dynamics. The car not only goes faster in a straight line, it can also corner faster.

There are a number of ways in which mass can be reduced.

Method 1

By making changes to the equipment fitted (see list of equipment and features).

Method 2

Instead of using conventional components made of conventional materials, especially lightweight and/or high-strength materials are employed. But trusting in one "lightweight material" on its own would not be a true M-Series solution. That is why the M3 CSL makes use of "intelligent lightweight design."

For a BMW M Series, intelligent lightweight design means using the right materials in the right places on the car. Each component is made of the material that is most suitable in each individual case – because every material has its own specific properties which have to be taken into consideration. Among those properties are physical characteristics such as resistance to heat (important for the exhaust system, for instance), or flexural strength or rigidity (of significance for parts such as the bumper cross-members, suspension components, wheels, chassis reinforcing stays, folding rear backrest, and the roof).

Criteria such as quality and production capability also have to be taken into account.

The materials primarily used were CFRP, GFRT, GFRP, SMC and aluminium along with one or two other lightweight materials according to their suitability for the particular application.

CFRP (carbon-fibre reinforced plastic)
CFRP is made with long carbon fibres and is characterized in particular by exceptional rigidity combined with excellent energy-absorbing properties, and is thus ideally suited as a structural lightweight material.

GFRT (glass-fibre reinforced thermoplastic)
This composite material contains layers or a woven fabric of continuous glass fibres.
It is heated up outside the press and then formed and cooled in the press.
GFRT is very impact-resistant due to its thermoplastic component as well as having good tensile strength from the continuous fibres.

GFRP (glass-fibre reinforced plastic)
Multiple layers of glass-fibre mats are placed in a mould and saturated with polyester or epoxy resin.
The process is known as laminating.

SMC (sheet moulding compound)
In this case, a duroplastic material is used which is hot-extruded to form a moulded component.
SMC is made up of

- long glass fibres (fibre length approx. 25 - 50 mm)
- mineral filler (calcium carbonate)
- polymerized reaction resins

SMC components provide the possibility for a large degree of design scope and the integration of several individual components into a complex component as well as a weight reduction of approx. 15% compared with steel.
The outstanding properties of SMC components are their immunity to corrosion, their tolerance of minor damage because of their high resistance to denting, and their favourable fracturing characteristics in the event of an accident.

- Overview of body components made of specialized/light-weight materials

CFRP (carbon-fibre reinforced plastic):

- Front valance
- Front bumper cross-member

CFRP with visible-weave finish:

- Roof
- Removable flaps
- Rear diffuser
- Centre console, door and side panels

Continuous GFRT (glass-fibre reinforced thermoplastic):

- Rear bumper cross-member

Sandwich-construction continuous GFRT:

- Structural components of folding rear backrest

GFRP (glass-fibre reinforced plastic):

- Front seats

SMC (sheet moulding compound) composite fibre material:

- Boot lid

Aluminium:

- Bonnet (same as standard M3)
- Front suspension brace
- Front and rear wishbones (steel on standard M3)

Paper honeycomb sandwich:

- Luggage compartment floor

Weight-optimized floor coverings

As a result of this rigorous weight-saving approach, the M3 CSL weighs only 1385 kilograms according to DIN, giving it a power-to-weight ratio of 1 kW:5.2 kg (1 bhp:3.85 kg). That is an improvement of around ten percent compared with the standard M3.

- General technical specifications

Performance		M3 CSL	M3 Coupé
Power-to-weight ratio according to DIN	kW:kg (bhp:kg)	1:5.2 (1:3.85)	1:5.93 (1:4.36)
Output per litre	kW/l (bhp/l)	81.6 (111)	77.7 (105.6)
Acceleration [1] 0 - 100 km/h	s	4.9	5.2
0 - 200 km/h	s	16.8	18.2
1000 m standing start	s	23.5	24.2
80 - 120 km/h in 4th gear	s	5.0	5.3
Maximum speed [2]	km/h	250	

Weight		M3 CSL	M3 Coupé
Unladen weight to DIN [3]	kg	1385	1495
Payload	kg	415	430
Max. gross weight	kg	1800	1925
Max. trailer weight	kg	Zero	Zero
Max. roof load	kg	Zero	75

Fuel consumption based on EU cycle		M3 CSL	M3 Coupé
Urban	l/100 km	17.8	
Extra-urban	l/100 km	8.4	
Overall	l/100 km	11.9	
CO_2	g/km	287	

Miscellaneous		M3 CSL	M3 Coupé
Fuel tank capacity	l	Approx. 63	
Emissions rating (Germany)		EU3	
Boot capacity to VDA	l	410	
Aerodynamic drag	C_wxA	0.683	0.659

[1] M3 CSL with Cup tyres

[2] Electronically limited

[3] EU: weight of on-the-road vehicle plus 75 kg for driver and luggage

- Vehicle dimensions

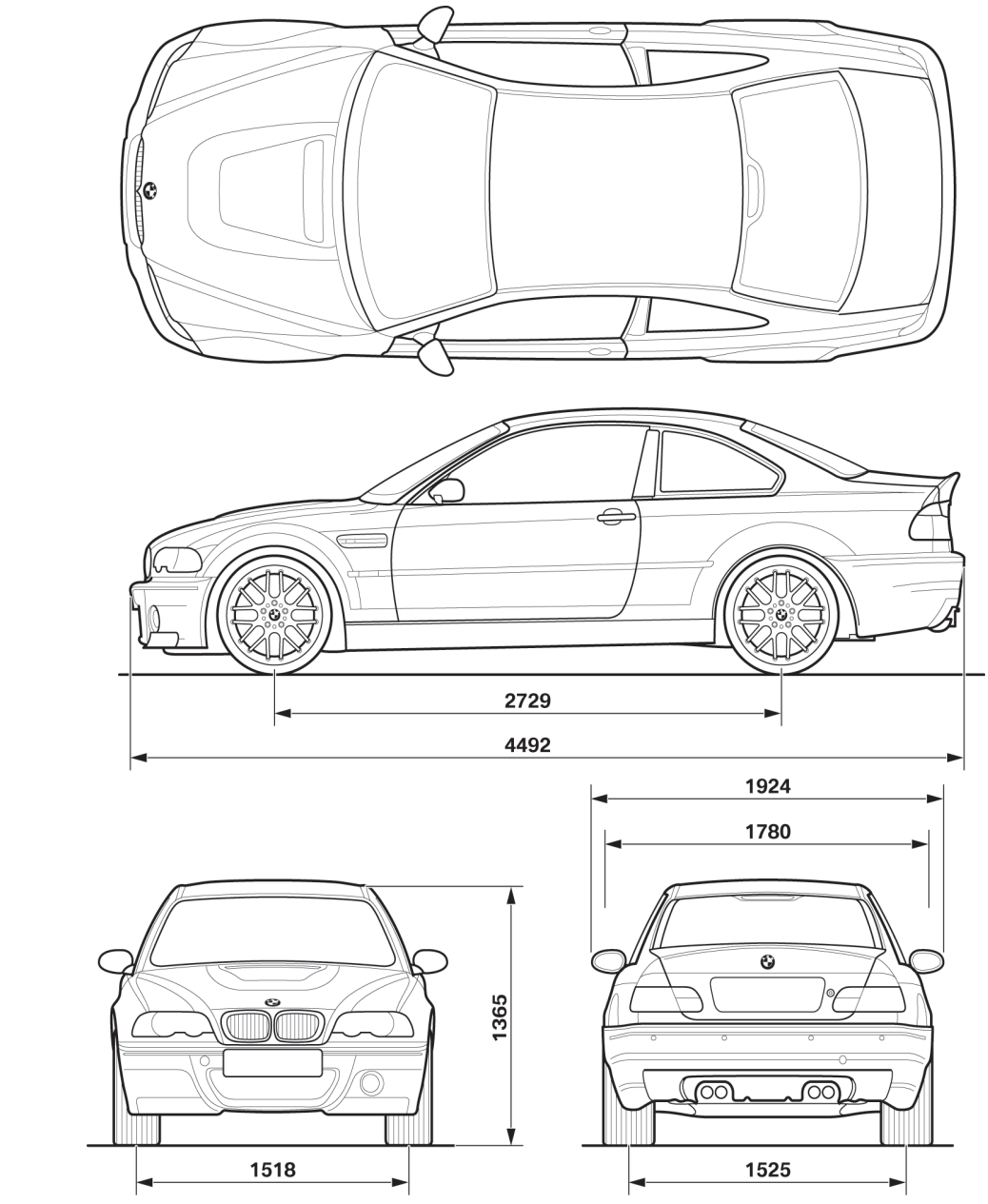

Fig. 7: Vehicle dimensions

Differences		M3 CSL	M3 Coupé
No. of seats		4	5
Overall height	mm	1365	1383
Wheelbase	mm	2729	2731
Front track	mm	1518	1508
Interior dimensions			

Body

- Front end

The special M3 CSL front valance is made entirely of CFRP.

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Fig. 8: Front valance

It has an engine air-intake scoop on the driver's side (diameter 9 cm) and two individually replaceable flaps made of CFRP with a visible-weave finish. Those flaps reduce the lift at the front of the car by more than 50 percent compared with a standard M3.

The front bumper cross-member is also made of CFRP.

- Rear end

The rear valance is identical to the standard M3 and is not made of CFRP.
The rear bumper cross-member is made of GFRT.
The special rear diffuser is made of CFRP with visible-weave finish.

KT-12414

Fig. 9: Rear diffuser

The centre console and the inner door and side panels are also made of CFRP with visible-weave finish.

- Roof

One of the particular features of the M3 CSL is its carbon-fibre roof with visible-weave finish. The carbon-fibre roof is six kilograms lighter than the standard steel roof and as a result lowers the centre of gravity of the car.
That has a positive effect on the dynamic handling characteristics.

The roof is made at the BMW factory in Landshut by our plastics specialists.

KT-12415

Fig. 10: M3 CSL roof

If damaged, the roof has to be replaced. It is bonded to the adjoining body components (see Repair Manual).

The rear window is made of special thin glass. Its thickness has been reduced by 0.7 mm to 3.15 mm. That represents a saving of 1.6 kg.

- Cockpit

The standard equipment for controlling passenger-compartment temperature and ventilation is a conventional heating and ventilation system with rotary controls.

The steering wheel, handbrake lever and SMG gear lever are partially covered in Alcantara fabric.

The mirror adjusting button on the M3 CSL is between the front seats on the centre console near the handbrake lever.

KT-12416

Fig. 11: Cockpit and mirror button (1)

- Seats

The driver's seat and passenger seat are contoured bucket seats made of GFRP which offer optimum lateral support. For easy access to the rear seats, they can be folded forwards and are their fore and aft position only is manually adjustable.

KT-12417

Fig. 12: Bucket seats

The seat trim is an Amaretta-fabric combination and a lumbar-support cushion can be positioned in the backrest (see Supplementary Owner's Manual).

The steering-wheel, passenger and front head airbags are fitted on the M3 CSL, but not the thorax airbags.
The contour of the bucket seats compensates for the absence of the thorax airbags in the event of a crash.
The bucket seats and door panels have been specially coordinated with one another with that in mind.
The M3 CSL produces very high lateral and linear acceleration forces when driven fast. The resulting forces acting on the driver and front passenger have to be resisted by the bucket seats.
In order to be able to cope with those forces in any situation, the seat subframe has to be suitably dimensioned. As a result, the seat adjustment and Easy-Entry function have a somewhat heavier action which in no way whatsoever represents a deficiency and is part of the design concept of the CSL racing seat.

Note:	The most efficient method in terms of effort is to apply the force below the release lever.

Seat height and inclination are adjusted to the customer's requirements by the BMW dealer.
This involves removing the seat and the lower side seat trims. The bucket seat is attached to the seat rail assembly by four special bolts. After removing the two front bolts and loosening the rear bolts, the front of the seat can be set to one of the three height positions and the front bolts then replaced in the chosen position. The same applies by analogy to the three rear height positions.

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Fig. 13: Bucket-seat fixing bolts (1)

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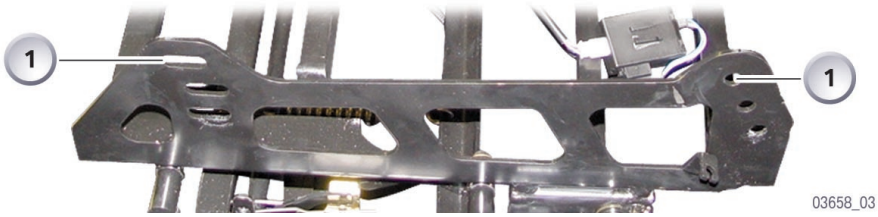

Fig. 14: Seat height/tilt adjustment options (1)

As a result there are three possible parallel seat-height positions and various possibilities for setting the seat inclination.

Caution:	The special bucket-seat fixing bolts are safety-related components and should be replaced at the appropriate intervals when fitting/adjusting the seats and should always be tightened to the specified torque. Refer to Repair Manual.

Individual rear seats with folding backrest

The structural components of the folding rear-seat backrests are made of continuous GFRT sandwich material.
On the standard M3, the folding backrest is made of steel.

KT-12420

Fig. 15: Individual rear seats

The contoured rear seats are integrated in the lightweight folding backrest. Like the front seats, they are covered in an Amaretta fabric combination.

Even the backing of the carpets is made of a weight-optimized foam underlay.

- Bonnet and boot lid

As on the standard M3, the bonnet is made of aluminium.

The boot lid and integral spoiler of the M3 CSL are made of SMC (sheet moulding compound).

KT-12421

Fig. 16: Boot lid

The only type of boot-lid damage that is repaired is superficial damage such as scratches.
With any other type of damage such as fractures or cracks, the boot lid must be replaced.

The boot floor liner is made of a paper honeycomb sandwich material.

Engine/Drivetrain

- Overview

The weight optimization measures adopted on the M3 CSL also extend to the S54B32S engine, as evidenced by a CFRP air-intake duct and a lighter exhaust system, for example.

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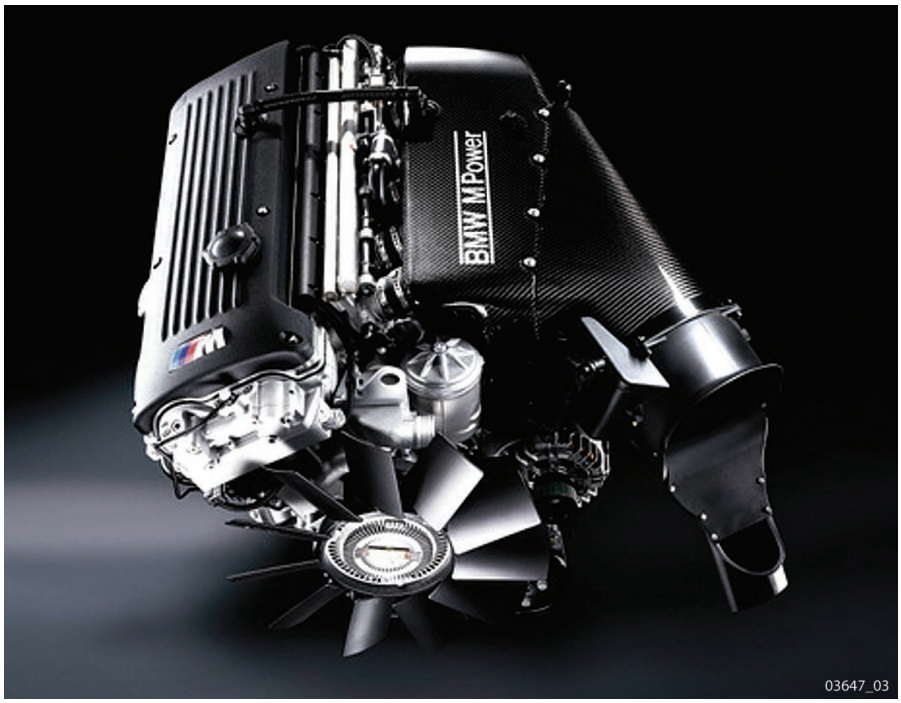

Fig. 17: The S54B32S engine of the M3 CSL

The increase in power has been achieved by modifications to the intake system, the valve gear and the exhaust system.

Engine management is performed by the new MSS54HP.

The M3 CSL also has its own special oil-level sensing system.

The launch control system (for making racing starts) of the SMG sequential M gearbox has been optimized on the M3 CSL.

The M3 CSL is also fitted with the M differential lock.

- Intake system

The substantially enlarged diameter of the air-intake duct, to which air is also supplied by the large scoop on the left-hand side of the front valance, provides an unrestricted flow of air to the engine thus allowing it to "breathe" more freely.

KT-12423

Fig. 18: Air-intake scoop in front valance

The flow of air into the large-volume air-intake duct is controlled by a 220 mm control flap. The flap is controlled by a PWM (pulse-width modulated) signal from the M3 CSL's special MSS54HP engine management module which operates a positioning motor on the basis of the power demand from the driver.

The control flap does not have any intermediate positions. Its open and closed positions are signalled by a potentiometer.

At lower power requirements, the control flap is closed and air is drawn in only through the one intake pipe behind the control flap.

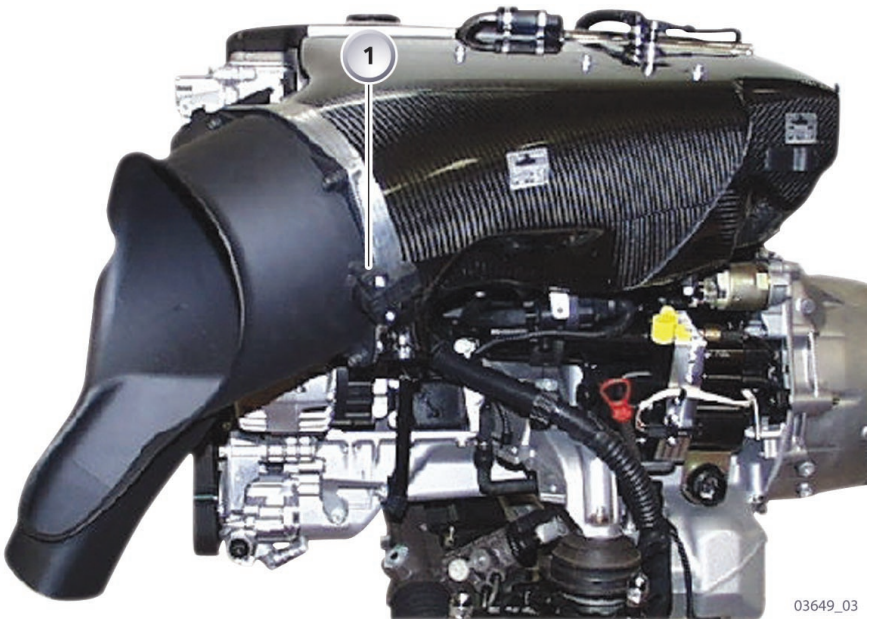

Fig. 19: Air intake duct with control-flap potentiometer (1)

When there is a high demand for power, the control flap is open and the full airflow cross-section upstream and downstream of the control flap is available to the engine.

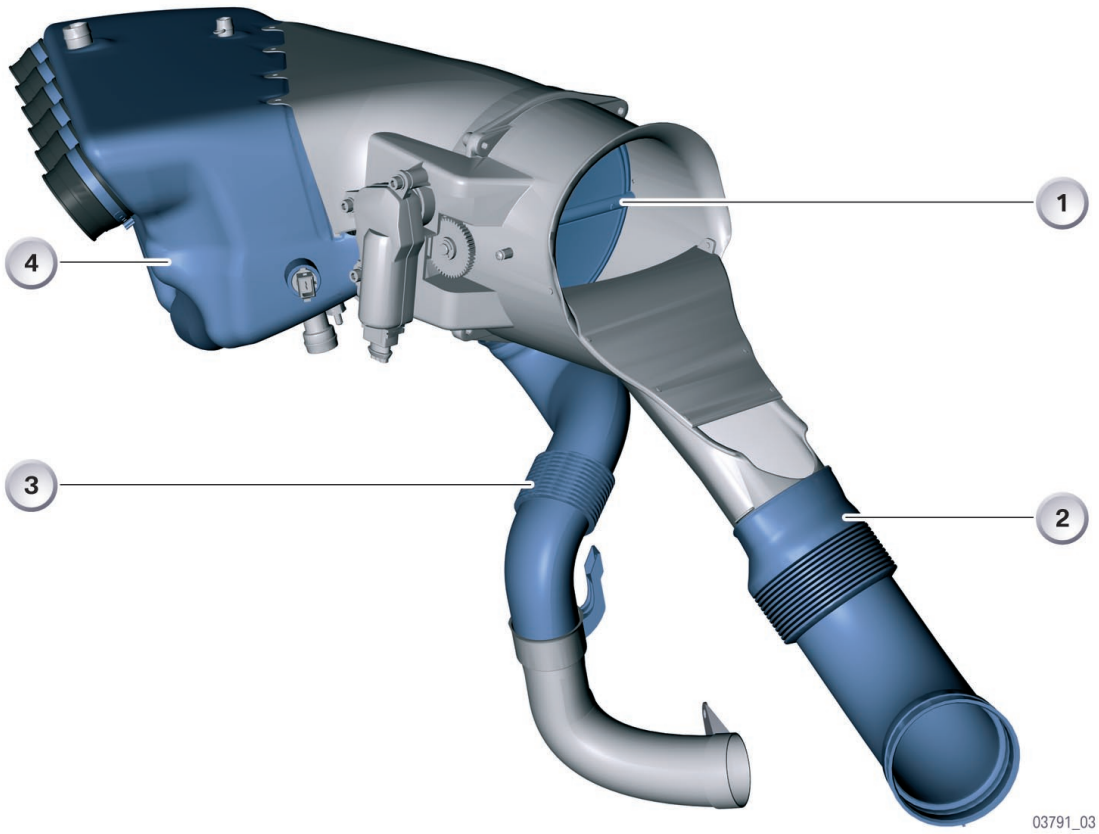

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Fig. 20: Air intake system

Index	Explanation
1	Air intake from engine compartment via control flap
2	Air intake from scoop in front valance
3	Air intake pipe upstream of control flap
4	Air-filter housing with integral filter element

The air-filter element is necessarily integrated in the twin-pipe air intake duct.

When the control flap is closed, air is drawn in relatively quietly from the area behind the front valance through a "silencer" pipe routed behind the front valance.

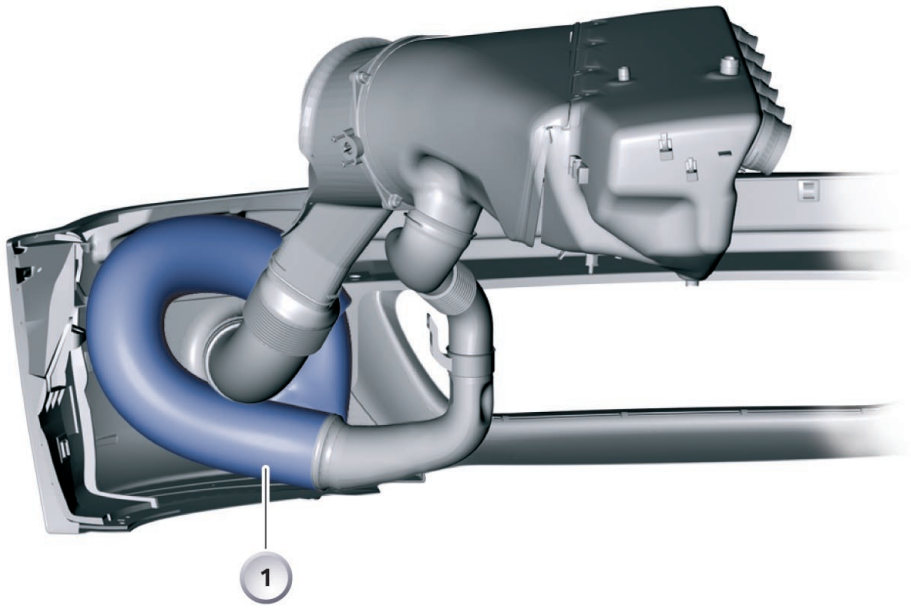

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Fig. 21: Air-intake silencer pipe (1)

When the control flap is open, air is also drawn in through the large aperture from the engine compartment and from the 9 cm scoop in the front valance. The control flap thus also lets in fresh air from outside the car delivered by ram pressure which increases with road speed.

The Sports button on the centre console substantially alters control of the throttle valves as on the standard M3. In Sports mode, throttle response is even more direct.
On the M3 CSL, power development is also improved over a wide rev band because the control flap is opened sooner in Sports mode.
The air-intake noise level increases accordingly when the control flap is open as determined by the power output.

A further derestriction of intake airflow is also achieved by the design-related absence of the air mass-flow meter.
The mass flow rate of the intake air is calculated by the MSS54HP from the engine speed and the throttle-valve position taking account of the intake-air temperature and the atmospheric pressure (pressure sensor in control unit).

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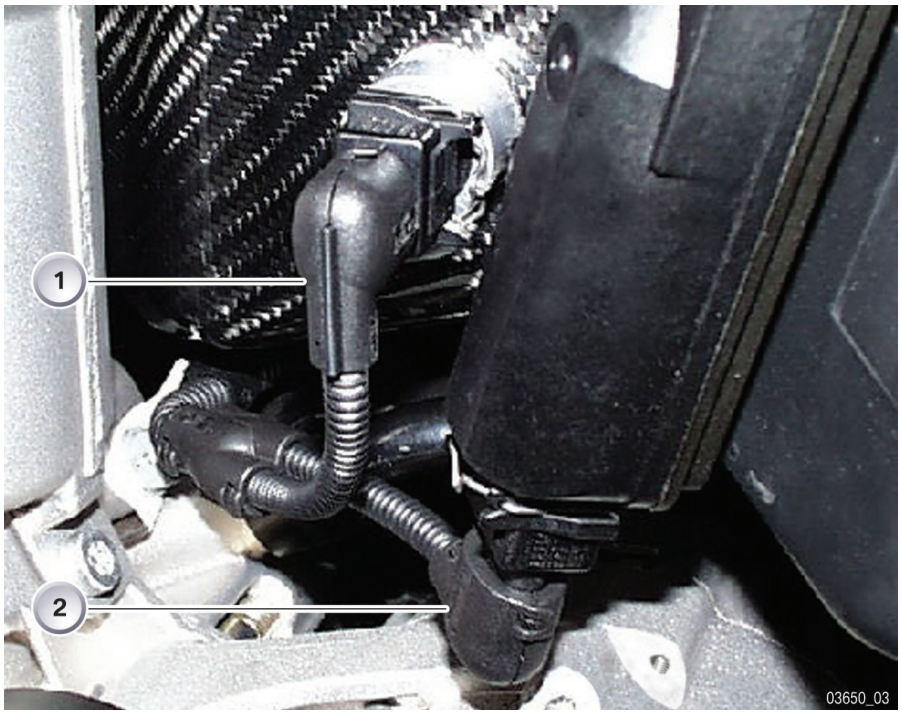

Fig. 22: Electrical connections on the air intake duct

Index	Explanation
1	Intake-air temperature sensor
2	Control-flap connection

In order to ensure that the engine can run in emergency mode without an air mass flow meter function if a fault such as failure of the throttle-valve potentiometer occurs, the M3 CSL has an additional pressure sensor on the idle-air rail so that the pressure on the engine-side of the throttle valves can be analysed.

KT-12426

Fig. 23: Pressure sensor on idle-air rail

- Valve gear

Another factor contributing to the increased engine power are the modifications to the valve gear whereby the valve opening times have been extended by changes to the camshaft and the exhaust valves have been optimized.
The inlet valve opening period has been increased from 260° to 268° of crankshaft rotation and the exhaust valve opening period from 260° to 264°.

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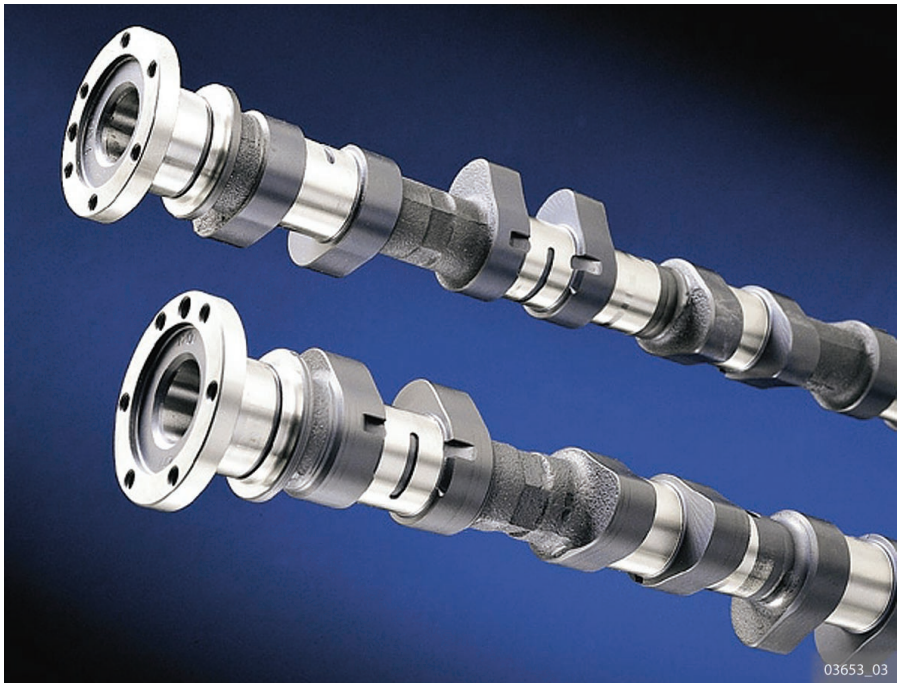

Fig. 24: Camshafts

In order to reduce the work required to expel the burned fuel from the combustion chamber, the geometry of the valve head has been improved.

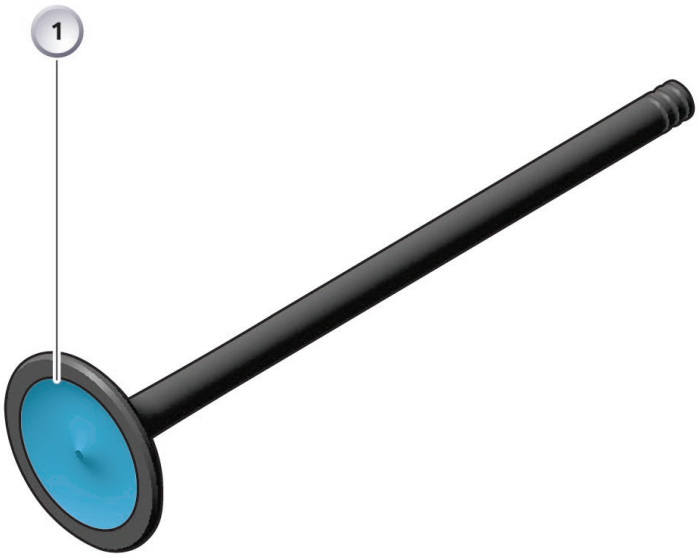

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Fig. 25: Modified exhaust-valve geometry

- Exhaust system

In keeping with the CSL lightweight design philosophy, the entire exhaust system is made of thinner-walled pipes.

KT-12429

Fig. 26: M3 CSL exhaust system

The silencers have been modified in terms of design and acoustics, and in order to reduce the exhaust back-pressure, the pipes open out into a funnel shape inside the rear silencers.

- MSS54HP

Because of the more complex tasks required of it, such as calculating the air mass-flow rate, the memory capacity of the MSS54HP has been doubled in comparison with the MSS54 and the processing speed increased by 25 percent.

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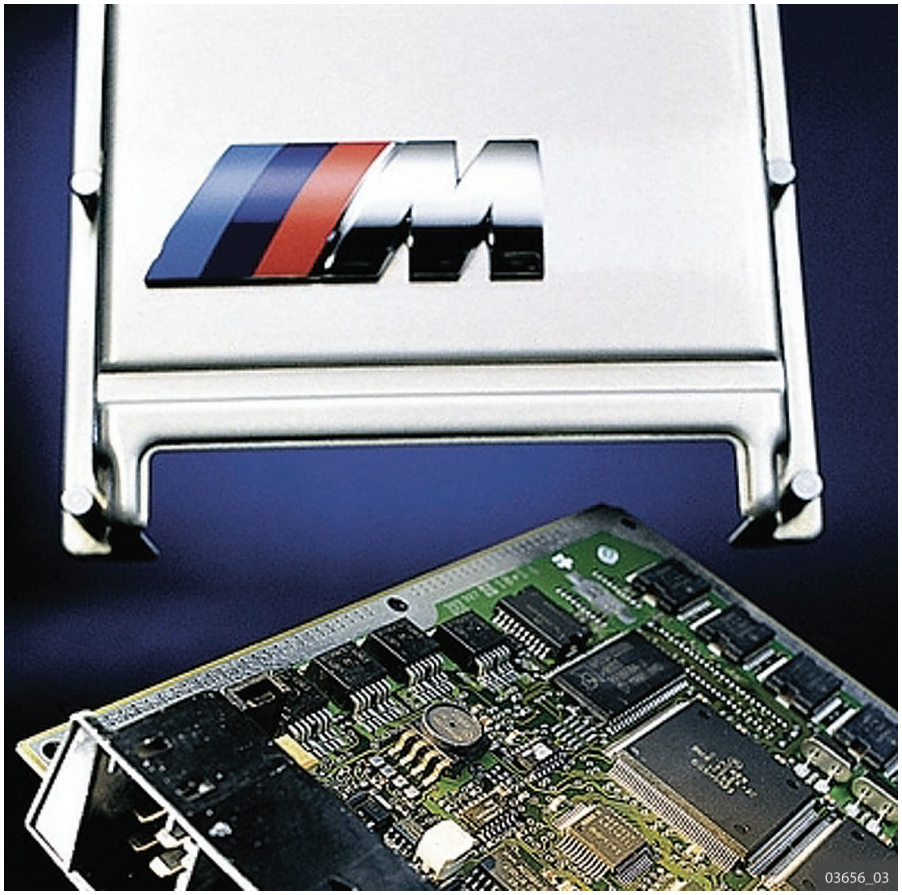


Fig. 27: MSS54HP

As of 9/2003, the MSS54 on the standard M3 will be upgraded to the same processing capacity as the MSS54HP.

- Oil level detection

Because of the design of the large-volume air-intake duct, the standard oil dipstick cannot be used.
Instead, a service/emergency dipstick is fitted which can only be accessed by removing the air-intake duct.

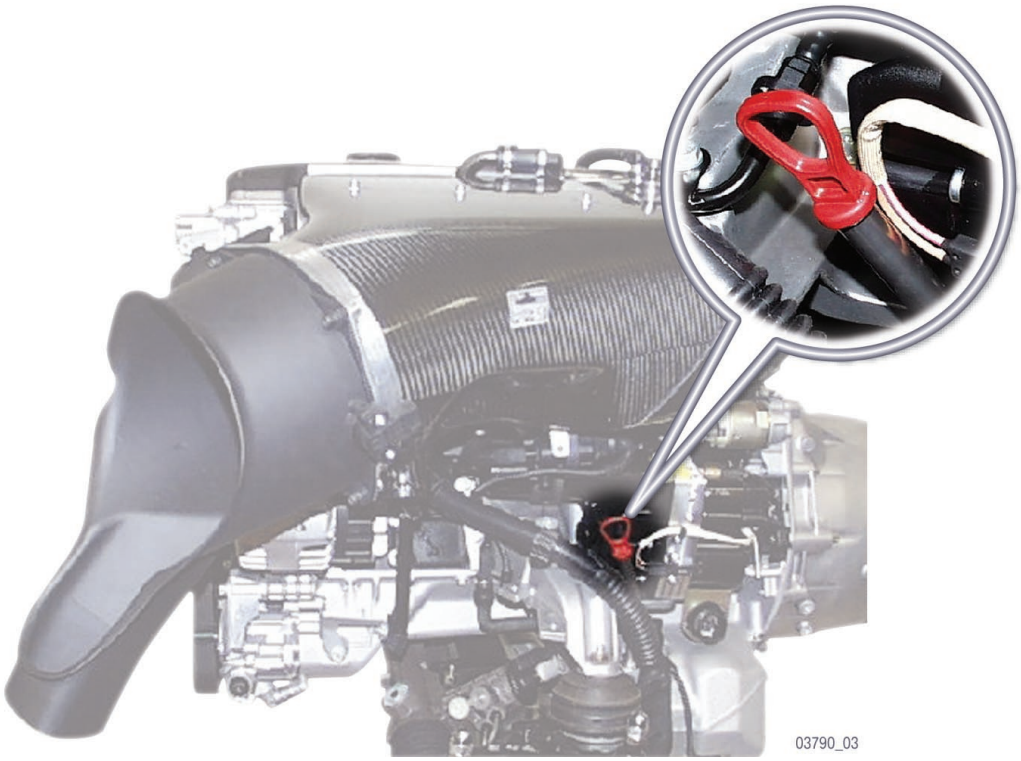


Fig. 28: Emergency dipstick

Under normal conditions, the oil level is detected by the MSS54HP using the thermal oil-level sensor and indicated by the on-board computer on the instrument cluster. As a consequence, the computer's average speed function has been dispensed with.

Two readings are taken – an averaged reading over an extended period, and a momentary reading.

Averaged reading:
The oil level reading can be shown on the instrument cluster by pressing the on-board computer button on the direction-indicator stalk.

Immediately after the engine has been started, the last averaged reading taken is shown. Once the engine has reached operating temperature, a new averaged reading is calculated. This should normally take approx. 15 min during which 1500 readings are analysed.

No reading is taken under the following conditions:

- Engine speed > 7000 rpm
- High levels of lateral or linear acceleration
- Oil temperature < 60 °C

A line of dashes on the display indicates that it has not been possible to determine an averaged reading. This may be the case during short journeys or when racing.

The figure displayed indicates the amount of oil above the minimum level. It should be between 0.0 l and 1.0 l above minimum.
The maximum figure that can be displayed is 1.0 l.

Caution:	Do not overfill with oil as excessive oil levels cannot be displayed!

An excessive oil level can only be established by checking the emergency dipstick.

If the oil level drops below minimum, a negative figure is displayed.
The M3-specific oil-level warning function using the oil warning lamp is always active.

Momentary reading:
It is also possible to obtain a relatively quick oil-level reading, e.g. after oil has been added, though with a lesser degree of accuracy.

Procedure:

1. Park the car on a level surface
2. Allow the engine to reach normal operating temperature, then switch it off
3. Press the computer button to request an oil level reading
4. Start the engine and allow it to run for at least 2 minutes at idling speed
5. Press and hold the Sports button on the centre console

The momentary oil level is indicated as a flashing figure.
If no flashing figure is indicated and only the previous averaged figure is shown, then it has not been possible to establish a momentary reading. This may be the case if the oil temperature is too low or the car is not level.
If the display shows a line of dashes, the reading has not yet been completed.

The momentary reading has no effect on the averaged reading as it is performed separately alongside the averaged reading.

- SMG and launch-control modifications

The M3 CSL is fitted exclusively with the sequential M gearbox developed by BMW M for the standard M3.

The familiar advantages of the SMG Drivelogic include the choice of changing gear either with a gear lever or so-called paddles on the steering wheel, the facility for changing from sequential to automatic mode, and the choice of a total of eleven different gear-shift modes.

KT-12545

Fig. 29: Gear-shift paddles and SMG gear lever

In addition, this advanced transmission also incorporates many practical supplementary functions including launch control.

Launch control enables the driver to obtain the best possible acceleration from a standing start. This function has been further refined for the M3 CSL. When the launch control function has been selected, the driver does not need to change gear when subsequently accelerating from a standing start to maximum speed.
The SMG Drivelogic changes up through each of the six gears at the optimum point just before maximum revs.

- Technical data

Engine		M3 CSL	M3
Engine type/No. of cyl./ No. of valves		Inline/6/24	
Engine designation		S54B32S	S54B32
Engine management module		MSS54HP	MSS54
Engine capacity	cm^3	3 246	
Bore/stroke	mm	87.0/91.0	
Compression ratio		11.5:1	
Fuel	RON	98 (min. 95)	
Power output	kW/bhp	265/360	252/343
at engine speed	rpm	7 900	
Torque	Nm	370	365
at engine speed	rpm	4 900	
Valve opening times			
Inlet	Degrees c/shaft	268	260
Exhaust	Degrees c/shaft	264	260
Cooling system inc. heating	l	10.7	
Engine oil	l	7	

Electrical system		M3 CSL	M3
Battery	Ah	55	70
Alternator	A/W	120/1680	

Transmission		M3 CSL	M3
		Sequential M gearbox (SMG)	

Differential		M3 CSL	M3
Differential		With variable M differential lock	
Final drive ratio		3.620:1	

- Torque and power curve

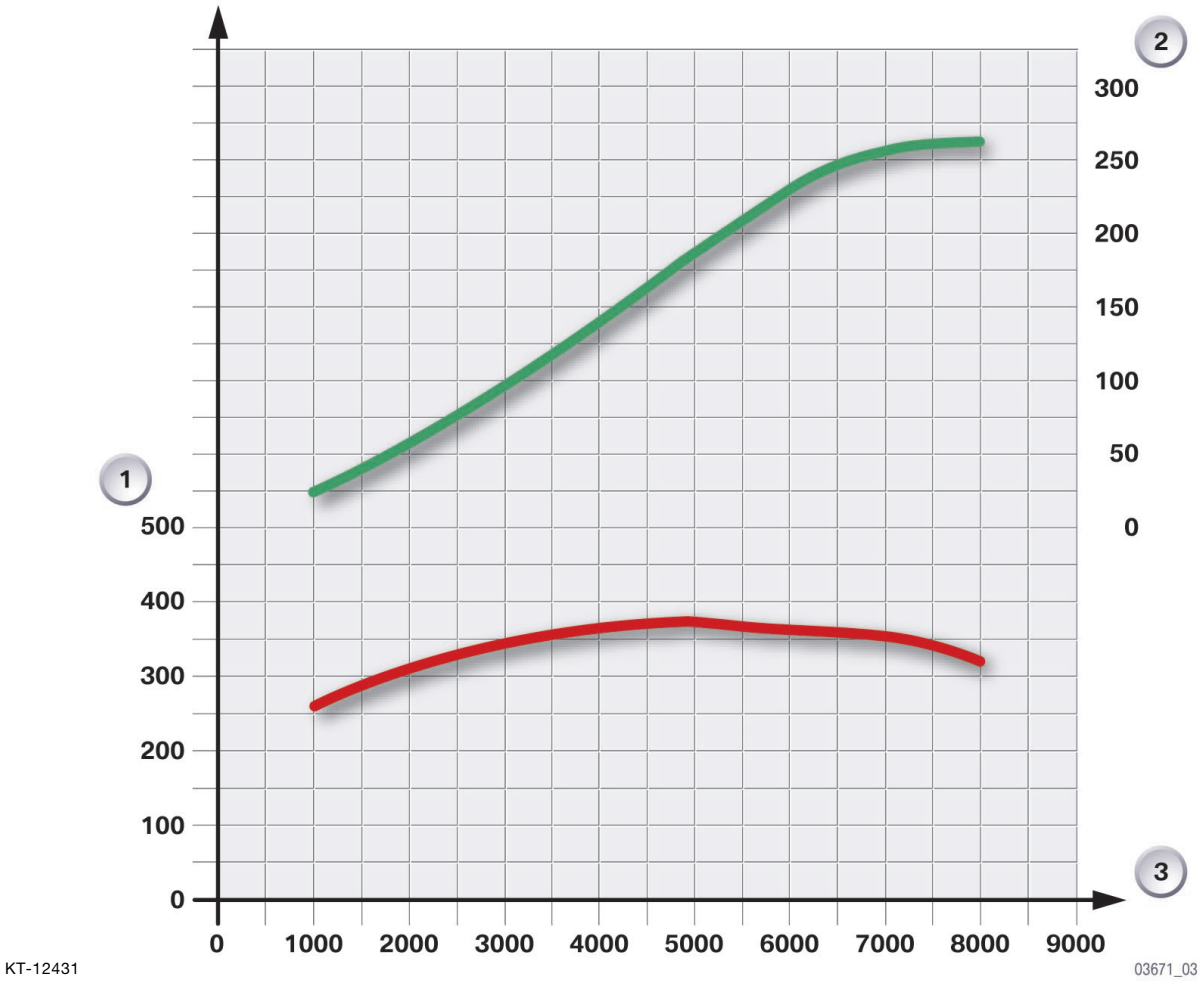


Fig. 30: Torque and power curve

Index	Explanation
1	Torque (Nm)
2	Power (kW)
3	Engine speed (rpm)

Wheels, suspension and steering

The most important variable parameters in this area are the suspension, steering and brakes, while the tyres also play a very special role.

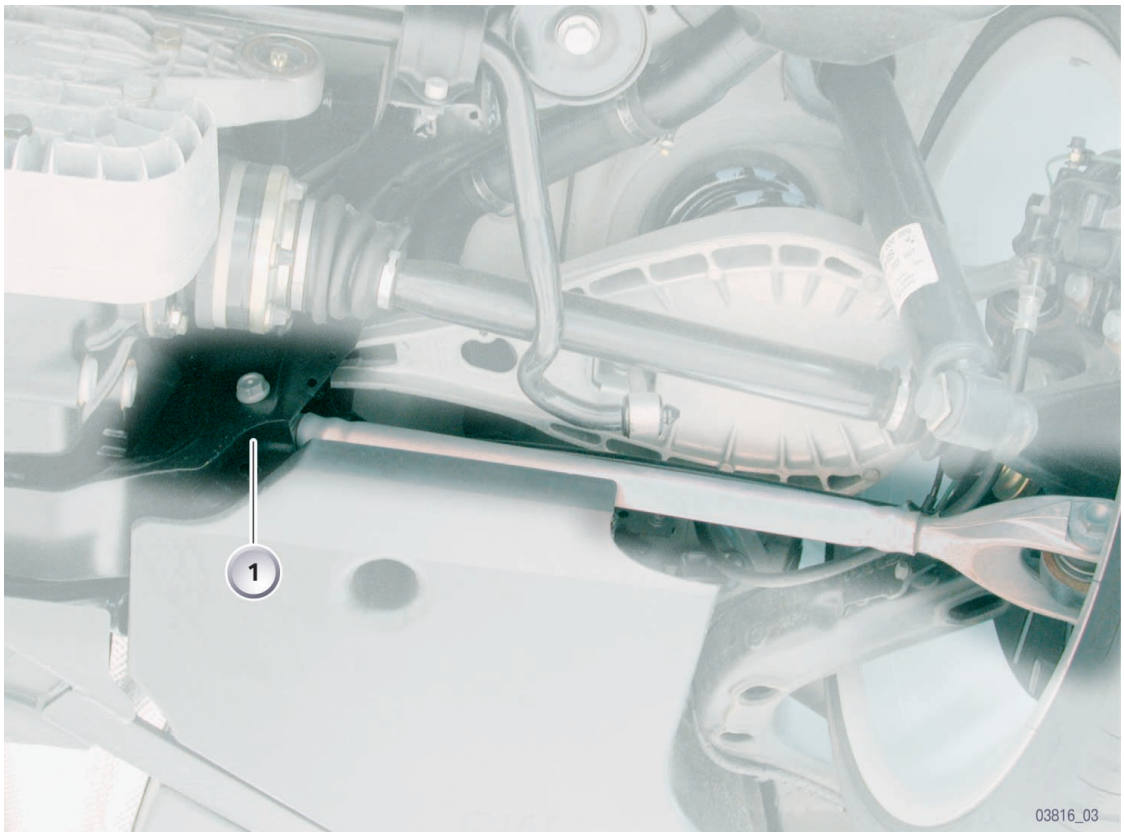
The already outstanding suspension and steering of the M3 has been optimized even further.

Only the differences from the standard M3 are outlined below.

- Suspension

The front springs have been shortened by one twist of the coil and all shock absorbers have been retrimmed for both the compression and extension phases. The diameter of the anti-roll bars has been modified. At the front they have been changed from 26 mm solid to 30.8 mm hollow. At the back, from 21.5 mm solid to 22.5 mm solid. The M3 CSL is 10 mm lower at the front and 5 mm lower at the back.

The rear control arms on the M3 CSL are made of lightweight aluminium instead of steel and improve lateral control by the use of ball joints instead of rubber mountings on the inner end.



KT-12600

Fig. 31: Control arm with new ball-joint mounting (1)

- Steering

A noticeably more direct steering response has been produced by the higher overall gearing ratio of the rack-and-pinion steering.
It has been changed from 15.4:1 to 14.5:1.

- Brakes

The diameter of the front compound brake discs is 345 mm (same as M5) as compared with 325 mm on the standard M3, while on the rear brakes the piston diameter has been increased from 42 to 46 mm.

The M3 CSL can brake at a rate of 11 m/s^2 when fitted with Cup tyres.
The braking distance from 100 km/h to a standstill is under 34 m.

The ABS has been reprogrammed.

- M3 CSL wheels and Cup tyres

The 19 inch wheels have been specially developed for the M3 CSL.
The front wheels are 8.5 inches wide and the rear wheels 9.5 inches, and Cup tyres are fitted.
The complete "CSL wheel set" is 11 kg lighter than the 19-inch wheel set for the M3 (option).

The 10 mm wider track at the front is primarily a result of the rim offset of 44 mm on the front wheels (M3 wheels: 47 mm).

The Michelin Pilot Sport Cup tyres in the sizes 235/35 ZR 19 at the front and 265/30 ZR 19 at the back are a special development.
They have been modified specifically for the M3 CSL.

KT-12557

Fig. 32: Tread pattern of Cup tyre

In design, construction and rubber compound very similar to a pure racing tyre, they have a dominant effect on the excellent handling characteristics of the M3 CSL thanks to their highly heat-resistant rubber compound.
They are designed for maximum dry-weather performance and offer significantly more potential for linear and lateral grip, and steering precision, than comparable standard tyres. They have an asymmetrical tread pattern with a high positive proportion (large contact area = fewer grooves).

Their wet-weather performance is accordingly diminished – a fact that customers must confirm acceptance of by signing a supplementary page to the contract of sale when purchasing an M3 CSL (see Introduction).

For winter driving, the M3 wheels with 225/40 R 18 92 V M+S tyres are available.

- Technical data

Dimensions		M3 CSL	M3
Wheelbase	mm	2729	2731
Track, front/rear	mm	1518/1525	1508/1525

Front axle		M3 CSL	M3
Front suspension		Single-link MacPherson strut suspension with positive kingpin offset, lateral force compensation; braking-dive reduction	

Rear axle		M3 CSL	M3
Rear suspension		Central control arm suspension with trailing arm and double transverse links Acceleration-squat and braking-dive compensation	
Permissible axle weight, front/rear	kg	880/1020	970/1140

Brakes		**M3 CSL**	**M3**
Front brakes		Single-piston floating-caliper disc brakes	
Diameter	mm	345 x 28	325 x 28
Rear brakes		Single-piston floating-caliper disc brakes	
Diameter	mm	328 x 20	
Handling stability system		ABS, CBC, DSC; M differential lock	

Steering		**M3 CSL**	**M3**
		Rack and pinion	
Overall gearing ratio		14.5:1	15.4:1
Turning circle	m	11.0	

Wheels/tyres (Cup tyres)		**M3 CSL**
Wheels, front/rear		8.5 J x 19 EH 2 IS 44 Al/9.5J x 19 EH 2 IS 27 Al
Tyres, front/rear		235/35 ZR19/265/30 ZR19
Tyre pressures, front/rear (max.)	bar	2.4 (2.8)/2.4 (3.2)