

The new MINI John Cooper Works **CHALLENGE.** Contents.



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1. Warm-Up at the 2007 Frankfurt Motor Show: the MINI John Cooper Works CHALLENGE. (Short Version)

The MINI CHALLENGE 2007 is entering its decisive phase – and behind the scenes the stage is already being set for the next season of this unique Clubsport Series.

The absolute star of the show in the MINI CHALLENGE 2008 will of course be the new racing car, the MINI John Cooper Works CHALLENGE.

The car's specifications and the results of the first test drives give everybody every reason to expect that participants of the MINI CHALLENGE 2008 will enjoy an even more intense motor sporting experience. The new model offers even more torque, faster acceleration and a higher top speed, faster lateral acceleration and optimised traction. Which, for the spectator, means even greater excitement, more dramatic action and even more thrilling duels on the track.

The new MINI John Cooper Works CHALLENGE will be making its first appearance at the 2007 Frankfurt Motor Show, where the public will be able to gain a first impression of the new racing car which will be delivered to the participating teams in good time before the start of the next MINI CHALLENGE in spring 2008.

Apart from the teams themselves, for the first time ever other ambitious motorsport enthusiasts will also be able to acquire and race the new MINI John Cooper Works CHALLENGE.

With its outstanding performance and superior handling, this unique car is predestined from the start to show its rivals its tail lights on the track in series and individual events.

The new MINI John Cooper Works CHALLENGE will be delivered to customers in race trim, including all features essential for supreme performance and enhanced safety.

Ready for supreme performance: the new MINI John Cooper Works CHALLENGE.

The performance and output figures of the new MINI John Cooper Works CHALLENGE have been improved once again not only over the regular production model, but also in comparison with the current racing version. A specially developed John Cooper Works performance engine tailored specifically to the requirements of motorsport will provide maximum output of 154 kW/210 hp.

And while this figure is the same as the current MINI CHALLENGE race car, optimised engine characteristics and an increase in torque from 260 to 280 Newton-metres (192–206 lb-ft) provided by overboost gives the driver everything he needs for even better performance and higher speeds on the track.

Further points are the reduction in starter weight by 30 kg to 1,150 kg/66 lb to 2,536 lb (including the driver), improved aerodynamics all round and numerous modifications to the chassis and suspension.

The new MINI John Cooper Works CHALLENGE accelerates to 100 km/h in just 6.1 seconds. And thanks to its special brake system, the car takes just 3.1 seconds to come to a standstill from 100 km/h or 62 mph. Top speed, in turn, is 240 km/h or 149 mph. Another particular forte of the MINI John Cooper Works CHALLENGE is its outstanding lateral acceleration – the high speed coming into the bend is therefore also achievable when coming out onto the next straight. A limited-slip differential featured for the first time on a MINI CHALLENGE racing car, finally, helps the driver keep to the ideal line at an even higher speed when leaving a bend.

MINI CHALLENGE: the optimum blend of racing and lifestyle.

Now in its fourth year, the MINI CHALLENGE has become one of the most successful and popular Clubsport Series in the world. The races, which have been held in Germany, Austria, Belgium and Holland hit the headlines all over Europe, and at the same time the MINI CHALLENGE phenomenon is gaining significance also in other parts of the world: New Zealand is already holding a MINI CHALLENGE racing series and Australia will follow this example for the first time in 2008 with preparations currently under way to establish a national MINI CHALLENGE Series.

The MINI CHALLENGE owes its particular appeal to a truly innovative concept, where motorsport meets lifestyle – a highly attractive blend thrilling for both driver and fan alike.

The drivers themselves also contribute to the particular atmosphere and flair of the events, old hands in racing and up-and-coming talents pitching their skills against celebrities from show business and sports.

Perhaps the most distinctive racing feature of the MINI CHALLENGE is the absolute equality offered to all drivers entering the races: all cars are technically identical. And it is precisely the supreme handling of the MINI further enhanced by the wide range of safety features in the racing cars that makes the MINI CHALLENGE particularly interesting for both the beginner in racing and the ambitious amateur driver.

(All technical data is preliminary.)

2. Warm-Up at the 2007 Frankfurt Motor Show: the MINI John Cooper Works CHALLENGE. (Long Version)



The new MINI has already proven its sporting talent on the road and soon the racing version based on the new generation of this small premium car, the new MINI John Cooper Works CHALLENGE, will likewise be ready to go. With the MINI CHALLENGE 2007 still under way, the racing car for the next season of this unique Clubsport Series is already being developed. It is already clear that based on the new MINI Cooper S, the car, which will be made available to participants in the MINI CHALLENGE 2008, will offer an even more intense and thrilling driving experience. Other ambitious motorsport enthusiasts will now also be able to acquire and race the new MINI John Cooper Works CHALLENGE.

Right from the start, the MINI John Cooper Works CHALLENGE already offers a wide range of supreme qualities such as a further increase in maximum torque, an improved power-to-weight ratio, even faster acceleration and even higher top speed. And at the same time drivers may look forward to lateral acceleration, traction and stopping power never seen before.

Given these qualities, the new racing version will set new standards not only in terms of agility, but also in terms of safety. For the crowd enjoying the various races of the MINI CHALLENGE 2008, this means even greater excitement, even faster action and even more thrilling duels for the leading position on the track.

The MINI John Cooper Works CHALLENGE is making its first appearance at the 2007 Frankfurt Motor Show, where the public will be able to gain a first impression of the new racing car which will be delivered to the teams participating in the MINI CHALLENGE in good time prior to the start of the series in spring 2008. Indeed, the new MINI John Cooper Works CHALLENGE will be delivered to customers in race trim including all features crucial to performance and safety, thus giving the ambitious driver everything he – or she – needs for outstanding success in motorsport. Thanks to its supreme performance combined with superior handling, the new MINI from the start offers everything required for outstanding success on the track.

The perfect starting point: four-cylinder power unit with twin-scroll turbocharger.

The muscle machine which is the MINI John Cooper Works CHALLENGE performance engine is based on the four-cylinder power unit which already shows its sporting spirit in the series version of the MINI Cooper S.

Indeed, this most powerful member of the new MINI generation combines pure driving pleasure, the power of a brand-new engine, and the go-kart feeling which has already made the MINI a legend in its own right, thus ranking unique in the small car segment.

The 1.6-litre four-cylinder is equipped with a twin-scroll turbocharger and direct gasoline injection, churning out maximum output in standard trim of 128 kW/175 hp at 5,500 rpm. This equals output per litre of 80.1 kW/ 109.5 hp – a figure which raises the new MINI Cooper S close to the realms of the most thoroughbred sports cars.

Maximum torque of 240 Newton-metres/192 lb-ft, in turn, is maintained consistently between 1,600 and 5,000 rpm, torque being further increased to 260 Nm/206 lb-ft by the overboost function briefly increasing charge pressure for particularly dynamic acceleration whenever required. The unique strengths of the MINI Cooper S even in standard trim, therefore, are spontaneous power and performance, muscular torque, and high revving speed.

The qualities of the new turbocharged power unit come out particularly clearly in everyday traffic – and were indeed confirmed only recently by an international jury of experts lauding the power unit of the new MINI Cooper S as the winner in its class of the 2007 Engine of the Year Award. The 16 intake and outlet valves are masterminded by two overhead camshafts, roller-type drag arms for minimum friction, and hydraulic valve play compensation units. The outlet valves, in turn, are filled with sodium in order to meet the significant cooling requirements made particularly of a turbocharged engine.

The intake camshaft comes with infinitely variable phase adjustment setting valve times to the driver's respective demands for superior power and performance. The two-piece bedplate structure of the crankcase is an equally outstanding technical feature carried over from motorsport, while the cylinder block and bearing housing are made of a cast aluminium alloy. The camshafts are a composite structure and are not cast in the usual process, thus helping to reduce engine weight even further: Contrary to the conventional casting process, the cam rings made of high-strength stainless steel are shrunk-fit on to the shaft as such. The pistons running in cast-iron bushes, finally, are cooled by splash oil to meet even the greatest thermal requirements.

The new MINI Cooper S is the first car in its segment to feature a power unit equipped with a twin-scroll turbocharger. This particular principle guarantees very spontaneous power and performance, with the ducts for two cylinders each being combined with one another in the exhaust manifold and

turbocharger. Reducing exhaust gas counter-pressure at low engine speeds, this particular configuration serves to make even better use of the dynamic effect of the pulsating gas columns in the manifold, thus ensuring an even better and faster turbocharger response.

Turbocharger pressure is limited by a wastegate to 0.8 bar. And since the turbocharger develops its superior boost as of an engine speed of just 1,400 rpm, there is not even the slightest sign of the turbo gap otherwise typical of turbocharged power units with conventional technology.

Direct gasoline injection applying the common-rail principle ensures a highly efficient supply of fuel tailored consistently to the driver's current demand for power and performance. A high-pressure pump serves to fill the stainless-steel common rail leading to all cylinders, fuel being subsequently injected into the combustion chambers in precise doses through injection valves positioned at the side in the cylinder head. Four valve pockets and the combustion chamber trough in the middle of each cylinder ensure optimum charge stratification of the homogeneous fuel/air mixture.

The optimised weight of the power unit made completely of light alloy also contributes to the car's sporting qualities on both the road and the race track. The reduction of weight on the front axle allows a perfect balance of weight, thus offering all the requirements for supreme agility in tight bends and around a chicane.

Using superior know-how in motorsport for even more power and torque.

Applying appropriate technologies for the enhancement of engine output, the engineers responsible for this power machine have successfully turned the very sporting production engine of the MINI Cooper S into a genuine high-performance power unit for the race track. Indeed, through its performance alone, the racing version now in the starting block for the MINI CHALLENGE 2008 outperforms even the current racing model with all its power – although maximum engine output, at 154 kW/210 hp, remains exactly the same as on the current MINI CHALLENGE racing version.

The decisive point, therefore, is that the engineers specialising in the construction of racing cars and engines have optimised the engine characteristics, providing even greater torque and giving the car an appropriate exhaust system ideal for racing as the prerequisites for even better and more convincing performance.

Maximum torque is up by 20 Newton-metres over the production model, now reaching 260 Nm or 192 lb-ft and, with the help of overboost, an even more significant 280 Nm or 206 lb-ft ideal for brief but ultra-powerful acceleration.

The greater torque provided in this way will come to bear right from the start, at the same time providing even better flexibility and a higher top speed. Everything indicates, therefore, that spectators will be able to enjoy new lap records in the MINI CHALLENGE 2008, even with engine output remaining the same as before.

Such enhanced performance and even faster lap times will result not only from the new engine, but also from the reduction of starter weight on the new model down by 30 kg/66 lb to 1,150 kg/2,536 lb, including the driver. Further contributing factors are the all-round optimisation of aerodynamics as well as the high-performance suspension of the new MINI John Cooper Works CHALLENGE specially modified for racing.

Even faster in powerful sprints, even more dynamic in bends, even quicker to a standstill.

Through its well-balanced package of high-performance improvements and racing features, the MINI John Cooper Works CHALLENGE is a truly exceptional sports machine. Indeed, the new racing version accelerates faster than before, and, at the same time, through its specially developed motorsport brakes as well as the anti-lock brake system tailored to racing requirements, comes to a standstill more quickly whenever required. A further point is that the car is lighter than its predecessor but hugs the road much more firmly, reaches significantly higher speeds in bends, and offers even more superior handling.

The new MINI John Cooper Works CHALLENGE accelerates to 100 km/h (62 mph) in just 6.1 seconds, then coming to a standstill from the same speed in 3.1 seconds after 31 metres or 102 feet. Top speed of the new racing model, in turn, is 240 km/h or 149 mph.

A further particular forte of the new racing version for the MINI CHALLENGE is the car's extremely fast lateral acceleration. This high speed in bends is further enhanced by the power and handling required to accelerate even faster on to the next straight.

To prevent the drive wheels from spinning when exiting a bend, this latest version of the MINI CHALLENGE racing car comes complete with a limited-slip differential instantaneously re-directing more engine power to the wheel with better traction. Also available on the regular production model, the limited-slip differential thus makes it easier for the driver to keep the ideal line at an even higher speed when leaving a bend.

The suspension on the new racing version comes additionally with adjustable damper units from KW Automotive, again designed and built specifically for motorsport. The big advantage in this case is that the driver is able to adjust ground clearance, damper pressure (inbound and rebound stroke) as well as damper response even more specifically to the requirements of various race tracks.

Power is transmitted to the front wheels through the regular six-speed manual gearbox, and the new racing model comes on 17-inch light-alloy rims (Borbet) in special MINI CHALLENGE design and with newly developed racing tyres (Dunlop).

The new MINI John Cooper Works CHALLENGE owes its exceptionally good and agile handling also to very effective modification of the car's body. This new design is based on the John Cooper Works Aerodynamics Package comprising however a new performance front spoiler made specifically for motorsport, an adjustable rear spoiler and a new rear diffuser. Perfect interplay of these features serves not only to eliminate lift forces on this racing model, but also to generate downforce at higher road speeds. And last but not least, these aerodynamic improvements have been specially conceived to provide a perfect balance of downforce between the front and rear axles.

MINI CHALLENGE: a fascinating blend of motorsport and lifestyle.

The premiere for the new MINI John Cooper Works CHALLENGE is the first step in continuing a unique story of success. Indeed, the MINI CHALLENGE held ever since 2004 in its current concept has quickly become one of the most attractive and popular Clubsport Series, with CHALLENGE races being held not only in Germany, but also in the Netherlands, in Belgium and in Austria. Some of these races are even held prior to major Formula 1 events, such as the European Grand Prix at Nürburgring and the Belgium Grand Prix in Spa-Francorchamps.

Through its great appeal, this Clubsport Series has indeed developed into not "just" a pan-European, but also a global phenomenon: With a MINI CHALLENGE Series already being held in New Zealand, the MINI fan thrilled by motorsport will soon also be able to enjoy these outstanding races in Australia, where yet another MINI CHALLENGE Series has been announced for 2008.

The MINI CHALLENGE owes its exceptional appeal to an innovative concept: motorsport meets lifestyle – a combination which has proved very successful and highly popular among both drivers and fans.

At the same time the drivers on the starter grid also contribute to the special atmosphere of the MINI CHALLENGE, old hands and young, up-and-coming talents in motorsport comparing their skills with celebrities from show business and other disciplines in sport.

The sporting symbol of the MINI CHALLENGE: absolute equality.

An essential point is that all drivers enter the races in technically identical cars: All MINI CHALLENGE racing cars are built to the same standard and optimised for the race track in the interest of absolute equality – an essential feature of the MINI CHALLENGE placing the emphasis on the driver's skills. And to ensure an absolutely perfect balance with equal opportunities, successful drivers are required to carry extra weight in the subsequent races depending on their initial result, the winning car, for example, carrying extra ballast in the next race. And taking the example of the World Touring Car Championship, the top six drivers in the first race subsequently enter the next race in a reversed grid.

Through its superior handling alone and the wide range of safety features incorporated in the racing models, the MINI CHALLENGE is of particular interest to the beginner in motorsport and the ambitious amateur driver. A further incentive, of course, is prize money in the MINI CHALLENGE Germany 2007 alone of Euro 340,000, plus three MINIs as special prizes.

The introduction of the new racing models for the MINI CHALLENGE 2008 now enhances the sporting appeal of this innovative Club Sport Series to an even higher standard: The sporting potential of the new MINI John Cooper Works CHALLENGE offers the drivers every opportunity to set up new lap records and thrill the crowd with even fiercer battles on the track.

In future spectators will enjoy even higher speeds together with greater safety also during pitstops in the qualifying sessions, since each car is now equipped with an air pressure elevating system made of four retractable pneumatic hoists on the bottom of the car activated by compressed air in the pits and lifting up the car as required for changing tyres in a very quick and dynamic process.

At the same time the new racing model also offers enhanced safety borne out not only by the even better handling of the new MINI. For like the current racing version, the new MINI John Cooper Works CHALLENGE is equipped with a safety cage welded firmly to the body of the car.

Over and above the RECARO sports bucket seat combined in future with a six-point safety belt, all racing models will also come from now on with the HANS (Head And Neck Support) system carried over from Formula 1 and ensuring effective protection of the driver's neck area.

More performance, more action, more excitement: Fans of the MINI CHALLENGE can look forward to a fascinating racing season in 2008. And the sporting challenge will be even greater for the driver than ever before, with the MINI John Cooper Works CHALLENGE offering better opportunities to prove the racer's driving talent in spectacular manoeuvres and with even faster lap times.

So the struggle for the podium will be even more exciting than ever before in the MINI CHALLENGE 2008, with one winner being clear right from the start: the MINI John Cooper Works CHALLENGE itself.

The cars will also be entered in many other motorsport events in 2008, the MINI John Cooper Works CHALLENGE offering the ambitious racing driver an extremely competitive car for many purposes and requirements. So it is fair to say that the sporting career of the new MINI is set for new highlights.

3. The most important Facts and Figures.



MINI John Cooper Works CHALLENGE.

MINI John Cooper Works Performance Engine:

Four-cylinder inline power unit with twin-scroll turbocharger and direct gasoline injection, fitted crosswise at the front Racing exhaust

Capacity: 1,598 cc

Output: 154 kW/210 hp

Max torque: 260 Nm/192 lb-ft (with overboost 280 Nm/206 lb-ft)

Power transmission: Front-wheel drive, six-speed manual

Suspension: Independent suspension, McPherson spring struts at the front, central-arm rear axle, EPAS (Electrical Power Assisted Steering), 17-inch aluminium rims (Borbet) in MINI CHALLENGE design, dampers adjustable both inbound and rebound (KW Automotive), adjustable spring strut support at the front, racing brakes, race-specific ABS, limited-slip differential, motorsport tyres (Dunlop)

Body: John Cooper Works Aerodynamics Package with a new performance front spoiler, adjustable rear spoiler and rear diffuser, Air pressure elevating system for an even faster tyre change

Performance: Acceleration 0–100 km/h in 6.1 seconds, top speed 240 km/h (149 mph), deceleration 100–0 km/h in 3.1 seconds = 31 metres/102 feet

Safety: Rollcage welded into the car, six-point safety belt, automatic fire extinguisher, racing seat including Head And Neck Support (HANS) system

Weight: Max 1,150 kg/2,536 lb including driver

(All technical data is preliminary.)