

#06

Spring 2024

CS COUPE

BMW Car Club GB - E9 Register Newsletter

ALPINA AND THE ETCC

The Racing Adventure That Ended With ALPINA On Top

MEMBER PROJECT

Kermit the CSi (p2)

TECHNICAL

Window Motors

YOUR CAR

Kirk Harrison

Plus: REGISTER NEWS | YOUR FEEDBACK | CLASSIFIEDS

IN THIS EDITION

Register News

An update on the Register's database, events, member feedback, and anything else that's newsworthy.

Database Statistics

The latest figures on known and unknown E9s from the Register's database.

Cover: ALPINA AND THE ETCC

It's been 55 years since ALPINA created their unicorn amongst the E9. After creating their own CSL, they went racing and took the fight to Ford in the ETCC. The result: 1973 became the season of all seasons. *Part 3 of 3*

Member Project: Kermit the CSI

Rob and Kermit are back with an update on the engine works that have taken place since they were featured in the 3rd edition of CS COUPE. *Part 2*

Technical: Window Motors

For most of us, the slow-winding rear windows are a common sight and can create a lot of frustration. Thankfully, this article will present you with the common problems and a step-by-step guide on how to remove, repair, and refit your motors.

Your Car: Kirk Harrison

From Top Trumps to British classics and eventually ending up with the best of Germany's offering. Kirk shares his journey to owning his cherished CSI.

Classifieds

For sale, wanted, and seasonal discounts by our favourite suppliers. Let's take a look at what's on offer.

If you'd like to contribute to the newsletter or provide feedback, please get in touch with me at e9register@bmwcarclubgb.co.uk

Next newsletter publication: **21 June 2024**

Deadline for submitting: **31 May 2024**

A big thank you to all those who have contributed!

FROM THE EDITOR

Finally, spring has arrived, and although it is still very wet, it allows us to open the garage doors again and start thinking about the first trip of the year. Unless you're of a similar mind as me, and you will have been driving your car all winter, top up the fuel and continue cruising the roads. Either way, it's time to start enjoying our cars even more!

As mentioned in the previous newsletter (#05), you may have noticed that this edition's contents have changed slightly. Unfortunately, the struggle to find sufficient member engagement and contributions has led to my inability to maintain fixed content. Instead, you will continue to find exciting and worthwhile articles on various themes throughout the newsletter and future editions. Rest assured, each will continue to contain a technical subject, an in-depth feature, and a member's coupe showcase.

The database is another bugbear at the moment. Although I've transferred all the data from the old database to the new version, I still have to populate the data so that the pivot tables function correctly to extract the statistics. In my infinite wisdom, I created a "model" version for each option (i.e., '73 vs '74 CSI models, CSL phase 1 vs phase 2, etc.). This has resulted in me being unable to "combine" them for statistical simplicity. Rest assured, I'm working on this, but I won't bore you with the details. As we say in aviation, stand by to stand by.

Thank you all for your continued support, and let's make 2024 the best E9 year to date!

Gute Fahrt!



Niek Nijsen



Cover photo: ALPINA leading the Nürburgring 6hr

REGISTER NEWS

New Members

I want to start by welcoming the new members to our select group. Welcome, and thank you for joining us!

Events

In just under two weeks, Techno Classica will open its doors in Essen for one of Europe's biggest classic car shows. A small contingent of the E3 and E9 Registers will attend, so if you plan on going, let us know, and perhaps we can meet up for a drink.

Not too long after, the BMW Club will host the annual Sommerfest at the Thruxton circuit in June. Mark and I are planning the E9 attendance for this event, and we hope to welcome as many as possible. Please get in touch if you're thinking of going or need some extra convincing. It will certainly be worth the trip! To give you an idea of what to expect:

E9-specific car boot sale, race cars, display, trade stands, and "Best of Show" award.

In addition to the above, there will be a lot to see and do on both days, including:

Register displays (including other Sharknose models), Independent Club & forums displays, Historic BMW's, BMW Bikes, BMW rides (M2 rides with celebrity racing drivers), BMW Classic race team display and rides, Trade stands & displays from the country's top BMW tuners, Auto-Jumble (including classic models), Competitions, Saturday night dinner & awards, BMW UK displays and sponsorship (they're excited to be coming, so expect lots of surprises), and much more

Weird & Wacky

This issue's contribution is by Nick Hull, who found this E3 billiard table in the Stuttgart Motorwold collection in 2015. Along with the E9 campervan conversion we had last time, this is definitely at the top of "odd creations". Beautifully crafted, but why?!



Member Feedback

I would like to thank all the members who have provided me with feedback on previous editions of CS COUPE.

If you have anything you'd like to comment on, provide feedback on, and/or correct any errors, please don't hesitate to get in touch. Many thanks!

Online Platform

Work continues on the new online platform I'm setting up for the E9 community, www.bmwE9.com, and I'm pleased to say that the first test print of the magazine is ready. Those of you attending the Techno Classica show next month will be able to catch a glimpse (and perhaps a copy) of this 140-page quarterly book. It will be a little longer before the first official issue will be ready, as I'm aiming for spring 2025.



DATABASE STATISTICS

Known & Unknown Vehicles							
Model	Total Produced	Known Owner	Unknown Owner	Unknown VIN	Missing	DVLA (UK only) - Registered / SORN	Broken
2000CS ^a	-	2 (1)	-	15 (0)	-	- / -	-
2000Ca ^a	-	8 (0)	(TBC)	12 (0)	-		-
2800CS LHD ¹	8232	1 (0)	-	5	-	17 / 18	-
2800CS RHD ¹	-	7 (5)	(TBC)		-		-
3.0 CS LHD ²	-	3 (4)	-	-	-	30 / 25	1 (0)
3.0 CS RHD	-	4 (0)	-	7 (0)	-	-	-
3.0 CSa RHD	215	64 (65)	(TBC)	30 (8)	192	25 / 32	5 (1)
3.0 CSi LHD ²	-	3 (1)	-	-	-	57 / 39	-
3.0 CSi RHD ¹	207	72 (70)	(TBC)	29 (11)	131		6 (1)
CSL LHD ²	-	1 (0)	-	-	-	85 / 51	-
CSL RHD	500	117 (103)	(TBC)	1	393 (414)		5 (4)
CSL RHD conv.	-	-	-	-	-		-
TOTALS	-	292	(-)	99	716	197 / 165	17

Colours by Car Model (current colours for known cars only)								
Colour	2000CS/a	2800CS	2800CSa	3.0 CS	3.0 CSa	3.0 CSi	3.0 CSL	Total
Agave Green (071)							1	1
Amazon Green (076)						2		2
Antrazit Grey (055)						1		1
Arktis Blue (045)								-
Atlantic Blue (041)					3	1		4
Baikal Blue (042)				2	4	3	1	10
Black (066)					2	5	4	11
Bristol Grey (058)	2							2
Ceylon Gold (008)	1			1	3	5		10
Chamonix White (085)	2	1		2	7	9	21	42
Colorado Orange (002)	1		1					2
Fjord Blue (037)			1	2	18	22	28	71
Golf Yellow (070)					2	5	11	18
Granada Red (023)		1	1			2		4
Granat Red (025)					3	4		7
Inka Orange (022)					2	4	13	19
Malaga Red (021)						1		1
Nachtblau (040)		2	1	1	7	5	2	18
Nevada Grey (001)								-
Polaris Silver (060)	6			6	21	15	31	79
Riviera (036)								-
Sahara Brown (006)	1							1
Siena Brown (009)					1	2		3
Taiga Green (072)					1	7	15	23
Tundra Green (058)		3	2	1				6
Türkis Blue (065)					4	6		10
Verona Red (024)		2			6	5	28	41

Current Location						
Model	UK	Ireland	Australia & New Zealand	USA	Other	Unknown
2000CS ^a	7 (1)	1 (0)				
2000Ca ^a	10 (0)					
2800CS LHD						
2800CS RHD	10 (16)					
3.0 CS LHD	14 (12)					
3.0 CSa LHD	4 (0)					
3.0 CSa RHD	80 (78)	3 (1)	5 (2)	1	1 (0)	
3.0 CSi LHD	6 (5)		1		1 (0)	
3.0 CSi RHD ¹	91 (88)	2	4 (3)		2 (1)	
CSL LHD		-	-			
CSL RHD	95 (76)	2	25 (14)	8 (4)	6 (4)	4 (3)
CSL RHD conv.	-	-	-			
TOTALS	317	8	35	9	10	4

Known cars by production year											
Model	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	Total
2000CS ^a	6 (0)	5 (0)	4 (0)								15
2000Ca ^a	3 (0)	6 (0)	5 (0)	2 (0)							16
2800CS			1	2	3 (2)						6
2800CSa				2	1						3
3.0 CS					3	5					8
3.0 CSa					1	13	8 (9)	5 (4)	2	1	30
3.0 CSi						8	35	12	4 (3)		59
CSL						64 (25)	24 (7)				88
TOTALS	9	11	10	6	8	90	67	17	6	1	

Notes to the statistics:

1. The figures in red between brackets are the figures from the previous newsletter, if different.
2. The total number of CSi RHD series 1 is unknown, therefore the total of RHD listed is based on series 2 which received its own VIN series (435...). The same applies to the VIN figures & number of missing cars. The same applies to the 2800CS series.
3. All LHD versions are excluded from the "Total Produced" as the Register currently limits tracking statistics to only those known to be in the UK.
4. The 3.0CS LHD includes the "CSa" models that are known to the Register as well.
5. Both the country and year statistics are based on only the known cars in the database.
6. The year statistics contain errors since some of the cars have a registration date before their production date. Also, there are several cars with "higher/later" VINs that were produced in years before "lower/earlier" VINs. This will be rectified as information becomes available.
7. The year statistics are grouped by car model and include both LHD & RHD models for now.
8. The 2000CS model is included in the statistics as the E120 Register no longer exists.
9. I realise that not all figures add up in the tables above, however, this is an ongoing process, and I still keep finding small errors in some of the formulas that result in incorrect statistics (mainly auto-calculated totals). Therefore, the next edition may contain figures that differ significantly from those presented above. One day, I'll get them all correctly listed.

ALPINA AND THE ETCC – PART 3

The Racing Adventure That Ended With ALPINA On Top

By Niek Nijssen & Jeremy Walton (author of "Unbeatable BMW")

Welcome to part 3 of this multi-part feature on ALPINA and its history. In the previous editions, we looked at the creation of the CSL, the development of ALPINA's own "CSL" version, and their tuning services. In the last part of this trilogy, we are taking a look at ALPINA's racing history with the help of Jeremy Walton's amazing book "Unbeatable BMW".



INTRODUCTION

It is rare to see the basic shape of a touring car cling on for much beyond four seasons. Yet the big BMW coupés raced internationally from 1969 to 1978 when the "Big Bimmer" was still capable of winning. During these years, it won five European Touring Car Championships. Of course, the BMW coupé changed dramatically during its long reign, ending with the large winged Gr5 design.

The big BMW made its debut in racing with Alpina in the weeks leading up to the July Spa-Francorchamps 24-hour race of 1969. Comparatively unmodified, it did not set the competition world on its ear, not even the parochial saloon car racing scene. Who knew then that this was the car that was to win in categories varying from Group 1 (production) to the wildly modified exotica that raced in Group 5? That one day the floorplan would glow with the heat of an engine capable of generating over 750 bhp turbocharged horsepower from 3.5 litres. That it would go on winning for four years after production of the CSL had ceased, and even after the factory had replaced the 3.0 CS range with their then-new 633 CSi flagship for the BMW buyer of 1976? Or even that the factory would compete with an obsolete model for a season? That is almost unheard of, yet BMW did it and the big BMW took it all. It was not without complaint, however, because you cannot just install 750 or more bhp at one end and expect to get power laid effectively on the tarmac at the other, via

a suspension and weight distribution system which had previously been designed for about half that figure!

So, when Burkard Bovensiepen and his Alpina staff recall the time they gave the six-cylinder coupé its rugged competition debut in a twenty-four-hour race, they smile a little. The car was so standard that it used the normal 6-inch by 14-inch diameter wheels, power steering, and relied on barely modified suspension with production brakes, and so on. Alpina had taken the engine apart, blue-printed it and substituted triple twin-choke Weber carburettors as they reassembled it, claiming 250 bhp for the fender-less coupé. Despite consuming some forty Dunlop racing tyres in the 24-hours, the alloy-wheeled BMW 2800CS did complete the course, as it did on other epic racing performances later.



In 1970, interest in the car increased sharply, and BMW asked Alpina to represent their interests in saloon car racing while the factory pursued their hefty Formula 2 schedule. Alpina's work during the intervening winter saw the car beginning to take its first steps toward a racing saloon from a converted road car. Plastic wheel-arch extensions covered wider alloy racing wheels, but still, the brakes and suspension remained virtually unmodified. The engine progressed, and one great aid to reliability with the wet sump lubrication then used (and subsequently required for the 1977 season) was Bovensiepen's patented piston displacement pump.

Based on race results, the 1970 season was the beginning of the CS success story, for Alpina had outright wins in two internationals counting towards the European title. This, in return, created interest in making the 2800 CS really competitive, both at the factory, where Gerhard Haerle was in charge of

making sure BMW paid the drivers, and amongst other tuners.

Meanwhile, big things were happening at Alpina in 1971, too. In March of that year, Dr Fritz Indra arrived at Buchloe. Born in Vienna, a graduate of technical high school in Germany, "Fritzy" was a fair, curly-haired youngster tackling his first full-time job in automotive engineering. However, he had an honourable background both in competition and emission control work – both subjects that needed attention at Alpina. Bovensiepen always used to joke that all his drivers were Austrian, and with the arrival of Indra, the Austrian atmosphere grew even stronger.

"When I came to Alpina, these cars were terrible; just like normal saloon cars, only the instruments and seats seem to be changed!" said Dr. Indra, "the 2800CS had won at Spa, of course, but it has the same disc brakes fitted, power steering. Everything is production compared with the Capris. It had 13-inch diameter wheels and the engine has 280 horsepower with the three Webers, but the car is so heavy, you just cannot imagine. Braungart and Neerpasch at Cologne, they make a proper racing car. It was so completely new for us in Germany; the Capri had these big wheels, light homologation weight, and racing suspension. They were so much faster than our cars then, maybe ten to fifteen seconds each lap at the Nürburgring".

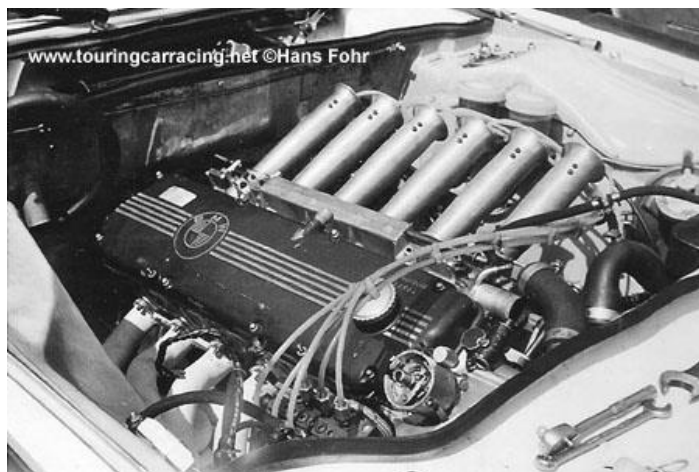
WHY WE RACE: FORD VS BMW VS OPEL

The factory's role was more of a watching brief through the 1971 season, though they drew little comfort from watching the blue and white V6 Capris lapping up race after race. Gradually a resolve was growing to do something about the situation, but through 1971 itself, the competition limelight on the big coupés was carried entirely by the tuners. Just how seriously BMW took the situation can be judged by the fact that they commissioned a British racing saloon car preparation specialist to complete a design study on the coupé at the close of the season. They also made sure that the 3-litre coupé (3.0 CSi) was homologated for racing in July 1971.

Meanwhile, back at Alpina, the factory's attitude to homologation was: "You don't need any, the car is perfect". In other words, the policy at the time was very similar to Bovensiepen's inclination and Neerpasch's consistently held views on Group1; the less modification and consequent easier homologation the better. In 1971, Burkard still felt that big brakes and other radical modifications were not a good thing --he felt that the car should just be reliable and finish with honour – but others (Indra amongst them) wanted to win against the accursed Fords.

Still, more power was needed. The lightweight CSL hadn't been created yet, one that the factory refused to homologate until Neerpasch arrived. Thus, work began on fuel injection at Alpina. The big six-cylinder was sold to the public with a fine Bosch electronic system later in 1971, but for racing the mechanical Kugelfischer layout was required. Kugelfischer injection had been used by the factory for many seasons on the four-cylinder, but for the six-cylinder, Alpina enlisted the help of Herr Quast, making use of the special lightweight pump that they had made reliable after experience with the four-cylinder factory engines.

Using 3-litre engines on carburettors, Alpina found that power outputs were always below 300 bhp, but once those internal and external injection changes had been made, they were eventually able to realize 330 bhp. Indra, and Dieter Quester for that matter, well remember the debut of the six-cylinder injection system on an Alpina coupé. It was at the Nürburgring 6-hours of 1971, and the original layout featured an enormous "guillotine" slide to admit or close off the air supply to the six chokes, which had no bearings to ease the slide operation. Naturally, this meant the throttle operation was very heavy and the linkage was subject to great stress. The unfortunate Bovensiepen was struggling to solder the linkage together for Quester up until ten minutes before the start. They did finally weld it together, but the linkage fell apart in "about half a lap", says Indra.



The advent of more power for the car produced other problems. Tyres, brakes, and suspension were all found to be inadequate, though by this time the disc brakes had been slightly thickened for competition to absorb a little more heat; standard callipers were retained. This was an enormous disadvantage compared with their rivals at Ford, as were the car weights, which were roughly 970 kg for the Capri (then offering about 300 bhp) and a whopping 1270 kg for the BMW. No wonder they were beseeching the factory for a lightweight model!

Some of the transmission problems apparent in 1969 were solved not long afterwards. For example, the differential had been overheating, and Alpina developed its own ingenious external pump to defeat this. The gearbox also gave trouble, and a five-speed ZF was adopted virtually "from the start". However, in Indra's words, "we still had standard clutches, and the drivers were not allowed to use full power for the starts!"

An item that is still sold today from Alpina's rural Buchloe premises was developed during the dour struggle of the 1971 racing season, when, in Indra's words, "we worked all night, every night, trying to beat the Capris". These were harder bushes for the suspension, front and rear. Such a substitution, in which the softer rubber that allows a quieter ride is sacrificed for stiffer bush location of all the suspension components in the interest of greater driver control and "feel", was commonplace even on tuned British road cars of the period. In Germany, the harder bushes were initially held in some suspicion as it was thought they would be liable to break. When this proved not to be the case, such bushes became a traditional feature of BMW preparation, too. At this stage rim sizes averaged 8 by 13-inch front and 9 by 13-inch rear, and servo-assisted power braking was still retained. However, the power steering had gone and the big BMWs were showing a turn of speed in a straight line that emphasized how competitive they would be if a lightweight chassis could be swiftly sorted out.

At the close of the 1971 season, Alpina were not too pleased with themselves. It was obvious that the 3.0 CSi would become the spearhead of a new BMW assault on Ford's monotonous success, but it was not obvious how BMW was going to do it. For the time being, they seemed content to rely on the tuners to turn their prestige model into a winner; but which tuner would get the lion's share of the factory blessing?

BMW, themselves, had not made up their minds. As the racing season closed with the one Schnitzer victory, they decided to see what could be done by an independent consultant, BMW Concessionaires (GB). The result was the provision of two works prototypes of very lightweight bodies. These were made using the lighter gauge steel and aluminium bonnet, boot and doors that were to become the CSL specification later on. There were no wings then, but Ralph Broad did fabricate his own alloy front spoiler and the car carried massive (for the time) wheel-arch extensions in glass-fibre to cover 11-inch-wide front wheels and 13-inch-wide rears. Because Dunlop was able to supply the first of their ultra-low-profile touring car tyres for the 1972 season, Broad's team opted (along with Ford and Schnitzer) to run 15-inch-diameter wheels. This allowed bigger brakes to be

installed, as well as taking advantage of better rubber. Some Alpina and Schnitzer know-how was used in the Broadspeed coupé, including a pristine Kugelfischer-injected engine that had passed through the hands of Paul Rosche at BMW.

Meanwhile, Alpina trod their own lonely path. For 1972 they ran regularly with 310/320 bhp, and these cars were what Indra describes as "Alpina's first racing cars". Having only one coupé to concentrate on, they tried some fairly advanced ideas. The disc brakes (with unventilated rotors) were mounted inboard and could be considerably larger than before, matching the units with the 14-inch-diameter wheels that had replaced their 13-inch-diameter units. A titanium flange to replace the production version was mounted between the propeller shaft and the differential, and solid rubber blocks were installed to mount the differential to the rear subframe. Alpina also shifted the driver back nearly four inches and the engine rearward by almost two inches, but their biggest problems were the wheels they had chosen, for they were simply not putting enough rubber on the road.

Again, the only BMW victory of the year came from Schnitzer, with that superbly turned-out silver and red machine taking the pounding handed out by the home track at Nürburgring in its stride and winning the 6-hours. Since this was shortly after Neerpasch joined BMW, it seemed a little bit as if it had been ordained, but the truth was the Schnitzer car was tremendously fast (some 360 bhp was claimed and rivals were almost inclined to believe it) and running on the proper rubber and brakes. It was also driven by the experienced trio of Rolf Stommelen, John Fitzpatrick, and Hans Heyer on this occasion. For Alpina and Schnitzer, winning races was all-important, as BMW had offered a substantial 10,000 DM to the winner of a European Championships round in a Munich machine, and 100,000 DM if either could win the title!



That was to prove impossible against the Capris since the Fords won the title for the first time since the

Cortina in 1965; ever since then class-winning cars such as Minis and Alfa Romeos had won the ECT marque series outright, although BMW had class victories.

The days of easy winning were coming to an end for Ford though. Alpina, Schnitzer, GS Tuning, Koepchen, BROADSPEED, and BMW themselves all agreed on the need for a lightweight coupé. The prototypes were already running around outside the Karmann works at Osnabrück.

THE 1973 ETCC SEASON

Neerpasch and Braungart were installed and operational from Munich in May 1972, Braungart having left Ford on just a month's notice. The ex-Ford duo had a year to produce a winning BMW in the European Touring Car Championship. BMW, like Porsche and Mercedes, cannot countenance losing, which is one of the reasons why we never see these prestige names in the German motor industry slugging it out in the same category.



Swiftly they decided to go ahead with the lightweight project, which was already well under way from a roadgoing viewpoint. Indeed, Neerpasch had a lemon yellow CSL, complete with its distinctive alloy "spats" at Salzburgring in April. As he had only just announced his decision to leave Ford it was little surprise to see that some kind souls from the rival Ford team had left a neat "Powered by Ford" sticker under the BMW chrome nomenclature while it was parked outside the hotel.

During the four months that followed, the team drew up everything that was required and ordered it to be made; new front suspension, steel hubs, new castings for the MacPherson struts and centre locking for the wheels (just one large nut and hub pegs secure the racing wheel, making changes faster and location better); completely new steel trailing arms to accommodate much bigger wheels; a complete power train (a Getrag five-speed gearbox was homologated and replaced the ZF) from one end of the car to the other. They even had a new prop shaft

made, some other axle ratios, magnesium castings for the bell housing, the gearbox, and several cooling systems. The brakes were also new, after co-operation with ATE. Rosche was certainly getting on with his side of things, too. A dry sump 92 x 80 mm, 3.3-litre version of the six-cylinder was devised and homologated ready for use with the rest of the competition CSL on 1 January 1973.

At the time manufacturers could only bore out their engines for Group 2, the stroke having to remain as homologated; one of the reasons Schnitzer always seemed to have an edge over the others was by a little extra daring in over-boring. Oddly enough, when Alpina came to run at the first race of 1973 they had not got the homologated parts to make an "over-3-litre" engine, and Neerpasch chose this moment to investigate. It was a surprise for the factory to find that the victorious Alpina car was under size.



At BMW, there was still in-team scepticism about the engines, so Neerpasch and Braungart directed them into the longest and most public test they could find: Le Mans. As Braungart felt afterwards, "it was a big break to finish and beat the Fords". Mechanically speaking the engines were fine, but the first of many gearbox problems on the car driven by Stuck reared its head. Even five years afterwards Braungart admitted that they were not really sure what had gone wrong, and what kept going wrong, on this car. "In theory the gearbox was perfect. It had wider gears, bigger bearings, and a different lubrication system. Do you know, in twelve months we made thirty modifications?" The team went back to an aluminium casing for the gearbox. Despite work with ATE, the German braking specialists, to solve a very visible problem in night racing, the brakes were glowing red through the wheels and the pads needed changing every four or five hours, a swine of a job with the heat being generated. ATE attached cooling fins to the newly designed four-piston callipers. Ford also picked up the idea for their Capris, and there was only one competitive BMW that occasionally appeared in Europe without them. This was Brian Muir" Alpina CSL, which used Lockheed components and was

intended primarily for the last 1973 season of Group 2 racing to be held in Britain. Otherwise, the Muir car was a twin to the one Alpina were campaigning in Europe, which won the opening round of the series after both the works cars and the Capris broke.

Aside from the normal evolution of a developing racing car, there was a revolution hidden and awaiting a startled touring car racing world, a potential upheaval that dated virtually from the moment Neerpasch and Braungart started their Munich crusade to beat their old team-mates in the North. They had spotted an amendment in the International FIA regulations that permitted evolutionary changes to be added to existing models. They decided this meant they could offer the CSL for sale with a full aerodynamic wing set, the soon-to-be-famous Batmobile.



The team had competed in six events with varied success and was testing at the Nürburgring 22.7 kilometre / 14.2-mile Nordschleife, a week before that circuit's 6-hour European Championship qualifier was due to be held. A 3.3-litre six was installed (by this time producing over 360 bhp) and they were lapping in the 8.30 bracket; earlier in the year Jochen Mass had managed an 8.25 lap in the 2.9-litre Capri. Because time was short, the Motorsport mechanics were asked just to fit the slightly larger front spoiler and the tail wing. The BMW "Batmobile" in Stuck's hands immediately recorded 8.15.4. Nearly fifteen seconds a lap! It was a team manager's dream come true, and Ford could not homologate an answer that season. But the effect of the wings was not just one of boosting lap speeds. Several chassis problems could then be solved quite quickly. Apart from the tyre problems recounted in Stuck's case, the winged BMW could generally run softer springs than the Capris.

Rosche also added his brand of engine magic to the BMW cause, producing a 3.5-litre version of the faithful SOHC alloy 12-valve head, iron-block six. The torque was important, for the CSL was still considerably heavier than the Capri, racing at around 1062 kg. Set against that, the BMW engines gave approximately another fifty bhp, for the Weslake-

headed Ford V6 was really at the end of its life and was safest at 320/325 bhp from nearly 3 litres.



In theory, and on the track, the 3.5-litre engines and wing system were enough to slaughter the Ford opposition with an unbroken string of wins. It would be wrong to think they were all BMW wins though, for the role of Alpina and Schnitzer was often the leading one, Alpina could have won the Championship, and beaten Ford on points, without the factory points, for they won quite a few rounds (notably the first and an epic struggle at Silverstone) and finished every race – except the Spa 24-hours, where the tragedy of young Hans-Peter Joisten's death overshadowed the importance of completing a motor race.

Technically, Alpina went for a simpler car than the works. They abandoned the magnesium transmission castings, retaining the 15-inch-diameter wheels and Dunlop tyres when the works and Ford had started working with the new 16-inch-diameter wheels. They installed production-type struts and uprated them appropriately rather than using the full-race and purpose-built factory struts. The latter move was to try and make the steering lighter and more manageable in some of the longer-distance events. Alpina also reverted the rear disc arrangement to a conventional outboard mounting point from the previous year's inboard experiments.



The engine specification was conservative too. For the first race, they had to run the smaller engine (3 litres), and even when they had the full 3.5 litres they reckoned to run up to twenty bhp less than Schnitzer in the interests of making the maximum number of race finishes, an objective they achieved. According to their tests, this means they had about 360 bhp at best, using narrower rims than most with ten inches at the front, and eleven at the rear. Alpina experience in 24-hour racing was excellent, with three Nürburgring night and day races to their credit; part of this was due to having relieved the engine of a little compression pressure, knocking back the ratio from 11:1 to 10.5:1. Deliberately, the emphasis was placed on torque, and they had 275 lb-ft (= 38,0 kgm) or more at 5000 rpm, the engine pulling well from that point to the bhp peak of 7400 rpm.



During the 1973 season, Alpina would go on to win the first race at Monza (Lauda/Muir), score 2nd at Salzburg & Sweden (Hezemans/Muir), 3rd at the Nürburgring (Joisten/Lauda), a DNF at Spa with the death of Joisten, and runners-up at Zandvoort (Muir/Hunt) & Paul Richard (Ickx/Hunt), before winning the final race at Silverstone with Ertl/Bell. Enough points to win the Manufacturer's championship by themselves.

THE YEARS THAT FOLLOWED

For 1974 Alpina dropped right out of the picture and Schnitzer was not represented in the new 4-valve era, which began officially on 1 January 1974. Alpina was out because Bovensiepen had always tried to race what he could sell to customers and 4-valve-per-cylinder, six-cylinder racing engines were not on that list. "If we have to buy everything and then call it Alpina, there is no point for us to race. That is not a technical development that we can benefit from and sell", Burkard sadly stated. They did try their luck at the first Monza round of the European Championship, with Rikky von Opel / Helmut Koinigg. Running a 2-valve-per-cylinder head, the talented Austrian Koinigg (who was killed in a Surtees at Watkins Glen later that year) tried to make up the power deficit and damaged the car. It was a sad ending to Alpina's efforts after their

pioneering role, but they were to be back with a vengeance three years later, conquering the penultimate European Championship in 1977.

The 1977 season saw Alpina produce their pride and joy with renewed energy in mounting a challenge against Jaguar. It amounted to a brand new CSL, built up from one of the CSL shells supplied originally by Motorsport GmbH for Group 2. In it, Alpina had expressed every talent they possessed, its gleaming green paintwork and glittering mechanical components speaking louder than any publicist's voice of the enormous care and enthusiasm that had gone into building perhaps the best-prepared touring car seen in Europe. The works cars were always highly professional and eye-catching, but Dieter Quester simply said of the Gösser Bier-sponsored Alpina CSL, "It was the best car I ever had. Fantastic handling, brakes, everything was good enough to win."



It was not just a pretty face though. On-board air jacks, 16-inch-diameter centre-lock wheels, and a rear alternator driven from Alpina's unique driveshaft belt arrangement (similar in principle to the oil pump differential cooler) were employed. Everything Alpina had learned about BMW coupés was within this remarkable racer. The engine began the year in wet sump form with some 325 bhp produced from 3.2 litres (standard 84 mm stroke and 89.8 mm bore), but when Leyland's political pressure changed the Group 2 regulations to allow dry sump lubrication late in the season, Alpina did eventually put the well-proven system on. It was chiefly this that allowed a yield of 340 bhp at the close of the year, with 8000 rpm as the recommended maximum on the production crankshaft. The 1075 kg Alpina CSL had to use a four-speed Getrag gearbox under the new regulations, and this was equipped with the following ratios: 2.33:1, first; 1.47:1, second; 1.17:1, third; and direct 1.00:1, top.

THE END OF AN ETCC ERA

"Jaguar was our only reason to participate in the 1977 ETCC, Burkhard admitted. But the "big cat"

from Coventry didn't reveal its claws often. Although the more than 500 bhp producing twelve-cylinder car would start from the front row in most races, technical problems resulted in the English retiring mid-race on most occasions. Yet the Alpina cars were also struggling with engine problems during the first half of the season. Despite their issues, five wins out of the eleven races were enough for Alpina to become European champions once again. Jaguar had already given up halfway through the season thereby robbing Bovensiepen of his motivation. "An expensive joke, as every race was costing us 50.000 Mark!"

With nobody left to beat; they sold the car to Carlo Facetti and Martino Finotto. Once away from Germany and Buchloe, it simply lost its polish and preparation in 1978, and it was left to one of the persistent Luigi BMW CSLs to take the model's fifth European Championship in 1978. An almost meaningless title, such was the state of the art that year - though the addition of the Mercedes-Benz did help a little.

So far as technical developments were concerned, the great days were long gone. The car that brought winged science to touring car racing in Europe went on, a winner that would not lie down.



ALPINA became the driving force behind the early days of touring car racing with the E9. Despite little success at the start, they soon developed the car into a race-winning phenomenon. What started with the Fords, ended with an internal fight between the BMWs themselves, with Alpina triumphing during the 1973 ETCC season with their driver pairing of Lauda/Muir and the occasional appearance of Toine Hezemans, who would go on to win the driver's championship. After a few years without an Alpina appearance, they returned once more to beat the mighty Jaguar, before retiring from the touring championship completely.



KERMIT THE CSI

An Update On Kermit's Story from Newsletter #03

By Rob Pilkington

The extensive re-restoration of "Kermit", the original RHD CSI from 1974, was covered in Issue #3 of this newsletter. To not repeat that article, I will recap the 'vision' for the re-restoration.



RECAP

Using correct original parts or meticulous refurbishment with period-type materials, return Kermit to how a 1974 CSI would have been back then, showing a level of empathy where original elements were still sound. It's an expensive route, but as there aren't many original RHD CSI's left and I wanted to keep the car for the long term, a worthwhile one if you love the E9.

At a show, I saw a Ferrari 330 GTC in dark green that had been beautifully restored in an original manner. I wondered if we could treat the similarly built' E9 CSI in a manner not so different from that 330 GTC.

We started from a low mileage, matching numbers CSI, that had seen many years of storage and neglect. It had been rescued and restored in the later 2010s, but this was not to the level of detail correctness I aspired to, which was probably due to economics for a commercial restorer when compared with a CSL. That's now changed in some other countries where going to town on an original CSI would be more viable. Maybe in future, the CS will follow suit. (Although CS's make suitable bases for some amazing restomods. My last car project was a Porsche restomod).

The re-restore has been a process of successive planned phases to allow test usage in between and a spread of costs. It has utilised all the knowledge and

resources of Dom Surdi and John Castle at Oilwell Garage in the Cotswolds, who are absolute specialists in the E9.

Oh yes, the factory paint colour was Taiga green - aka Kermit!

STAGE 4 (AUTUMN/WINTER 2023)

I'd left off the last article following three increasingly extensive phases, so what happened next??

During test drives in 2023, I noticed that a top-end tick in the engine was always present despite recent tappet adjustments. I took the car for Dom, John, and their team to investigate further.

With careful examination, they found that the rockers were hitting 3 of the valves ever so slightly offset, causing wear. Considering the engine was strong overall, and it was critical to me to keep the original unit, I decided to embark on the only real practical long-term solution—an extensive top-end rebuild.

THE TOP END REBUILD

After the head was removed and disassembled, every valve could be examined. The majority were excellent, but the three being mishit were slightly worn, so we replaced them with new ones.

We found that the rockers weren't A1 and that the camshaft had a small amount of wear. We replaced the camshaft with a new standard part from BMW, along with all the rockers, all the other shafts, and many smaller ancillary parts.

The bottom end was checked and was all good, as expected for the mileage. I hadn't realised that 3.0CSL/is (to get the extra compression) has a pattern a bit like a "grand piano" at the top of each piston—to me; this is quite an interesting '70s design feature.

For everyone's reference, we used Synter Parts Stevenage for all the BMW items in 2 extensive orders – some pictured below. They provided excellent service and were very helpful as I put the orders together, checking that I'd got everything right for a '74 car.

A specialist engineering company in Oxfordshire carried out the head work. It included pressure testing the head, refacing it, lapping the valves, and cleaning it.



Although a complete engine re-wire and several other works were carried out at a previous stage, we took advantage of the head removed for a few extra jobs. During stage 1, the twin brake servos were removed and sent for refurbishment. We also replaced the master cylinder, completing all the braking system work. After bleeding, I'm now really pleased with the feel and capability of the braking for an original setup. In total, it was expensive to complete, but we all know it's not a simple E9 system to get right. (For example, the discs were replaced before and had barely covered any miles before the re-restore.)



Head after collection

The Oilwell team assembled the re-engineered head with the replacement components and secured it with the new bolts. As part of the process, we also refurbished the exhaust manifold—the rest of the exhaust system had been replaced with a new period-style system during my project.

We then struck a problem!

When everything was back together, the car refused to fire consistently; it went very lumpy. Everything looked fine, but it was traced to the old injectors after several hours of trying to track it down. Although the engine was fully rewired, these were not replaced during the previous stages, and for some reason, they sort of worked previously with the 'settled but faulty' top end.

When they were removed, it was found that over the years, the originals had been replaced by three differing types, two of each. It was a miracle (and testament to the M30 engine) how well it had run on them. Two were standard fit for Volvo's, but all Bosch. The original Bosch part for BMW D-Jetronic is not available from Bosch anymore, so I was then forced to search around everywhere for second-hand options. I finally found a suitable place in Germany, but they required all your originals to even start, with the problem for me being that they weren't all the same! As Dom and I discussed, they would not make a suitable base.

Eventually, after further forum research, I found that several U.S. cars had replacement injectors. These were brand-new U.S. replica parts which were flow/pattern matched to the original Bosch item. Dom had tried a different part from China in the past with little success, but this one had positive testimonials. I wanted to retain D-Jetronic, so finding the correct injector would be critical, given its limited adjustability.

We all decided the U.S. solution was the best option - a fresh part to work with the rebuilt top end. To cut a long story short, they shipped them efficiently, and when installed, the engine became smooth and happy. They've worked perfectly for me since, and it's comforting to know I have a complete set of new injectors to last for many years, as Kermit wants to continue as a veteran performer!

Exceptionally, during this period, the complex factory firewall sound-deadening part became available, something not seen on quite a few restored E9s. While the head was off, one of these was ordered from Germany and fitted, complementing the interior sound-deadening replacement.



As you'd expect, with the head skimming, we had to obtain a slightly thicker gasket, which took a little while to come. After an initial run-in period, I had the tappets re-adjusted, and the bolts tightened as per standard practice.

We also noticed that the old Bosch alternator was not giving full charge. Again, this part is not available anymore. Still, I found an excellent company in Lancashire (Lancashire Rotating Electrics) to whom we sent it off, and they refurbished it to like new. When this was fitted, we were there with the engine. It's looking and running 'just right' now.



I now had a car with an attractive exterior, an original interior to be proud of and an engine back on song. Braking, steering, and suspension were also nicely 'right' for a '74 E9, but one mechanical item was not yet up to that standard - Kermit's slightly whiney gearbox.

A related problem was that although everything else was as original '74 CSI, the car had been converted to the 262/5 version of the Getrag box. This was something I wanted to keep for three reasons: It's a genuinely acknowledged improvement, the 5th ratio is just an extended section with the same box for the first four gears as the original, plus I'd read one of the BMW Directors converted his late CSI 'back in the day'.

I'd also had a better mount fabricated for the 5-speed and the prop shaft re-engineered at a previous stage, so going back didn't make sense.

After enjoying some running in of the engine, I've since been lucky and sourced a refurbished (by Getrag specialist All Gears) matching gearbox that had not yet been used in a car.



At the time of writing, it's being fitted to the car. Once in, aside from the obvious mechanical maintenance, it completes the mechanical elements of the Kermit project, aligning the quality.

FUTURE PHASE 5 - FINAL STAGE

There is one final phase before I purely focus on upkeep and maintenance.

During the previous stripping process, it was discovered that both door skins had undergone previous repairs, and the lower section had been replaced with new sheet steel. They're very sound and have been injected with rust-proofing, etc., during my project, but achieving a factory door fit to match the car's overall standard is impossible with this previous repair.

We've done our best with an improved fit/seal/ease of closing compromise.

I have since purchased the correct door skins from Germany. The plan is to strip down the doors (again) and use the best contemporary techniques to ensure an impeccable door fit and shut line. At the same time, the front of the car (including the bonnet) will be repainted to perfectly match the recently painted rear and roof. From carrying out a lot of work in the last three years, Dom and John believe there is not much else to do on the front as that was well restored.

Member Project

We also replaced horns, lights, chrome accents, and indicator lenses, so this final stage is really about aesthetic excellence to match the rest of the vehicle after such an extensive project.

I'm not going to do that until at least this winter, as with a beautiful car that goes nicely, I plan to get some pleasurable driving out of the old aristocratic frog when the weather finally brightens in 2024.



S.R.PHOTOGRAPHY

ELECTRIC WINDOW MOTORS

Diagnosing, Removing, and Repairing

By Niek Nijsen & John Castle

For most of us, slow-winding rear windows are a common sight and can create a lot of frustration, especially when trying to resolve the issue, let alone taking it apart for repairs or replacement. Thankfully, this article will present you with the common problems and a step-by-step guide on how to remove, repair, and refit your motors, whether they're the early or later style.

INTRODUCTION

History

During the production of the E9, two significantly different electric window mechanisms were used. The early style had a motor with wound coils and drove through a separate gearbox, the later style came with a motor that used permanent magnets and went through an integral gearbox. Although most of us would assume that the second version was introduced in late September 1974 along with the phase 2 CSi, the BMW Classic catalogue states that it wasn't available until February the year after. Odd, as we've come across these motors in cars built in mid-'74. Either way, before we remove any parts from the vehicle, we shall cover the theory on both motors and briefly look at other common problems that could cause the slow working windows.



Early style motor



Late style motor

Theory

In the early '70s, electric windows were only just being introduced by the European motor manufacturers, primarily in "luxury cars". Compared to modern standards, they were pretty crude, which, fortunately for us, is an advantage because it allows for much easier dismantling and cleaning. Despite their basic design, they rarely burn out because they are fitted with an internal overload breaker, which opens to cutting off the electrical supply if the motor is stalled. Although the request for second-hand motors is frequently seen across the community, the most common motor problems are related to the grease inside them.

The burnout philosophy is also highlighted when we consider the life cycle of these motors. If we were to use an electric window once a day, up and down, which takes roughly 30 seconds, it would mean the motors run approximately 2 hours per year. Our cars have been around for close to 50 years since production, which amounts to 100 hours, which isn't much use compared with an alternator or windscreen wiper motor. So, in the grand scheme of things, they're only lightly used and, as a result, very rarely burn out.

Common problems other than motors

Before we jump into stripping part of the car and dismantling the motors, we want to quickly touch upon common problems that could cause the windows to move slowly or, in some cases, not at all. As mentioned above, grease is frequently identified as the culprit, especially if it hasn't been renewed since the windows were installed in the factory.

The window runners were also lubricated with the same grease to facilitate the smooth running of the guide wheels and crank mechanism through the frame. Since our cars are 50 years old, the grease will have congealed far beyond the original viscosity, sometimes to a solid paste, and the motors are not powerful enough to operate the window any longer.

The same level of ageing will have influenced the car's wiring as well, which could affect the proper functioning of the motors. It is, therefore, wise to check fuses, wires, relays, switches, and connections before removing the motors themselves. You'd be surprised how poorly the condition of these components can be after being subjected to years of vibration. A simple voltmeter, especially when the battery is still fitted, can quickly check the integrity of any electrical item.

DETERMINE YOUR MOTOR TYPE

Before we can follow the correct process of removing and overhauling the motors, we need to identify which type is fitted to our cars. And before you start removing any of the interior trim, there's an easier way to determine this through the switches that control them. Gently remove one of the window switches from the centre console by gently levering it out, careful not to damage the leather surrounding them. A thin, plastic wedge is your best option (such as those commonly used to remove the interior trim), and avoid using sharp screwdrivers as they can easily slip and do more damage than good.

If you discover that the wires are connected to the switch by spade terminals, your car is fitted with the early-style window motor, which is operated by reversing the current through the field windings.



If you find the wiring loom has a moulded plug instead, your car is fitted with the late style, which is controlled by reversing the current through the armature.



GAINING ACCESS

Unfortunately, gaining access to the motors isn't a quick job, especially if you're dealing with the later style. It requires you to remove the interior trim, unbolt the motor itself if it's the early type, or remove the entire window mechanism if it's the later style before separating the motor from it. So, before you do anything, ensure you have the time and space to complete the job, and keep a list to hand to track your progress and always label items. Better yet, take photos as you go, as they can provide vital information for putting it all back together.

The workshop manual can be of great help in this process, especially when dealing with the later style motor, as it involves removing much more of the trim than initially thought. Since most of us don't have access to this document, and we can write a whole article on the process itself, Niek has recorded the necessary steps in his restoration journey, which can be accessed on his YouTube channel [here](#) (shameless plug, yet very useful). To help you in finding the correct episodes, here's a quick hyperlinked list with the proper time stamps:

- [Trim removal \(episode 07\)](#)
- [Window frame removal \(episode 08\)](#)
- [Removing the motor and restoring the frame \(episode 24\)](#)

Removing the window crank system is also of great use when cleaning and re-greasing the system is required.



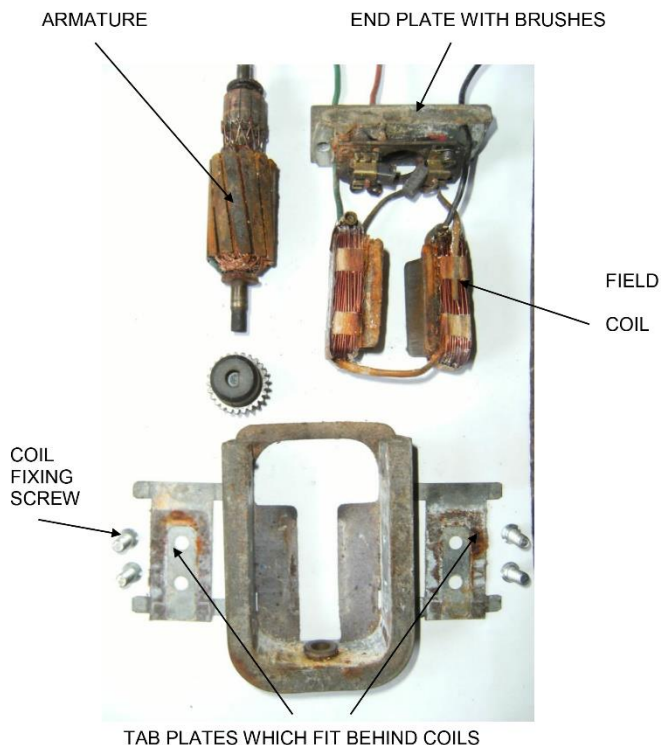
THE INNER MOTOR WORKINGS

Early style

The motor has identical metal covers on both sides, held in place by bent-over tags. When opening the cover, carefully bend back the tags so as not to damage the paper sealing gaskets. Depending on their condition, it is worth replacing them before closing the covers after repairs.

Inside, you will find two coils mounted on opposite sides of the motor, with the armature sandwiched in the centre. The coils are held in place by two plates and accompanying fixing screws. The endplate holds the brushes and overload protection switch, where the wires are soldered to the motor. Two of the three

wires terminate in a small plug, whereas the last wire is the grounding and should be connected to the chassis. A small gearwheel is mounted to the top of the armature extension and controls the larger gear to move the window crank system.



Late style

The motor comprises two distinctive sections: the round top, which is the gearbox, and the black bottom box, which houses the electronics. The gearbox section can be uncovered by removing the three small screws that hold the cover plate in place. Be careful when removing the cover not to damage the paper sealing gasket. You can now see the main gearwheel, the gear which is part of the armature, and a bearing at the top. On the outside, located at the top, you'll find an adjusting screw to increase/decrease the space between the top of the gearbox housing and the bearing in case of excessive play or tightness. We'll touch upon this during the actual refurbishment process.

The bottom box houses the electronics, which consist of the spade terminals (external), the brushes, overload protection (white box), permanent magnets, and an armature with magnets and a coil. Depending on how the system is powered, the armature will spin left or right by reversing the polarity, thus making the window move up or down.

EARLY MOTOR

Place the motor in a vice and remove the two screws holding the bearing end plate to the frame of the motor. Pull off the end plate with the brushes and overload protection switch attached to it and fold gently to one side. Now, pull out the armature and

take care of the spacing washers on the armature shaft so that they can be reused. If the two field coils are corroded, they can be removed by unscrewing the two taper-headed screws which hold each coil to its side of the frame. Removing these six screws in total requires a large screwdriver of the right size to fill the screw head slots, firm downward pressure, and strong wrists to avoid damaging the screw heads. The motor will now be dismantled as per the item identification photo below.

Clean up the armature, commutator, and inner faces of the coils using 250-grade dry "wet & dry" emery paper or 3M Scotch-Brite Ultra-fine hand pads (Niek's preferred option). Similarly, polish the two ends of the armature shaft using a fine grade emery paper/Scotch-Brite. Clean the end plate and brushes with WD40 and a soft cloth to avoid breaking any of the soldered connections (they are reasonably robust). Niek's preferred alternative to the WD40 is Wurth industrial brake cleaner or (even better) Ambersil Amberklene FE10, which is specifically designed for cleaning electronic components.

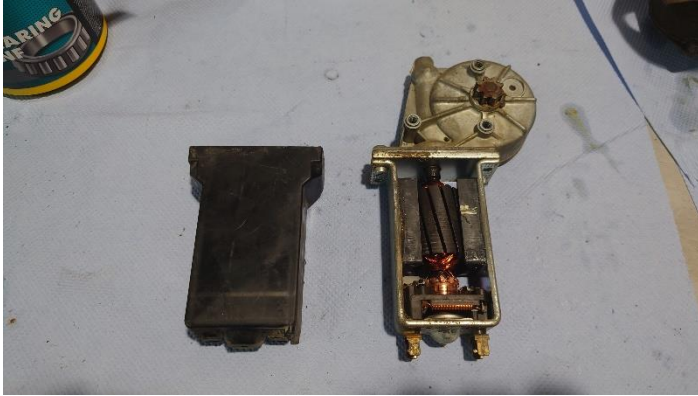
Once all the items have been cleaned and inspected for damage, re-install the field coils with the tab plates in their correct orientation. Lightly oil the bearing in the motor frame with "3 in 1" and replace the armature. Now, offer up the end plate, tucking the end of each brush over the end of the commutator until the end plate can be pushed home tight onto the frame. Replace the two holding screws and lightly oil the end plate bearing with a couple of drops of "3 in 1".

Before replacing the cover plates, test the motor using a 12-volt car battery as a power source. Run the motor in both directions for a few minutes to allow the brushes to bed in. The brown wire is GND/-Ve. Once you're happy the motors work correctly, replace the covers with their gasket papers. If they are damaged, use them as a template to cut new ones from gasket paper of similar thickness.

LATER MOTOR

Before taking any of the motors apart, label them left and right, as they differ slightly when installing the gearbox section.

Place the motor on your bench and carefully pull off the black plastic cover over the bottom part of the motor. Depending on dirt build-up over time, this could be tight so that hot water might be required. Carefully pour it onto the plastic cover, ensuring it doesn't leak inside. Gently spray the terminals and upper section with brake cleaner or Amberklene to help loosen it up if needed. Clean the cover with brake cleaner and a cloth before giving it a good look-over and inspecting it for any cracks or damage. It is wise to repair any of them before reassembling the motor.

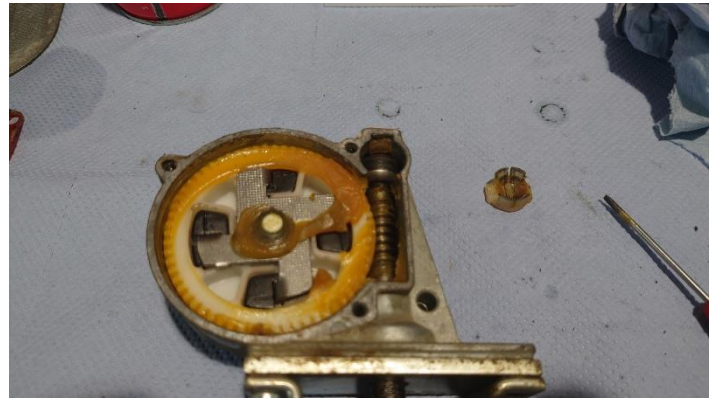


With the cover cleaned, we can continue with the rest of the motor. With the components still securely in place and giving you a good handhold, gently clean the terminals using ultra-fine Scotch-Brite and Amberklene.

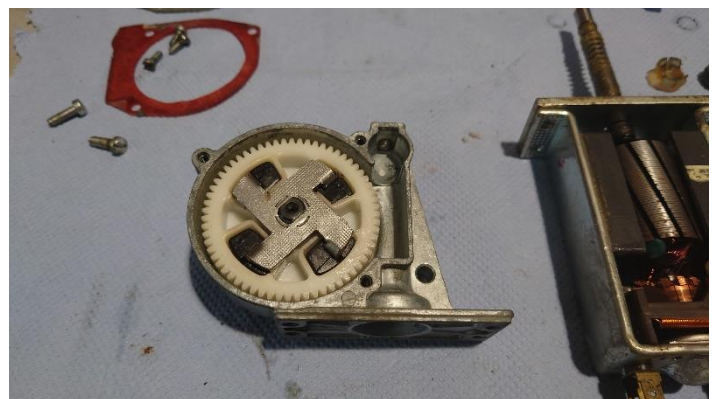
Depending on the orientation of the motor, flip it over to display the side with the three screws that hold the gearbox cover in place. Remove the screws using a flat screwdriver, being careful not to damage the paper gasket that's sandwiched in between. Carefully peel off the paper from the cover if it is stuck and place it to the side. Use brake cleaner to clean the cover plate and gasket. You're now left with the exposed gearwheel and accompanying components.



Remove the cover cap on top of the bearing at the top of the armature worm drive and clean it before placing it to the side. We can now start to separate the electronic section from the gearbox by removing the four screws that hold the two components together. Marking one of the permanent magnets with a marker pen and taking a photo will help you later to ensure the correct orientation of the two components when screwing them back together. Once the four screws have been removed, gently pull the two parts away from each other. You might have to rotate the armature to help the gearwheel, as it will unlikely spin by itself due to the congealment of the grease.

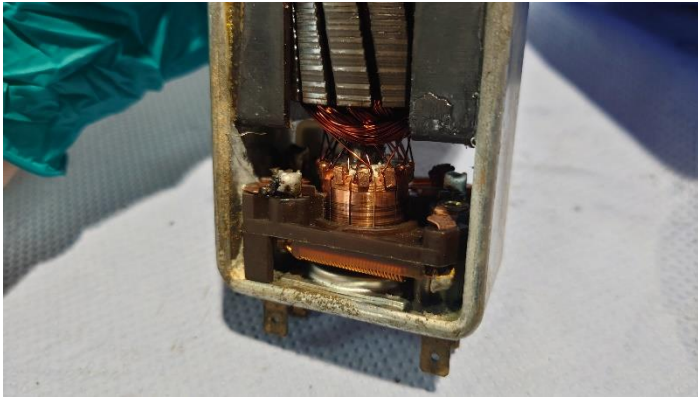


We'll continue with the gearbox section. First, remove the spherical end bearing found at the top with a small screwdriver and clean it thoroughly. Next, we'll need to clean the large gearwheel itself. Using a combination of a small flat screwdriver and a pick, gently remove as much of the grease as you can. Using a suitably sized tub, white spirit (or paraffin), and a small brush, clean the gearwheel and entire housing until all grease is gone. Unfortunately, we can't remove the gearwheel itself, so be aware that grease will be hidden underneath it, and we cannot see it very well. Access to compressed air can be helpful here, as it will allow you to blow the grease from underneath. It is wise to wear protective glasses, as it can blow out in any direction at high speed! Give the whole gearbox a good inspection upon cleaning to ensure all old grease has been removed and the components are in good condition. If the metal spider is corroded, gently clean it using the Scotch Brite until it's shiny metal again. Once happy, place all components to the side for now.



Shifting your focus to the electronics housing, remove the rectangular plate at the top and clean it. Remember its correct orientation for the reassembly later. Depending on the condition of the armature and its magnets, you might not have to remove it. If so, inspect the components carefully and gently clean them where needed using Amberklene. However, if the armature is rusted and requires additional work, you can now carefully pull it out from in between the magnets in an upward movement. Be mindful that the brushes that push against the bottom part of the armature and pass through the current are spring-loaded and will "pop out" from their position. Use the

Scotch-Brite to clean the magnets found on the armature until all rust/dirt has been removed and you're left with a clean and shiny appearance. Give the brushes a good inspection and clean if needed, as well as the rest of the framework that holds it all in place.



In case you've had to remove the armature, now comes the painful and frustrating part of putting it back between the brushes. It took me several attempts but eventually was successful by holding the casing upright, inserting the armature, which should "drop down" by gravity, and using a small flat screwdriver to push the brushes back into place. It's a fiddly task, and multiple attempts might be needed to get it all back into place, so take your time, and don't take out your frustration on the brushes, as they are very fragile!

With all the components cleaned, we must put new grease into the whole gearbox before closing it up again. This is best achieved before screwing the two sections back together. I used blue wheel bearing grease, mainly because I have a large tub of it, and it's very suitable for the job. I applied this using a small brush while rotating the gearwheel to ensure it was evenly distributed. Apply a thin coat to the end bearing itself before installing it back into the gearbox housing, and coat the worm drive that's part of the armature with a generous amount. Ensure you've correctly installed the rectangular plate between the gearbox and electronics and carefully re-assemble the two sections back together. As you do, ensure the worm drive's top end is seated nicely inside the spherical bearing before coating and installing the small cover cap. Be mindful not to overfill the gearbox with grease!

Depending on the amount of play you might have, you can adjust the screw located at the top of the gearbox housing as required. Unless there's been significant wear at the bottom end of the armature, which is unlikely, you shouldn't have to make any adjustments

here. If you do, ensure you don't overtighten the screw, as it will prevent the armature from spinning freely.



After the system has been reassembled, we must test the motor functions correctly before installing the covers. But before we do, it is recommended that the gearbox cover plate be installed, as it will stop the grease from flying all over the place once the worm drive starts spinning! Make sure the gasket sealing paper is installed correctly before securing the cover plate with the three screws. Now, supply power to the motor from a 12V battery to check its operation by applying a voltage to both terminals (connected pairs).

WINDOW FRAME

Before you install the fresh motors, inspect and clean the window frame and crank components. Then, apply a small amount of fresh grease to aid in the system's smooth operation.

The window frame also houses the stop limits to limit the movement of the crank by cutting power to the motor via the overload protection switch. The limits can be adjusted; however, it is recommended not to change them unless the window doesn't close properly. If this is the case, only readjust them accordingly once the whole assembly is back in the car.

CONCLUSION

Dealing with a slow or malfunctioning electric window can be frustrating at the best of times. Thankfully, if your motors are indeed the cause of slow or non-moving windows, the step-by-step process described in this technical article provides you with the necessary knowledge and skills to remove, overhaul, and re-install your electric motors.

FROM TOP TRUMPS TO REALITY

With a Few Diversions In Between

By Kirk Harrison

Despite the 3.0 CSL being in my Top Trumps pack growing up in the 1970s, I had properly fallen for the E9 around 2010 when a dark blue 3.0CSi was part of the fleet of the Classic Car Club in London, where I was a member (the CCC owned about 25 classics and modern classics, and for an annual membership, you got points to drive the cars for maybe 20 days a year on average).



The CCC E9 was a bit tatty inside and out but drove very nicely and had the 5-speed dogleg box, and it soon became my car of choice in the CCC, beating E Types, 911s, Jensons, etc, so no mean feat. At this time, my classic fleet had mainly been British Leyland-inspired – Triumph Stag, Dolomite Sprint, Jaguar XJC, 2-door Range Rover, Rover P6 3500, etc., but the E9 made me fall for BMWs again. I had owned a lovely E30 325i touring in red in the 1990s but stupidly sold it when we bought our first flat. Needs must, etc., but I loved that car..... I also owned an E63 M6, which was a beast but was too powerful and technical for me. I can at least say I owned a car with a V10 engine, but the fuel bills, OMG.

By the time I realised I wanted an E9, prices had probably doubled or trebled, from maybe £15-20k for a nice (ish) one in 2012/3 to c.£50-70k by 2017/8. So instead of an E9, I bought myself a mint Audi Quattro for £30k and kind of moved on from the E9 dream.

Fast forward to lockdown and as we emerged from the pandemic the classic auctions started up again and I found myself at Ascot Racecourse with a mate in May 2021. I was just there to get out the house really but low and behold there sat a lovely-looking 3.0 CSi in Polaris silver. On first inspection, you could see the car had been restored as it was very solid

underneath, with lovely paint, a lovely engine bay, and a sweet engine. It was however a bit of a CSL 'lookalike' with the front chin spoiler and black bumpers etc. I asked to see the file and it soon became apparent that the current owner had restored the car at a huge cost. KKJ 952N had a build date of December 1973 but as quite common sat in Belgium docks for months then BMW in Dover until it was registered in May 1975.

Chatting to the auctioneers the sad story emerged that the current owner had restored the car at great cost after buying it at Anglia Car Auctions in 2014 (from someone currently on the E9 London(ish) group I might add...). The poor guy then became quite seriously ill and eventually lost his driving licence so was forced to sell.

So, I set myself a limit and decided to have a bid, and after bidding against one other punter, I thankfully bought the car for what I thought was a very fair price given the work that had been done (over £100k of bills on file). The previous owner is a lovely guy and seemed pleased that it had gone to an enthusiast vs a collector or dealer – and he supplied me with a huge file and c.650 photos and videos of the restoration which was great to have.



So KKJ 952N joined my small collection and became my flagship car. It drove pretty well on the way home, but it was apparent that the gearbox wasn't great, and the engine needed a tune. But nothing shocking. I didn't particularly like the chin spoiler (but quite liked the black bumpers) and the interior, while recently re-trimmed, wasn't right or authentic.

Over the next few months, I really enjoyed driving the car, especially with all the windows down in summer

listening to the throaty straight 6. I then started a gradual upgrade first removing the chin spoiler and replacing the bumpers with lovely originals (thanks to John Renaudon). I also re-trimmed the interior in the proper blue velour (thankfully the blue leatherette was intact, so it was the inserts and parcel shelf that needed doing) and added a genuine steering wheel, a refurbished blue tooth Becker radio etc. The wheels were changed from turbine alloys to refurbished Chromadoras as I wanted the 1973 look. Just my thing, I guess.

So far so good but then one autumn day the gearbox went “crunch” and I was on the back of an AA truck home. It later became apparent that the gearbox hadn't been refurbished in the restoration, maybe because the costs had gotten so high.

Thankfully, by now, I had been introduced to the E9 London(ish) WhatsApp group, which is a group of proper E9 experts but a very welcoming group to keen amateurs like me. When I asked who could sort my gearbox, the consensus was that Mark at All Gears in Workop was the best man for the job—and justified, it turned out. The amazing Mark managed to squeeze me in and refurbished my 4-speed box in a few weeks, and all was good with the world again.

On the gearbox, a few E9 owners suggested I switch to a 5-speed box, but I decided to stay with the original as the 4-speed box gearing is so long that unless you're driving over 85 mph, I don't feel the car needs it. Horses for courses and all that, but my E9 is my cruising car, not one for the race track, and I have a couple of other vehicles that fulfil the need for speed...



I then took the car to Cotswold Garages (who had completed the engine rebuild in 2015), where Dom and John Castle helped me return it to the spec I wanted. A thorough inspection found that while the car was 90% sorted the front callipers needed sorting and the brake servos weren't working as they should.

So I went about getting this done and at the same time replacing the windscreen with a replica (with the blue stripe), fitting a Tracker, adding a passenger wing mirror, replacing a leaky radiator, getting it properly clean underneath, then waxoiled, sorting numerous power drains, upgrading the headlight bulbs to LED, fitting new replica boot panels (made in Poland) – the list of ‘minor’ upgrades seem to get bigger and bigger – and cost me more and more - as we all know it's hard to know when to stop.



As of today, the car is pretty much how I want it – I love the colour scheme and the chrome fittings over the black; again, it's all personal taste. It gets lots of attention wherever it goes, but for me, I'm happiest cruising around north Herts/Beds on a sunny day with the windows down, listening to that straight six soundtrack....



CLASSIFIEDS

The latest offers, sales, and wants by our members

If no contact details are provided, email e9register@bmwcarclubgb.co.uk with the title and member # of the advert, and the Register shall initially act as a mediator.



Wanted

Previous owners of CSL #251

Wanted by: Wes Young / AUS

Contact: wesyou@gmail.com

I'm trying to locate and contact the previous owners of my CSL, #251. Previously registered in the UK as "PYV 906L" and was exported to Hong Kong in the 80s before coming to Australia in 1991. Please contact me if you have more information relating to his car. Thank you.

Right door glass

Wanted by: Christopher Scott / UK

Contact: thecsi@hotmail.com

I'm looking for the right-hand door window glass with the etching "Duro Glas F - D100 - Dot 28 M100 AS2" as per the photo. Thank you.



Bonnet & Bootlid for 2002

Wanted by: Biran Cosgrave / UK

Contact: +44 (0)87 751 1136

I'm hoping someone might have a good bonnet and boot lid for a 2002 cabriolet. I could also do with the rear folding hood section. Thank you.

For sale

Restoration & New Production of Interior Wood

Offered by: Thomas Hombach / DE

Contact: +49 (0)173 906 2561

HombachThomas@gmx.de

I specialise in restoring and producing interior wood parts with new veneers. The original wooden pieces are professionally prepared. The top layer is of high-quality "American Walnut" veneer and is stained in the original colour.

A high-quality "satin-gloss" paint from the company "Hesse" is used as a top coat. The complete set, as shown in the photos, costs 2500 EUR. I can offer you to trade in your existing set that is suitable for processing, in which case the set shown will cost 1500 EUR.



Additionally, all individual parts and the complete set can be offered as reproductions, which are available in "European walnut" and "American walnut" and a lighter stain. Talk to me! I would be happy to send you more photos.



1972 CSL (RHD) - £125,000.-

Offered by: Dave Morrell / UK
Contact: +44 (0)7957 364740
dave@dmmrigging.com



I bought this car in January 2021. Munich Legends comprehensively rebuilt it in 2019, and it has only covered some 3000 miles since then. It drives beautifully. The car sits on Michelin tyres with the correct suspension and also comes with the lower ride height springs.

Sale due to spiralling E9 CSi restomod costs...

Photos of the rebuild can be viewed [here](#). Contact me for more details.



Set of Refurbished 14" Alpina's - £595.-

Offered by: Peter Chaplin / UK
Contact: +44 (0)7910 005554
flintmculagh@yahoo.co.uk

I have a set of refurbished and powder-coated 14" 6J Alpina alloy wheels, complete with chrome centre caps. Wheels fit 2.5, 2.8, and 3.0 CS/CSa/CSi. The price includes postage to the UK. Please email or text me for photos.



BMW E9 Getrag 262 Gearbox (4 Speed) - £400.-

Offered by: Paul Thomas / UK
Contact: +44 (0) 7738 903567

Complete and in excellent condition, recently serviced (approx. 5 years ago). Tower, gearstick, mechanism and gearbox mount included. I'm based in South East London.



BMW E9/E3 M30 Exhaust Manifold - £200,-

Offered by: Paul Thomas / UK
Contact: +44 (0) 7738 903567

Recently removed from the car, no leaks or cracks. I'm based in South East London.

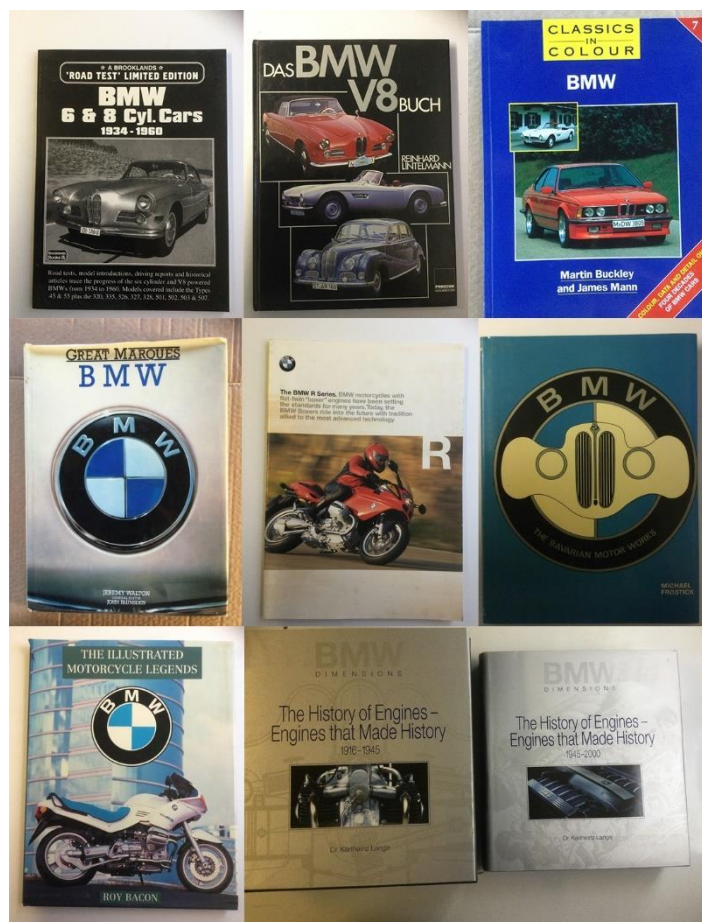


BMW Books – £ Sensible Offers

Offered by: Clen Tomlinson / UK
Contact: clen@charmans.com

I have for sale the following BMW books:

- BMW - **£7.50**
- The BMW Centaury - **£7.50**
- BMW – A Celebration - **£7.50**
- Das BMW V8 Buch
- BMW 6 & 8 Cyl. Cars 1934 – 1960
- Great Marques – BMW
- Classics in Colour – BMW
- The BMW R-Series
- BMW – The Bavarian Motorworks
- BMW – The History of Engines
- BMW – Motorcycle Legends



Various Parts – £ Sensible Offers

Offered by: Alan Skyrme / UK
Contact: skyrme@onetel.com

- Getrag 265/5 overdrive, incl. bell housing (fully overhauled by All Gears)
- Pair of front non-ventilated brake discs (34 11 1 152 089) – New – 2800CS
- Pair of rear brake drums (34 21 1 158 559) – New – 2800CS
- Pair of front strut inserts Boge (31 32 1 112 664) – New – 2800CS
- 4x BBS Cross spoke alloy wheels 14", excellent condition

- Bosch D-Jetronic distributor c/w pulse generator (12 11 1 268 361) – Used
- Bosch D-Jetronic pulse generator (12 11 1 355 628) – New (old stock)
- Bosch D-Jetronic pulse generator (12 11 1 360 012) – New – Probably last one in the world
- 2800CS/CSa owner's handbook – Slight crease in front cover, otherwise as new. Dated 11/1970
- 3.0 CS/CSi owner's handbook – Unmarked and as new. Dated 04/1973
- M30 cylinder head from '87 E28 528i c/w cam and shafts/rockers/valves – Excellent condition
- Clutch slave cylinder, early type (21 52 1 102 060) – New
- Electric window switches, late type (61 31 1 356 006) – Used but perfectly serviceable.

Complete Doors Left & Right - £ See item

Offered by: Justin Wilson / UK (IOM)
Contact: +44 (0)7624 429802
Justin.wilson@manx.net

I have a complete left and right door for sale. Both have light rust, and the right one has a dent; see photos. I'm selling the left for £450 and the right for £375. Contact me for more details and photos. Sensible offers are considered.



E3 Door Cards & Trim - £ POA

Offered by: Adam / UK

Contact: madada99@btinternet.com

In great condition, contact me for more details and photos. Please note that the front armrests are missing.

