

FOR **EVERY DEMAND** THE
PERFECT SUSPENSION!



STREET COMFORT

*Easy to Use Products that
Improve Ride Comfort*



STREET PERFORMANCE

*Coilover Suspensions for Improved Looks
and Increased Driving Dynamics*



TRACK PERFORMANCE

*Clubsport & Racing Suspensions to Achieve
the Fastest Possible Lap Time*

Klaus Wohlfarth
Executive Partner



Jürgen Wohlfarth
Executive Partner



“I STAND BEHIND IT WITH MY REPUTATION”

Klaus Wohlfarth

For over 25 years the letters “KW” have been synonymous with height adjustable Coilover suspensions for custom vehicle design. The yellow and purple suspensions have become famous with automotive enthusiasts worldwide. Over the years, several styles have been created to meet customer demands, enabling them to make individual adjustments based on their unique requirements. Our suspensions demonstrate that both sporty and every-day use can be combined with an exceptional effect!

Thanks to our customers we have become a market leader of individually adjustable coilover suspensions. The secret to our success is simple: customer satisfaction has been the number one priority for my brother Jürgen and me. The feedback we received from day one has resulted in constant improvement of our products and development of new suspension solutions. The numerous innovative technologies, improvement processes and overall quality are without a doubt attributed to the

demanding vehicle manufacturer’s projects we have been a part of over the years. With the knowledge we’ve gained, we continue to support numerous special projects from automobile manufacturers. The experience and specialized knowledge of what has grown to be a workforce of 300 members, allows us to produce customer-specific suspension solutions of the highest quality in a unique manufacturing plant. We strive to supply our customers all over the world with not only an outstanding product but unique driving experiences. Along with the employees, we consider our specialized dealers a part of our “KW family”. The intensive collaboration of trained experts allows us to provide the end customer with the necessary service from installation up to adjusting the KW product. A guarantee for sustainable and longterm success is something we work on every day! New concepts will continue to help us intensify our collaboration with our dealers so we can continue to write the “KW” success story with you.

Klaus & Jürgen Wohlfarth

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FROM HUMBLE BEGINNINGS...

In 1992, with lots of enthusiasm and little experience, Klaus Wohlfarth opened a small retail outlet in his home town of Murrhardt in Swabia. In a small company called "KW Tuning" he initially worked alone and then later with his brother, successfully selling car accessories and hi-fi car products. Situated in a dilapidated building, the first shop was no more than 807 square feet in size and had expanded little by little to include a garage. The year 1995 marks the first important milestone in the company's history and was the basis for today's success.

Out of frustration at the quality of the products on the market and even more disappointed with the available functions the current solutions offered and didn't deliver, they decided to create their own solution by manufacturing a height-adjustable suspension with the help of a friend. Throwing caution to the wind, they went ahead against all odds. This is when the KW Tuning coilover suspension – the first suspension on the market with definition and tested height-adjusting – came into being.

THE SUCCESS STORY



THE **FIRST KW COILOVER SUSPENSION** IS, IN A WAY, THE PREDECESSOR OF TODAY'S **VARIANT 2**

It all began with some KONI standard dampers which had to be extensively modified. As the requested support of other established damper manufacturers declined, they continued to draw on the KONI catalog, in the process buying out almost every article on the market for certain products. With the subsequent manufacturing of special cartridge dampers, KW became one of the Dutch manufacturer's biggest customers. A change of strategy heralded the end of the collaboration – and the beginning of their own damper development and production on the KW premises. Since 1999 they have developed numerous valve systems of their own and now produce as many dampers in one day as they did in one year at that time.

The First Challenges

After the young businessmen had done all of the necessary material strength tests, endurance tests and assembly trials, the TÜV gave its blessing in the form of a technical component report. This meant that the innovation could be presented to the public for the first time at the 1995 Essen Motor Show. The overwhelmingly positive reaction led to them starting the production of coilover suspensions for trade in a 150 square meter warehouse in the village of Klingen at the start of 1996. From then on, in this “chicken yard”, a technically-versed triumvirate

also worked on the further development of products. Alongside the Variant 1 coilover suspensions with a fixed damper setup, one development in particular came to the front – the height adjustable rear-axle springs. The unsuspecting entrepreneurs introduced these innovative height adjustment mechanisms and rear-axle springs to the market without any patent protection and as a result of their success, there were soon numerous unauthorized copies.

Yellow/Purple Became the Brand...

Today the colors “yellow” and “purple” represent the attributes of our products in the same way as the letters KW themselves – and are just as strong of a mark. And who would know that the first KW coilover suspensions featured no yellow or purple parts at all? It is purely by chance that the anodized parts were delivered with a purple color instead of the shade of blue that had been ordered and because the red springs didn't match these aluminum parts, they were quickly painted yellow and marked with stick-on letters. Out of this necessity, we made a virtue, in the process creating one of the strongest brands in our industry. The internationally-registered color trademark has a high recognition value and clear differentiation from other product suppliers. With the move to Fichtenberg and the transformation of the



Yellow/Purple More Than Just an Unusual Color Combination – an Internationally Recognized Brand.

IT WASN'T LONG BEFORE THE **FIRST NEW BUILDING** WAS **TOO SMALL**

joint partnership into “KW automotive GmbH” in 1998, the Wohlfarth brothers had paved the way for the growth of their young business. In the same year as the purchase of the 11,302 square foot manufacturing plant, the administration building was established and a future factory commissioned – even though at the beginning of the year it seemed that the then five employees had more than enough space at their disposal. In the following years, further warehouses and manufacturing plants were constructed and major renovations were undertaken to repurpose existing buildings, resulting in a factory space over 247,569 square feet. This period of intensive construction was brought to an end in 2006 with the launch of the new 7-post test stand, for the time being.

With 11 construction projects in only 7 years the factory space was extended to 247,569 square feet.



Retail outlet in Murrhardt, 1996

Beginnings of the suspensions factory in Klingen, 1996



Start of construction of factory 1 (11,302 ft²) in 1997



New build (mechanical manufacturing), 2002



Start of construction of factory 5 – in the background, factory 3

2005 – development of factory 5 with over 64,583 square feet of production space





From Their Own Racing Team ...

Since the early years, the Wohlfarth brothers have experienced race car drivers and have been committed to motor sports. In 1999, they founded the KW racing team and were able to persuade the only woman ever to win a DTM race to join them: Ellen Lohr. From then on her name was connected with KW and over the years was an ambassador for the KW brand. Launching their own racing team in the DTC series didn't just mark the inception of KW competition racing suspensions, but more impressively it demonstrated the technical competence of the whole team with the construction and operation of the race cars. From the chassis to the suspension, right up to the engine, the entire electronics system and the transmission were all developed auto-

nomously and manufactured in their own factories as well as tuned on their own test stands. A race car which had been unknown up until that point and was inferior on paper – a 1.8 liter Honda Integra – caused a sensation and was successfully employed by its own team for a year. At the same time, they were able to employ an STW Honda Accord with a second team in the Super Touring Car Championship of the same name, which they supported as a regular sponsor. In order to cope with the growth in the sector, after this debut season, they concentrated on out kitting the competitors and the gaining new customers, so that little by little they could expand their commitment to motor sports as the main supplier for numerous national and international race teams and series.

... to the Supplier & Partner of Other Teams

A historic motorsports success in 2002 marked the beginning of a new era in KW's commitment to motor racing. We celebrated our first overall victory in the toughest long-distance race in the world: the ADAC Zürich 24h race at the Nürburgring. Since that victory by the legendary Zakspeed Viper on the North Loop, KW has been considered a reliable partner and has become the biggest supplier of suspensions at the long-distance race in the Eifel region. Alongside countless class victories in the VLN and the 24h race, the suspension manufacturer celebrated five additional overall victories with the Manthey Porsche in the "Green Hell" – the most demanding race track in the world.

MOTOR SPORTS – MUCH MORE THAN A PASSION



One of the two self-developed race cars from the 1999 DTC season



1999 – series partner of the STW Championships



8 Mercedes DTM factory drivers competing in 8 SimRacer

The Next Suspension Revolution

With the experience gathered from motorsports, the coilover suspension pioneers worked on another innovation that they presented at the 2001 Essen Motor Show: the KW Variant 3! The coilover suspension with its patented technology for the separate and independent adjustment of compression and rebound stage damping enables a considerable sportier tuning of vehicles as well as good ride comfort – a true revolution. The introduction of the Variant 3 also laid the foundation for an even more

brilliant idea by the Wohlfarth brothers, which once again revolutionized the market – in terms of housings, KW focused on stainless steel and launched the Inox Line product range. After the thoroughly positive experience of manufacturing rust-free stainless steel suspension struts, in 2002, the entire range of KW branded suspensions was changed over and today all suspension struts are, without exception, made from stainless steel or aluminum. This impressive commitment to quality supports KW's philosophy today.

RaceRoom - Motor Sports for Everyone

As a former motorsports driver, Klaus Wohlfarth knows the emotions experienced by every race car driver who has been set free behind the wheel of a competitive race car. Being able to experience these very emotions in a simulator led to the pursuit of a new vision on the KW premises: since 2009 anyone who wants can launch a racing career and test themselves against other race drivers in the RaceRoom.



GLOBALIZATION BEGINS IN 2004 WITH THE FOUNDING OF KW SUSPENSIONS NORTH AMERICA INC.

Growth – Strategy

The year 2001 is another milestone in the growth of the company and also a new experience. KW automotive GmbH takes over a competitor and with it the WEITEC brand, which from this point is established as an inexpensive alternative to KW's premium suspensions and

resulted in the expansion of their product portfolio. At the same time, it was also a landmark decision that resulted in a very successful multi-brand strategy by KW automotive GmbH in which the various products and market segments are recognizably differentiated still today.

First Foreign Branch

In Switzerland, with Weitec Fahrwerktechnik AG – later KW (automotive) Schweiz AG – the Wohlfarth brothers found their first foreign branch and start the internationalization of the company.

KW Goes to the USA

In 2005, with the takeover of the assets of the U.S. suspension manufacturer “Belltech Sport Trucks and Suspension Techniques”, the expansion of the German company from the Swabian village of Fichtenberg to America begins. The truck and SUV components of the Belltech brand, in particular, were an ideal addition to the KW product range that had been a success in Europe and under the new umbrella of KW automotive NA Inc. and the expanded product portfolio could successfully be placed in the established commercial structures. From that point on, both American and German engineers worked together to develop further products at the new headquarters in Sanger, California, where the majority of the product range for the American market is manufactured. Then, in

2015, the company headquarters was relocated to Clovis, a suburb of Fresno/California, where 60 employees now conduct daily business for the North American market in a modern and prestigious location.

Trendsetter – Lambo Style Doors.

Always open to new ideas and with the foresight of a successful entrepreneur, Klaus Wohlfarth had his sights set on more than just suspensions. While visiting the SEMA tuning and accessories trade fair in 2003 he came up with the idea for a new product: LSD – Lambo Style Doors. However, the universal kits he saw at the trade fair didn't come close to meeting the safety requirements of the German testing organizations and fell very short of the quality standards of KW's engineers. From that point they

took charge on the development of the product range. Amid major visitor interest and an unexpected media response, the retrofittable “Lambo doors” are presented for the first time six months later at the 2004 Tuning World Bodensee and additional vehicle-specific solutions subsequently presented to the North American public at SEMA 2004 with superstars like Snoop Dogg, Nelly, Chingy and boxer Bernard Hopkins. These products quickly attracted interest, even among vehicle manufacturers. In order to satisfy the demands of this clientele, the operational safety of these solutions was demonstrated in crash tests. Today “Lambo doors” are available for a variety of small, mid-range and super cars like the Audi R8, Lamborghini Gallardo etc.

Further Branches

In order to provide the best possible service to the core markets for all of the products of the enterprise group's various brands, KW has systematically set up its own branches with specially trained employees. Since 2006, customers in the British Isles have been served from a base in England. KW has been represented on the rapidly growing Asian markets since 2008 with its own subsidiary in China and with the founding of an agency in Taiwan in 2016 this boom region has been further consolidated. The setting up of our 7-post drive dynamics test stand has increased the awareness of our capabilities at our Fichtenberg location as well as the interest of vehicle



OEM PROJECTS – NEW CHALLENGES THAT BENEFIT ALL OF OUR CUSTOMERS

Manufacturers in our products and technologies. The test stand facilities, normally used by Formula 1 racing teams, make it possible to simulate almost any driving situation under laboratory conditions. This gives motor sports teams and industrial partners the chance to tune vehicles in an objective and efficient way by simulating a wide variety of road conditions or testing programs directly on the test stand. This allows us to systematically develop new suspension solutions which optimize performance and ride comfort together with our customers.

AMG Black Series Projects

In collaboration with engineers from AMG, the first OE coilover suspension was developed for the Mercedes Benz SLK 55 AMG Black Series, with KW contributing to further Mercedes AMG Black Series models. Other suspensions are being developed in collaboration and manufactured on location in Fichtenberg. Vehicles such as the CLK 63 AMG Black Series or the SL 65 AMG

Black Series display the highest levels of performance in their vehicle classes and have already achieved cult status today. With the success of these vehicles, there is a growing interest by other manufacturers to collaborate and in subsequent years we have worked (in some cases continue to work) together with almost all vehicle manufacturers in the development of special suspension solutions for prototype vehicles and low volume production performance vehicle models.

HLS – Lift Systems

In the course of our collaboration with our OE customers, we not only developed new processes for production, quality assurance and monitoring of the products themselves but often developed completely new technical solutions which have found their way into the aftermarket range like the KW Hydraulic Lift System, for example.

Originally used in DTM/ITC race cars, this system allows vehicles to be hydraulically raised or lowered by up to 45 mm at the touch of a button. The HLS system is particularly

popular in the super car segment and with the quick raising of the vehicle the necessary ground clearance can be attained. However, in the Show & Shine segment too, this technically demanding system is used to achieve the lowest possible suspension setting.

The Evolution of KW Coilover Suspensions

Customer feedback from international markets leads to more innovative, technically-advanced solutions: this is the reason the adjustable coilover spring perches, which were originally made from aluminum, are now manufactured using polyamide composite materials with incorporated stainless steel reinforcement. This has also resulted in the further improvement to their corrosion resistance and has made the spring seat considerably easier to adjust. Since 2010 the independently adjustable dampers in the compression and rebound stage have been fitted with respective click settings and scaled adjusting dials – something which has considerably simplified the application and tuning of the vehicles.



CLA 45 AMG with KW 2-way upside-down competition racing suspension in the Mercedes-Benz Challenge Brazil



BMW M4 GTS with 3-way adjustable racing technology

Rounding the North Loop at Speed

With the Dodge/Chrysler OE customer project, a new generation of coilover suspensions is being established: the ACR-X Viper SRT10 is factory-fitted with a 2-way adjustable suspension in a lightweight aluminum design which helps the vehicle to achieve maximum performance, leading to an impressive new North Loop lap record for production vehicles at 7:22:1 minutes. The 2-way and 3-way adjustable Clubsport suspensions which are based on that are

a result of the further development of the original Viper project.

Trigger for the Development of the Variant 4

In 2015, the 3-way adjustable Clubsport suspension was used as the basis for a new OE project and the BMW M4 GTS. Introduced to the market in 2016, it is factory-fitted with a completely revised damper system which is now adjustable for rebound and 2-way compression stage damping. The first BMW fitted with a 3-way adjustable

coilover suspension as standard, currently represents the peak of the performance vehicle range. However, it's not just the rare owners of the BMW M4 GTS who stand to gain from this innovation. With the introduction of the Variant 4 in the 2017 season, the owners of other sports cars can draw on this technology and optimize the performance of their vehicles with an 18-way adjustable rebound stage damping, 14 click settings in the highspeed compression stage and 6 click settings in the low-speed compression stage.



BASIC



SETTINGS



PERSONAL



ADVANCED



KW GOES SMARTPHONE!

With the DDC plug and play coilover suspension, KW automotive is meeting a new challenge on the suspension market with another intelligent innovation. Select vehicles with standard, adaptive dampers can now be controlled via the standard electronic system and adjusted to the designated steps. Here the KW suspension struts simply replace the standard damper/spring combinations and the electronic connection is made with the original connectors.

This allows the onboard electronics to recognize the adaptive damping system and regulate the control valve within milliseconds. For vehicles without standard electronic dampers or for customers who want

even more adjustment options, the innovative KW DDC ECU damping system has been available since 2011. In addition to the suspension struts with DDC (Dynamic

Today there are already numerous applications that can be controlled with a smartphone. With this in mind, we have provided our users with their own KW app.

Damping Control) valve, a cable harness and a control unit with software are also included in the package. The Wi-Fi module can be purchased optionally. The damper settings can be individually configured via the

KW DDC app. As well as three fixed settings (comfort, sport, sport+), the driver can also establish direct contact with the dampers and adjust the characteristics at

the touch of a button and record his/her own characteristics. As the valves react in a matter of milliseconds, the driver will immediately feel the changes, empowering them to become an active "setup engineer" in the process. In 2012 the family of "app-controlled KW suspensions" was complemented by another innovative product,

the electronic DLC suspension lowering module. It allows the user to set the height of vehicles with standard air suspension at the touch of a button through individually defined steps or millimeter by millimeter.

NEW CHALLENGES DEMAND FURTHER INVESTMENTS



*For Every Demand the
Perfect Suspension – More Than
Just an Advertising Slogan*

The Original Equipment Manufacturer Business is Still Growing

These unique structures, our technologies and the corporate philosophy of being able to manufacture individual suspension solutions according to customer and market needs, result in a more intensive collaboration with almost all vehicle manufacturers. As a result, the John Cooper Works Pro sports suspension developed by KW and produced in Fichtenberg is officially marketed for the three-door MINI Cooper (F56) via BMW Mini AG's dealership network. KW also kits out the Mercedes-Benz G 500 4x4² with dampers. At the 2017 Wörthersee meeting, Audi presented a real jaw-dropper in the form of the TT Clubsport Turbo Concept. The 600 hp sports car has a KW coilover suspension system including HLS lift system. One hundred percent precision, first-class quality, technical expertise, innovations from the race track adapted for the road: you'll find all of this packed into the suspension solutions from Fichtenberg.

Preparation for Future Growth

In 2016 the most extensive construction and investment projects in the history of the young company were set in motion. A ready-made assembly hall and development workshop (29,062 ft²) will be complemented by a modern office (12,916 ft²) for the 40+ technicians and engineers who are now employed there. A new warehouse and logistics center (21,527 ft²) is also being built. For 2019, exactly 20 years after the purchase of our first building in Fichtenberg, we are planning to complete the 32,292 ft² office building. With this commitment to our headquarters and our 220 current employees (over 300 employees worldwide) we plan to continue driving innovation in the suspension sector. Here's to the next 25 years...



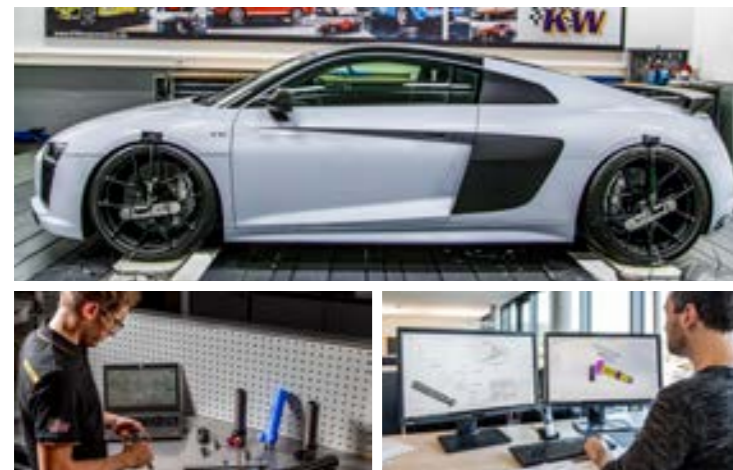
EVERYTHING
**UNDER
ONE ROOF**



THE COILOVER SUSPENSIONS

MANUFACTURE

Development



- Hydraulic research, prototyping, and testing
- CAD design, documentation, and simulation
- 7 post rig used for objective coordination and for determining the group-specific set up values of the product under laboratory conditions
- Extensive test drives to evaluate the 7-post coordination and fine-tuning the driving characteristics in real operation

Production



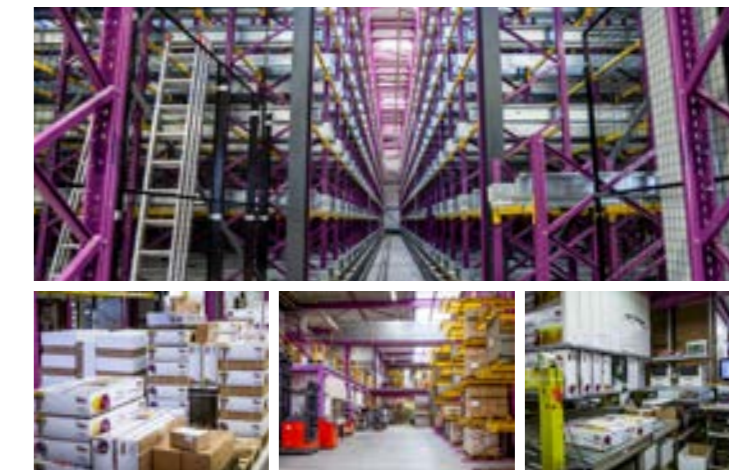
- Highest range of manufacture using automated processes for small-series production with highest quality
- Laser cutting, CNC-centers, laser welding, CNC milling
- Testing-processes with state-of-the-art measuring technology in every production process
- Well-trained staff who are passionate about exclusive parts manufactured in small-series

Assembly



- Damper assembly of the product and vehicle specific setups
- 100% tested damper setups guarantee the desired KW handling
- Manufacture with precise devices and measuring equipment in a reliable assembly sequence according to DIN EN ISO 9001: 2015

Logistics



- Full-automated high-bay warehouse for small parts and pallets
- QR code, weight and photo-realistic monitoring of all parts for reliable picking
- Pick-by-light removal of all provided assembly parts
- Elaborate high-quality packaging materials for quality assurance of transport to the end customer

FOR EVERY DEMAND THE PERFECT SUSPENSION

AFTER ORDER RECEIVED IN **86 PRODUCTION STEPS**



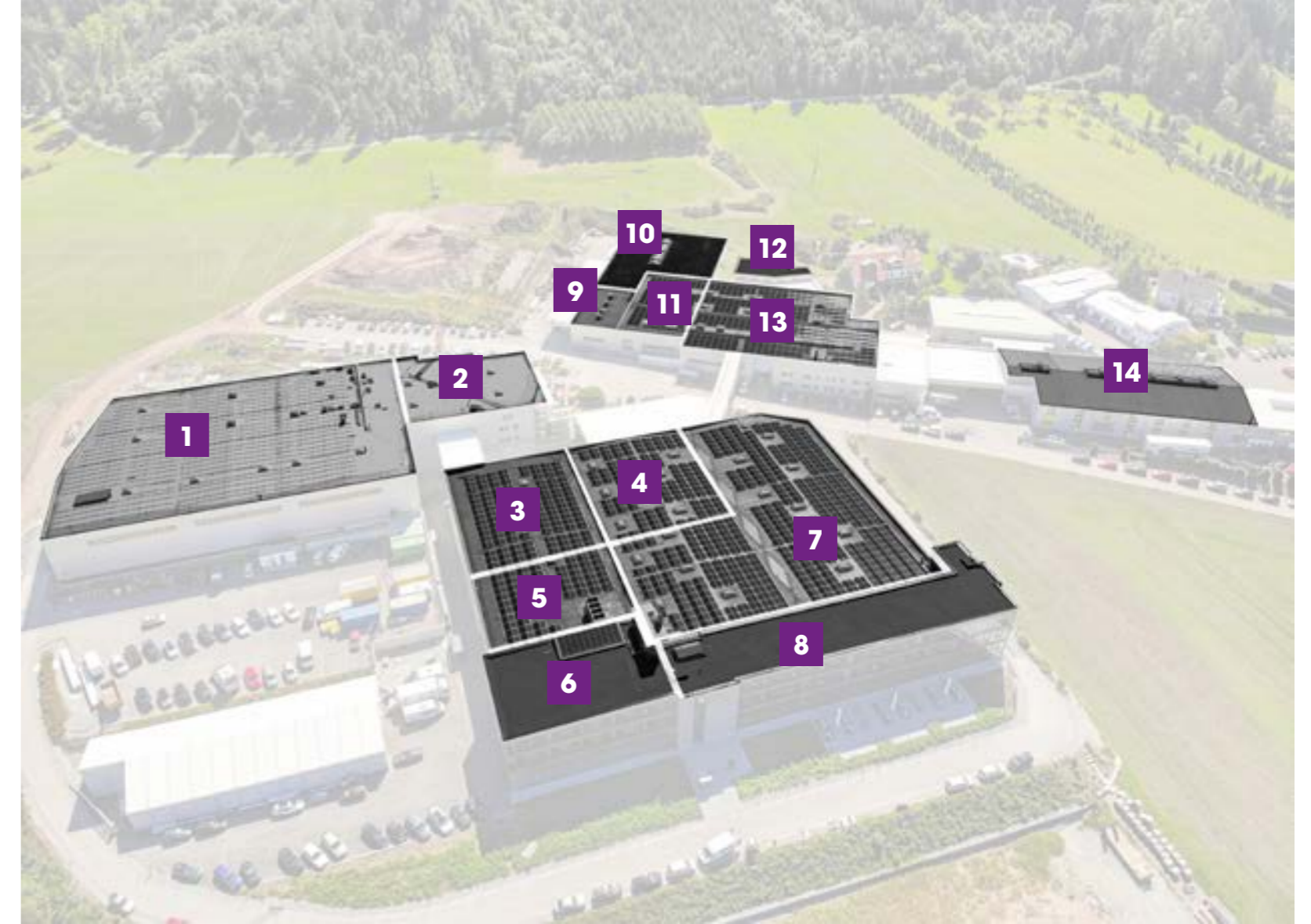
UNIQUE STRUCTURES FOR MANUFACTURING AND DEVELOPMENT

Our wide range of solutions and products impress thanks to market proximity and customer-orientation.

In order to cater to market conditions and the changing needs of customers throughout the years we have developed new technologies and with those, new applications. Although, more importantly, we have also improved our manufacturing processes. While in the early years the coilover suspensions were assembled in large quantities, packed and then sent to our shelves and our customers' warehouses, today every suspension is individually made-to-order for a

customer. This not only guarantees that customers with very different wants and needs get the right KW suspension but also means we can guarantee that every KW suspension measures up to the cutting edge of technology and customers aren't receiving just any old stock. The manufacturing of "production batch 1" imposes very particular requirements on the vertical range of manufacture, which is why almost all parts are manufactured on-premises in takt time.

The logistics and assembly processes have also been optimized and refined throughout the years. Thanks to their exceptional flexibility, our qualified employees can manufacture any of our myriad products at short notice and able meet the demands of our customers. This also includes the desire for exceptionally high quality which we can guarantee thanks to the numerous quality assurance measures that have been integrated into the manufacturing process.



- | | | |
|--|------------------------------|-------------------------------|
| 1 Automatic warehouse | 5 Motorsports | 10 CNC |
| 2 1 st floor: Incoming goods department 2 nd floor: Powder coating | 6 Development | 11 Strut housing |
| 3 OEM | 7 Production | 12 7-Post-Rig |
| 4 Damperassembly | 8 Administration | 13 Shipping Department |
| | 9 Sheet metal working | 14 Raceroom |

INNOVATION, CONTINUAL DEVELOPMENT AND MODERN TECHNOLOGIES

Innovation, continual development and modern technologies guarantee the competitiveness of our products. At our Fichtenberg headquarters, there are more than 200 people permanently employed in the development and manufacturing of new suspension and damper systems. All components have to undergo some extensive testing in order to satisfy the highest quality standards. Our own production on modern CNC machining centers enables a high vertical range of manufacture and ensures that we can react quickly and flexible to the demands of our customers. From prototype samples to small and medium sized lots, this allows us to manufacture everything quickly and in line with market requirements.



7-POST DRIVE DYNAMICS TEST STAND

In the development center at its Fichtenberg headquarters, KW automotive has a cutting-edge 7-post rig at its disposal. Worldwide there are only 15 of these hydraulic drive dynamic test stands and it is primarily used by Formula 1 teams for research and development. The independent weather conditions which can be reproduced, provide informative analytical data with objective test readings. Amongst other things, race track processes, road profiles or frequency sweeps can be simulated without subjecting the vehicle to the wear and tear of normal driving. The continuous documentation of all measurements and a data evaluation with Matlab® and MS Excel® enable the quick analysis of all acquired findings.



MADE FOR **WINNERS**



SPA FRANCORCHAMPS
24H WINNER 2019

GPX RACING

DRIVER: ESTRE / CHRISTENSEN / LIETZ

BATHURST 12H
WINNER 2019

EARL BAMBER RACING



DRIVER: WERNER / OLSEN / CAMPBELL



DRIVER: FÜBRICH / GRIESSNER

VLN WINNER 2019

PIXUM TEAM ADRENALIN
MOTORSPORT

1ST PLACE FORMULA
STUDENT COMBUSTION

RENNSTALL ESSLINGEN



PARTNER OF WORKS MOTOR SPORTS

Whether it is customer racing, private teams or constructor teams – all around the world many professional motorsports and leisure racers rely on the KW competition motorsports technology. We produce cup suspensions, rally suspensions, formula student suspensions, approved GT3 suspensions, as well as suspensions for historic motorsports. In addition, we offer our customers a number of development services, tests and tunings under laboratory conditions.

Further References



AMG GT GT4



BMW M6 Schnitzer



Porsche 991 Spec. 2019



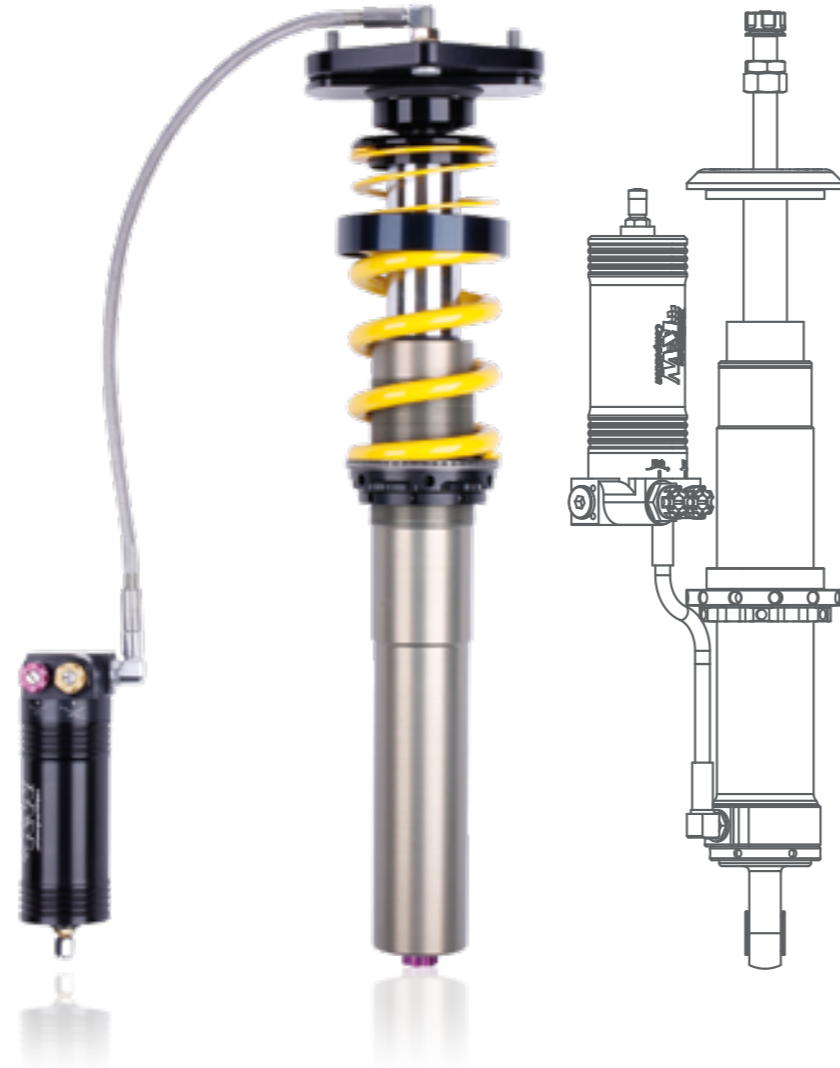
Porsche Cayman GT4

Porsche 911 GT3 R (991)

Approved GT3 suspension
KW Competition 3A

VA: McPherson strut with
linear bearing guide
Rear axle: aluminum strut

Damper setting:
Rebound stage 18 clicks
Compression stage low-speed 18 clicks
Compression stage high-speed 18 clicks





CUSTOMER MOTOR SPORTS PARTNER

BMW Z4 GT3

Approved GT3 suspension
KW Competition 3A

VA McPherson linear bearing guide
for up to 87% less friction
under transverse force

Damper setting:
Rebound stage 18 clicks
Compression stage low-speed 18 clicks
Compression stage high-speed 18 clicks



From 2012 to the end of 2015 the BMW Z4 GT3 was fitted with KW Competition dampers for the official BMW motorsports and customer racing. At the end of its "motorsports career", the BMW Z4 GT3 bowed out with an overall win at the 24-hour race in Spa-Francorchamps and remains successfully on the road today in leisure sports.

Further References



Reto Meisel SLK 340J



Mad Mike Mazda MX-5



Rallye Mitsubishi Lancer



Formula Student

MANUFACTURERS PARTNER

No Mercedes-AMG is closer to the motorsport. For the Mercedes-AMG GT R Pro, which is exclusively produced in a small series, KW automotive developed a triple-adjustable coilover suspension in cooperation with Mercedes-AMG. The KW high-performance dampers allow separate adjustment of the low and high-speed compression as well as the low-speed rebound. The KW coilover suspension variant 4 is also based on this damper technology.

Further References



Mercedes CLK 63



Mercedes G500 4x4²



BMW M4 GTS



Dodge Viper

Mercedes-AMG GTR PRO

Developer and suspension manufacturer
KW Variant 4

Production: since April 2019 til today

Customer: Daimler AG





PARTNER OF LOW VOLUME PRODUCTION MANUFACTURES



Fast. Efficient. Outstanding.

Our development experience, a high vertical range of manufacture and flexible customization options, has set the standard. You can trust in our suspension technology – just like the international automotive industry, well-established low volume production manufacturers and renowned accessories manufacturers have.

RUF Automobile

- Stainless steel coilover strut modules
- Dampers with separate compression and rebound stage adjustment
- Hydraulic lifting, front axle with 30 mm stroke and speed-dependent setting

KW Variant 3 coilover suspension with hydraulic lift system
Customer: Ruf Automobile GmbH

Further References



Glickenhaus



Alpina B3 GT3



Roush Mustang



Gumpert Apollo

TUNER PARTNER

Top successful international tuners also trust in the wide-ranging custom KW suspension product solutions portfolio. Whether it is our KW coilover suspensions, height-adjustable KW coilover springs, hydraulic lift systems, adaptive damper control systems or where the highest standards are required in addition to compelling performance for everyday road capability, the leading international tuners rely on our expertise and “made in Germany” quality. Among our long-standing partners are AC Schnitzer, Abt Sportsline, Asch Motorsport, Carlsson Fahrzeugtechnik, MTM, Novitec Group, Ruf Automobile, Techart and and many more.

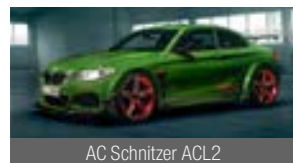
Further References



MTM RS3



Mountainpass Tesla Model 3



AC Schnitzer ACL2



Manthey Racing GT2RS



Novitec Torado

- Aluminum coilover struts
- Separate and independent damper force setting for rebound and compression stage (low and high-speed)
- Tuning on our in-house 7-post drive dynamics test stand

KW Variant 4 coilover suspension

Customer: Novitec GmbH & Co.KG



THIS IS, WHAT THE TRADE PRESS SAYS!



AUTOBILD SPORTSCARS

Porsche has the GT model, AMG the GT R Pro, only from Audi doesn't exist a track model since the previous generation R8 GT. APR tuner helps.

"... The KW V4 completely transforms the RWS. The car steers squeaky clean with stable rear. (...) The chassis doesn't just have the balance of the RWS completely changed, it also allows a merciless robbers over the curbs. (...) The chassis carries at least one as large as the grip tires, because both components not only bring time, they also make the R8 easier to control than the waist-swinging series RWS. (...) Despite the juicy fall values on the front axle, the straight line is still quite solid, and otherwise the R8 in APR form does not have much of its everyday competence lost. The chassis dampens bumps in a defined way, but clean away, and the untouched interior. (...) The handling has gained tremendous contour thanks to the chassis and tires, without doing so to become too stiff-legged. ..."

Source: AutoBild sportscars No. 3, March 2020, Page 76 - 80

BBC TOPGEAR

Mercedes-AMG GT R Pro review: most hardcore AMG GT tested

"... The GT R Pro uses comp-spec coilover suspension so it's adjustable for bump and rebound. Pitch, roll and traction are all optimised as a result. The rear axle features Uniball spherical bearings on the lower and upper wishbones, and the rear suspension is also adjustable. In other words, there's scope here for tuning the car's set-up according to the requirements of whatever track you're fanging your £188k AMG around on, or your personal preferences. ..."

Source: BBC TopGear from the 7th April 2019,
<https://www.topgear.com/car-reviews/mercedes-benz/amg-gt/gt-r-pro-2dr-auto/first-drive>

AUTOBILD

All information on the AMG GT R Pro - With the GT R Pro brings Mercedes-AMG an even sharper version of the GT R. AUTO BILD has all the information and the driving report for the fastest AMG!

"... The professionals have come up with the development of the limited top model from Affalterbach took care of four specific aspects: chassis, aerodynamics, lightweight construction and optics. The precision work in terms of aero and chassis seems to be crowned with success: Because despite the identical performance of 585 Racing driver Maro Engel managed the lap time of the GT R in horsepower and 700 Nm on the Nordschleife from 7: 10.09 minutes to just under six seconds Improve 7: 04.62 minutes with the GT R Pro. (...) Chassis: Motor sport influences for the GT R Pro Mercedes-AMG has developed a coilover kit for the GT R Pro is adjustable in compression and rebound. The dampers can be easily and can be set quickly using the click mechanism and can also be set between. A distinction can be made between high and low speed settings. ..."

Source: AutoBild from the 8th April 2019,
<https://www.autobild.de/artikel/mercedes-amg-gt-r-pro-2019-test-preis-technische-daten-14301281.html>

FOCUS

Driving report Mercedes AMG GT Pro R Coupé - Street legal racing machine

"... Staying on or lubbing lightly? The right bend of the Hockenheimring towards the Mercedes grandstand usually brings one question up. Fast? Yes! But full pipe? Better not if you don't acquaintance with the exit zone or - worse - with the guardrail want to do. But the Mercedes AMG GT R Pro is not a normal car, but a thoroughbred racing machine Street legal that instills and suggests an incredible amount of trust, that nothing can go wrong. (...) There is also the coilover suspension, that is an ideal playground for creative tinkerers. Springs and dampers can be adjusted mechanically. At the dampers (come from KW) can not only adjust the rebound and compression to your own taste the pressure level is also between higher Differentiated speeds and low speeds so slow and fast compression movements. That happens by Rotary wheel in the engine or in the trunk and influences the pitch and Body swaying as well as traction. ..."

Source: Focus online from the 12th April 2019,
https://www.focus.de/auto/fahrberichte/mercedes-amg-gt-pro-r-coupe-schwaben-pfeil_id_10613852.html

ROAD AND TRACK

A Modified Porsche 911 GT2 RS Beat a P1 Around Portimao Circuit – Top Gear's Chris Harris beat his lap record at the Portuguese circuit by over two seconds.

"... Late last year, a Porsche 911 GT2 RS modified by German racing team Manthey Racing set a 6:40.33 on the Nürburgring, becoming the quickest road-legal car to ever lap the famous track. It's a fast car, and at Portimao circuit, Top Gear's Chris Harris found that out for himself. There, he set a 1:49.5 in the car, which is more than hypercar quick. (...) Manthey Racing's modifications to the GT2 RS are extensive, though. The suspension components come from KW Racing and they're basically identical to those used in the 911 GT3 R race car. Manthey also adds dive planes to the front, and a Gurney flap and new endplates for the rear wing, all in the name of increasing downforce. ..."

Source: Road and Track from the 29th March 2019
<https://www.roadandtrack.com/new-cars/a26988670/porsche-911-gt2-rs-mr-portimao-mclaren-p1/>



SPORTAUTO

Already his fifth track record - in the individual test in Hockenheim the Porsche 911 GT2 RS MR from Manthey-Racing already set the fifth course record. We explain what makes him a high-flyer.

"... The Porsche 911 GT2 RS MR from Manthey-Racing is something like that like the Real Madrid of the sports car scene. Like the royal ones Real kicking is not a question of whether he wins, but how he wins. Winning is synonymous with records. After this route record for street legal vehicles on the Nordschleife, in Portimão, on the Sachsenring and on Bilster Berg, the Über-Elfer set the best time today at the Hockenheimring. (...) In addition to the additional water tank, magnesium wheels, brake pads and steel braided lines, the Manthey Kit also includes a coilover kit that is adjustable in rebound and compression and is equipped with racing springs. Across from the series GT2-RS from the supertest reduced the Manthey develop the driving height on the front axle by 19 millimeters and on the rear axle by 7 millimeters. According to Manthey, the fall values were increased to 2.5 degrees negative camber on the front and rear axles. (...) Chapeau, Manthey-Racing, I never thought you could get out of that concept of the GT2 RS can get as much out of it. Even without an increase the engine works, the Porsche works team from the Eifel managed to with targeted detailed modifications the GT2 RS for the racetrack to perfect. The downforce of the standard GT2 RS was already for a road vehicle very high, the downforce of the MR sets again a new standard.

The Porsche 911 GT2 RS MR takes fifth after 1.43.5 minutes Course record of his career. Congratulations, Manthey Racing!"

Source: Auto, Motor und Sport from the 12th January 2020
<https://www.auto-motor-und-sport.de/test/manthey-porsche-911-gt2-rs-mr/>

AUTOMOBILE

Thar She Blows: We Drive the Wild, 700-HP Porsche 935! This homage to Moby Dick makes our hair stand on end.

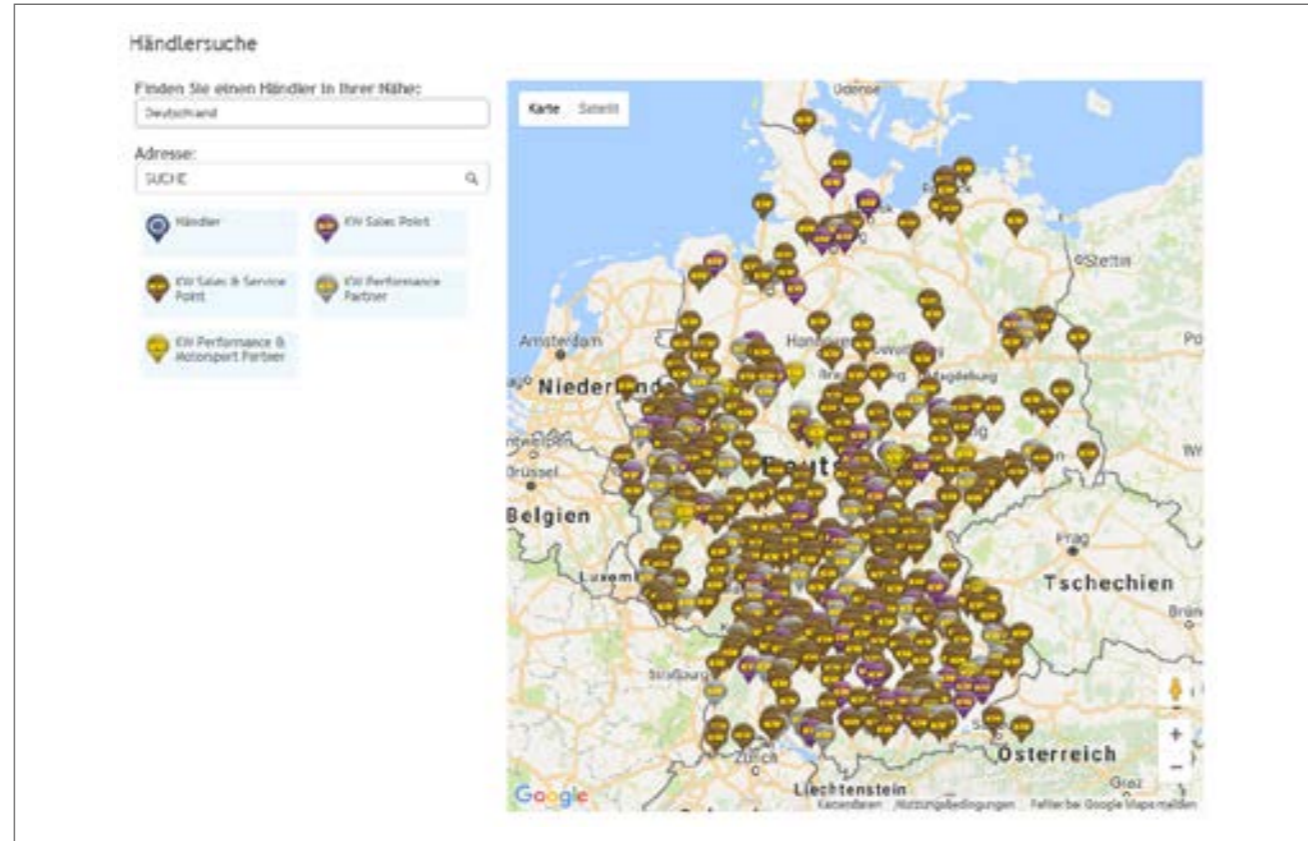
"... Also impressive was the damper/spring relationship. Despite the track bumps and stiff setup, I was still not "flying" the car from bump to bump. Wheel contact with the track remained solid, despite the high lateral g's. I felt the bumps, of course, and some were certainly harsh, but the car remained on its line and I experienced no snappy lateral tire release. What slides I did feel were induced deliberately by me. Each time I asked, the chassis complied with no complaints. My six timed laps went so quickly I couldn't believe it. I stood staring at the 935 after my run. What an opportunity. It's such a beautiful car, and oh—how I wanted some more laps. An appetizer for the gods, indeed. ..."

Source: Automobile from the 1st August 2019
<https://www.automobilemag.com/news/porsche-935-race-car-track-first-drive-review/>

SPECIALIZED RETAIL PARTNER

Having started out as a retailer ourselves, we know from experience how important the close cooperation is from the manufacturer, specialist retailer and end customer. In this fast-paced environment of online sales, satisfied customers, quality products and an active retail specialist are the most important factors in the success of a company. That's why today, as a suspension manufacturer, we also place great value on a close relationship with our specialized retailers and aim to actively involve our trained partners in our communications via the KW importing partners and KW subsidiaries.

On our website, where to source KW products (subsidiary / importer) are listed on our webpage under "dealer finder". This allows every end user to find their closest KW retail specialist. Enclosed you see the example for the German market, this is also foreseen within the future to roll it out globally and every certified retail partner will be listed, as soon as these certification programs are introduced in the national markets.



KW TRAINING



KW supports the business of retailers and offers to its partners (dealers via the importers/subsidiaries), training programs in order to upgrade suspension technology know-how. The comprehensive range of suspensions provides the right solution for every requirement. It is vital that our partners and retail specialists are comprehensively trained so that they can give our final

customers the best possible advice accordingly. For that reason, numerous of specialist partners are comprehensively trained every year on the topics of driving dynamics, products, technology and installation at our in-house KW automotive GmbH training centre. In addition, the certified KW specialist trade partners have attended further seminars.



THE KW BRAND



For 25 years we have been consistently working on building up the KW brand and have achieved brand recognition worldwide in the relevant target group. Our outstanding quality, as well systematic branding combined with consistent creative campaigns and some major investment in both online and offline marketing have resulted in very strong brand awareness. Even in the early days KW was present at the most important automobile trade fairs and regularly supports retail specialists with extensive POS schemes. A large amount of money was invested in directly engaging the target group by means of advertising and

online campaigns. In addition to these efforts, from the very beginning, KW has supported numerous national and international motorsports teams and has been a partner of the WTCC Touring Car World Championship for over 10 years. However, it is not just these measures alone that have made KW an internationally-recognized brand, but also the protection of the company colors of yellow and purple as a color trademark. This has allowed KW to join the ranks of Coca Cola (red/white), Deutsche Telekom (magenta) and Milka (purple). Our current campaign connects very distinct customers, from the owner of the

ALPINA automobile factory to TV star Sidney Hoffmann with our specific applications – in keeping with the motto: for every demand the perfect suspension. With all of these measures KW is once again supporting our retail specialists, because strong brand guarantees a steady demand and with it permanently good turnover. Today more than ever, KW is established worldwide as a premium suspension manufacturer and its most appealing features include highly stable pricing and exceptional brand values. The myriad best brand awards that KW regularly receives from the various media are a testament to this.

POS MATERIAL



Stand-Up Counter Display

Beach Flag

Banner Stands

Kiosk Flag

Triangular Display Stands

DLC airsuspension Sample Box

POS Display

Display Pedestal



STREET COMFORT

“With this, my new BMW 5-series drives even more dynamically with a great comfort at the same time”

DR. REINHARD WOLLERMANN-WINDGASSE
Executive Partner bott GmbH



STREET COMFORT



FOR EVERY DEMAND THE PERFECT SUSPENSION!



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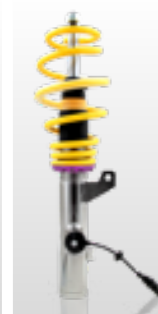
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| Product | KW DLC Airsuspension | KW Coilover Spring Kits | KW Hydraulic Lift System | KW Street Comfort | KW DDC |
|--------------------------------|--|---|--|--|--|
| Description | Plug & Play lowering suspension solution for vehicles with standard air suspension. Optional control from mobile app also available. | Customized lowering suspension combined with standard dampers; standard suspension system remains active – also with electronic damper control. | For vehicles with little ground clearance, obstacles be can easily driven over. Can be used as a complete solution with KW coilover suspension or as a retrofit kit for standard suspension. | Coilover suspension with maximum comfort for gentle customized lowering. Adjustable rebound stage damping. | More ride comfort and sportiness at the touch of a button with an outstanding look. KW coilover suspensions with electronic damping control. |
| Customized Suspension Lowering | ● | ● | ● | ● | ● |
| Composite Spring Seat | | | ● | ● | ● |
| Trapezoidal Thread | | ● | ● | ● | ● |
| INOX-LINE | | | ◐ | ● | ● |
| Rebound Stage | | | | ● | |
| App Control | ● | | | | ● |
| 7-Post Tested | | | | ● | ● |
| Hydraulic Elevation | | | ● | | |
| Technical Component Report | ● | ● | ● | ● | ● |

◐ = depending on application



STREET PERFORMANCE

“Only a KW coilover kit offers maximum lowering and perfect performance – in five damping variants”

SIDNEY HOFFMANN
Managing Director Sidney Industries GmbH



STREET PERFORMANCE



FOR EVERY DEMAND THE PERFECT SUSPENSION!



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NEW

| Product | KW Variant 1 | KW Variant 2 | KW Variant 3 | KW Variant 4 | KW Variant 5 |
|---|---|--------------|--------------|--------------|--------------|
| Description | Sportiness and outstanding look along with factory-set damping. | | | | |
| ↓ Customized Suspension Lowering | ● | ● | ● | ● | ● |
| 🌀 Composite Spring Seat | ● | ● | ● | ● | ● |
| 🌀 Trapezoidal Thread | ● | ● | ● | ● | ● |
| INOX-LINE STAINLESS STEEL | ● | ● | ● | ◐ | ● |
| ± REBOUND | | ● | ● | ● | ● |
| ± BUMP | | | ● | | |
| 5 BUMP | | | | ● | ● |
| TEP | | | | | ● |
| 7-Post Tested | ● | ● | ● | ● | ● |
| Aluminum Uniball Top Mount / Adjustable | | | | ◐ | ◐ |
| 📄 Technical Component Report | ● | ● | ● | ● | ● |
| 🛢 Reservoir | | | ◐ | ● | |

◐ = depending on application



TRACK PERFORMANCE

“Since many years, my first choice for the Nordschleife”

CHRISTOPH BREUER
Project Manager Street Cars
Manthey Racing GmbH



TRACK PERFORMANCE



FOR EVERY DEMAND THE PERFECT SUSPENSION!



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| Product | KW Clubsport 2-way | KW Clubsport 3-way | KW Competition 2A | KW Competition 3A | TTSP35 4A/5A |
|---|--|---|--|---|--|
| Description | Track performance with sports tire setup for street-legal clubsport vehicles. Racing technology with technical component report. Adjustable rebound and compression stage (low-speed). | Track performance with sports tire setup for street-legal clubsport vehicles. Racing technology with technical component report. Adjustable rebound and compression stage (low & high-speed). | Racing suspensions made for leisure sports and used in international motor sports. Adapted for the respective purpose. Adjustable rebound and compression stage (low-speed). | Racing suspensions built for used in international motor sports. Adapted for the respective purpose. Adjustable rebound and compression stage (low & high-speed). | Racing suspensions for international motorsport. Tailored to the respective application. Adjustable rebound and compression (low and high speed) as well as the adjustable blow-off. |
| Customized Suspension Lowering | ● | ● | ● | ● | ● |
| Composite Spring Seat | ● | ● | | | |
| Trapezoidal Thread | ● | ● | | | |
| INOX-LINE | ● | ● | | | |
| Rebound Stage | ● | ● | ● | ● | |
| Rebound Stage (High&Low) | | | | | ● |
| Compression Stage (Low) | ● | | ● | | |
| Compression Stage (Low & High) | | ● | | ● | ● |
| Solid Piston Technology | | | | | ● |
| 7-Post Tested | ● | ● | ● | ● | ● |
| Aluminum Uniball Top Mount / Adjustable | ● | ● | ● | ● | ● |
| Technical Component Report | ● | ● | | | |
| Reservoir | ● | ● | ● | ● | ● |

● = depending on application

KW FUNCTIONAL & QUALITY FEATURES

On all products you will find advice button that give a quick explanation of the features.



CUSTOMIZED SUSPENSION LOWERING

Fulfills Every Wish

KW coilover suspensions, KW coilover springs and KW DLC AirSuspensions allow the suspension to be steplessly lowered within the framework of the certified technical component report. For example, our Street Comfort products allow for a customized height setting with gentle suspension lowering from 10 - 50 mm, while the Street Performance products allow the maximum technically possible suspension lowering range from 45 - 85 mm, depending on the vehicle. This means that the suspension can be lowered to suit the personal needs of the user and, depending on the product category, a setting ranging from Comfort to Performance can be chosen.



HYDRAULIC ELEVATION

Lift Me Up

With KW's hydraulic lift system (HLS) the body can be raised for more ground clearance at the touch of a button, even while driving. With KW's HLS, obstacles like speed bumps or steep parking garage ramps can be easily negotiated. The system can be used as a vehicle-specific retrofit solution for OEM dampers or as a complete suspension solution including hydraulic equipment. The KW hydraulic lift system is available for the front axle or for both axles, depending on the application.



TRAPEZOIDAL THREAD

The Perfect Height-Adjustable Coilover

In comparison to common coilovers, KW uses a friction-optimized and dirt insensitive trapezoidal thread that displays low adjustment forces. Its large cross-sectional area allows for a higher load-bearing capacity.



APP CONTROL

The KW iSuspension Innovation

With the KW iSuspension apps, customer-specific adaptations can be made simply and intuitively via one's own smartphone.

1.) First, the DDC ECU coilover suspension app allows a choice of three defined damper setups (comfort / sport / sport+) and second, it allows a complete individual customization of the adaptive dampers during operation. 2.) With the DLC app you can simply choose between a self-defined lowered suspension setting and the standard vehicle height and precise adaptations can be made to the vehicle height when combined with our DLC air suspension modules.

Both apps are free to download in the Apple and Google Play stores.



RESERVOIR

KW Twin-Tube Technology Knows No Limits

The use of KW reservoirs provides additional volume for additional oil and additional cooling capacity for particularly high-stressed systems. The reservoir, which is filled with low gas pressure, can be fitted anywhere and accommodate the adjustable compression stage valve to provide the damper with more working space.



UNIBALL TOP MOUNT

Provides More Track Performance Adjustment Options

Depending on the vehicle application, the aluminum uniball top mounts feature scaled camber adjustment and caster can be optionally adjusted. This means that the camber angle can be set, allowing the maximum tire-contact area to be achieved when cornering, making handling even more direct. Please note: increased camber values are only recommended for track day use as they reduce tire lifespan when used on the road.



TECHNICAL COMPONENT REPORT

Certified Safety

The technical component report is always included in the package and outlines the individual options for lowering the suspension of the respective vehicle. Allowing for an inspection and subsequent entry into the vehicle documents to be carried out without any problems. The technical component report also includes precise vehicle classification, requirements and tips for safe fitting.



INOX LINE

The Only Truly Permanent Corrosion Resistance

KW's coilover suspension struts are manufactured from high-quality stainless steel that is rust-proof. In contrast to other solutions, coatings will not wear off while adjusting the suspension settings making KW coilover struts 100 percent corrosion resistant with an unlimited lifespan. Lowering the suspension using the dirt-insensitive trapezoidal thread in combination with the polyamide composite collar guarantees long driving pleasure. Even after years the stepless suspension lowering is not affected by environmental influences.



COMPOSITE SPRING SEAT

Because the Devil is in the Details

The KW coilover spring seat is made from a wear resistant and friction-optimized polyamide composite material with a stainless steel insert. In contrast to the anodized aluminum adjustable spring seats, the polyamide composite material prevents any possible oxidation. In combination with the Inox Line, this guarantees the long-term functionality of the height setting.



7-POST DRIVE DYNAMICS TEST STAND

Testing Like in Formula 1

Used regularly by automobile manufacturers and international racing teams, KW's in-house 7-post drive dynamics test facility optimally tunes the KW coilover suspensions according to the design and target group. The 7-post drive dynamics test facility is essential for perfect fine tuning along with road trials on public roads and race tracks. In objective laboratory conditions, which can be reproduced at any time, we work everyday to give our customers the internationally-esteemed KW driving experience.



REBOUND STAGE ADJUSTMENT TECHNOLOGY

Two-Step Rebound Valve with Adjustable KW TVR-A Rebound Stage Damping Technology (Twin-Valve Rebound Adjustable)

The rebound stage damping is precisely tuned to the respective vehicle in our in-house drive dynamics test facility, with the setting fixed in the mid range. Individual customization can be achieved in 16 precise click positions, allowing you to choose between more comfort or more body control. The patented two-step TVR-A technology allows the damper oil to flow through an adjustable, conical low-speed valve during slow piston speeds, while during higher piston speeds the main rebound stage valve opens to handle the flow of large volumes of oil. This provides major improvement in ride comfort without influencing the high-speed in the safety-relevant zone.



COMPRESSION STAGE ADJUSTMENT TECHNOLOGY (LOW-SPEED)

Two-Step Compression Stage Valve with Low-Speed KW TVC-A Adjustment Technology (Twin-Valve Compression Adjustable)

The patented compression stage valve with TVC-A technology features two separate spring pre-tensioned valves for small and large volume flow. The compression stage is tuned to the respective vehicle type on our 7-post rig and is delivered with a mid-level factory setting. Within 12 precise clicks the adjustable compression stage valve can increase or decrease the cross-section in the low speed valve, thus providing more or less compression damping. At the same time, in the case of sudden high piston speeds, the spring pre-tensioned needle valve opens along with the spring pre-tensioned main valve to its maximum valve cross-section, to prevent unwanted progressive power surges in the high-speed range with its blow-off feature. This makes it possible to brace the vehicle body better while still offering more comfort than the conventional valve technology during high wheel acceleration. The compression stage damper setting is always supplied in combination with a separate rebound setting, only one independent 2-way damper setting allows for true performance optimization.



COMPRESSION STAGE ADJUSTMENT TECHNOLOGY (LOW- & HIGHSPEED)

Two-Step Compression Stage Valve with Low and High-Speed KW TVCLH-A Adjustment Technology (Twin-Valve Compression with Adjustable Low/High Speed)

This is the high-end motor sports technology for the most demanding street and track performance customers. Two separate valves and a two-way adjustable compression stage valve allow separate compression damping changes in the low and high-speed range. The adjustments are made via two adjustment dials with click increments that feature 16 settings (with 15 clicks) in the high-speed valve housing and 7 settings (with 6 clicks) in the low-speed housing. During tuning at the KW drive dynamics test facility, the groundbreaking V4 coilover suspension is tuned to a mid-level basic setting for the best road performance with an additional recommended setting for occasional track day use. The 3A Clubsport coilover suspension is tuned to a mid-level factory setting especially for track day use, with an additional recommended setting for the drive to the race track. Starting from the factory setting, the damping can be set firmer or softer for low and high-speed. The TVCLH-A technology has a blow-off feature with large cross-sections. The resulting high low-speed forces create the best bracing for the vehicle body to keep the tires on the road in the case of wheel-induced high damper speeds (driving over curbs). The separate low and high-speed setting is always supplied with an additional rebound setting, to ensure an independent three-way damper setting.



REBOUND STAGE ADJUSTMENT TECHNOLOGY (LOW- & HIGHSPEED)

Two-Step Rebound Stage Valve with Low and High-Speed KW SPRLH-A Adjustment Technology (Solid Piston Rebound with Adjustable Low- / Highspeed)

The new Solid Piston damper technology allowed us to further develop the rebound tuning. The new generation of rebound adjusters can be precisely and intuitively adjusted in the low and high-speed forces. Due to the two-step rebound valves, the KW Variant 5 have 13 clicks in low and high speed in one turn. The 4A and 5A Competition racing dampers are available with 18 clicks in one revolution in the low-speed and high-speed rebound. These precise setting options offer maximum flexibility, whether in professional motorsport, on the road or on track days.



COMPRESSION STAGE ADJUSTMENT TECHNOLOGY (LOW- & HIGHSPEED)

Two-Step Compression Stage Valve with Low and High-Speed KW SPCLH-A Adjustment Technology (Solid Piston Rebound with Adjustable Low- / Highspeed)

The new Solid Piston damper technology also uses a new generation of two-step compression valves. With one revolution, the KW coilover variant 5 can be set with 13 clicks in the low and high speed range. With the Competition 4A and 5A racing dampers and suspensions, the compression level can be set precisely with 18 clicks in low and high speed. These precise adjustment options offer maximum flexibility in the suspension setup, whether in professional racing, on the road or near-series Trackdays vehicles.



SOLID PISTON TECHNOLOGY

The Latest Generation of Twintube/Tripлетube Racing Damper Technology

The new KW Competition TTSP TwinTube and TripleTube damper with the Solid Piston Technology enables a direct response to the smallest strokes. Valve technology with Belleville washers and flow-optimized valve arrangement ensures a cavitation-free function with low gas pressure. The KW TTSP technologies are in different dimensions and designs for formula, GT and touring cars available. The modular damper has, depending on regulations, 2- or 4 independent precisely with 18 clicks each adjustable for low and high speed compression- and rebound damping valves and as a 5A version also with an adjustable blow-off. In the case of KW variant 5 in the Street performance area, the rebound and compression can be adjusted with 13 clicks.




ADJUSTABLE BLOW-OFF

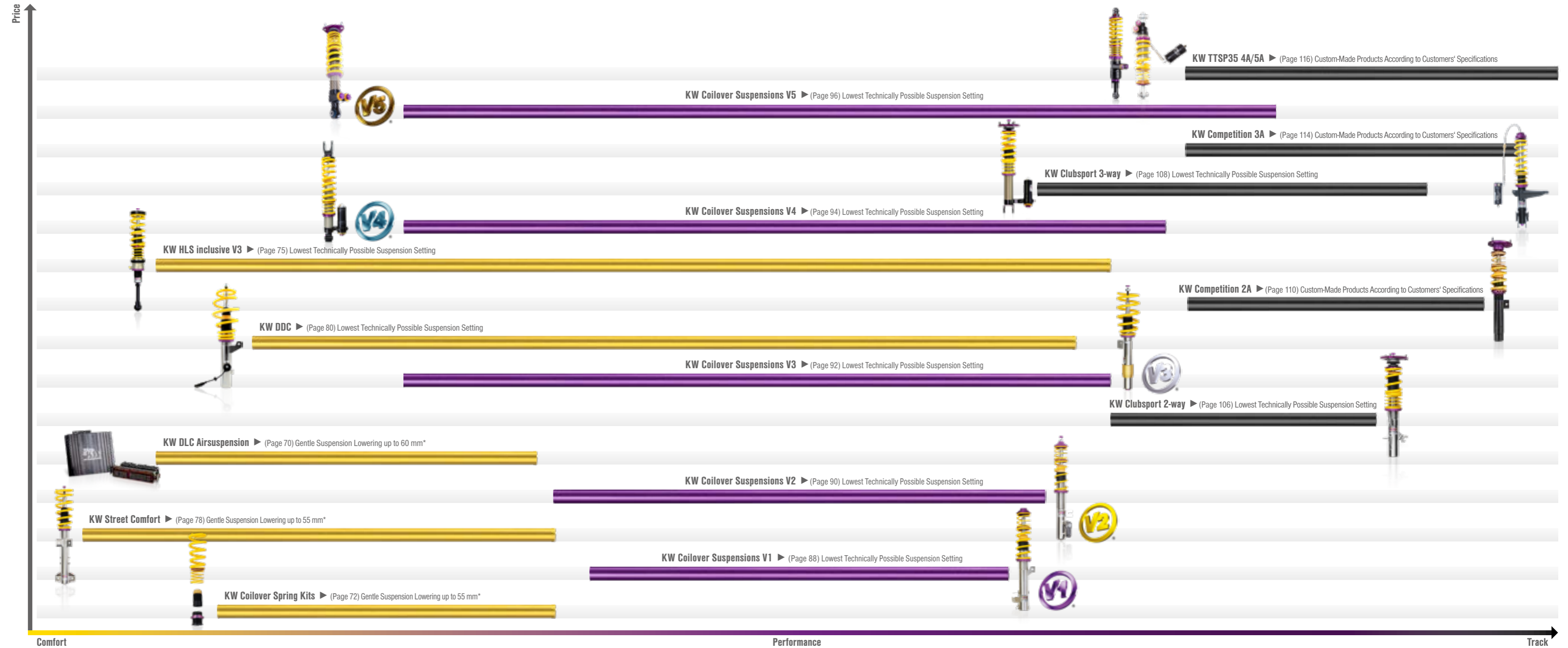
The adjustable blow-off with 12 precise clicks ensures a gradient change in the higher high-speed ranges in order to generate a flatter characteristic curve at the high speed area. This adjustment option provides more tolerance for the suspension setup to take even better track characteristics, curb design and curb height into account. At strong bumps, a better road connection is generated.

PRODUCT FINDER

The adjoining overview provides a guide by price level and performance rating. The KW product finder allows you to quickly find the right suspension solution based on personal preferences. Because KW offers:

FOR **EVERY DEMAND** THE
PERFECT SUSPENSION!

 *Example for respective lowest suspension setting. Exact vehicle-specific suspension lowering settings can be found at www.KWsuspensions.net/productfinder



TUNING

Long-term tests under freely reproducible laboratory conditions, tests on the north loop of the Nürburgring, as well as numerous test miles on a huge variety of road surfaces are an integral part of our comprehensive tuning procedures.



Test Track

Evaluation of the test stand tuning, test runs and assessment of subjective impressions of the drive.



4-Post "Profile"

Iteration of street data or profiles for the analysis of track-specific stimuli. Including constant aerodynamic loads where necessary.



7-Post

Track-specific analysis with an additional simulation of downforce and rolling movement.



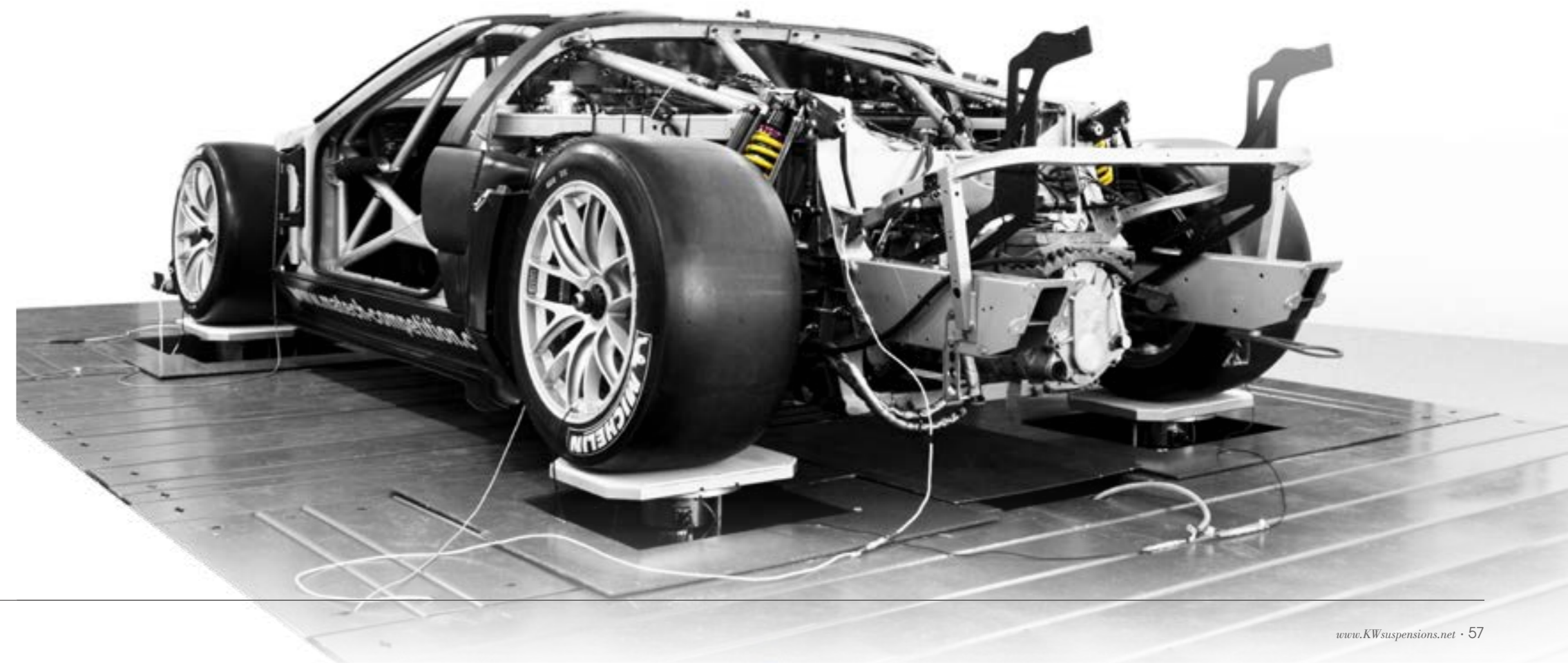
4-Post Sweep

Analysis of the basic calibration with four actuators at a frequency sweep of 0-30 Hz.

More information on the 7-post rig is contained in the "7-Post Rig" brochure. Order now at www.KWsuspensions.net

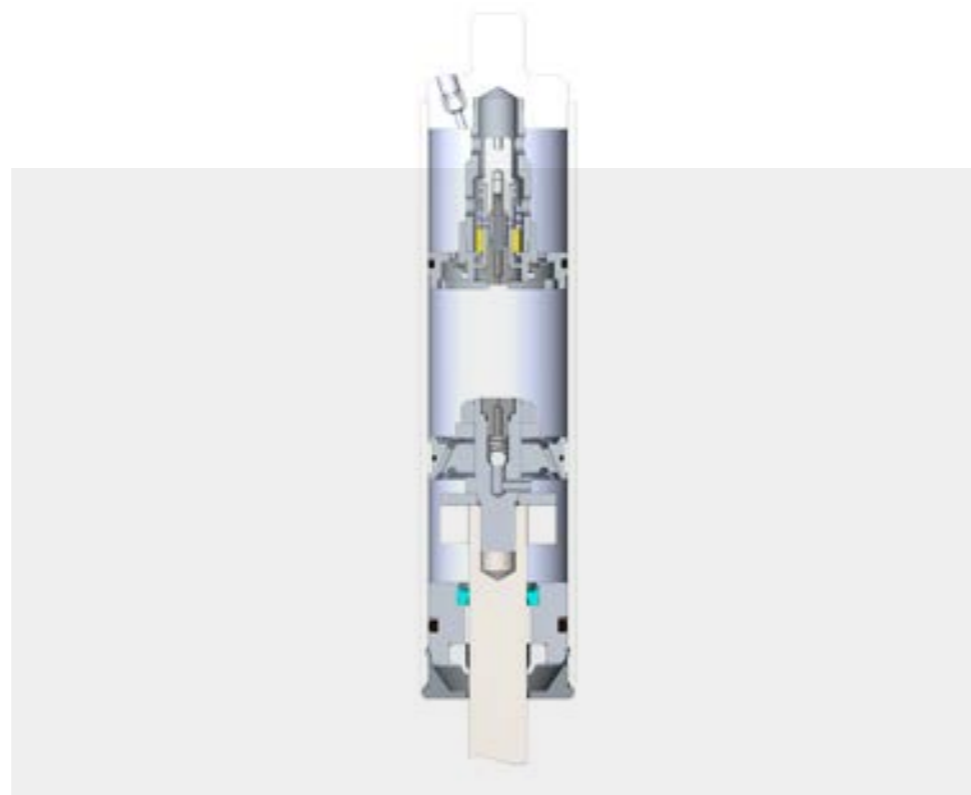
100 SETUPS TESTED AND NOT 1 KM TRAVELLED

At our KW automotive headquarters, on our drive dynamics test stand (4/7-post rig), dampers and springs can objectively be adjusted. Here the vehicle is not subjected to any wear and tear and the measurements are reproducible thanks to constant external conditions. This allows us to evaluate up to 100 setups in a single day. This saves time and money and leads to better results for the subsequent evaluations on the race track and on the road.



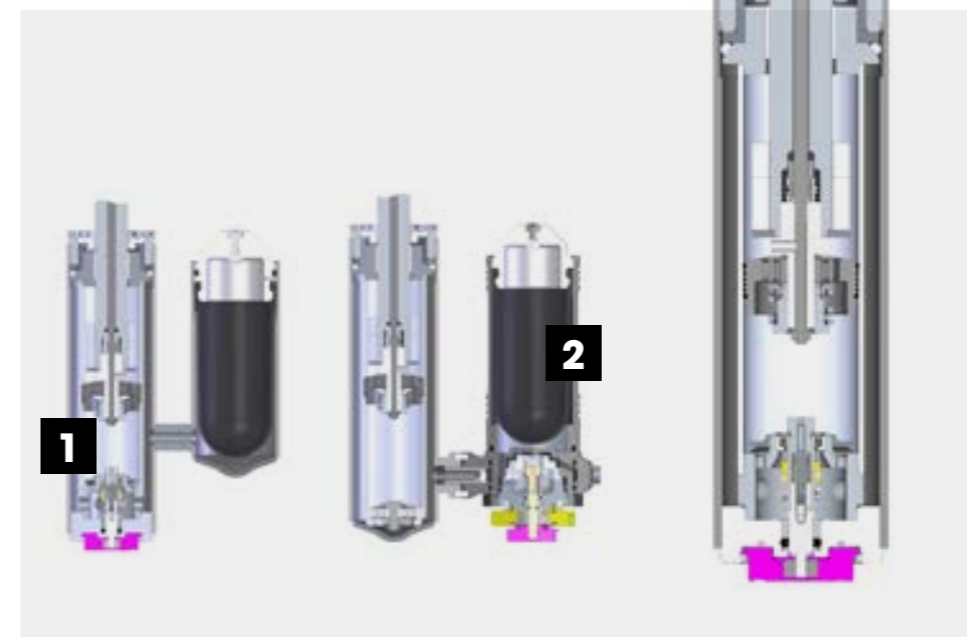
KW DAMPING TECHNOLOGY

For every vehicle class and purpose, KW has an optimally-adjusted coilover suspension – be it comfortable, sporty or performance-oriented. This challenging goal is achieved by innovative, patented KW technology and an independently adjustable rebound and compression stage damping. Here, we are not explicitly tied down to mono-tube or twin-tube technology, rather we draw on all technologies and take advantage of their respective benefits. Where hydraulic design is concerned, we decide whether to employ mono, twin or triple-tube dampers with low-pressure gas filling or whether to use a separate reservoir. In terms of tuning, we consciously try to control the body acceleration from the very beginning via low-speed damping and we place great emphasis on the fine-tuning of the high-speed damping through elaborate two-step twin valve technology in the compression and rebound stage. This, for example, allows our customers to finely tune the all-important low-speed compression damping on the patented TVC-A dump valve over a wide and extremely efficient range without negatively influencing the high-speed compression damping values which are decisive in terms of comfort. This two-step pressure valve technology allows two incompatible characteristics – sportiness and ride comfort – to be uniquely harmonized. It is thanks to this technology that KW Variant 3 coilover suspensions have stood out from the very beginning. An optimal and sporty-neutral basic setup is provided ex works. True performance optimization can only be achieved via the independent adjustment of the compression and rebound stage damping.



KW MONO-TUBE DAMPER

The KW mono-tube damper always comprises two valves: the working piston with twin-valve rebound valve (two-step rebound stage valve) and twin-valve compression valve (two-step compression stage valve). This combines the advantages of the mono-tube and twin-tube systems while also featuring lower gas pressure and less thermal influence than the typical mono-tube systems. At the same time, higher compression forces can be generated since there is no need for bracing against the gas pressure. The KW mono-tube system is available with fixed damper characteristics or with 2-way and 3-way adjustable damping technology. Adjustments to the compression and rebound stage damping are always made separately or with reservoirs and additional, adjustable low-speed and high-speed compression stage damping. KW mono-tube dampers are primarily installed upside-down. This means that the 40 or 45 mm diameter chrome-plated damper cartridge that is built onto the head of the piston tube absorbs the suspension forces on friction bearings. The upside-down technology with friction bearings should be cleaned and greased regularly. It is recommended for use in racing products which are regularly serviced.



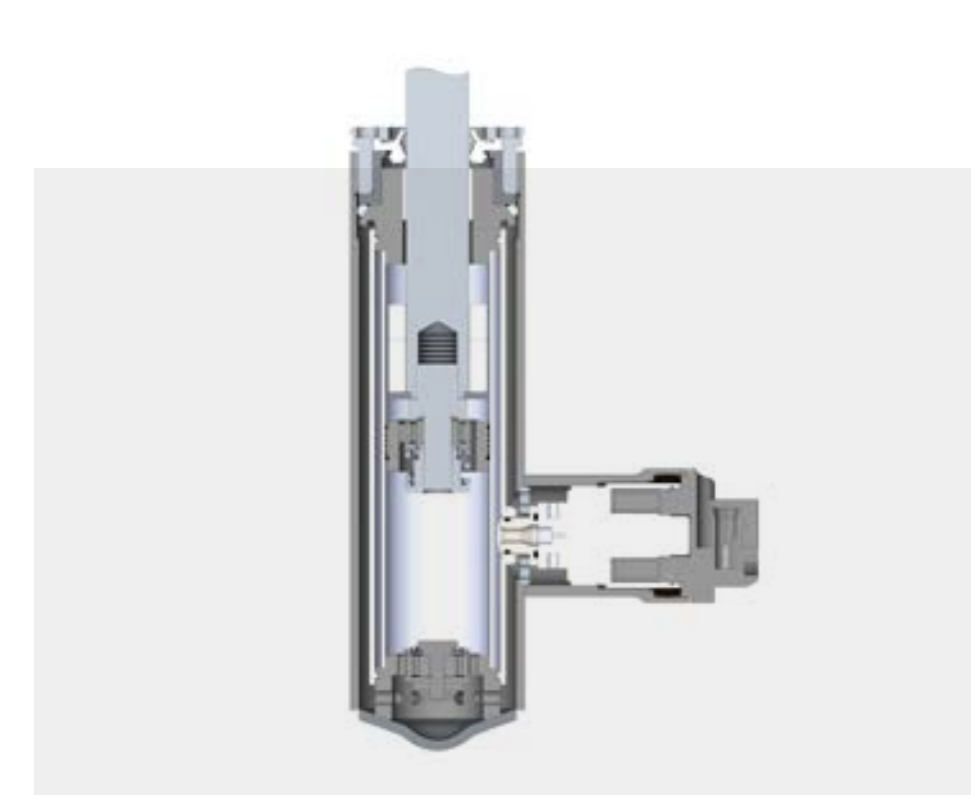
KW TWIN-TUBE DAMPER

The KW twin-tube damper consists of a damper housing, cylinder tube, guiding and sealing package, piston rod with working piston and rebound stage valve technology as well as a dump valve on the underside of the inner tube with compression stage valve technology. Thanks to the separate valve technology the desired damper characteristics can be produced for any purpose. Because it is highly reliable and low maintenance, twin-tube technology is the most tried and tested technology in automobile manufacturing. Separate and independent damper settings are possible for the rebound and compression stages, as well.

If required, the twin-tube damper can be filled with gas, allowing the benefits of the twin-tube system to be combined with the benefits of the gas-filled system.

1) The twin-tube damper is also available with a separate reservoir. The additional hydraulic volume increases performance and enables position-independent fitting.

2) For more damper space the reservoir can also accommodate the compression stage valve technology which can feature a low-speed setting or separate low and high-speed settings.



KW TRIPLE-TUBE DAMPER

As the name suggests, the KW triple-tube damper consists of three aligned housings: the damper housing, the cylinder tube (operating area) and an intermediate tube. The intermediate tube connects the operating areas of the twin-tube damper with those of an additionally affixed valve. This can be set up conventionally or electronically. This complex setup allows you to modify the compression and rebound stage forces. In combination with an electronic valve, dynamic dampers can be set up on the basis for highly efficient vertical dynamic suspension control systems.

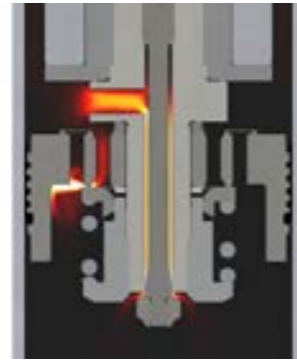
KW VALVE TECHNOLOGIES

TVR-A

REBOUND DAMPING STAGE

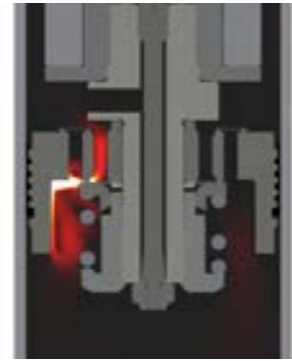
*KW TVR-A Technology
(Twin Valve Rebound - Adjustable)*

The rebound damping stage is adapted on our own 7post rig for the respective vehicle and it is set in the middle range when delivered. 16 exact clicks are available for an individual adjustment, so that it can be chosen between more comfort or more body control.



OIL FLOW FACTORY SETTING 8 CLICKS

Bypass channel of the rebound damping is opened in a middle setting. At slow damper speed, small oil volume flows arise.



OIL FLOW AT CLOSED REBOUND STAGE

Bypass channel of the rebound damping is closed. The maximum possible rebound damping forces are achieved.



OIL FLOW AT OPENED REBOUND STAGE

The lowest possible low speed rebound damping is achieved.



HIGHSPEED CHARACTERISTICS

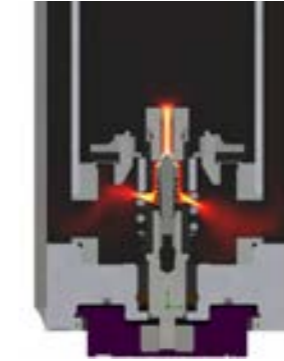
At high damper speeds and large volume flows, the spring-loaded main valve is opened additionally.

TVC-A

COMPRESSION DAMPING

*KW TVC-A Technology
(Twin Valve Compression Adjustable)*

The patented compression stage valve with the TVC-A technology has two separate spring-pretensioned valves for low and high volume flows. The compression damping stage, adapted on our 7post rig for the respective vehicle type, is delivered in a middle factory setting. With 12 exact clicks, the adjustable compression stage valve can reduce or enlarge the cross-section in the low speed valve, to achieve more or less compression damping.



OIL FLOW IN BASIC SETUP 6 CLICKS

At slow damper speeds, the low oil flow rate flows through the bypass valve and allows an additional low speed compression damping.



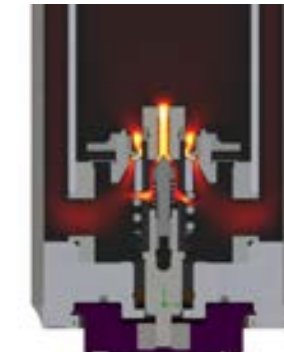
OIL FLOW AT CLOSED COMPRESSION STAGE IN THE BOTTOM VALVE

The closed compression stage creates a more progressive low speed compression damping curve without affecting the high speed damping. A sporty tight adjustment of the low speed compression can be used for more roll support or for a targeted tire warming, without affecting the comfort of the high speed damping.



OIL FLOW AT OPENED COMPRESSION STAGE IN THE BOTTOM VALVE

By opening the spring-loaded bypass valve, the low speed rebound damping is reduced.



BLOW-OFF CHARACTERISTICS

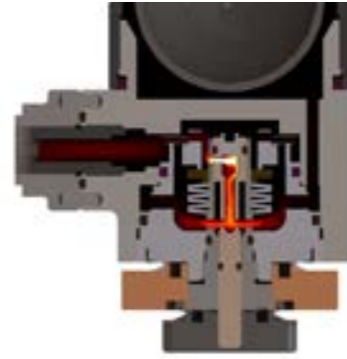
At sudden high speed excitations, the maximum valve cross-section opens at the main compression stage valve and the spring-pretensioned adjustable low speed bypass valve.

TVCLH-A

COMPRESSION DAMPING

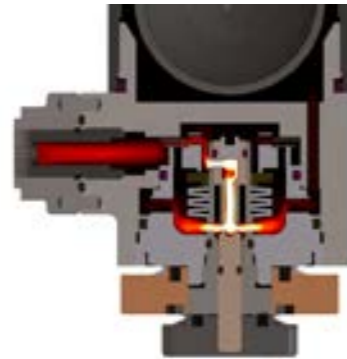
*KW TVCLH-A Technology
(Twin Valve Compression Low Highspeed-Adjustable)*

High-end technology from motor sports for the most demanding street performance and track performance customers. Two separate valves and a 2-way adjustable compression stage valve allow compression damping changes separately in low speed and high speed. The adjustments are made via two adjusting dials with click snap in the valve housing, that feature 16 adjustment positions (at 15 clicks) for the high speed range and 7 adjustment positions (at 6 clicks) in the low speed range.



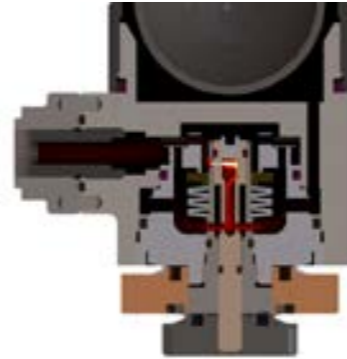
**OIL FLOW IN BASIC SETUP
8 CLICKS HIGH SPEED AND 3 CLICKS LOW SPEED**

KW Clubsport 3-way Coilovers - Track setup, KW V4 Coilovers - Street Performance setup.



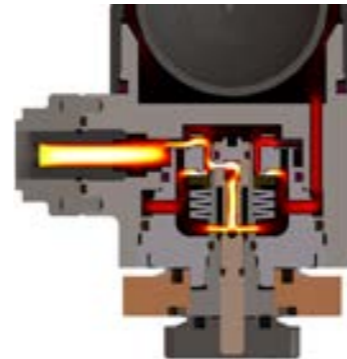
**OIL FLOW AT COMPLETELY OPENED HIGH AND
LOW SPEED COMPRESSION DAMPING STAGE**

At opened low speed adjustment, the oil flows through the largest throttle cross-section. At low damper speeds, the compression damping is reduced.



**OIL FLOW AT CLOSED HIGH SPEED AND
LOW SPEED COMPRESSION DAMPING STAGE**

At closed low speed adjustment, the oil flows through the smallest throttle cross-section. At low damper speed, the compression damping arises.



BLOW-OFF

At high damper speeds and large volume flows, the high speed valve opens additionally. The oil flows through a maximum valve cross-section. This is the transition to a degressive damper characteristics.

TVR-A



TVC-A



TVCLH-A

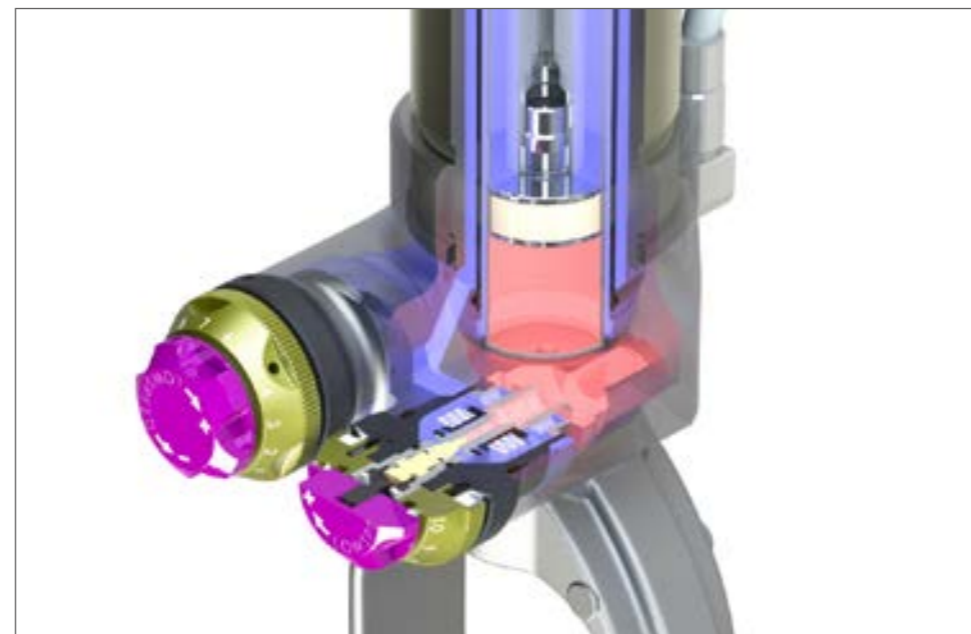


KW SOLID PISTON TECHNOLOGY

In contrast to our classic overflow Twin Valve technology, our 4-way and 5-way power adjustable dampers use our solid piston technology. Here, the piston is not overflowed, but generates a volume displacement depending on the piston diameter, which covers even larger damper force ranges or the system pressure drops with the same damper forces, which significantly increases the hysteresis (response behavior, frequency response of the damper performance). This technology enables the corresponding system pressure to be reached more quickly. This leads to a significantly more direct response of the damper performance (lower hysteresis).

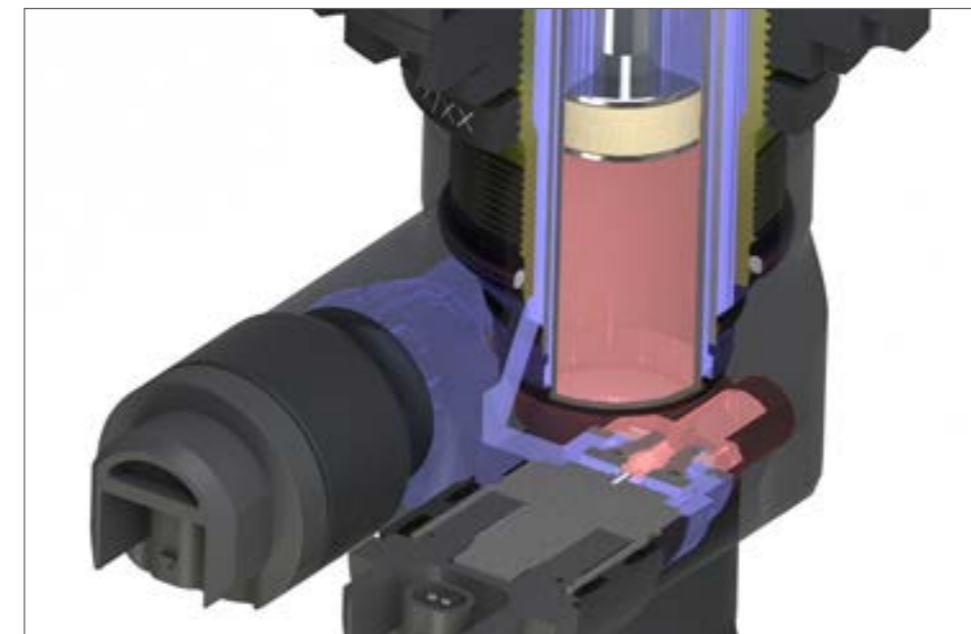
Furthermore, the modular valves of these systems are connected in series, which results in an even more precise damping. Since the volume displacement in this system is not dependent on the piston rod diameter, this can be reduced to the necessary strength of the power transmission. The reduction in diameter leads to a reduced friction surface in the seal guide system. As a result, the system friction drops and the response of the damper becomes more sensitive. Another advantage of the smaller piston rod diameter is based on the lower volume displacement when the piston rod is immersed. The gas ejection force is significantly lower and changes minimally over temperature. This makes the influence on the stand height negligible. With regard to the installation space, the reservoir volume can be smaller, which means that a larger working area of the piston rod can be driven with the same housing length or an external reservoir can be made more compact. A more compact design of the external reservoir also benefits from smaller friction surfaces with smaller diameters when using a separating piston system. The system friction drops further and improves the response behavior (lower hysteresis).

With the KW SPRLH-A (Solid Piston Rebound Low / High - Adjustable), for example, the rebound forces can be set separately with 13 clicks in the low-speed and high-speed range. The pressure level is using the SPCLH-A (Solid Piston Compression Low / High - Adjustable) valve technology in order to adjust the pressure level with 13 clicks in the low-speed and high-speed range. The valve setting is made possible by one turn and is clearly readable.



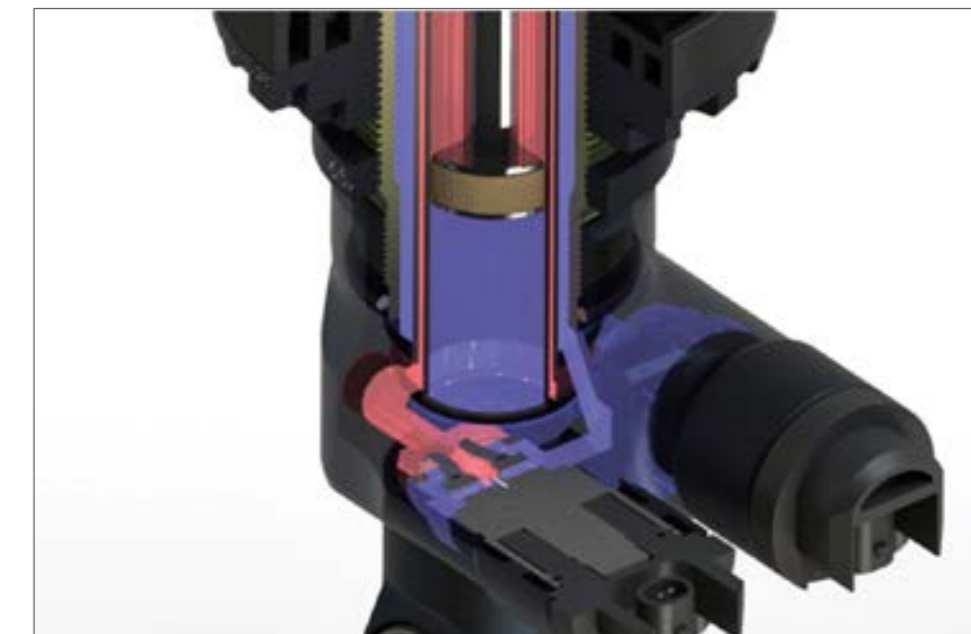
TWINTUBE, SOLID PISTON

The KW twin-tube damper with Solid Piston technology has an even more direct response, less friction and minimal hysteresis. Due to the independent valves for rebound and compression damping which 4-way can be set in low and high speed, we generate with 13 clicks (visible within one revolution) the perfect damping force absorption despite low gas pressure in the damper.



TRIPLE TUBE, SOLID PISTON WITH INTERNAL GASVOLUME

The KW triple-tube damper with Solid Piston technology has an even more direct response, less friction and minimal hysteresis. Due to the independent valves for rebound and compression damping which 4-way can be set in low and high speed, we generate with 13 clicks (visible within one revolution) the perfect damping force absorption despite low gas pressure in the damper.



TWIN TUBE, SOLID PISTON WITH TWO PROPORTIONAL VALVES

The KW twin-tube damper with Solid Piston technology, combined with 2 independent proportional valves in Rebound and compression, covers a large force range for effective or semi-active chassis control. The response time of the valves is between 7-60 ms (depending on damper speeds, forces and direction of movement). The modularity of the KW displacement system enables the integration of 2 proportional valves in addition to mechanically adjustable valves. This structure significantly increases the adjustable force range and thus increases the performance of chassis control systems. By using 2 valves, it is possible to set the basic damping in the rebound and compression stages independently. In addition, control interventions in the directions of movement can be parameterized differently.

SPCLH-A

COMPRESSION DAMPING

*KW SPCLH-A
Solid Piston, Compression
Low-/Highspeed Adjustable*

The independent compression valve of the solid-piston technology ensures maximum setting options with 13 exact clicks in the low and high-speed range. The technology achieves a more direct response, the lowest friction, and minimal hysteresis in response.



**OILFLOW COMPRESSION
LOWSPEED**

At the low-speed, the damper fluid flows through the needle channel, which is throttled depending on the setup, and thus generates the necessary low-speed characteristic.



**OILFLOW COMPRESSION
HIGHSPEED**

At the high-speed, the spring-loaded pressure plate is opened by the oil pressure and generates the given high-speed characteristic.



**OILFLOW COMPRESSION
BLOW OFF**

In the area of the blow-off function (damper speeds > high-speed), the spring-loaded spring plate opens further due to the oil pressure and thus generates the blow-off characteristic.



**OILFLOW COMPRESSION
LOWSPEED CLOSED**

The low speed setting is closed. The spring-loaded high-speed bypass still allows oil flow.



**OILFLOW COMPRESSION
BASICSETUP**

Factory default oil flow.

SPRLH-A

REBOUND DAMPING

*KW SPRLH-A
Solid Piston, Rebound
Low-/Highspeed Adjustable*

The independent rebound valve of the solid-piston technology ensures maximum setting options with 13 exact clicks in the low and high-speed range. The technology achieves a more direct response, the lowest friction, and minimal hysteresis in response.



**OILFLOW REBOUND
LOWSPEED**

At the low-speed, the damper fluid flows through the needle channel, which is throttled depending on the setup, and thus generates the necessary low-speed characteristic.



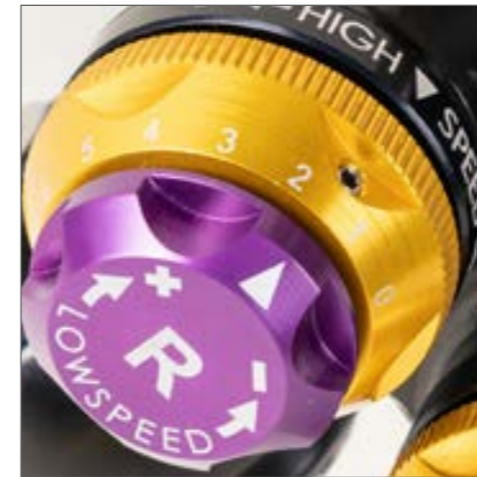
**OILFLOW REBOUND
HIGHSPEED**

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**OILFLOW REBOUND
BLOW OFF**

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**OILFLOW REBOUND
LOWSPEED CLOSED**

The low speed setting is closed. The spring-loaded high-speed bypass still allows oil flow.



**OILFLOW REBOUND
BASICSETUP**

Factory default oil flow.

STREET COMFORT

The Street Comfort product group includes suspension solutions that make driving more comfortable. To start off, KW Street Comfort coilover suspension systems provide exceptional comfort and a good performance with outstanding looks. Thanks to a lift system on the front

axle or front and back axles the HLS product range offers more ground clearance for supercars, allowing otherwise insurmountable obstacles to be driven over. The DDC and DLC electronic solutions were developed for vehicles with electronic suspension systems.



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“I can see the passion for detail. KW coilover kits are little artworks, just like our cars!”

DIRK MÖRSDORF, NOVITEC
Sales Director Novitec Rosso GmbH and
convinced user of KW HLS



KW dlc air suspension

*Electronic Suspension Lowering for
Vehicles with Air Suspension.*

KW DLC Air Suspension (Dynamic Level Control) provides visually appealing suspension lowering for numerous automobiles and SUVs with standard air suspension. This involves an electronic suspension lowering module which is quickly and easily connected to the on-board power supply via an adapter plug. The KW DLC Air Suspension allows customized suspension lowering of up to 60 millimeters. Optionally, stepless suspension lowering can be conveniently set with the KW DLC Air Suspension app. It goes without saying that the electronic suspension lowering module is compatible with a huge variety of air suspension systems and driver assistance systems. Be it Audi's "adaptive air suspension", Mercedes Benz's AIRMATIC, Mercedes Benz's ABC or another – all functions will continue to remain fully functional and do not have to be deactivated for the operation of KW DLC Air Suspension.



- ↓ Customized Suspension Lowering
- 📱 App Control + Plug and Play Adapter
- 📄 Technical Component Report

KW DLC Air Suspension – WIFI Module / App Control

The user-friendly KW DLC Air Suspension app is compatible with the Apple iPhone, Apple iPod touch, Apple iPad and devices with an Android operating system. Via the ADVANCED menu, it allows you to precisely lower your vehicle millimeter by millimeter. With the KW DLC Air Suspension app, creating your own vehicle height setups is also a breeze.



Setting Options With the DLC Air Suspension App

The KW DLC Air Suspension app is available for free from Google play and from the app store



KW coilover spring kits

*The Spring Kit with Stepless
Suspension Lowering!*

The KW coilover spring kit is used in combination with the standard dampers to lower the suspension of the vehicle. Unlike conventional spring kits, a customized height adjustment is possible within the tested adjustment range. With this solution, vehicle-specific spring seats with tuned KW lowering springs and compatible elastomers, as well as dust protection systems, are used. The standard damper system with electronic or hydraulic control, for example, will continue to remain active.



↓ Customized Suspension Lowering

⌘ Trapezoidal Thread

§ Technical Component Report





↓ Customized Suspension Lowering

○ Composite Spring Seat

⌘ Trapezoidal Thread

INOX LINE STAINLESS STEEL

⚙ Hydraulic Lifting

§ Technical Component Report

TVR-A Rebound Stage Damping

TVC-A Compression Stage Damping



KW
hls

*The KW Hydraulic Lift System –
Makes Your Supercar
Suitable for Everyday Use.*

Because of their low center of gravity, many super cars have only marginal ground clearance. We developed the KW Hydraulic Lift System to allow speed bumps or steep ramps in parking garages to be negotiated with ease. At the touch of a button, the HLS system lifts vehicles by up to 45 millimeters allowing obstacles to be negotiated without a problem. Retrofittable with KW coilover suspensions or with the original suspension, depending on vehicle type and application.

KW hls lift kit

*Suspension Lifting for Easy
Negotiation of Obstacles.*

With the HLS Lift Kit, obstacles such as parking garages, garage entrances, speed bumps or uneven road surfaces are not a problem – even for vehicles with lowered suspension or low ground clearance. A vehicle fitted with the Lift Kit can be raised by up to 45 mm, allowing obstacles which would be impossible at the normal vehicle height to be easily negotiated. Depending on vehicle type and model the Lift Kit is available as a vehicle-specific solution or as an individual retrofit kit.

- Easy negotiation of obstacles for vehicles with low ground clearance
- Available as a complete solution with KW coilover suspensions or as a retrofit kit
- Can be activated while driving (up to 80 km/h)
- Quick lifting in 4 - 5 seconds with HLS 2
- Activation from interior via button with LED position indicator or optionally via remote control
- Fully corrosion-resistant (coated cylinder components made from aluminum)

The Lift Kit is available in two different versions: HLS 2, which is fitted to the front axle and HLS 4 which is fitted to the front and rear axle, allows the entire vehicle to be lifted. The hydraulic cylinder unit is fitted to the coilover suspension between the spring seat and the spring. The advantage of a hydraulic system is that no compression (movement) of the lowered cylinder unit (no undesired additional suspension) occurs during operation.



The Lift Kit is available as a complete suspension solution combined with a KW coilover suspension or also as a retrofit kit for standard suspensions and KW coilover suspensions and comprises springs, adaptations, hydraulic cylinder and complete control system.

HLS Lift Kit complete with KW coilover suspension



HLS Lift Kit as retrofit kit for KW dampers or standard coilover suspensions



KW hls lift kit individual

*More Ground Clearance at the Touch of a
Button for Vehicles with Lowered Suspension.*

The KW Individual HLS Lift Kit retrofit set is installed in combination with a coilover suspension. The hydraulic unit that lifts/lowers the vehicle is fitted between the spring seat and the spring. The required installation space for the cylinder unit is 65 mm.

- For vehicles with low ground clearance for the easy negotiation of obstacles
- Can be activated while driving (up to 80 km/h)
- Quick lifting (4-5 seconds for HLS2; 6-8 seconds for HLS4)
- With technical report for submission of registration as per §19 (2) / §21



KW street comfort

*The Most Individual Sport Suspension
with Maximum Comfort.*

Is your sport suspension too firm? Do you want sportier looks and driving dynamics without having to compromise comfort? With the Street Comfort suspension, KW has the solution – the comfortable sport suspension for subtle suspension lowering and guaranteed perfect level thanks to the height-adjustment options of a KW coilover suspension. The handling or the comfort can be individually increased as desired via the integrated rebound adjustment. In this way the KW Street Comfort coilover suspension offers the perfect compromise between driving dynamics and ride comfort.



↓ Customized Suspension Lowering

± REBOUND Rebound

○ Composite Spring Seat

⊞ Trapezoidal Thread

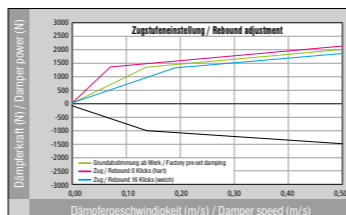
INOX LINE
STAINLESS STEEL

7-POST TESTED

§ Technical Component Report

TVC-A Rebound Stage Damping

± REBOUND
16 clicks





Operation via standard button (enables switching between the vehicle-specific damper setups)



VW DCC Dynamic Chassis Control



BMW EDC Electronic Damper Control









Mercedes Benz AGILITY CONTROL



Seat Drive Profile



-  Customized Suspension Lowering
-  Composite Spring Seat
-  Trapezoidal Thread
-  INOX LINE
-  7-Post Tested
-  Technical Component Report



KW ddc plug & play

Customized or Maximum Suspension Lowering for Your Electronic Suspension.

Today, more and more premium vehicles are being fitted with an adaptive suspension system. Until KW DDC Plug & Play was introduced to the market you often had to make compromises when customizing your suspension lowering and often even dispense with the active control system and comfort features that you had paid extra for. With the adaptive KW DDC Plug & Play coilover suspensions there are no compromises to be made and you can combine the control of your standard damper system with a stepless suspension lowering and the driving dynamics of a KW coilover suspension. During installation, the standard struts are simply replaced with KW "Inox Line" stainless steel struts while the adaptive KW dampers are connected to the on-board electronics using your automobile's original plug. Fitting a KW DDC Plug & Play coilover suspension requires no further steps. The standard dampers can be simply replaced with the KW DDC

(Dynamic Damping Control) coilover suspension. The existing control system and the internally-fitted switch for the activation of damper control are retained. The KW DDC coilover suspension combines, for the first time, the benefits of a KW coilover suspension with the comfort of a standard damper control system. At the touch of a button the driver can choose from three setups which have been optimized for the KW coilover suspension: Comfort, Normal and Sport. In addition to this, the KW coilover suspension allows for customized suspension lowering within the tested adjustment range. Our OEM-quality suspension technology is compatible with a variety of vehicle manufacturers. As a result, the adaptive KW DDC suspension is instantly recognized by the onboard electronics. This means that all of your production vehicle's visual displays and controls remain fully functional while still providing you with a totally new driving experience.

KW
ddc ecu

*Electronic Damper Control
for Retrofitting.*

Experience the innovation and quality of high-end “made in Germany” engineering: the KW DDC (Dynamic Damping Control) coilover suspension with ECU (Electronic Control Unit). The coilover suspension with its electronically adjustable dampers combines, for the first time, intelligent, app-controlled suspension tuning with customized suspension lowering. This gives you the opportunity to upgrade your vehicle with an adaptive damper control and, if desired, tune it to your requirements and way of driving. Included in the package is a KW “Inox Line” coilover suspension with high-quality stainless steel struts, elec-

tronically adjustable dampers, a high-performance control unit with a vehicle-specific set of cables and a KW button for control from the cockpit, as well as extensive assembly instructions for the simple installation. The KW DDC ECU coilover suspension features three vehicle-specific damper setups. At the touch of a button, you can choose between the basic Sport setting, a very sporty and performance-oriented Sport+ setup as well as Comfort mode for driving on poor surfaces. In addition, the adjustable height of the KW coilover suspension enables customized suspension lowering within the tested adjustment range.

 Customized Suspension Lowering

 App Control

 Composite Spring Seat

 Trapezoidal Thread

 INOX LINE

 7-Post Tested

 Technical Component Report



BASIC



SETTINGS



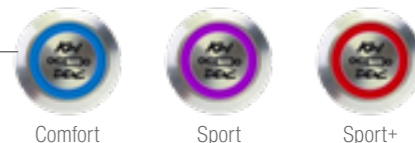
PERSONAL



ADVANCED

1 BUTTON, 3 DIFFERENT EXPERIENCES

The KW DDC button which is included in the package allows you to switch between the three damper setups: “Comfort”, “Sport” and “Sport+”. Here, the KW DDC button changes color.



Comfort

Sport

Sport+



KW ESC MODULE

*KW Cancellation Kits for Vehicles with
Electronic Damper Force Setting.*

More and more vehicles optionally feature adaptive suspension damper control systems, which have to be replaced with costly OEM dampers in the event of a defect or increased wear and tear and creates an obstacle for stepless suspension lowering. However, in order to increase driving pleasure through the customized retrofitting of a coilover suspension or sport suspension, we have developed the so-called KW cancellation kits (KW ESC module). Our KW ESC module deactivates the functions of the standard damper control system and via the change of suspension all other control systems remain intact. You can also use our KW ESC module if you opt for OE aftermarket suspension solutions or the suspensions of other manufacturers.



- Deactivates the standard damper control system of electronically adjustable OE suspensions for the prevention error messages
- Other control functions and systems remain fully operational
- Enables the use of all KW coilover suspensions, KW Clubsport and KW racing suspensions which are available for the vehicle type
- Also suitable for replacing OE dampers with aftermarket suspensions



STREET PERFORMANCE

Perfect Lowering and Performance.

The widest possible suspension lowering range is offered by KW's V1 to V5 coilover suspensions which are made using "Inox Line" stainless steel technology and are available in four damping varieties: Variant 1 is tuned to a sporty-harmonic damper setting ex works. Variant 2 offers the experienced sports driver the possibility of influencing the car's pitch and roll behavior by means of the adjustable

rebound stage damping in addition to customized lowering. Variant 3 allows rebound and compression stage damping to be configured independently of one another for perfect vehicle tuning. KW's recently-introduced Variant 4 offers true racing technology for the road and thus provides a perfect combination of performance and road suitability.



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"Performance for everyday use and the finest of suspension technology make KW my first choice – on the road and on the race track."

SIDNEY HOFFMANN
Managing Director of Sidney Industries GmbH











KW
coilover suspensions

*Sportiness and Outstanding Looks.
With factory-set damping.*

The ideal entry-level system for customers who want the technically lowest possible suspension setting or for those who want to customize their own. In extensive road tests, our experienced engineers developed a target group-specific setup by establishing an optimum balance of sportiness, comfort and safety and then implementing this in the series.



-  Customized Suspension Lowering
-  Composite Spring Seat
-  Trapezoidal Thread
-  INOX LINE
-  7-Post Tested
-  Technical Component Report

- Vehicle-specific, sporty-harmonic damper tuning
- Tested adjustment range for maximum or customized suspension lowering
- Strut housing featuring “Inox Line” stainless steel technology
- Individually height-adjustable
- High-quality damper components for extra durability
- Full package including detailed documentation

| Version | Variant 1 |
|---------------------|--|
| Setting Options | |
| Suspension Lowering | Tested adjustment range for customized or maximum suspension lowering |
| Area of Application | Road, Tuning, Shows. |
| Damping Performance | Firmly configured sporty-harmonic damping setup. |
| Extras | Coilover Struts: Inox Line stainless steel technology, Rear axle setting, Aluminum. |



Find the right suspension with ease at www.KWsuspensions.net/productfinder











KW coilover suspensions

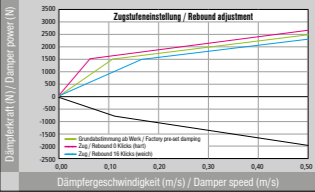

*Sportiness, More Body Control or
Ride Comfort With Outstanding Looks.
Adjustable Rebound Stage Damping.*

The system for the accomplished sports driver who also wants to make adjustments to the setup for customized vehicle lowering. The individually adjustable rebound stage damping ensures a better connection on fast road sections and easier vehicle control. In addition, the driving comfort on poor road surfaces can significantly be influenced with customized rebound stage damping.



-  Customized Suspension Lowering
-  Rebound
-  Composite Spring Seat
-  Trapezoidal Thread
-  INOX LINE
-  7-Post Tested
-  Technical Component Report
-  TVR-A Rebound Stage Damping

- Individually adjustable damping technology in the rebound stage
Twin Valve Rebound Adjustable Technology (TVR-A)
- Adjustable rebound stage damping with 16 precise clicks
→ Individually customizable basic tuning in +/- direction
(+) less body movement / (-) more comfort
- Strut housing featuring “Inox Line” stainless steel technology
- Tested adjustment range for maximum or customized suspension lowering
- High-quality damper components for extra durability
- Full package including detailed documentation

| Version | Variant 2 | |
|---------------------|--|---|
| Setting Options |  |  |
| Suspension Lowering | Tested adjustment range for customized or maximum suspension lowering | |
| Area of Application | Road, City Traffic, Highway, Long-Distance Journeys, Tuning, Shows. | |
| Damping Performance | Adjustable rebound stage damping with 16 precise clicks. Basic tuning with adjustment range in + (firmer) / - (softer) direction. | |
| Extras | Coilover struts: Inox Line stainless steel technology, Rear axle setting, Aluminum. | |



Find the right suspension with ease at
www.KWsuspensions.net/productfinder





KW coilover suspensions

Performance, High Level of Sportiness and Comfort with Racing Technology for the Road. Separately Adjustable Compression and Rebound Stage Damping.

Cutting-edge motorsports technology for more performance on the road. With compression and rebound stage damping, that can be set separately and independently of each other, the damper setup can be customized to your own driving preferences or vehicle changes such as weight, tire characteristics or altered vehicle rigidity. True performance optimization is only possible with this unique, patented system. For example, this allows the compression damping force to be increased and get more grip from the tires, to improve cornering behavior and reduce squat without simultaneously altering the rebound stage damping which is optimally matched to the spring rate – a scenario which results in reduced grip and the associated loss of performance.



- Customized Suspension Lowering
- Rebound
- Compression (Low)
- Composite Spring Seat
- Trapezoidal Thread
- INOX LINE
STAINLESS STEEL
- Reservoir
- 7-Post Tested
- Technical Component Report
- TVR-A Rebound Stage Damping
- TVC-A Compression Stage Damping

- ▣ Independently adjustable damping technology for rebound and compression stage
Twin Valve Rebound Adjustable Technology (TVR-A)
Twin Valve Compression Adjustable Technology (TVC-A)
- ▣ Strut housing featuring “Inox Line” stainless steel technology
- ▣ Tested adjustment range for maximum or customized suspension lowering
- ▣ OEM-approved damper components for extra durability
- ▣ Full package including detailed documentation
- ▣ Adjustable rebound stage damping with 16 precise clicks
➔ Individually customizable basic tuning in +/- direction
(+) less body movement
(-) more comfort
- ▣ Adjustable compression stage damping with 12 precise clicks
➔ Individually customizable basic tuning in +/- direction
(+) bracing/more grip/more performance
(-) comfort/adaptation/tire stiffness



Find the right suspension with ease at www.KWsuspensions.net/productfinder



| Version | Variant 3 | |
|---------------------|---|--|
| Setting Options | | |
| Suspension Lowering | Tested adjustment range for customized or maximum suspension lowering | |
| Area of Application | Road, City Traffic, Highway, Long-Distance Journeys, Tuning, Shows, Sports Use with Road Tires. | |
| Damping Performance | Separate, independently adjustable compression and rebound stage damping. Basic tuning with adjustment range in + (firmer) / - (softer) direction. Rebound damping with 16 precise clicks. Compression stage damping with 12 precise clicks. | |
| Extras | Coilover struts: Inox Line stainless steel technology, Rear axle setting, Aluminum. | |

TVR-A TVC-A



KW coilover suspensions

High-Performance Racing Technology for
Daily Road Use with KW 3-Way
Racing Damper Adjustment Technology.

The KW Variant 4 coilover suspension combines our leading racing technology that is exceptionally suitable for everyday use for numerous high-performance vehicles. This enables the independent setting of rebound stage damping as well as low-speed and high-speed compression stage damping. In this way, KW supplies the Variant 4 with a vehicle-specific performance setting. Thanks to the adjustable dampers, drivers can – if necessary – quickly change to a comfort tuning using the intuitive, integrated setting dials on the damper. The three-way adjustable high-performance dampers which

KW Coilover Suspensions feature the independent setting of the rebound stage as well as low-speed and high-speed compression stage damping are based on the successful racing technology of the multiple overall winners of the ADAC Zurich 24h Nürburgring race and are supported with aluminum top mounts, depending on the vehicle-specific design. Thanks to the sophisticated KW suspension technology, the new KW Variant 4 coilover suspension has been developed exclusively for selected high-performance vehicles that can benefit from safer driving at the limits of their driving dynamics.

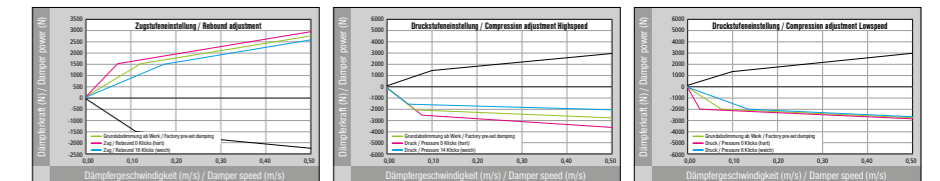


- Racing technology of the 24h winner
- Separate and independent damper force setting for rebound and compression stage
Low and high-speed
Twin Valve Rebound Adjustable Technology (TVR-A)
Twin Valve Compression Low/High Adjustable Technology (TVCLH-A)
- Basic tuning ex works with adjustment range in + (firmer) / - (softer) direction
- Rebound stage damping: convenient adjustment with 16 precise clicks
- Low-speed compression stage: with 6 precise clicks
- High-speed compression stage: with 14 precise clicks
- With adjustable aluminum top mounts, depending on application

- ↓ Customized Suspension Lowering
- Composite Spring Seat
- ⊕ Trapezoidal Thread
- INOX LINE STAINLESS STEEL INOX LINE
- ± REBOUND Rebound
- TVR-A Rebound Stage Damping
- ⊕ BUMP COMPRESSION Compression (High&Low)
- 7-POST TESTED 7-Post Tested
- ALU ALU Aluminum Uniball Top Mount / Adjustable
- § Technical Component Report
- RESERVOIR Reservoir
- TVCLH-A Compression Stage Damping

| Version | Variant 4 |
|---------------------|---|
| Suspension Lowering | Tested adjustment range for maximum or customized suspension lowering |
| Area of Application | Road, City Traffic, Highway, Long-Distance Journeys, Sports Use with Road Tires. |
| Damping Performance | Separate, independently adjustable compression and rebound stage damping. Basic tuning ex works with adjustment range in + (firmer) / - (softer) direction. Rebound stage with 16 precise clicks. Low-speed compression stage with 6 precise clicks. High-speed compression stage with 14 precise clicks. |
| Extras | Coilover struts with "Inox Line" stainless steel technology or aluminum, with adjustable aluminum top mounts, depending on application. |

TVR-A TVCLH-A





KW coilover suspensions

High-Performance Racing Technology
for Daily Street Use with KW 4-Way
Racing Damper Adjustment Technology.

The new KW Variant 5 coilovers, are equipped with ist successful motorsport chassis technology with solid pistons and modular as well as connected in series damper valves. The KW Variant 5 convinces in sports cars and super sports cars with its precise and fast damping without delay. Even at low steering movements and minimal road bumps the dampers and valves react directly.



- Customized Suspension Lowering
- Rebound (High&Low)
- Compression (High&Low)
- Composite Spring Seat
- Trapezoidal Thread
- Solid Piston Technology
- 7-Post Tested
- Technical Component Report

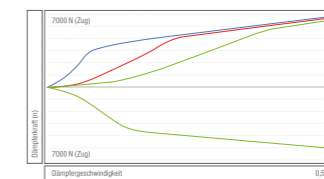
SPRLH-A Rebound Stage Damping

SPCLH-A Compression Stage Damping

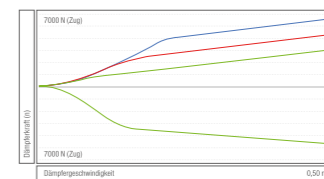
- Separate and independent damper force setting for rebound and compression stage Low and high-speed
- Twin Tube Solid Piston Technology
- Basic tuning exworks with adjustment range in + (firmer) / - (softer) direction
Rebound LowSpeed 13 Clicks
Rebound HighSpeed 13 Clicks
Compression LowSpeed 13 Clicks
Compression HighSpeed 13 Clicks
- With adjustable aluminum top mounts, depending on application



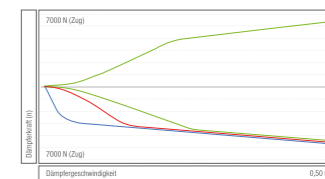
Einstellbereich Zugstufe Lowspeed
Adjustment range rebound lowspeed



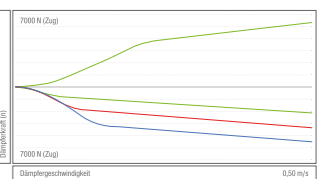
Einstellbereich Zugstufe Highspeed
Adjustment range rebound highspeed



Einstellbereich Druckstufe Lowspeed
Adjustment range compression lowspeed



Einstellbereich Druckstufe Highspeed
Adjustment range compression highspeed



| Version | Variant 5 |
|---------------------|--|
| Suspension Lowering | Tested adjustment range for maximum or customized suspension lowering |
| Area of Application | Road, City Traffic, Highway, Long-Distance Journeys, Sports Use with Road Tires and Racing Tires. |
| Damping Performance | Separate, independently adjustable compression and rebound stage damping. Basic tuning ex works with adjustment range in + (firmer) / - (softer) direction. Rebound LowSpeed 13 Clicks. Rebound HighSpeed 13 Clicks. Compression LowSpeed 13 Clicks. Compression HighSpeed 13 Clicks. |
| Extras | Coilover struts with aluminum, with adjustable aluminum top mounts, depending on application. |

SPRLH-A SPCLH-A

CLASSIC SUSPENSIONS

Also for every antique car and young classics, KW offers the perfect suspension for every demand - even for your classic car! The great advantage: Your automobile cultural asset gets a modern suspension with the latest damping

technology and the option of an individual lowering. Thanks to our KW special construction manufactory, we are able to consider all your requirements and demands for your classic car in every detail.



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Page 102

“We want to exploit the full potential of your classic vehicle with our latest suspension technology”

ROLAND ASCH
German Automobile race car driver



KW CLASSIC SUSPENSIONS

for Porsche G-Models

The Porsche G-models have been among the most popular classic cars for many years. For these 911s we have specially developed suspensions that all feature modern damper technologies and are tuned according to the latest data. This means that Porsche lovers no longer have to settle with the suspension technology of 1973. In addition, our suspensions feature forged wheel mounts on the front axle damper housings for the G-models. This eliminates the need to acquire costly parts which are often out of stock.



KW V3 Damper

The KW V3 shock absorbers are ideally suited for restoration projects. Our complete solution enables the continued use of the standard torsion bar springs. The dampers which can be separately adjusted for the compression and rebound stages (TVC-A & TVR-A technology) are supplied including newly forged wheel hubs. This eliminates the need for a costly conversion or the use of replacement cartridges. The registration-free V3 shock absorbers provide the G-models with more bracing against pitching and rolling as well as increased ride comfort.



KW Clubsport 2-Way Coilover Suspension

As well as racing springs and adjustable aluminum uniball top mounts, the KW Clubsport 2-way coilover suspension features 2-way high-performance dampers with separately-adjustable compression and rebound stage damping (TVC-A & TVR-A technology). The dampers are supplied in an upside-down design for the front axle and as an aluminum coilover strut for the rear axle. Thanks to the technical component report, the Clubsport suspension is ideal for sporty road use as well as track day events.



KW Competition Racing Suspension

Whether it's for circuits, long-distance or rally – we have the ideal racing suspension for every purpose. Depending on regulations and the application we offer racing solutions for the 2-way and 3-way Competition G-Models. The 2-way Competition suspensions feature TVC-A & TVR-A technology with separate damper adjustment for the compression and rebound stage damping. The 3-way Competition coilover suspensions additionally feature a reservoir with low-speed and high-speed compression adjustment (TVCLH-A technology) and, as a result, feature the 3-way damper technology of the current Porsche 911 GT3 R (991).



TVR-A TVC-A TVCLH-A

KW valve technologies can be found in detail on pages 58 - 67



YouTube video: Porsche G-Model

KW CLASSIC SUSPENSIONS

for Classic Cars

For many classic and modern classic cars, we have developed a comprehensive product range of vehicle-specific coilover suspensions with up-to-date damper technology. Using our drive dynamics test stand and in road tests, we used modern tuning methods to create modern damper setups, specifically for the requirements of classic car suspensions,

which provide increased driving safety and performance without neglecting comfort. The KW classic suspensions include a technical component report and provide the option of stepless suspension lowering within a tested range. Depending on the application, the classic car suspensions are available in three different damper designs.

KW coilover suspensions

*Sportiness and Outstanding Looks.
With Factory-Set Damping.*

The V1 coilover suspension features a target group-specific, firm damper setup which is set, by vehicle type, after extensive road tests. This means that the VW Golf I Cabrio, for example, would get a more comfortable tuning than the normal VW Golf I. The factory-set damping provides sporty handling with modern ride comfort.

The V1 is available for the Audi V8, Audi 80, BMW E30, Ford Mustang (1979 - 1993 models), Golf I, Golf I Cabrio and Polo 86C.



TVR-A

KW coilover suspensions

*Sportiness, More Body Control or More
Ride Comfort and Outstanding Looks.
With Adjustable Rebound Stage Damping.*

The V2 coilover suspensions also feature adjustable rebound stage damping with TVR-A technology. Adjusting the damper provides more sportiness and body control or more ride comfort. The mid-range basic factory setting is tuned for typical classic cars for road use. For example, in contrast to many sport suspensions on the market which were derived from the VW Golf, special dampers for the VW Beetle were developed with torsion bar suspension as well as coilover struts with two-point and three-point fixing. The strut housings feature sufficient spring deflection to allow a harmoniously sporty and comfortable setup with the classic wheel/tire combinations.

As well as the VW Beetle designs, a suspension for the DeLorean DMC-12 was also developed.



TVR-A TVC-A

KW coilover suspensions

*Performance, High Level of Sportiness and
Comfort Thanks to Racing Technology for the
Road. Separately Adjustable Compression and
Rebound Stage Damping.*

The V3 coilover suspensions feature TVR-A and TVC-A technology and are separately adjustable for the rebound and compression stage. The adjustable spring pre-tensioned low-speed valve provides additional bracing against pitching and rolling while at the same time the maximum cross-section of the low-speed and high-speed valve is opened in the case of sudden wheel-accelerated excitations via the main valve's blow-off feature in order to offer better comfort than with traditional damping technology. This modern damping technology prevents, for example, the typical one-sided squat in water-cooled Porsche models when accelerating in corners, without losing ride comfort.

The V3 is currently available for Porsche (G-models, 964, 993, 944, 968), BMW E9, E30, Ford Mustang (1979 - 1993 models) and Lancia Delta Integrale (EVO). For Porsche G-model and BMW E30 with forged wheel hubs (no major changes necessary).



CUSTOM-MADE ITEMS

of the Highest Standard

In addition to standard developments, we offer drivers of exclusive classic cars the chance to have their own custom-made suspension manufactured in our KW custom construction factory. In the process we take into consideration all requirements that vary considerably with regards to ride height, ground clearance, wheel loads, spring deflection, spring rigidity and damping ratio depending on intended use on the road. This can vary from rallies, participation in classic car rallies or racing in historic motorsports events. Thanks to KW, no classic car driver has to settle for the technology from the era of their car. Depending on the vehicle-specific application, coilover struts or damper housings are made from aluminum, steel or tempered stainless steel and combined with perfectly

optimized KW damper-valve technology (TVR-A, TVC-A and TVCLH-A). These are then tuned on our KW drive dynamics test stand according to objective criteria for the various intended uses. In an extensive tuning and adjustment process, the respective target values are reached without having to drive the precious vehicle. Therefore, keeping the concluding test to a minimum. If desired or required by regulation, after evaluation and approval by the customer, the suspension can also be converted to a non-adjustable variety of damper. Optionally, comprehensive documentation in accordance with our QA processes and the specifications of the TÜV organization instructions enables individual approval and entry in the vehicle's documentation.





“For our BMW ALPINA B3 GT3 and on the race track we rely on KW coilover kits - because our customers expect just the best from an ALPINA.”

ANDREAS BOVENSIEPEN
Managing Director ALPINA



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at Page 116

TRACK PERFORMANCE

This range of suspensions was developed for use on race tracks around the world. It offers the perfect tuning in various designs for every application. The KW Competition Racing coilover suspension is available in two damper designs for leisure sports and for use in top class international motorsports. Here the range of applications from series production is sufficient, for example for the MINI Challenge right up to customized solutions with innovative setups from the KW 7-post drive dynamics test stand for series such as the FIA GT 1, GT 3 and WTCC. KW Competition's racing

technology is not just superior in terms of performance, but also in quality, which is supported by six overall victories in ten years at the Nürburgring 24-hour race as well as countless class victories. Our in-house KW motorsports department has their own structures at their disposal. These allow the specially-assigned team to meet the customers' demands in a flexible, goal-oriented way. The KW Clubsport range, on the other hand, was developed for the passionate sports driver and for use at track day events. This design is also available in two damper varieties.

KW clubsport 2-way

Coilover Suspension with Sports
Tire-Setup for Clubsport Vehicles.



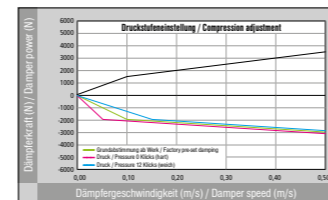
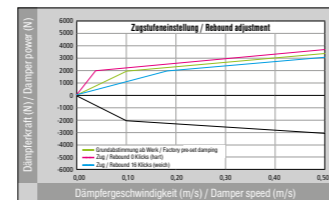
A Street-Legal Race Track Feel! KW Clubsport provides cutting-edge motorsports technology for the sportiest of road vehicles with a sports-tire setup for use on the race track and on the road. KW Clubsport was developed specifically for customers who want to use their road vehicle on the race track, e.g. for tourist drives, sports driver courses or other track sport events and need it to be street-legal so that they can drive their car on public roads. The setup was specially designed for the North Loop and the use of sports tires. The height-adjustment possibilities enable the adaptation of the wheel loads. The aforementioned adjustment possibilities, combined with the separately adjustable damping technology for the compression and rebound stage (TVR-A and TVC-A technology) enable customized setups appropriate for the vehicle weight, the tire characteristics, various road conditions and driving conditions.

- Customized Suspension Lowering
- Rebound
- Compression (Low)
- Aluminum Uniball Top Mount / Adjustable
- Composite Spring Seat
- Trapezoidal Thread
- INOX LINE
- Reservoir
- 7-Post Tested
- Technical Component Report

± REBOUND
16 clicks

± BUMP
12 clicks

TVR-A
TVC-A





KW clubsport 3-way

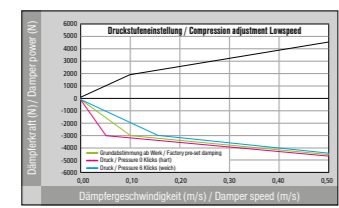
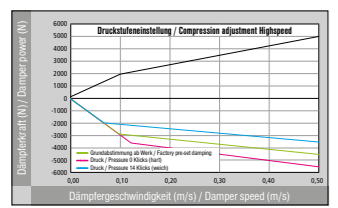
Track Performance with Sports Tire-Setup
for Street-Legal Clubsport Vehicles.

The vehicle-specific basic setup of the KW Clubsport 3-way coilover suspension which was developed in numerous test drives and measurement runs on the North Loop and the KW 7-post drive dynamics test stand, can be adjusted via click dial for wheel loads, vehicle weight and altered body rigidity via a bolted cage, welded safety cell or strut brace. Similarly to the KW Competition racing suspensions which are used in international motorsports, it allows for the separate compression stage fine-tuning of the KW Clubsport 3-way coilover suspension in the low-speed and high-speed ranges. The click-setting of the TVCLH-A technology (Twin Valve Compression Low Highspeed Adjustable) is done directly on the reservoir.

You can vary the low-speed compression stage on the purple adjusting dial by hand with six precise click settings. With the gold-colored adjusting dial below that, you can individually change the high-speed compression stage of the recommended basic setup for your track day with 14 precise clicks. Independently of this, you still have 16 clicks at your disposal which allow you to noticeably adjust the rebound stage damping. If you want to adjust the KW Clubsport 3-way coilover suspension – which is available with a technical component report – to a more comfortable setting for the drive to the North Loop or another race track, you can simply reduce the rebound forces via the rebound stage damping.



-  Customized Suspension Lowering
-  Composite Spring Seat
-  Trapezoidal Thread
-  INOX LINE
-  **± REBOUND** Rebound
-  **BUMP** Compression (High&Low)
-  **7-POST** 7-Post Tested
-  Aluminum Uniball Top Mount / Adjustable
-  Technical Component Report
-  Reservoir
-  **TVR-A** Rebound Stage Damping
-  **TVCLH-A** Compression Stage Damping
-  **± REBOUND**
16 clicks
-  **BUMP**
HIGH/LOW
14/6 clicks









KW competition 2a

2-Way Adjustable Racing
Damper Technology.

The KW Competition 2A are available as TwinTube TT2A or SingleTube ST2A 40P-version with 40mm upside-down cartridge and separate compression and rebound adjustment. They build the basis of an extensive racing suspension program for demanding mass- and customer motor sport. Available as vehicle-specific development or even as an individual customized production. KW Competition suspensions are available with galvanized steel housings or in a lightweight aluminum construction for circuits, hill-climbing, slalom or rallies.



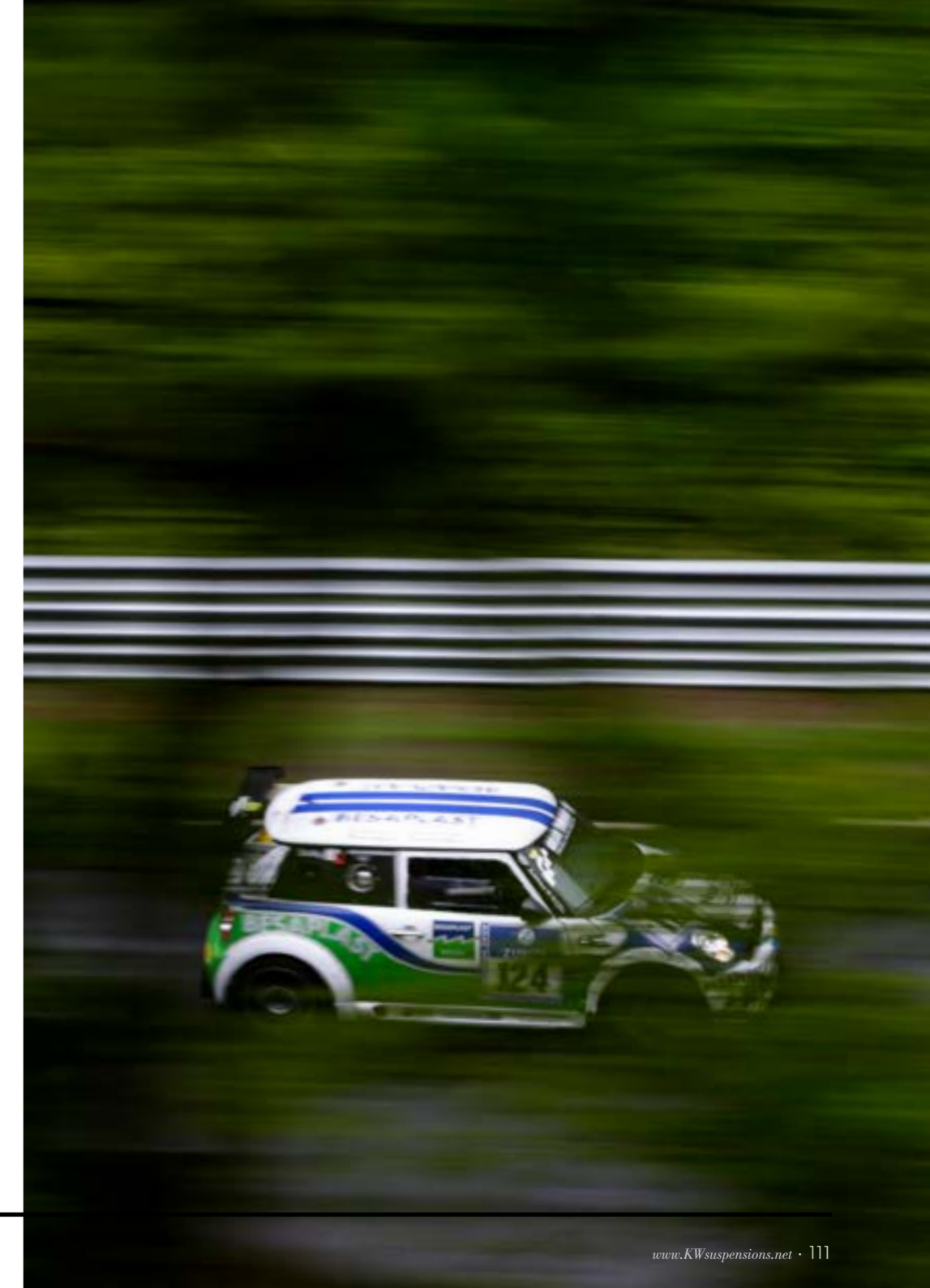
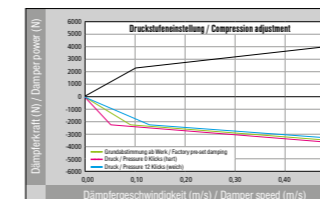
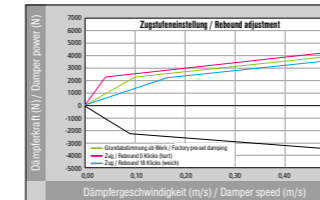
-  Customized Suspension Lowering
-  Rebound
-  Compression (Low)
-  7-Post Tested
-  Aluminum Uniball Top Mount / Adjustable
-  Reservoir

± REBOUND
16 clicks

± BUMP
12 clicks

TVR-A TVC-A

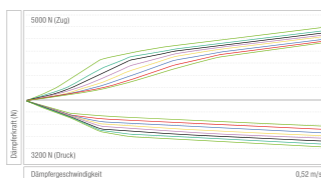
- TwinTube and SingleTube dampers
- Separate compression and rebound valve
- 2-way adjustable
- Dampening adjustment:
Rebound 16 clicks
Compression 12 clicks
- Extensive characteristic design
- Piston rod diameters: 15mm, 18mm, 22mm and 25mm
- Piston diameters: 27mm, 30mm, 33mm, 36mm and 40mm
- Damper or height-adjustable racing coilover struts in TT-version
- McPherson-struts in TT or upside-down version ST 40P
- Housing made of high-strength aluminium or in galvanized steel





- SingleTube dampers
- Separate compression and rebound valve
- 2-way adjustable
- Damping adjustment: Rebound 16 clicks / Compression 15 clicks
- Extensive characteristic design
- Piston rod diameters: 18mm or 22mm
- Piston diameters: 36mm or 40mm
- Damper or height-adjustable racing coilover struts in STR2A-version
- McPherson-struts in inverted version STR2A 40P or STR2A 45P
- Pressure compensation tank as piggyback (rotatable up to 360°) or with hose connection for an installation independent of construction
- Optionally: upgrade to 3-way adjustment

Dämpfungseinstellbereich
Damping adjustment range



- ↓ Customized Suspension Lowering
- ± REBOUND Rebound
- ± BUMP Compression (Low)
- 7-POST 7-Post Tested
- Reservoir

± REBOUND 16 clicks ± BUMP 12 clicks

TVR-A TVC-A



KW competition 2a EXR

2-Way Adjustable Racing Damper
Technology with Reservoir.







The KW Competition 2A EXR are the consequent further development of the 2-way adjustable racing dampers for the use in GT4 and TCR racing. STR2A stands for SingleTube damper technology with 2-way adjustable valve technology and separate reservoir. The damper forces are generated on the working piston and the compression valve in the expansion tank. Due to the position-independent reservoir, the gas volume can be adapted to the damper stroke and higher damping forces can be realized with a lower static gas pressure than with 1-pipe gas pressure dampers without separate pressure stage bottom valve. The KW Competition 2A EXR are also available for McPherson axles in upside-down version STR2A 40P and STR2A 45P with 40mm or 45mm plain bearings.

KW competition 3a

3-Way Adjustable Racing Damper
Technology with Reservoir.

KW Competition STRS3A are SingleTube dampers with reservoir, coil spring valve technology and 3-way damper force adjustment. The basic compression stage has an individually pre-configurable midspeed valve, in addition to the high speed and low speed compression adjustment, the transition point from a progressive to a digressive characteristic curve can be varied. The adjustable rebound stage can be optimally configured for the intended purpose by an extensive number of needle valves and coil springs with a linear, progressive or digressive characteristic. The STRS3A technology convinces by a maximum reliability and low maintenance effort. For McPherson-axes with 40mm Inverted damper cartridge as STRS3A 40P plain bearing or in the unique friction-optimized linear bearing version STRS3A 40L. For the rally use with standpipe diameter 45mm and 50mm available as KW Competition STRS3A 45P or STRS3A 50P.



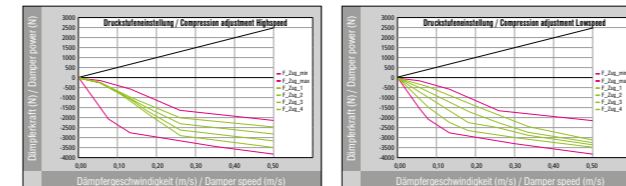
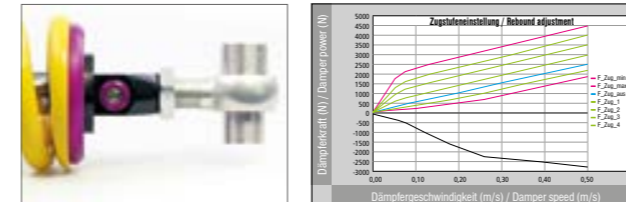
-  Customized Suspension Lowering
-  Rebound
-  Compression (High&Low)
-  7-Post Tested
-  Aluminum Uniball Top Mount / Adjustable
-  Reservoir

± REBOUND
18 clicks

BUMP
HIGH/LOW
18/18 clicks

TVR-A TVGLH-A

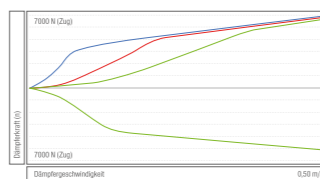
- SingleTube
- Separate compression and rebound valves
- 3-way adjustable
- Damping adjustment:
 - 18 or 22 clicks rebound
 - 18 clicks compression damping in low speed
 - 18 clicks compression damping in high speed
- Pre-configurable compression-midspeed-valve
- Individual characteristic design for a linear, progressive or digressive characteristic
- Piston rod diameters: 18mm or 22mm
- Piston diameters: 35mm, 36mm, 40mm and 43mm
- Damper or height-adjustable racing coilover struts in STRS3A-version
- McPherson-sturts in upside-down-version STRS3A 40P or STRS3A 45P
- Linear bearing version with 40mm upside-down cartridge STRS3A 40L



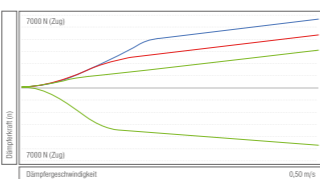


- TwinTube damper
- 4-way adjustable
- Valve arrangement for a cavitation-free function
- Solid slave piston 35mm
- Piston rod 15mm
- Separate low speed and high speed rebound and compression damping valves with plate spring
- Individual characteristics design, force range 1000N to 8000N
- Damper adjustment:
 - Rebound low speed and high speed 18 clicks each
 - Compression low speed and high speed 18 clicks each
- Rotatable pressure compensation tank as piggyback (45° positions) or with hose connection
- Low gas pressure, gas volume adapted to damper stroke
- Dampers or height-adjustable racing coilover struts
- Housing made of high-strength aluminium
- Optionally with adjustable blow-off

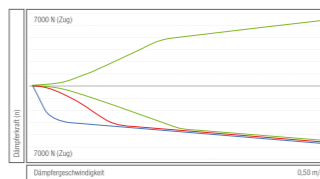
Einstellbereich Zugstufe Low speed
Adjustment range rebound low speed



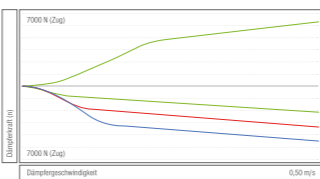
Einstellbereich Zugstufe High speed
Adjustment range rebound high speed



Einstellbereich Druckstufe Low speed
Adjustment range compression low speed











Einstellbereich Druckstufe High speed
Adjustment range compression high speed



KW TTSP35 4A

4-Way Adjustable Racing Dampers
and Racing Suspensions.



-  Customized Suspension Lowering
-  Rebound (High&Low)
-  Compression (High&Low)
-  Solid Piston Technology
-  7-Post Tested
-  Reservoir
-  Rebound Stage Damping
-  Compression Stage Damping



The new KW Competition TTSP35 4A TwinTube damper has a precise 4-way damper adjustment in low speed and high speed forces of the compression stage as well as the rebound stage with 18 clicks each. Its functional principle with solid slave piston allows an direct reaction even at the lowest strokes. The new KW valve technology with plate springs allows an individual characteristic design and covers a large force range of 1000 to 8000N. Depending on the requirements, the modular built damper can also be extended with an additional blow-off characteristic. The valve arrangement ensures a cavitation-free function at a low gas pressure. Due to its construction-independent use possibilities, the damper is suitable for any type of non-wheel-guiding axle constructions such as double wishbone or pushrod suspensions. The external reservoir is connected to the damper either directly as a piggyback or via a hose connection.

NEW
in the range

KW TTSP35 5A

5-Way Adjustable Racing Dampers
and Racing Suspensions.

The new KW Competition TTRS35 5A TwinTube damper has a precise 5-way damper adjustment in low and high speed forces of the compression as well as the rebound stage with 18 clicks each. The functional principle with solid piston allows a direct response even at the smallest strokes. The new KW valve technology with plate springs allows an individual characteristic design and covers a large force range of 1000 to 12000N. Depending on the requirements, the modular built damper can also be extended with an additional blow-off characteristic. The valve arrangement ensures a cavitation free function at a low gas pressure. Due to its construction-independent use possibilities, the damper is suitable for any type of non-wheel-guiding axle constructions such as double wishbone or pushrod suspensions. The external reservoir is connected to the damper either directly as a piggyback or via a hose connection.



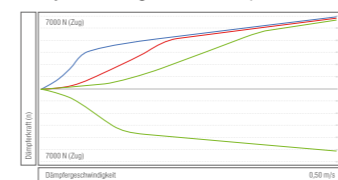
- TwinTube-damper
- 5-way adjustment
- Valve arrangement for a cavitation-free function
- Solid-Piston-diameter 35mm
- Piston rod diameter 15mm
- Separate compression and rebound valves in High and Lowspeed with Belleville Washers
- Individual characteristic curve design with a force range 1000N to 12000 N at 0.5 m/s
- Damping adjustment:
Rebound Low/Highspeed 18 Clicks
Compression Low/Highspeed 18 Clicks
- Optional with 12-way adjustable Blow-Off
- Inline reservoir
- Pressure compensation tank as piggyback (rotatable up to 45°) or with hose connection for an installation independent of construction
- Damper or height-adjustable racing coilover struts
- Housing made of high-strength aluminium



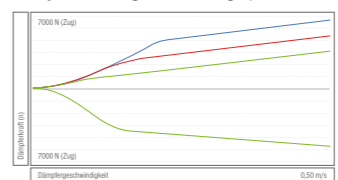
SPRLH-A SPCLH-A



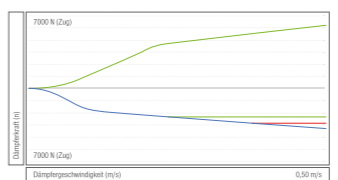
Einstellbereich Zugstufe Lowspeed
Adjustment range rebound lowspeed



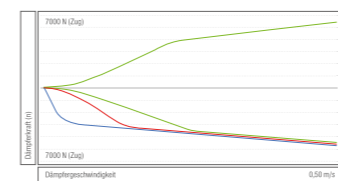
Einstellbereich Zugstufe Highspeed
Adjustment range rebound highspeed



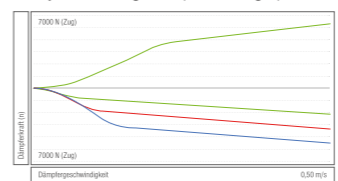
Druckstufeneinstellung Blow-Off
Compression adjustment Blow-Off



Einstellbereich Druckstufe Lowspeed
Adjustment range compression lowspeed



Einstellbereich Druckstufe Highspeed
Adjustment range compression highspeed



- Customized Suspension Lowering
- REBOUND HIGH/LOW
- BUMP HIGH/LOW
- BLOW OFF
- TTSP
- 7-POST TESTED

KW PERFORMANCE ACCESSORIES

KW Wishbone Retrofit Kit for the Rear Axle

Enable vehicles with lower suspension to achieve the camber values recommended by the manufacturer.

- Strength Tested
- Reduced Tire Wear
- Ideal Axle Adjustment Options
- Galvanized and Powder-Coated for Optimum Corrosion Protection
- With Technical Component Report



KW Clubsport Toe Link Kit HA

Extended toe adjustment range for best track performance at maximum camber

- Sealed Hirschmann Automotive uniball joints
- User-friendly thanks to right/left-hand thread
- Including technical component report.



KW Rebound Damping Control Extension

Extension for the rebound stage adjustment, from 100 to 350 mm



KW Top Mount

- Scaled camber adjustment (also caster, as optional)
- Sealed uniball bearing, pre-tensioned in loading direction
- Axial bearing as torque compensator on McPherson struts



KW STABILIZERS

High-Precision Performance in Every Sporty Driving Situation.



The sports stabilizers enable the fine-tuning of your car's handling, reduce body roll by means of high rigidity and provide increased stability. This improves the handling which provides better traction in every sporty driving situation. KW sports stabilizers are manufactured for high-precision performance using cold-formed, heavy-duty aircraft tubing and coated with a durable powder coating. Included in the package are the hardware for fitting and the simple installation instructions.

- Reduces lateral tilt when cornering and changing direction quickly
- Undiminished suspension comfort in case of bilateral compression
- Reduction of load differences between inner and outer wheel path
- Positive influence on under or over-steering tendencies (self-steering properties)

KW HIGH-PERFORMANCE RACING SPRINGS

For Better Looks and Even More Driving Dynamics – in OEM Quality.



KW high-performance racing springs are made from specially alloyed and tempered spring steel and the high loading capacity of the material that enables new spring designs with smaller wire diameter. This makes the springs up to 30% more effective than the conventional racing springs.

KW TOOLBOX



KW Toolkit

- For the fitting of all common top mount designs and damper attachments
- For the fitting and removal of connected strut fixtures
- For the replacement of the KW damper cartridge
- Also available ON LOAN for a deposit!

Glass Damper Presentation Box



KW Suspension Accessories Kit

Replacement Parts Box



KW REPLACEMENT PARTS

Over the past years we have continually developed our KW coilover suspensions, so certain components may have different dimensions. To help us provide your replacement parts as soon as possible, please proceed as follows:

Provide the suspension guide number and article number 100% guarantee that we will send you precisely-fitting replacement parts! For replacement part orders please ALWAYS provide the suspension guide number and article number. You will find these:

on the certificate of guarantee



OR

on the strut



KW Composite Spring Seat
Inox Line and Basic

1

KW Coilover Spring Seat
for Steel Coilover Suspensions

1



KW Hook Wrench

Upper KW Polyamide Spring Seat

2



KW Rear Axle Height Adjustment



KW Elastomer for Piston Rods

3



Aluminum Uniball Top Mount (Optional)

Polyamide Spring Seat

2

Flat Wire Pre-Tensioned Springs

Compression Buffer with
Integrated Dust Protection System

3

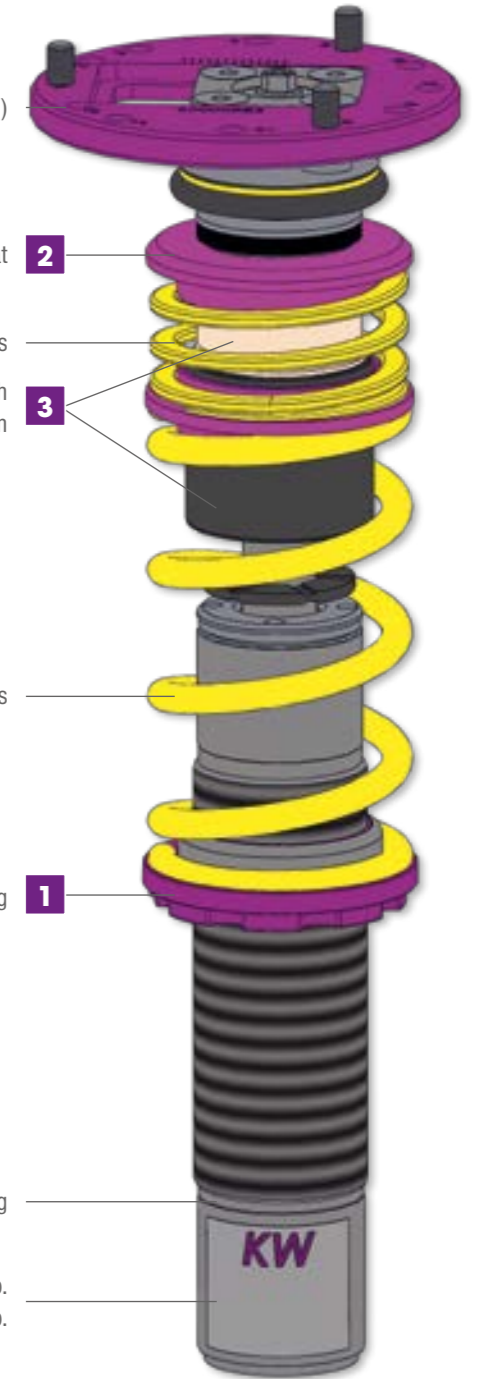
Highly Stiff Springs

Composite Threaded Ring

1

Inox Line Stainless Steel Strut Housing

Strut Label with art. no.
and suspension guide no.





KW Softshell Jacket men

KW MERCHANDISING & COLLECTION



KW Work Pants similar to illustration



KW Work Shorts similar to illustration



KW Mechanic's Gloves



KW Precision Mechanic's Gloves



KW Windshield Sticker



KW Cup



KW Height-Adjustable Pen Holder



KW License Plate Holder



KW Beanie



KW Backpack



KW Director's Chair Set



3D - T-Shirts men



Basic T-Shirt men



Polo shirt men



KW Trucker Cap



Sticker Colored



Sticker Black



Sticker Silver



Sticker White



Sticker Chrome



All merchandising and collection items can be found in the promotional flyer or at www.KWsuspensions.net



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