GOLDSCHMITT®

THE DRIVING EXPERIENCE

www.goldschmitt.de

Full Air Springs

Alloy Wheels

Upratings

Goldschmitt.techmobil

Levelling Systems

Coil Springs

Auxiliary Air Springs

info@goldschmitt.de

Navigation is everything.

We get you to your destination quickly and safely to keep you from fumbling around in the dark.

No need to hesitate. Just ask!

Our employees are happy to help and advise you on request.

0 62 83 / 22 29-100 **info@goldschmitt.de** **www.goldschmitt.de**

Leaf or coil springs? Auxiliary air springs or full air suspension? Don't worry. We know how extensive and complex the world of chassis and suspension technology is. This is why we would like to help if you have questions about our products or services. From Monday through Friday, we are on hand and ready to help with your request. Simply write us an e-mail, use our online contact form, or call us on the phone if you would prefer a friendly voice on the other end of the line. Alternatively, you can leave feedback on our official Facebook page or send us a private message. We look forward to speaking with you.

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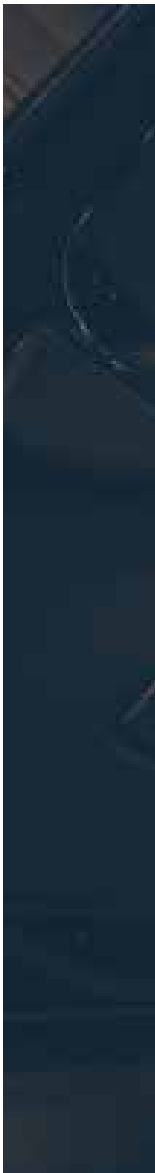
Not all chassis are the same.

Why chassis optimisation is essential in many cases.



Transportation vehicle models are produced in a wide variety of designs that then cover countless industries and applications. It is for this reason that automakers have to accept many compromises in the area of suspension and chassis. Optimal suspension for a tool truck can have dire consequences for a patient in an ambulance. This is by no means intended to be criticism of automakers. From the manufacturing side, it is simply not possible to configure an appropriate chassis setup for every intended use.

Transport vehicle manufacturers like Ford, Renault, Fiat, Volkswagen, Opel, Mercedes and Iveco utilise compromise solutions in their chassis tuning that are normally designed for a transition from empty to full load. In the event of continuous high loads, as is the case for motorhomes, ambulances, sales vehicles and tool trucks, the standard steel springs lose their original tension force after just a short period of time. Fatigue on the original springs reduces the spring travel and road clearance. Significantly worse driving comfort and driving safety are the logical result.

Chassis optimisations from Goldschmitt let you feel safe and secure on the road once again. Goldschmitt has the right solution for every requirement and application area. Whether leaf, coil or air springs, the upgradeable chassis solutions from Goldschmitt ensure greater suspension comfort, better road handling and increased safety for your transporter vans.

Keeping the law in mind.

The gross weight of a vehicle plays a significant role in every industry.

Automakers and customers keep a close eye on the 3.5 tonne limit because this weight class offers a variety of financial benefits, such as on tollways and ferries. In addition, 3.5 tonne vehicles are subject to the traffic laws for cars and only need a corresponding class B driving licence. It is important to keep a close watch on the weight of your motorhome or transporter van, however, and not to underestimate the weight. Recreational vehicles with heavy interior fittings, industrial vehicles with a workshop setup and ambulances with their specialised equipment can all quickly end up exceeding the limit for the permitted gross vehicle weight rating, or may have done so from the start. If you are caught by the police while driving an overloaded vehicle, you will be subject to the force of law. This can mean more than just a hefty fine. Insurance agencies classify exceeding the gross vehicle weight rating as grossly negligent conduct. In this case, it does not matter if you are driving a motorhome or an industrial vehicle. Don't let this happen. Upgrade your vehicle's weight rating accordingly. This lets you feel safe and secure on the road once again.

What is uprating, exactly?

Uprating, load capacity, gross vehicle weight: We are here to explain these key terms.

Every vehicle has a **gross vehicle weight rating** entered on the vehicle registration by the vehicle manufacturer. This weight refers to the maximum permitted vehicle weight, including the passengers and load capacity. If you subtract the empty weight of the vehicle from the permitted gross weight, you have the maximum load capacity you are allowed to carry in your vehicle. This weight is referred to as the **load capacity** and you should never exceed this value. If you require a higher load capacity in your vehicle, you can increase the gross vehicle weight rating by increasing your vehicle's weight rating, a process known as **uprating**. Depending on the vehicle model, uprating can be implemented by installing an auxiliary spring and changing the tyre and wheel combination. Contact us if you need to increase the load capacity of your motorhome, transporter van, ambulance or tool truck. As a result of decades of experience, we guarantee professional advising and the perfect solution to meet your needs.

Uprating

The gross vehicle weight rating of a vehicle should never be exceeded. Doing so can be both dangerous and costly. Uprating gives you a big boost to load capacity and driving safety based on your vehicle type.

Auxiliary springs

Most means of uprating require making modifications to the chassis. Installing additional or reinforced spring elements can increase the axle loads and the gross vehicle weight rating of a vehicle. Depending on the vehicle model, a variety of suspension systems are available for uprating: Leaf springs, coil springs, auxiliary springs or full air suspension systems.

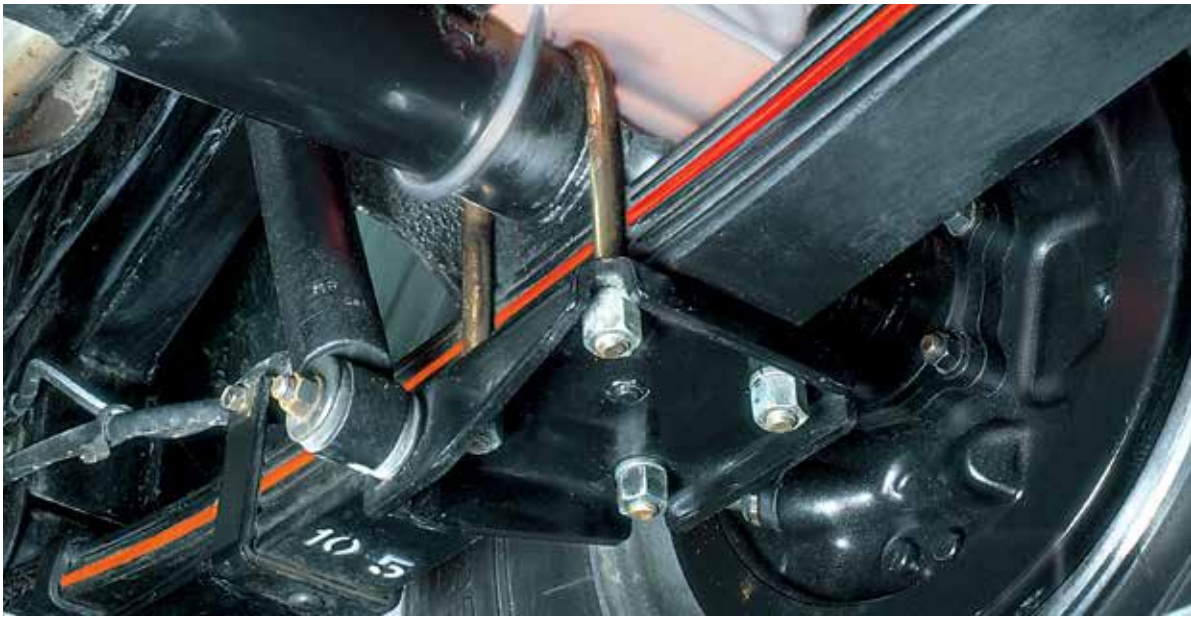
Aluminium rims

Some vehicles require more than just a modification to the chassis to achieve an increased vehicle weight rating. If the standard rims are too weak, special aluminium rims often have to be installed along with mounting corresponding tyres.

Leaf springs – The simple variant.

Leaf springs have been meeting the most challenging requirements in the recreational and professional applications for many years.

Leaf springs have been meeting the most challenging requirements for many years, both on transporter vans for industrial uses as well as in the leisure industry. Motorhomes normally ride on rear axles with leaf springs, just like tool trucks and ambulances. Although standard leaf springs are designed merely for shifting between a full load and an empty state, they have a virtually impossible task. The heavy additions in motorhomes and ambulances as well as the equipment in tool trucks, armoured cars and livestock transporters lead to fatigue in standard springs on the rear axle even after just a short while. The consequences for occupants as well as cargo and equipment are very alarming. Hard impacts and poor driving characteristics are the unpleasant and dangerous results of overloaded standard leaf springs.



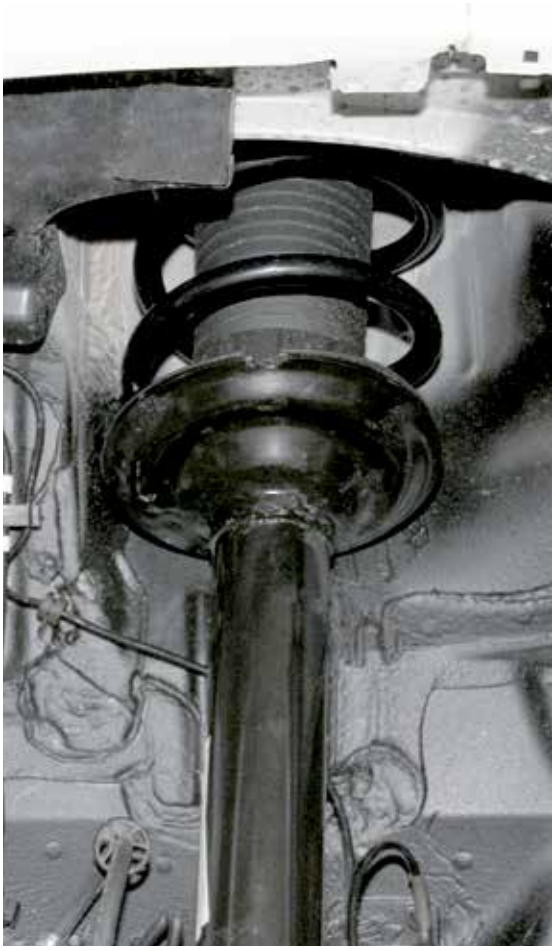
Our upgradeable leaf springs provide more tension and spring force back to the chassis of your motorhome, transporter van, ambulance or tool truck. High-quality steel and specially rolled spring ends ensure reduced susceptibility to side winds, better cornering stability and easier handling. Auxiliary leaf springs provide an efficient, affordable means of compensating for massive workshop installations and heavy equipment. Sagging spring assemblies can have the majority of their original tension restored by installing an additional leaf, leading to a clear increase in the height of the rear of the vehicle. It is possible to upgrade the axle load rating and the gross vehicle weight rating of most motorhomes and transporter van chassis using Goldschmitt suspension systems (page 6). We would be happy to advise you about uprating over the phone or on-site at one of our Goldschmitt Technik-Centers.

Coil springs – For a stable front end.

Strong coils for overloaded front axles on motorhomes and commercial vehicles.

Transporter van manufacturers like Fiat, Ford, Iveco and the like do not design their chassis based primarily on the fact they will be used for motorhomes, industrial vehicles or ambulances later down the line. At this early stage, the chassis is designed for the express purpose of being a simple beast of burden. Transforming a Ducato, Transit, Daily or others of their load-bearing ilk into a motorhome, sales vehicle or TV broadcast vehicle usually leads to the following: The chassis is often overwhelmed with the load of the heavy special installations and overloaded in the truest sense of the word. Even on vehicles with a high front axle load, the front coil springs are often put under such a heavy strain that they fatigue in no time at all and are simply no longer up to the task. The vehicle literally buckles under the strain and severe impacts are felt by the occupants and the sensitive interior directly. A decline in driving comfort is often linked with fatigue in the original springs.

Active beyond the leisure industry: In close co-ordination with various manufacturers, we offer a variety of chassis components for pick-ups and off-road vehicles that improve suspension comfort and driving characteristics and enable the use of heavy attachment parts such as snowploughs, spreaders or road sweepers. Coil and air springs ensure higher resting spring travel, providing better driving characteristics and greater safety.



But there is no need to worry. We have a suitable solution available for these kinds of problems. Because the standard springs are not capable of bearing these kinds of heavy loads continuously, reinforced coil springs have to take up the task. Our coil springs are used to replace the overloaded standard springs. This can raise your vehicle at the front axle by as much as 100 millimetres, depending on the model. The optimised spring travel significantly improves driving characteristics, comfort and safety. Your vehicle is once again able to handle potholes and uneven road surfaces perfectly, protecting sensitive furniture and installations. But reinforced Goldschmitt springs can optimise more than just comfort and driving characteristics. Many vehicles run at the edge of allowances with their weight. Installing reinforced suspension systems can achieve an increased axle load rating and gross vehicle weight rating on many vehicles. You can find more information at page6.

On the preceding pages you learned about conventional methods necessary in the event of overloaded front axles. But exceptions also prove the rule in chassis and suspension technology. Motorhomes and transporter vans differ by more than just the way they look. While the front axle of most vehicles is equipped with coil springs, Mercedes uses built-in leaf springs in the transverse direction for its Sprinter series. Aftermarket reinforcement was possible by means of reinforced leaf springs in the past, but it rarely had the desired effects for top-heavy vehicles.

Custom solution for Sprinter and Crafter chassis

However, we have an innovative new solution for your Sprinter and the VW Crafter with the same design. An additional coil spring installed above the standard shock absorber supports the transverse leaf spring and raises the front end of your vehicle by as much as 35 millimetres. This significantly increases driving comfort, reduces roll tendency and has a positive impact on driving characteristics. The installation of the additional springs can also increase the weight rating of the front axle of the Mercedes Sprinter and VW Crafter as well. This gives you a significant boost in load capacity and driving safety.

Are you familiar with our SprinterPLUS+ packages? The complete packages are designated as Basic, Smart, Complete and Premium and, depending on the version, contain coil springs for the front axle, air springs for the rear axle, spacers or aluminium rims. These high-quality optimisation packages increase the comfort and safety of the chassis of your Mercedes Sprinter and add to the appealing design.

RouteComfort – Front axle optimisation for Fiat panel vans.

RouteComfort is the name of the new front axle optimisation process developed by our technicians for Ducato panel vans. The specially tuned spring/shock unit provides a quieter and more comfortable driving experience, especially on camping buses. The differences are striking even on smooth roads, but they are truly spectacular on uneven roads or cobblestone. Together with optimisation of the rear axle using auxiliary coil springs or auxiliary air springs, you can achieve unprecedented ride comfort in your camper. In addition, RouteComfort is available for both the light and heavy variant of the Ducato.

Coil springs – Support for your rear axle.

Maintenance-free support for increased safety, better comfort and more stable driving characteristics.

Coil springs are the classic choice among spring suspensions. They can be found on the chassis of almost every car and transporter nowadays. While coil springs at all four wheels normally absorb the shocks from uneven road surfaces in cars, the suspension on a transporter van usually only has coil springs on the front axle (page 10). Leaf springs or torsion bars are used on the rear axle. Because manufacturers do not primarily design their chassis with the intention of it being used as a motorhome or emergency vehicle later, the original springs often end up overloaded and have to be reinforced accordingly for their field of application.

In addition to our leaf springs (page 8), coil springs can be used as additional spring reinforcement in transporter vans and motorhomes operated with a high rear axle load. The coil springs are used in addition to the leaf springs on the rear axle. This raises the overloaded vehicle rear end, considerably enhances ride comfort and minimises side wind sensitivity which specifically has unpleasant effects on the handling of vehicles with a high centre of gravity.

Uprating possible

Our coil springs give you the option of increasing the axle load ratings and gross vehicle weight rating of most chassis (page 6). We would be happy to advise you over the phone or at one of our Goldschmitt Technik-Centers in Walldürn, Polch or Leutkirch.

The alternative to leaf springs: Auxiliary coil springs for the rear axle are fitted in addition to the production suspension. They ensure greater safety and ride comfort. In addition, they allow the axle loads and the permissible gross vehicle weight to be increased depending on the vehicle model.

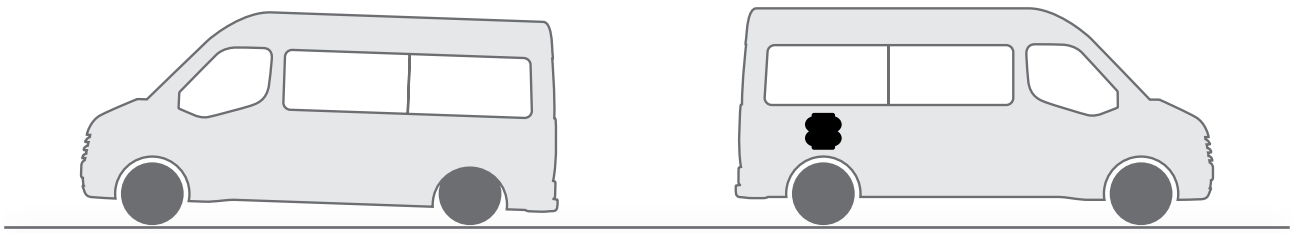
Auxiliary air springs – The flexible solution.

Auxiliary air springs help support standard springs and increase the comfort and safety of the chassis.

Motorhomes and many specialised vehicles both struggle with a number of inherent disadvantages: Continuous loading with frequent, severe changes in load distributions, heavy fittings and weighty equipment. The standard steel springs in most motorhomes all too quickly reach their limits. They have the great disadvantage that they lose tension under continuous loading and the chassis is no longer able to meet expectations. With the brand new vehicle still operating reasonably well, the ageing leaf, coil or torsion bar spring often lead to a noticeable drop in comfort and driving safety after just a few months. Fatigue in the spring steel also causes the vehicle to literally sag at the rear axle, preventing the spring action from offering the same performance. Auxiliary air springs are here to help. They raise the rear of your vehicle and provide greater suspension comfort.

Adaptability thanks to control unit and compressor.

Auxiliary air springs, as the name implies, are installed between the vehicle frame and axle in addition to the standard steel springs. They are the most flexible of all auxiliary springs and offer a wide assortment of benefits compared to just having steel springs. Unlike mechanical springs, which get shorter or longer when they are compressed, the internal pressure in an air bag does change under different loading but the inherent geometry does not change. The air springs compensate for the higher load just by using a correspondingly higher counterpressure in the air bags. This ensures an even ride height throughout the entire vehicle life. The air pressure in the air bags can be controlled conveniently from the cabin using a control unit and standard compressor. This makes it possible to raise up the rear of heavy motorhome or tool trucks permanently or intermittently in cases where you have to drive over steep ferry ramps, rough patches of road or other obstacles. An auxiliary air spring can help prevent getting hung up, and the associated damage to the rear or side skirt. Auxiliary air springs reinforce the standard steel suspension system, even out load differences in the vehicle, improve driving characteristics and, if necessary, allow for raising the rear of the vehicle. If the standard load capacity of your vehicle turns out to be insufficient, it is possible to increase the load capacity of many common vehicle types (page 6).



On vehicles with a high rear axle load, the standard steel springs are often overwhelmed. The rear of the vehicle drops down, negatively affecting the suspension comfort.

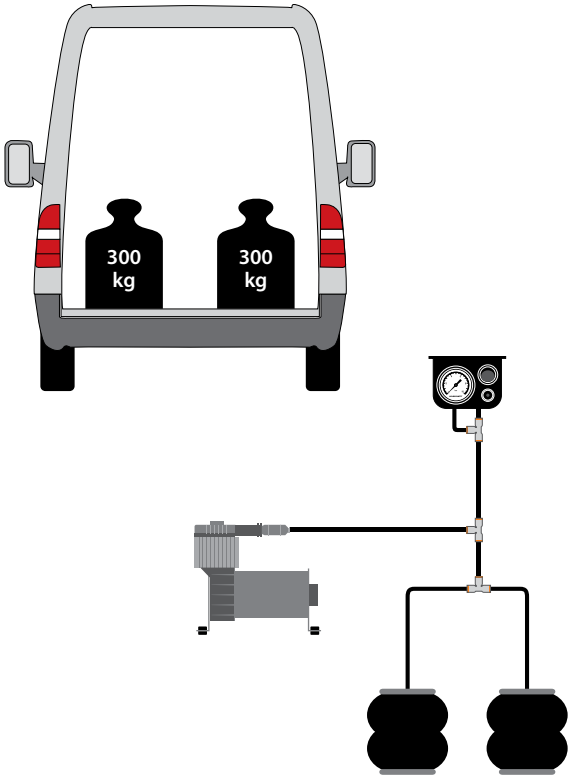
The auxiliary air springs raise the rear end and ensure sufficient spring travel. For unsettled loads, the air bags offer flexibility for filling and emptying.

The right system for every intended use.

We have designed Goldschmitt air suspension systems to make everyday work easier and make driving safer and more comfortable. Because each vehicle differs in terms of its construction and load and offers its distinctive individual benefits, we offer two different auxiliary air suspension systems: The 1-circuit system and 2-circuit system. The following is an introduction to both variants. If you want to come in for a technical consultation and learn more, we look forward to a friendly visit.

1-circuit system: for vehicles with uniform rear axle load

The 1-circuit system fills or empties the rear axle air spring centrally via a shared air line or via a shared air circuit. The air pressure is controlled and monitored at a control unit that includes an individual – optionally illuminated – pressure gauge in the cab. As a result, only the height level of the rear axle can be controlled simultaneously. A single-sided lowering of the air spring with an uneven load is not possible. Therefore, the 1-circuit system is only to be recommended for vehicles with an even rear axle load.

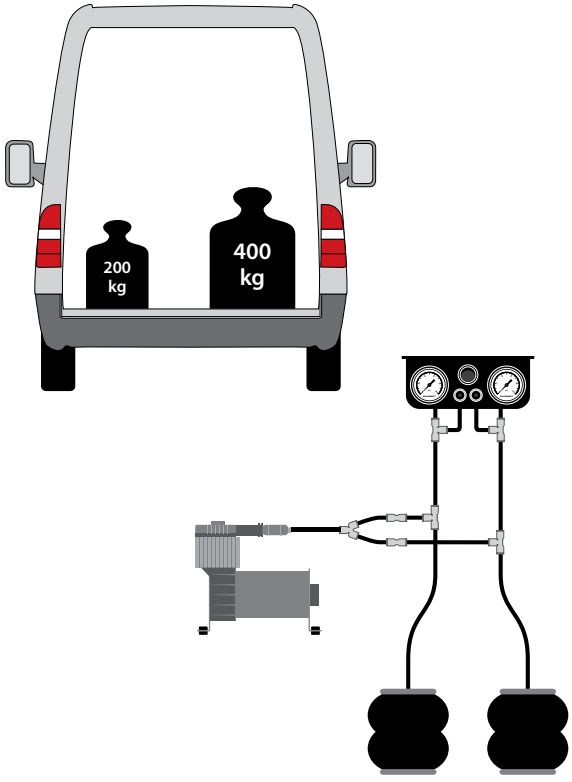


All included: Each of our additional air suspension systems include a high-performance compressor and an in-cab control unit with single or double pressure gauge in the scope of delivery. This enables you to easily and conveniently monitor the air pressure in your air suspension system from the cab and adjust it as necessary.

Auxiliary air springs help relieve the excessive load on the steel springs of the rear axle and restore maximum comfort and safety to the chassis of motorhomes, pick-ups and heavy industrial or special vehicles. The standard in-cab control unit including pressure gauge and compressor enables you to raise and lower the rear axle of your vehicle depending on the needs and requirements.

2-circuit system: For vehicles with different rear axle load

Vehicles with different wheel loads frequently tilt to one side and steer unevenly. Steel springs make it impossible to correct the uneven levels. This is not the case with a 2-circuit air suspension system. The air bags are supplied with compressed air through two separate circuits. Using a control unit including a double pressure gauge (with optional illumination), the air pressure of both bags can be monitored and controlled separately from each other. Therefore, the 2-circuit system is recommended only for vehicles loaded on one side, as differences in load can be compensated for easily.



Always keep an eye on things: To ensure you have a complete overview of your system at night, we also offer our illuminated pressure gauges as an optional upgrade package. The integrated LED illumination lets you keep an eye on your air suspension system, even at night. An integrated pressure switch also provides a visual warning of a drop in pressure in the air suspension system.

You are able to check your air suspension system conveniently and flexibly thanks to the control unit, pressure gauge and high-performance compressor.

Have you even been frustrated by long lists of surcharges when buying a car or motorhome? If so, we have something in common. We want to do something about that and set a new precedent in the accessories industry. Our goal is to not only offer complete systems, but the most complete systems available. Simply compare for yourself. You will soon see that this is not just a vague promise. Each of our additional air suspension systems include a high-performance compressor and control unit including pressure gauge as a matter of course. We would like to offer you the luxury of easily and conveniently monitoring and operating your air suspension system from the cab. Gone are the days when you had to fetch the heavy compressors from the garage or even drive to the next petrol station in order to fill the air bags. Thanks to our complete systems with control unit, pressure gauge and high-performance compressor, you are able to adapt the air pressure to the respective load at any time, quickly and conveniently.

Always keep an eye on things even at night

Another option that will make operating your air springs easier in future is the illuminated pressure gauges. They are available as an optional upgrade package for each additional air suspension system. The integrated LED illumination lets you keep an eye on your air suspension system, giving you a clear overview, even at night. An integrated pressure switch also provides a visual warning of drop in pressure in the air suspension system.

Perfect appearance for your vehicle

In the motorhome industry, both perfect function and aesthetics are important. Therefore, we have developed specific cockpit panels for many vehicle types. These vehicle-specific control units are available for models of the Fiat Ducato, Ford Transit and Renault Master. We also offer what are known as radio delete plates that fit into any ISO-compliant radio shaft for these and all other vehicles.

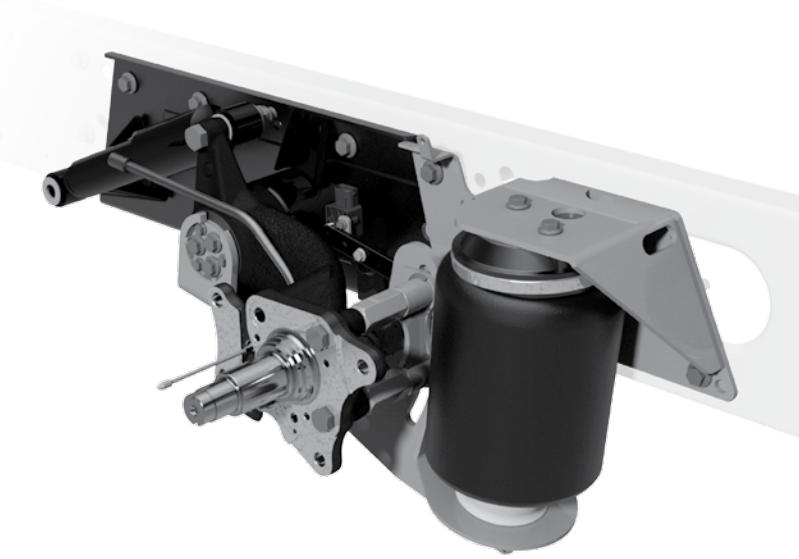
Full air suspensions – Maximum comfort.

The premier class among chassis for the leisure sector and professional use.

What are the benefits of a full air suspension system? First of all, a system of this type should provide a comfortable ride, while also having a positive effect on driving characteristics and thus on safety. There is no doubt that these properties are important. The hardware of a full air suspension system safeguards them. Air bags, holder structures and shock absorbers replace conventional steel springs and, in conjunction with the precise fine-tuning of the chassis, ensure the desired level of comfort and added safety. Heavy motorhome or ambulance chassis are the applications where full air suspensions shine the most, with positive effects on the entire driving characteristics. Body roll is a thing of the past, the vehicle remains substantially more stable than for series chassis and the tendency of vehicles to skid in curves is eliminated almost completely.

Motorhomes are not the only application for full air suspension systems from Goldschmitt. In the tough conditions of the ambulance industry, high-quality full air suspensions can be a lifesaver. Numerous rescue services also have their ambulances and other emergency vehicles equipped with corresponding air suspension systems. This enables sick or injured patients and sensitive interior fittings to be transported gently and safety.

Full air suspensions are used in instances where people or materials require a gentle journey. This pertains to both motorhomes and to vehicles used commercially such as medical transport vans. As the name "full air suspension" already implies, suspension air bags are completely responsible for the task of suspension of the heavy vehicle chassis. The standard steel suspension is replaced by large-capacity air bags controlled via a sophisticated level control system. This enables various load statuses to be detected reliably and compensated for by the system automatically. Our systems have attracted a great deal of attention in the transit van and other sectors. For example, our full air suspensions for the VW T5 and VW Crafter have been awarded the coveted certificate of endorsement from Volkswagen AG. Like all of our suspension systems, the axle loads and the gross vehicle weight rating of many vehicles can also be increased using our full air suspensions (page 6). Feel free to contact us at any time with any questions you may have.



AirDriveControl – Perfect control.

The revolutionary air suspension control promises first-class operating convenience.

Remember the days before the Apple iPhone or Samsung Galaxy? Smartphones and other mobile phones were long known for their complicated technology and difficult operation. The defining features of the design were fixed buttons and keys, but above all, it was the static control of the mobile devices. A few years ago, manufacturers realised that it was not enough for complex devices to be fast, powerful and attractive. Rather, they should be user-friendly, allowing owners to navigate through the menu quickly and easily. Only the introduction of the touch screen made it possible to simplify menu guidance, a revolution in terms of convenient, intuitive operation. For a long time, the control of complex air suspension systems was very difficult and complicated as well. This is a thing of the past with the new AirDriveControl® air suspension control. Never has it been easier to operate an air suspension system. Find out for yourself!

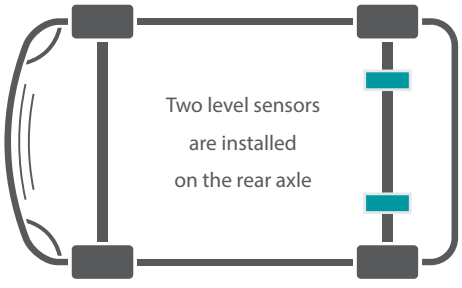
Rear-axle comfort or complete chassis?

The terms "2-channel system" and "4-channel system" sound more complicated than they actually are. Both systems have highly complicated technology, of course, however, the functional principle is very easy to explain. A 2-channel system is usually installed on the rear axle of a vehicle, while 4-channel systems are installed on the front and rear axle. In this case, the number of channels describes the number of installed air bags, the number of separate air lines and above all, the number of height sensors. While only the steel springs of the rear axle are replaced in the 2-channel system, a 4-channel full air suspension uses large-capacity air bags at all wheels. The standard leaf, coil or torsion bar springs are entirely replaced by flexible air springs.

Which system is available for my vehicle?

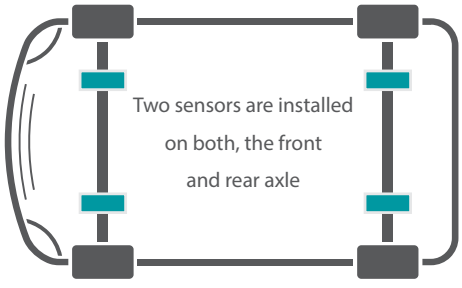
Vehicle	2-channel rear axle	4-channel front/rear ax.
Citroën Jumper	●	●
Fiat Ducato	●	●
Iveco Daily	●	●
Mercedes Sprinter	●	–
Mercedes Vito	●	–
Peugeot Boxer	●	●
VW Caddy	●	–
VW Crafter	●	–
VW T5 / T6	●	●

2-channel system on the rear axle



The 2-channel automatic level control system has two level sensors installed on the air bags of the rear axle. The air from the compressor is routed separately to the air bags on the left and right side. As a result, the system is capable of detecting one-sided wheel loads and of equalising the heights. The rear can be raised or lowered from the ride height using the control unit. The programmed heights can be stored according to customer request.

4-channel system on the front and rear axle



The 4-channel automatic level control system is distinguished by extensive components from the 2-channel version. Each of the four air bags has its own level sensor. This makes it possible to compensate for different wheel loads automatically. In addition to selecting four programmed ride heights, the entire vehicle can be raised or lowered. The auto-level function also enables the vehicle to be aligned horizontally at the touch of a button.

The advantages of AirDriveControl®

- 3.5-inch colour display
- Operation with your fingertips (touch screen)
- Intuitive user interface
- Fully automated level compensation
- Auto-level function
- Preprogrammed ride heights selectable
- Improved driving dynamics with sport mode
- Manual control system of the air spring possible
- Determining the axle load at the touch of a button
- EMC-tested (electromagnetic compatibility)
- Safest air suspension control on the market
- Various languages available
- Self-diagnostics using system self-test

Full scope of performance with four channels

You already know the difference between a 2-channel and a 4-channel system (page 25). The variety of control options depend on the respective system. This is only logical, since after all, the more spring elements installed, the more flexibly the control system can work. Accordingly, a vehicle with air springs on the front and rear axle has more functions than a vehicle equipped with air springs on the rear axle only. Of course, the vehicle cannot be raised and lowered using the steel suspension of the front axle. Therefore, functions such as auto-level, sport mode or one-sided lowering are reserved only for 4-channel systems. Despite this, we promise you will be excited by AirDriveControl®, whether you have a 4-channel version at the front and rear axle or only a 2-channel solution.

The intuitive touch control unit of the AirDriveControl® was specially developed for use in motorhomes. At the touch of a fingertip, you can activate a wide variety of useful functions on the large colour display. For one, the vehicle can be lowered, for instance to load the rear garage (Figure 2). In addition, the road clearance can be increased to enable the vehicle to pass roads in bad condition or approach ramps at slow speeds without any problem (Figure 1). If the vehicle speeds up, the system automatically adjusts to the ride height (Figure 3).

Simple operation with new functions

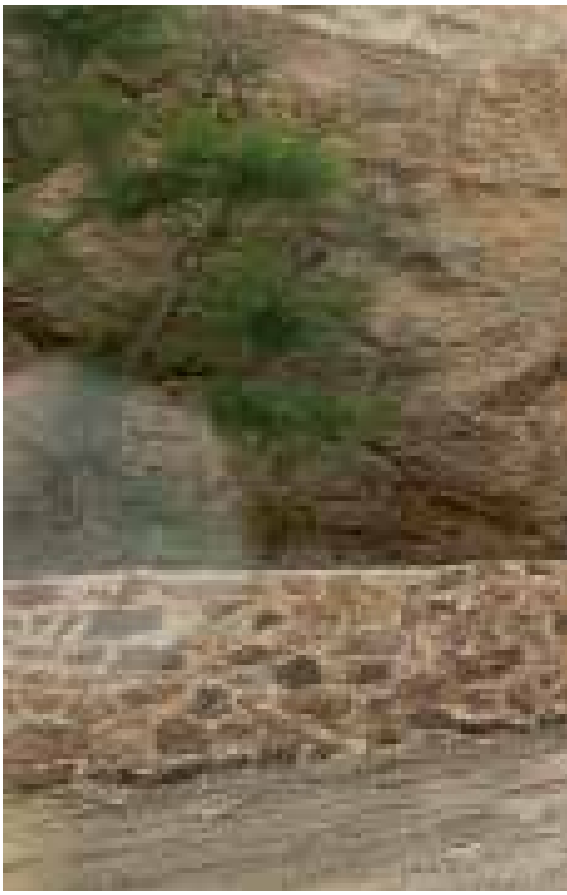
The AirDriveControl® is an intuitive control system that is capable of doing more than any air suspension control has before. Operation via the 3.5-inch touch screen is just as simple as operating a smartphone. The user is guided through the straightforward menu quickly and efficiently. The innovative control unit is our response to the request expressed by many customers for a more convenient control system. Depending on the system, the AirDriveControl® offers users a variety of new functions in addition to the standard programs that make living with a motorhome vastly easier. Enjoy the envious glances of your neighbours when your vehicle aligns automatically on the campground or when you determine the axle loads of your motorhome without a board scale. However, this is only the beginning. For the full scope of function of the AirDriveControl®, refer to pages 28 and 29.

Quality and safety set new benchmarks

New sensors, improved air supply, watertight plug connectors and optimised cable harnesses — the AirDriveControl® is the highest-quality air suspension control of all time. A thermosensor also monitors the temperature of the compressor, protecting the system from overheating. Integrating a three-axle acceleration sensor also makes it possible to meet the increased safety requirements of vehicles with ESP. To make your journey even safer, the system carries out a self-test at each start. These self-diagnostics detect and locate any anomalies in the system and notify the user via plain-text message. Users also have the ability to read out the control unit on a computer without any installation effort. Despite the improved quality of all parts, the weight of all components could be reduced drastically.

Familiarise yourself with the scope of function of AirDriveControl® and benefit from functions tailored to your needs.

The AirDriveControl® enables you to determine the axle loads of your motorhome and view them on the colour display.



Ride height (2C/4C): This mode is used for normal driving operation. The height sensors provide a uniform ride height under any load.

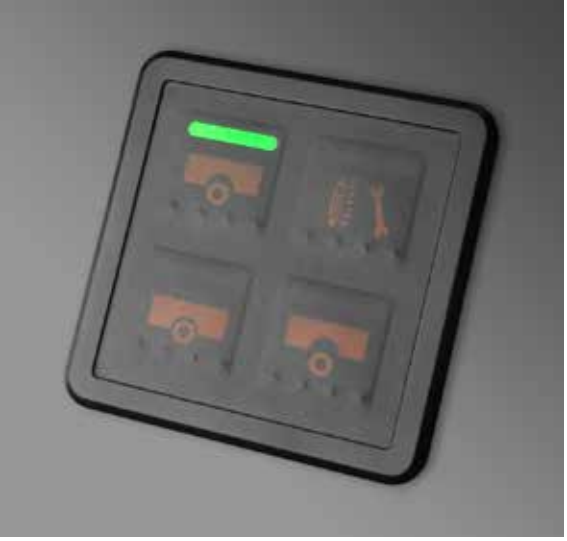
Raised height (2C/4C): This enables you to pass approach ramps or roads that are in poor condition without damaging the underbody or side skirts.

Lowered height (2C/4C): This function enables you to drive into and out of underground car parks at low speed or conveniently load the vehicle while parked.

Sport mode / Economy Drive (4C): Depending on the speed, the vehicle is raised or lowered automatically while the vehicle is in motion.

Auto level (4C): Using an electronic spirit level, your vehicle can be levelled horizontally in a fully automatic process.

Service mode (2C/4C): Disable your air suspension system, if you want to prevent the automatic control of the air springs, for example.



For ambulances and vehicles in commercial use, we offer an optional durable key-operated module. The module, which also works via the CAN bus, offers only those functions needed in rescue vehicles: Driving mode, offroad mode and service mode. To meet the requirements of vehicle manufacturers, the AirDriveControl® provides an additional switch input on the control unit. This lets you also control the air springs using a proprietary operating element of the manufacturer.

Settings / Diagnostics (2C/4C): This area lets you read out the event memory and carry out various configurations of the control system.

Lower one side (4C): This function brings the vehicle into an inclined position, which is helpful when emptying a water tank, for example.

Manual operating mode (2C/4C): Positions activated manually can be defined individually and stored for fast retrieval.

Weighing function (2C/4C): The air pressure in the air bag enables the AirDriveControl® to determine and display the current axle loads of your vehicle*.

Lower rear (2C/4C): The rear air springs are bled and the rear of the vehicle is lowered. This makes it drastically easier to load the rear garage.

Daytime / nighttime mode (2C/4C): This function enables you to change the contrast of the display and adapt it to the outside conditions (day / night).

2C = 2-channel system, 4C = 4-channel system *Deviations of approximately +/- 5 percent possible

Shock absorbers – Perfectly tuned.

You cannot have suspension comfort without perfectly tuned shock absorbers.

After the brakes, tyres and steering system, the shock absorber is the most important component for maintaining safe control of a vehicle. It is therefore important not to get the terms "suspension" and "damping" mixed up, even in part. While the suspension compensates for unevenness in the road, the shock absorber is a safety-related component that allows the vibrations of the suspended mass to attenuate quickly. The shock absorber keeps the tyres on the road when driving around curves. Without the shock absorbers to dampen the vibrations, spring action would cause the wheels to rebound on their own after they compress, pushing the vehicle upwards and thus reducing the force of the wheels on the road. Therefore, a suspension system is only as good as the tuning of the corresponding shock or vibration absorbers.

The quality of a shock absorber is dependent on the quality of the material and the precision of its manufacture as well as on technical details, which in their totality, are only found in a good shock absorber. A complex system of drilled holes, valves and springs enables you to implement any desired damping characteristics. Perfect tuning requires the correct co-ordination of the rebound stroke and compression stroke and, above all, the perfect interaction of the suspension and damping systems.

One-of-a-kind quality

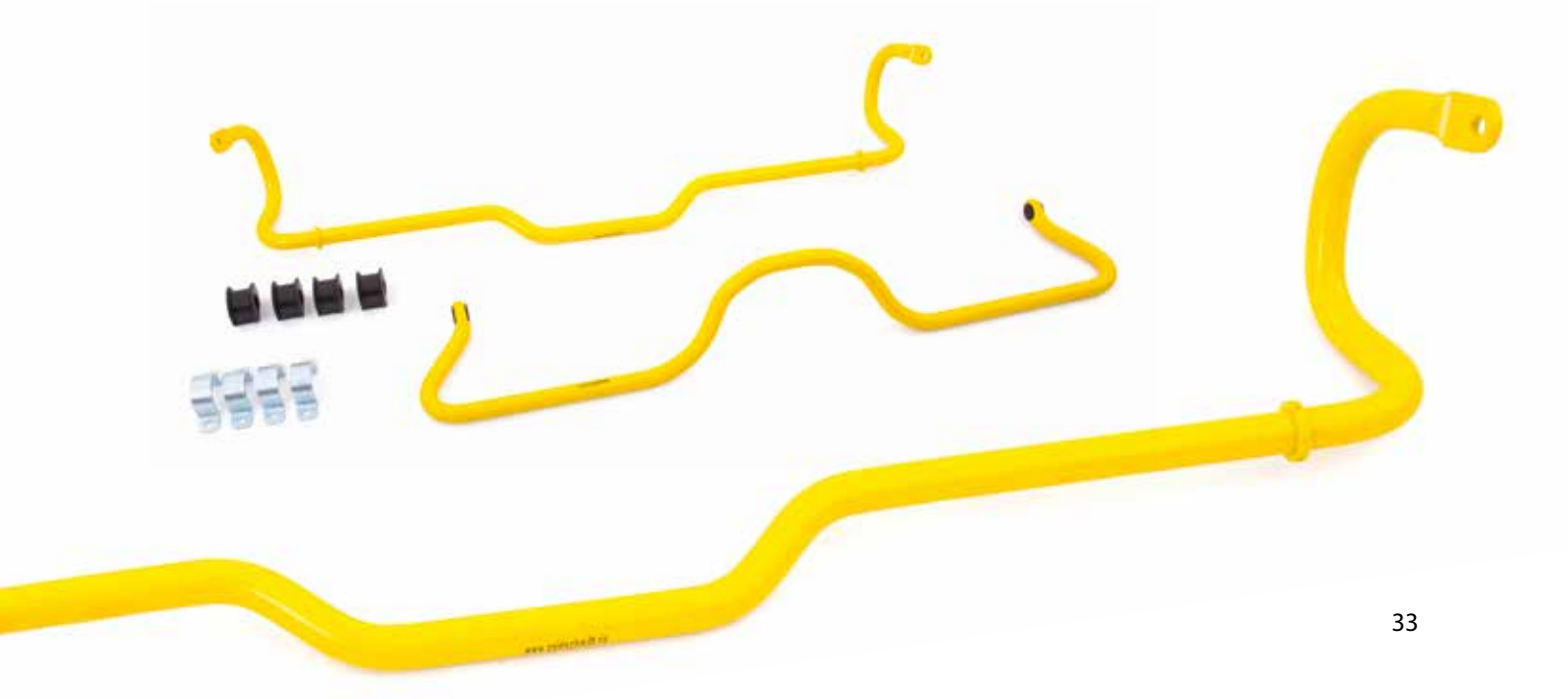
Shock absorbers from Bilstein and Koni are the standard in various Formula 1 racecars. They are also used in many German DTM racing vehicles. Even world-famous stars such as Niki Lauda and Alain Prost have won Formula 1 races and world championships with Bilstein shock absorbers. These shock absorbers, which withstand extreme racing conditions, are also ideally suited for recreational, industrial and ambulance vehicles. As a result, we have collaborated with renowned shock absorber specialists such as Bilstein and Koni to find the ideal comfort and safety solutions for motorhomes and transporter vans. With Bilstein, for example, we have optimised the air suspension for the VW T5 and the new T6. The joint project produced three shock absorbers for the VW rear axle. In combination with our full air suspension systems, they are the best thing that can happen to the VW transporter van. Goldschmitt also has works exclusively with other damping system specialists to implement the best possible products. Ask our shock absorber and suspension experts what type of optimisation we can offer for your vehicle. With our years of experience, we are guaranteed to have the optimum solution for your model.

Sway bars – Safety around every bend.

Our tried-and-tested sway bars make body roll a thing of the past.

The sway bar has the task of reducing the vehicle's side tilt when cornering. It consists of a curved steel bar that connects the two wheels on an axle together. The middle part of the sway bar is fixed to the vehicle body such that it is able to rotate while the two lever arms are connected to the front or rear axle suspension. If a wheel loads the suspension during cornering, the sway bar does more than just prevent the upward deflection of the opposing wheel, it does the opposite, helping to provide downward deflection on the other wheel. The sway bar has no effect, however, if both wheels load the suspension simultaneously, such as when driving over rough road. This means the actual spring characteristic remains unchanged when driving in a straight line. A sway bar effectively prevents susceptibility to side tilt and side wind sensitivity on your vehicle. This increases driving safety especially while cornering, during overtaking manoeuvres and when oncoming lorries, buses or motorhomes pass by.

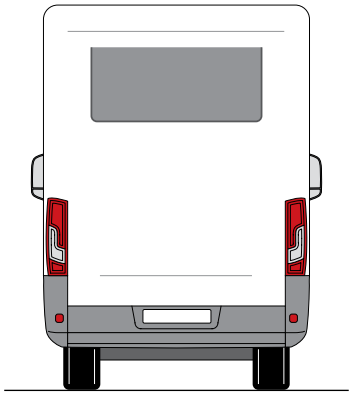
When changing direction or being hit by wind from the side, vehicles with a high centre of gravity can quickly begin rocking or tottering in short order (image on the left). A sway bar connects the wheels on an axle together, significantly reducing the side tilt and body roll (image on the right).



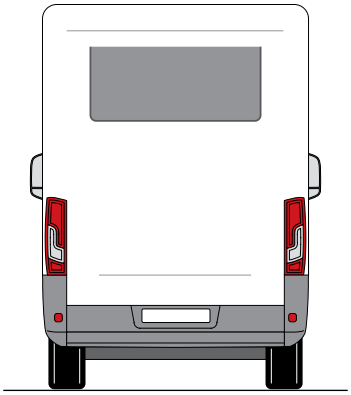
Spacers – Staying on course.

Widen the track of your vehicle and enjoy the benefits of more driving stability.

Motorhomes are generally built onto transporter van chassis. But conventional transporter vans have different priorities than motorhomes, sales vehicles, livestock transporters and other special vehicles. An extra-wide vehicle body can make a motorhome look narrow-tracked. A high centre of gravity has a negative impact on the vehicle's tracking stability and as a result, on the driving experience. Our spacers adapt the track to the width of the vehicle body. This does more than improve the look of your vehicle. The vehicle then provides the driver with better driving stability, less side tilt and better straight-line stability, especially if the road is rutted or there is a side wind. The suspension also benefits thanks to the extended lever arm.



Spacers are not only visual corrections, but also chassis correctors. They reduce susceptibility to side winds and rolling, improve directional stability and support your vehicle's suspension. This provides a simple and effective means of optimising narrow-tracked motorhomes and special vehicles.



Spacers are installed between the wheel hub and the rim. This provides a long-term improvement to the driving characteristics and the look of your vehicle without a massive investment of time or money. Our spacers are made from high-strength aluminium alloy. The benefits are plain to see: The rust-proof aluminium spacers are significantly lighter than their steel counterparts but every bit as good when it comes to service life and quality. Our spacers are made from the highest quality materials and inspected in accordance with European standards. The endurance strength of the spacers themselves is taken into consideration during the test as is the strength of all the components connected to the spacer. This ensures that there can be no premature wear on the wheel bearings or wheel hub.

Aluminium rims – Stable and elegant.

Sleek design coupled with optimum quality and high load.

Beautiful legs are eye-catching, and this is no less true of the wheels on your vehicle. More than just the visual features, the technical refinements in particular make the difference. Compared to aluminium wheels on cars, the rims on motorhome need to have substantially higher load capacity. Our rims have been performing this task with aplomb since their introduction. So it is no wonder that our rims are so beloved among motorhome enthusiasts and vehicle body makers and vehicle manufacturers. While aluminium wheels are just a matter of style for brightening up the look of a vehicle for some, many others need them as a solution to meet the weight limit for alterations like special conversions. We are able to offer a large assortment of products for (nearly) any required use. Our light alloy rims feature a sleek design and immense load capacity, making them ideal for uprating on your vehicle. As with all Goldschmitt products, quality takes centre stage for our aluminium rims. This is why every rim is manufactured to our specifications for the highest quality standards.

Smart solutions for Iveco chassis

In the past, rims for heavy-duty vehicles were given short shrift in many cases. The GSH and GSM series from Goldschmitt combine visual appeal with load capacity. The elegant heavy-duty rims are at the ready, offering an array of technical special features. The GSM2, for example, includes a track modification of up to 116 mm depending on the vehicle type. This means: There is no need for spacers on the front wheels on your Iveco Daily. This not only saves money, it also cuts down the weight. Solid alloy trim is used on the rear axle of the twin-wheeled Iveco Daily. This matches the rim design of the GSM2 and is secured to the original wheel with a cleverly designed taper. Stainless steel flexible hoses are used as valve extensions. The pressure in both tyres can easily be checked at the valves by removing the cap on the alloy trim.

Well-known manufacturers like Niesmann+Bischoff count on the sleek design and tried-and-tested Goldschmitt quality. The current Flair generation based on the Iveco Daily comes equipped with Goldschmitt GSM2 rims. Aluminium trim is used on the rear axle.

Aluminium rims for pick-ups and special vehicles: Useful helpers with high load capacity

Sleek rims brighten up more than just motorhomes. More and more often, special vehicle manufacturers are also reaching for practical aluminium wheels. While motorhome enthusiasts place a high value on the look of their pride and joy for obvious reasons, visuals are usually not the primary consideration in the commercial vehicle industry. The loading capacity of the rims is the critical factor instead, because many special vehicles—whether they are on a transporter van or pick-up chassis—are on the road close to the tolerance limit with their heavy installations. Increasing the load capacity is often the only option for building practical sales vehicles, armoured cash transport cars or versatile municipal vehicles. But how do the rims factor in? Naturally, uprating normally requires reinforcement of the suspension system, but the wheel/tyre combination also has to be able to withstand the heavy loads. Because standard

rims are often not designed for special assemblies but for significantly lower weights instead, Goldschmitt rims are frequently used in this sector. They offer the necessary load capacity while also providing an elegant look.

GSM2 Anthracite Polished Glossy

Rim size: 6,0 x 16 Inch
Loading capacity: 1.150 kg / 1.400 kg
Wheel offset: 50 mm / 78 mm
Bolt pattern: 6 x 170 mm / 6 x 205 mm
Vehicle: Iveco Daily

GSM2 Dark Chrome

Rim size: 6,0 x 16 Inch
Loading capacity: 1.400 kg
Wheel offset: 78 mm
Bolt pattern: 6 x 205 mm
Vehicle: Iveco Daily

GSH3 Anthracite Polished Glossy

Rim size: 8,0 x 18 Inch
Loading capacity: 1.215 kg
Wheel offset: 53 mm
Bolt pattern: 6 x 130 mm
Vehicle: Mercedes Sprinter

GSM4 Anthracite Polished Matt

Rim size: 6,0 x 15 Inch / 6,5 x 16 Inch
Loading capacity: 1.150 kg / 1.350 kg
Wheel offset: 68 mm
Bolt pattern: 5 x 118 mm / 5 x 130 mm
Vehicle: Fiat Ducato

GSM4 Dark Chrome

Rim size: 6,0 x 15 Inch / 6,5 x 16 Inch
Loading capacity: 1.150 kg / 1.350 kg
Wheel offset: 68 mm
Bolt pattern: 5 x 118 mm / 5 x 130 mm
Vehicle: Fiat Ducato

GSH5 Black Polished Matt

Rim size: 8,0 x 17 Inch
Loading capacity: 1.050 kg
Wheel offset: 50 mm
Bolt pattern: 5 x 120 mm
Vehicle: VW T5 / VW T6 / VW Amarok

GSM6 Anthracite Polished Glossy

Rim size: 6,5 x 16 Inch
Loading capacity: 1.450 kg
Wheel offset: 52 mm
Bolt pattern: 5 x 130 mm
Vehicle: Fiat Ducato

GSM6 Silver Black Glossy

Rim size: 6,5 x 16 Inch
Loading capacity: 1.450 kg
Wheel offset: 52 mm
Bolt pattern: 5 x 130 mm
Vehicle: Fiat Ducato

GSH7 Anthracite Polished Glossy

Rim size: 7,0 x 16 Inch
Loading capacity: 1.050 kg
Wheel offset: 32 mm
Bolt pattern: 5 x 120 mm
Vehicle: VW Amarok

GSM8 Anthracite Polished Glossy

Rim size: 6,0 x 16 Inch
Loading capacity: 1.200 kg / 1.350 kg
Wheel offset: 68 mm
Bolt pattern: 5 x 118 mm / 5 x 130 mm
Vehicle: Fiat Ducato

GSH9 Black Polished Matt

Rim size: 7,5 x 18 Inch
Loading capacity: 1.350 kg
Wheel offset: 60 mm / 58 mm
Bolt pattern: 5 x 118 mm / 5 x 130 mm
Vehicle: Fiat Ducato

GSM16 Black Polished Glossy

Rim size: 8,0 x 18 Inch
Loading capacity: 1.125 kg
Wheel offset: 30 mm
Bolt pattern: 6 x 139 mm
Vehicle: Isuzu D-Max

Our aluminium rims are ideal for increasing your vehicle's weight rating based on the model. Some restrictions apply to the use of polished aluminium rims in winter.

Jacks – Nothing downhill from here.

Rocking floors and unsteady wine glasses are finally a thing of the past.

Imagine the following scenario: You drive your motorhome to a remote campsite with fantastic natural beauty. The sloping terrain gives you an indescribable view of the amazing landscape. In the comfort of your motorhome, you want to relax with a glass of wine before retiring to bed. When pouring the wine, you see that the position of your motorhome is anything but level. You look at the leaning wine glass like a bricklayer checking with his spirit level. By quickly downing the wine, you can make the problem invisible for a while – and you may even forget about it. But that does not mean it has gone away. When you are trying to go to sleep, the reality of the situation becomes all too clear. The sloping terrain and the incredible scenery are great—but who wants to sleep on an incline? Our bedmates, after all, appreciate not being pestered by having people roll into them all the time. By this point, any devoted camper will have learned that living in a motorhome without careful level compensation is hard work, if it as possible at all.

Of course, we have to admit that the above scenario is a little exaggerated—but by no means unrealistic. It may also be hard to believe that many people in motorhomes tend to get seasick. That unpleasant feeling when the body reacts to unfamiliar motion primarily tends to happen on ships. Many people find that the swaying movements a motorhome makes while parking cause nausea, headaches and dizziness. In such a case, even ramps are not much help. These can straighten out your motorhome with a great deal of patience, but cannot provide stable support.

Put all these problems behind you and get to know our hydraulic jack systems, which allow you to level out and stabilise your motorhome. At the touch of a button, piston rods extend from your hydraulic cylinders and ensure that your vehicle is level and horizontal. With our jack systems, levelling out and stabilising your motorhome could not be easier. Depending the specific application and desired scope of function, we offer two different systems: The entry-level models of the Light series and Pro series, which feature innovative technology, an unmatched safety concept and convenient operation.

Light series or Pro series? The differences at a glance.

We hope that while reading the previous pages, you learned about the functional principle and, above all, the benefit of hydraulic jacks. Where many hydraulic systems are nearly identical in function, there are enormous differences in terms of quality, safety, operation and load capacity. Our jacks also give you a choice between two systems that differ in terms of quality and, of course, price. While our entry-level model (Light series) carries out manual levelling processes reliably, our Pro series sets new standards in terms of quality, operating convenience and safety. Whether you are changing tyres, fitting snow chains or carrying out a fully automated level adjustment of your vehicle – the Goldschmitt Pro series makes it all fun and easy. Enjoy curious glances from envious onlookers.

	Light series	Pro series
Load capacity	Up to 4 tonnes load capacity per jack	Up to 10 tonnes load capacity per jack
Control system	Radio remote control	Diagnostics-capable control system based on a CAN bus. Three control options: Basic, Comfort and iLift.
Level adjustment function	Manual adjustment using remote control	Fully automated level adjustment at the touch of a button
Safety	Non-return valve on the hydraulic unit	HRP technology: Integrated hose rupture protection on the cylinder head, thermal switch and pressure sensor.
Jack technology	Double-action differential hydraulic cylinders	Double-action differential hydraulic cylinders, with hollow bores and double seals.
Valve technology	4/3-way slide valve, protection class IP65	2/2-way seat valve, double-acting. Highest protection class for road vehicles: IP69K.
Hydraulic unit	12 or 24 volt	12 or 24 volt
Oil connections	One connection at both the top and bottom of the hydraulic cylinder	At the head area of each hydraulic cylinder (protected from separation)
Emergency control	Valves for emergency manual operation on the pump block. Hand lever on the pump block.	Valves for emergency manual operation on the jack. Hand lever on the pump block.
Versions	Vertical-Star, Swing-Star, Tele-Star	Vertical-Star, Swing-Star, Tele-Star
Jack pads	Vertical-Star, Tele-Star: Fixed jack pads (Ø 150 mm). Swing-Star: Fixed jack pads (Ø 120 mm).	Vertical-Star, Tele-Star: Moving jack pads (Ø 230 mm, optional 160 mm). Swing-Star: Fixed jack pads (Ø 120 mm).

Vertical, Swing or Tele?
Which jack is the right one for me?

Picking the right jack system for you depends first and foremost on your vehicle. Every motorhome, every transporter van and every special vehicle is designed differently and has different general conditions and space requirements that are of fundamental importance for installing a jack system. Setting aside the respective system type (Light or Pro), there are three different jack variants: Vertical-Star, Swing-Star and Tele-Star. Get in touch with us. Our experts would be happy to advise you and point you towards the right system for your needs. The following section provides an introduction to the different versions.

Vertical-Star: The workhorse

The powerful Vertical-Star jack is available in a variety of lengths upon request to meet different requirements and can often be found on large motorhomes or industrial vehicles, such as those with a basic chassis from Iveco, MAN or Mercedes. The powerful stroke is capable of providing perfect compensation even for large differences and can brace heavy vehicles with a gross weight of up to 40 tonnes.

Swing-Star: The patented original

Our Swing-Star jacks are also available in a variety of lengths and are perfect for smaller vehicles. Thanks to a patented folding mechanism, the jacks stay in a virtually horizontal position on the vehicle frame while in idle mode. The jacks fold down when extending. This technical feature makes the system ideal for all vehicles with restricted space.

Tele-Star: The variable system

The compact Tele-Star jack can be used anywhere and can be found in use on many motorhomes, panel vans, show trucks, sales vehicles and broadcast vehicles. Our compact Tele-Star is used in places where other systems simply give up due to space limitations. The pistons in the hydraulic cylinder can be extended in two steps like a telescope. This means large strokes even with minimal installation height.

The tried-and-tested entry-level model.

Inexpensive entry into the luxury class of hydraulic jacks.

Hydraulic jacks have one role first and foremost: providing stable orientation that is as level as possible for parked motorhomes and special vehicles. And this is exactly what our entry-level Light series model does with flying colours. The wireless control unit lets you level your vehicle from inside and out. The range of the standard wireless remote reaches nearly 20 metres. Pressing the corresponding control buttons lets you level your vehicle until you have reached the level you want. A single button push is all you need to retract all of the jacks.

The jack systems of the light series contain many quality features that have made our hydraulic systems famous among motorhome enthusiasts and professional users throughout Europe. Our jack systems come standard as vertical, fold-down and telescoping supports. The universal application options and high manufacturing quality make the Light jack system one of the best-selling systems of its kind in Europe.

Handy helpers

The ground is usually not perfectly level like in this seaside scene. Our levelling systems ensure that you can sleep in an absolutely level bed just like at home while you are on the go, even on difficult and sloping terrain. Goldschmitt jack also make cooking in your motorhome a true delight—no worries about a pot or pan tipping off of the hob here.

For recreational and professional use

There would hardly be any broadcasts for sporting events and political debates without Goldschmitt. Countless TV transmission vehicles are equipped with our jack systems. Dependability is the order of the day when it comes to finding solid ground and precisely aligning the transmitting antenna with satellites. Nothing may wobble under these conditions. Of course, being the proven solution in professional applications also means it lends itself well to recreational vehicles.

The professional system with HRP technology.

Cutting-edge technology with an unmatched safety concept and innovative operation.

Swaying motorhomes, rolling ball-point pens and leaning glasses—you can successfully prevent these familiar campsite situations by using hydraulic jacks. But just like with buying a car, with hydraulic systems it also depends on important details and technical sophistication. And without any doubt, these are also to be found in our Pro series jacks. Wouldn't it be practical to use the existing hydraulic jacks as substitutes for car jacks? The load capacity would certainly be sufficient for this use. But it isn't so simple. The risk of a pressure drop from damaged hydraulic hoses would be too great with conventional systems. This could lead to life-threatening situations. Therefore, the manufacturer is obligated to indicate that lifting the vehicle to change a wheel is not permitted. Thanks to the innovative security concept of our Pro series jacks, they are protected against drops in pressure. As a result, users can use our Pro system without hesitation to change tyres or put on snow chains.

The advantages of the Pro series

- Load capacity per jack: up to 10 tonnes
- Innovative control options: Basic, Comfort, iLift (page 50)
- Fully automated levelling at the push of a button
- Vehicle is supported in a stable and reliable manner
- The levelling is done without warping and is gentle on the structure
- Suitable and approved for changing tyres
- The system can be used as an immobiliser
- Moveable platform available in two different sizes (not for Swing-Star systems)
- One-of-a-kind safety technology (page 48): HRP technology, thermal switch, pressure sensor
- Tear-proof routing of oil lines
- Double-sealed piston guide
- Valve technology with the highest protection class: IP69K
- Capable of diagnostics thanks to CAN bus technology
- Emergency operation using a standard hand pump
- Optimised weight: 30-percent lighter than our Light series jacks
- Available and combinable in various versions and lengths
- EMC-tested
- Made in Germany

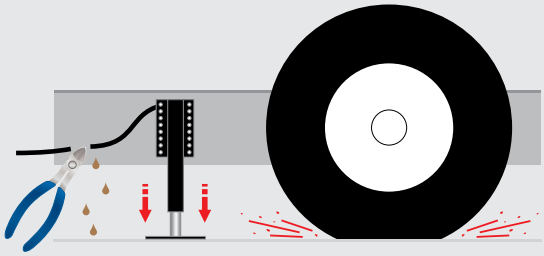
We succeeded in reducing the weight of the Pro version by a whole 30 percent compared to our hydraulic jacks in the Light series. As a result, our professional version is now one of the lightest fully hydraulic systems ever. This is made possible, for example, by a hollow piston rod. Not only does this measure greatly reduce the weight, but the cavity in the piston rod is also used as an oil supply. As a result, the oil connections are located in the head area of each jack, which ensures tear-proof routing of oil lines. Oil is prevented from escaping by a double-sealed piston guide on the lifting cylinder. A pressure sensor monitors the oil pressure in the hydraulic system as well as the position of the hydraulic jacks while the vehicle is in motion. The system's safety is further increased by a standard thermal switch, which protects the system against overheating. In addition, the Pro series is equipped with the one-of-a-kind HRP technology. Learn more about what this innovative technology is capable of on the next page. Our Pro series uniquely combines weight reduction, strength and the highest level of safety.

What is HRP technology?

HRP is the abbreviation for Hose Rupture Protection. Our Pro jack series is the only system on the leisure market with this innovative technology making it the safest jack system on the leisure market. The red protective cap is the identifying feature of our Pro jack series and HRP technology. There is a unique technology hiding underneath. An integrated safety valve can be found on the support head of each Pro series hydraulic cylinder. This safety valve ensures stable oil pressure in the hydraulic system and prevents undesired sagging of your supported vehicle. Leaks in the hydraulic system and oil loss as a result of a defect or sabotage have no significant effect on your safety.

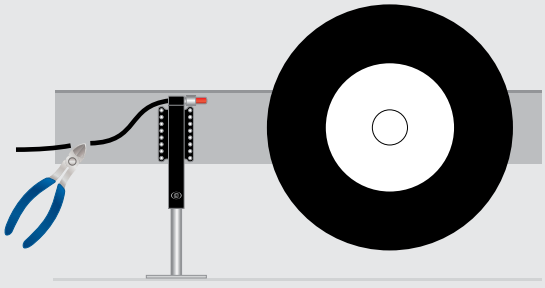
Unlike conventional systems, the jacks in the Pro series can and may be used when changing tyres or putting on snow chains, thanks to the HRP technology. Positive side effect: You can leave your car jack at home.

The Pro series from Goldschmitt is the only jack system permitted for changing tyres.



Without HRP technology

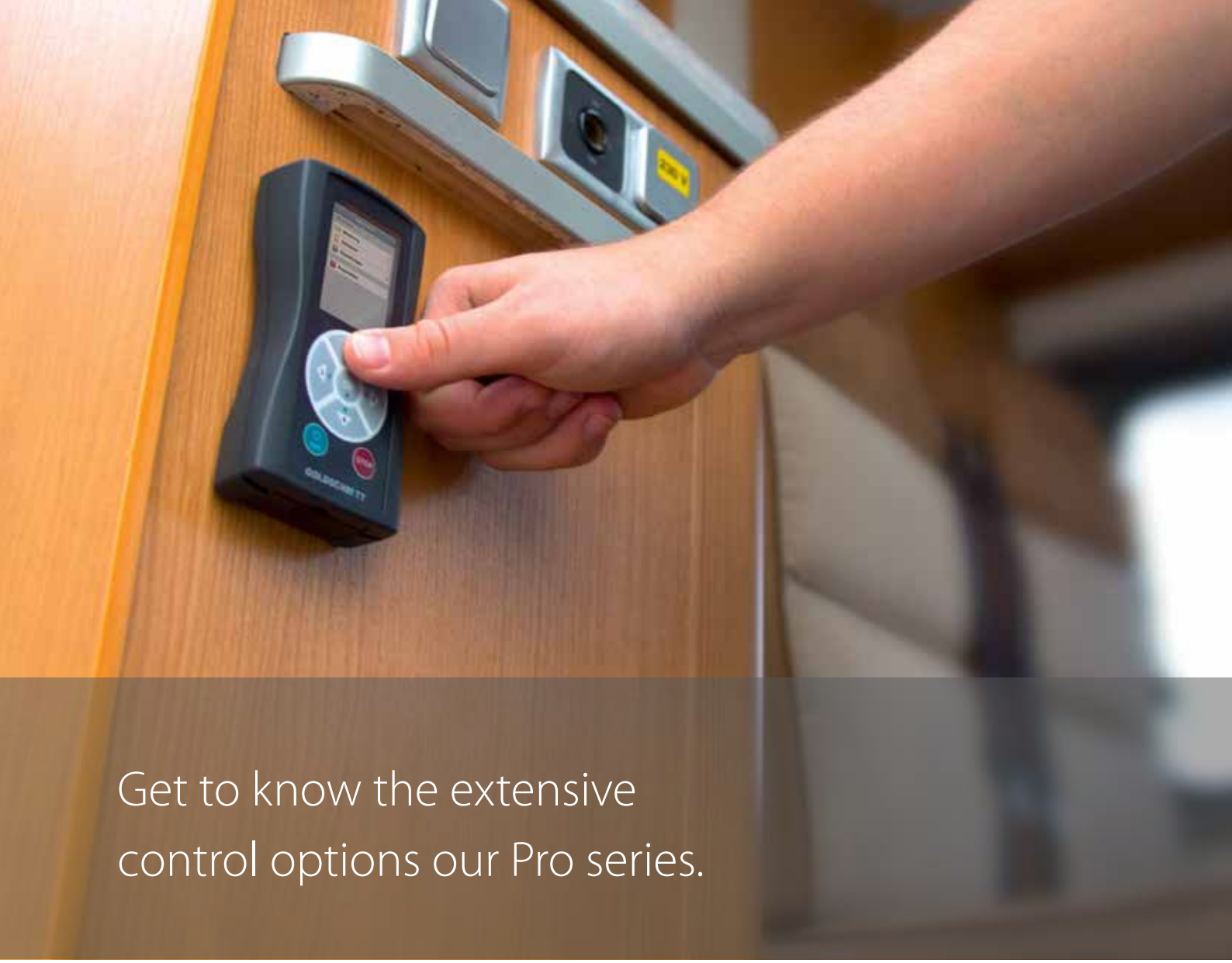
If a hose is damaged in a system without HRP technology, the jacks may no longer be able support the load of the vehicle. The hydraulic cylinders give way—the vehicle crashes to the ground. It is highly inadvisable to raise a vehicle using such systems without using additional safety measures. The manufacturer of such hydraulic systems is also obligated to indicate these limitations.



With HRP technology

Jack systems with the HRP technology from Goldschmitt are protected against hoses that have burst or developed leaks. An integrated safety valve prevents the vehicle from lowering unintentionally under load. This safety technology makes it possible to lift the vehicle without using additional safety measures and the jack system may also be used for changing tyres or putting on snow chains.

Manufacturers warn against using common jack systems for changing tyres and lifting the wheels or the vehicle itself without using additional safety measures. Serious accidents can result if conventional jacks suffer a loss of pressure. Only jacks in the Goldschmitt Pro series have a one-of-a-kind safety technology that reliably prevents the jacks from sagging unintentionally. That makes the Goldschmitt system the only one and only official system permitted for changing tyres and putting on snow chains.

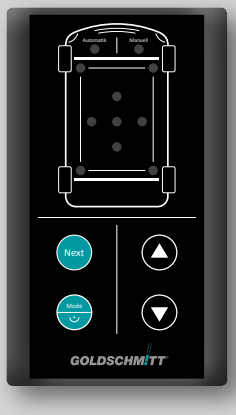


Get to know the extensive control options our Pro series.

How easy is it to use the control system of your jack system? While the decision regarding the jack version and length is pre-determined by the vehicle type, we leave you with the sweet agony of choice for the control system. The Pro series features not only cutting-edge technology, but also innovative control options. Not only are we offering you two versions of a cabled control unit, but also the high-tech iLift version for the iPhone, iPad or iPod Touch.

Straightforward and clear—that is the Basic control unit. It is extremely easy to operate: The jacks move to the desired position with a simple push of a button. Many motorhome drivers also decide in favour of the Comfort control unit, which is also cabled, because a number of useful positions are pre-programmed. These pre-programmed positions enable you to raise one side of your vehicle at the touch of a button to empty the water tank, for example. The jack system and Comfort control unit also make changing a tyre as easy as child's play. The ultimate feature, however, is accessing the control system using an iPhone. A smartphone app provides a convenient and intuitive way to operate the jack system by using your phone.

With our Light system you can extend the jacks individually or in pairs, and you have to level your vehicle manually using a spirit level. The control unit in the Pro series, however, gives you the choice between manual or fully automated levelling. Your vehicle is automatically brought to a level, horizontal position and stably supported at the touch of a button. A hydraulic jack system cannot offer any greater convenience.



Basic

The Basic control unit for the Pro jack series shows how easy it can be to operate hydraulic systems with highly-complex technology. The simple design of the control device enables the user to control his or her jack system quickly and conveniently. The Basic handheld control unit also provides all of the necessary basic functions. In addition to automatic mode, which enables levelling at the push of a button, the user can manually control selected jack pairs. Moreover, the control unit always shows the current work step and any possible vehicle tilt.

Comfort

The Comfort control unit gives you an indication of the options waiting to be used in a CAN Bus-controlled system. Unlike the Basic version, the Comfort version has a large colour display. Simple menu navigation provides quick access to all of the available functions. In addition to the familiar "Automatic" and "Manual" modes, you can save and use individually set levels as needed. You can protect the system against unauthorised access using a PIN. This function also serves as an immobiliser.

iLift

Your Goldschmitt jack system can be controlled via an iPhone, iPad or iPod Touch with iLift. This is made possible by an app. The intuitive menu leaves nothing to be desired. Regardless of whether you are using Automatic mode, Manual mode or moving to any of a wide variety of customised positions you have saved—all it takes is a few button pushes to execute the desired action. All of the actions are displayed to the user clearly on the large Apple display. In addition, iLift has extensive security functions, such as a PIN-protected immobiliser.

FAQ – Frequently Asked Questions.

Here are the answers to some frequently asked questions in the area of chassis and suspension technology.

Goldschmitt products require acceptance from the German Technical Inspection Agency (TÜV)?

Technical modifications to the chassis of a motorhome or transporter van always require approval by a technical inspection organisation (e.g. TÜV, Dekra). The basis for the acceptance is a what is called the TÜV Part Certificate of Conformity, which is included with each Goldschmitt product. The Part Certificate of Conformity includes detailed instructions and requirements to be complied with when installing the respective component. After the installation, both the conformity of the product and the proper installation have to be inspected by a TÜV or Dekra inspector. If all tests have been passed, you are given an official certificate (German Road Traffic Licensing Regulations StVZO §19.3), which you must present to your certification office immediately. The technical modification is entered into your vehicle papers there. Your vehicle may not be driven in road traffic until the entry is made by the certification office.

All chassis components from Goldschmitt are equipped with at least one TÜV Part Certificate of Conformity. Without such a certificate, an individual approval from a technical inspection organisation would be required.

Vehicle components that are particularly easy to install (such as aluminium rims) are equipped with what is known as a National Type Approval (German abbreviation: ABE). These components do not have to be checked by the TÜV or registered by the certification office. However, the operating permit must be kept in the vehicle so that it can be inspected if the vehicle is pulled over for a traffic stop.

What is the difference between a regular chassis and an AMC or AL-KO chassis?

Classic transporter vans and commercial vehicles are equipped as standard with what is known as a ladder-type frame. This frame consists of two longitudinal beams, connected by transverse bars, that give it a ladder shape. Usually, such chassis have leaf springs arranged lengthwise on the rear axles.

An AMC or an AL-KO chassis is a special lowered frame flange-mounted on a transporter van tractive unit (usually Fiat Ducato). This low-frame chassis is used primarily in the motorhome industry. You can typically identify an AMC chassis by the rear axle with torsion-bar spring. The low-slung design enables a lower entry and overall height and a false floor.

How do I know which chassis optimisation is the right one for my vehicle?

The area of chassis and suspension technology is so complex that a variety of possible solutions exist for each problem. For this reason, we recommend obtaining professional consultation from our experts. To prepare yourself, have a look at page 55 to get an idea of the scope of delivery of our chassis components.

What is an increased vehicle weight rating?

In an increased vehicle weight rating ("uprating") or payload increase, the axle loads and/or the permitted gross weight of a vehicle are increased. Depending on the vehicle, upratings can be implemented by reinforcing the

springs and putting a wheel/tyre combination with sufficient load capacity in place. An uprating report must also be provided.

What is the difference between steel springs and air springs?

Steel springs — whether leaf or coil springs — are made of high-strength spring steel. Under load, the steel springs change shape before returning to their original form after the load is removed. Carrying high loads can result in fatigue of the steel springs and make them lose their original resilience.

Air springs make use of the compressibility of air. They provide suspension using compressed air that is enclosed in large-capacity air bags. For auxiliary air springs, the air pressure can be adapted manually to the load status of the vehicle and the vehicle height can be levelled accordingly. In our full air suspension systems, the level is controlled in a fully automated manner.

What is an auxiliary spring?

An auxiliary spring is a spring element installed in addition to the original spring. The enormous loads of motorhome and custom special installations place such great strain on the standard leaf, coil or torsion bar springs that in many cases, additional suspension is required. Depending on the request and requirement, either leaf, coil or air springs can be used as auxiliary springs. Auxiliary springs make it possible to increase the gross vehicle weight rating of certain vehicles.

What is the difference between an auxiliary air spring and a full air suspension system?

Auxiliary air springs are installed in addition to the original steel springs, where a full air suspension completely replaces the original spring elements.

Are additional air suspension systems always shipped with a control unit and compressor?

Goldschmitt additional air suspension systems are always installed with a standard high-performance compressor and an in-cab control unit including a pressure gauge. These enable you to monitor and operate your air suspension system conveniently from the cab. Optionally, illuminated pressure gauges are available with an additional warning light to indicate when the pressure drops.

What is the difference between a 1-circuit and 2-circuit system in auxiliary air springs?

In a 1-circuit system, the air bags are filled and emptied centrally via a shared air circuit, while the air bags of a 2-circuit system can be filled separately from each other. This makes it possible to successfully compensate for load-related side tilting in a 2-circuit system.

How high should the air pressure be in a air suspension system?

Our full air suspension systems have a fully automated level control, which means there is no need for manual intervention or maintaining a certain air pressure. Auxiliary air springs, on the other hand, are controlled manually. The air pressure depends on the load of vehicle and is determined according the actual weight during installation. In general, the air pressure should not fall below 0.5 bar or exceed 6 bar where the guideline value while the vehicle is in motion is between 2 and 3 bars.

When do we refer to air loss or leaks in the air suspension system?

An air suspension system can be assumed to be leaking if the air pressure drops by more than 0.2 bar within 24 hours.

Are the chassis components from Goldschmitt also permitted for vehicles with ESP and ABS?

Yes, all of our products are tested in accordance with current ECE regulations. These tests include including brake, steering and EMC tests. Permission is granted only if safety-related assist systems such as ESP and ABS are not negatively affected.

What are the criteria for selecting spacers?

Spacers can be installed on the front and rear wheel. They are selected using the bolt pattern and the hub diameter. The thickness of the washers depends on the space in the wheel housing.

How can I tell the loading capacity of rims?

The loading capacity is stated in the corresponding inspection report. In some rims, the loading capacity is also embossed on the inside.

Where can I find information about the tyre loading capacity?

The loading capacity of a tyre is stated in its type designation. Example: 195/65 R15 91T. The number 91 is what is called the load index. For vehicle tyres, this encodes the maximum permitted load and can be viewed in corresponding tables. The number 91 stands for a maximum load of 615 kilograms per tyre.

Why does Goldschmitt have only hydraulic jacks in its product line but no electric ones?

We have years of experience with hydraulic jacks and are confident of the quality of our systems. Our jacks are among the best systems on the market in terms of quality, load capacity, safety and operating convenience. Compared to hydraulic jacks, electrical systems are highly sensitive to the weather. Each individual electric jack has mechanical parts that are highly susceptible to rust. Electric motors also send the weight and power consumption soaring.

What are the advantages of the Pro lifting support system versus the Light version?

The Pro jack system has many advantages compared to our Light version and compared to other hydraulic jack systems on the market. In addition to the quality, weight, operation and load capacity, we surely ought to emphasise the innovative safety concept of the Pro jack. For example, the Pro system features HRP technology, with safety valves on each hydraulic cylinder to prevent the supported vehicle from sagging. As a result, our Pro jack system is capable of being used for changing tyres and fitting snow chains and is approved for these applications. In addition, a pressure sensor monitors the position of the jacks while the vehicle is in motion. A thermal switch also protects the system from overheating. Double seals on the piston rods prevent oil leaks and an intelligent oil supply ensures an uninterrupted cable routing.

Is HRP technology also offered by other manufacturers?

HRP technology is one-of-a-kind. Jack systems from other manufacturers usually omit this type of safeguard for cost reasons – sadly, at the expense of safety. Unlike commercially used systems, when using jacks in the leisure area, there are no regulations whatsoever with regard to safeguarding against leaks in the line system. Commercial jack systems, on the other hand, are subject to the most stringent regulations. They have to be designed in such a way that the extended piston can never be moved unintentionally. This means that the system must be immune to blown-out or leaky hoses. Because our Pro series meets this requirement, it can be used not only in recreational vehicles, but in commercial vehicles as well.

Can I decide for myself which jack version I want?

Of course, you can decide for yourself whether to purchase our Light or Pro system. However, the version you use typically depends on your vehicle and/or the space conditions below your vehicle. Depending on the vehicle type and size, vertical (Vertical-Star), swinging (Swing-Star) or telescoping (Tele-Star) jacks are used. For an overview of the different jack sizes, refer to the table on page 55. Get in touch with us. Our experts will be pleased to advise you.

Goldschmitt products and their availability by vehicle type

Vehicle type	Load capacity increase	Leaf-springs	Coil springs (FA)	Coil springs (RA)	Auxiliary air springs	Full air suspension	Shock absorber	Sway bars	Washers	Aluminium rims	Jacks
AL-KO chassis	●	–	●	–	●	●	●	–	●	●	●
Citroën Jumper	●	●	●	●	●	●	●	●	●	●	●
Fiat Ducato	●	●	●	●	●	●	●	●	●	●	●
Ford Ranger	–	–	–	–	●	–	–	–	–	–	–
Ford Transit	●	–	●	●	●	–	●	–	●	–	●
Isuzu D-Max	●	–	●	–	●	–	●	–	–	●	–
Iveco Daily	●	–	–	–	●	●	●	–	●	●	●
MAN TGL	–	–	–	–	●	–	–	–	–	–	●
Mazda BT -50	–	–	–	–	●	–	–	–	–	–	–
Mercedes Sprinter	●	●	●	●	●	●	●	●	●	●	●
Mercedes V-Class	●	–	●	●	–	●	–	–	–	–	–
Mitsubishi L200	–	–	–	–	●	–	–	–	–	–	–
Nissan Interstar	●	–	●	●	●	–	●	–	●	●	●
Nissan Navara	–	–	–	–	●	–	–	–	–	–	–
Opel Movano	●	–	●	●	●	–	●	–	●	●	●
Peugeot Boxer	●	●	●	●	●	●	●	●	●	●	●
Renault Master	●	–	●	●	●	–	●	–	●	●	●
Toyota Hilux	–	–	–	–	●	–	–	–	–	–	–
VW Amarok	●	–	–	–	●	–	–	–	●	●	–
VW Caddy	Our products for vehicles for the transporting the disabled based on the VW Caddy are available on request										
VW Crafter	●	●	●	●	●	●	●	●	●	●	●
VW T5 / T6	●	–	–	–	–	●	●	●	●	●	●

● Available for the respective vehicle – Not available for the respective vehicle

Goldschmitt products and their benefits

Benefits	Leaf-springs	Coil springs	Auxiliary air springs	Full air suspension (2-channel)	Full air suspension (4-channel)	Shock absorber	Sway bars	Washers	Aluminium rims	Jacks
Increase load capacity	●●●	●●●	●●●	●●	●●	–	–	–	●	–
Raise the rear of the vehicle	●●	●●	●●	●●●	●●●	–	–	–	–	–
Lower the rear of the vehicle	–	–	●	●●●	●●●	–	–	–	–	–
Level the variable	–	–	●	●●	●●●	–	–	–	–	–
Reduce the tendency to roll	●	●	●●	●●	●●	●	●●●	●	●	–
Improve road handling	●	●	●	●●	●●	●	●●●	●●	●	–
Improve suspension comfort	●	●	●●	●●●	●●●	●	–	–	–	–
Improve driving safety	●	●●	●●	●●	●●	●	●●	●●	●	–
Level vehicle when stationary	–	–	●	●	●●	–	–	–	–	●●●
Vehicle stably supported	–	–	–	–	–	–	–	–	–	●●●

● Suitable ●● Highly suitable ●●● Very highly suitable – Not suitable

Size table of our hydraulic jacks (overall height / stroke / diameter)

Vertical-Star Light	Swing-Star Light	Tele-Star Light	Vertical-Star Pro	Swing-Star Pro	Tele-Star Pro
400 mm / 286 mm / 60 mm	315 mm / 118 mm / 60 mm	333 mm / 352 mm / 65 mm	408 mm / 275 mm / 58 mm	315 mm / 115 mm / 58 mm	325 mm / 315 mm / 75 mm
450 mm / 336 mm / 60 mm	350 mm / 150 mm / 60 mm		458 mm / 325 mm / 58 mm	351 mm / 150 mm / 58 mm	
535 mm / 405 mm / 70 mm	400 mm / 203 mm / 60 mm		490 mm / 355 mm / 58 mm	400 mm / 200 mm / 58 mm	
610 mm / 461 mm / 85 mm	450 mm / 253 mm / 60 mm		528 mm / 395 mm / 58 mm	450 mm / 250 mm / 58 mm	
			618 mm / 457 mm / 75 mm		

Air Springs
Shock Absorbers
Alloy Wheels
Spacer Discs
Levelling Systems
Coil Springs
Upratings
Sway Bars
Special Solutions
Leaf Springs

GOLDSCHMITT®
THE DRIVING EXPERIENCE





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With kind regards