

SIDEM MOUNTING ADVICE.

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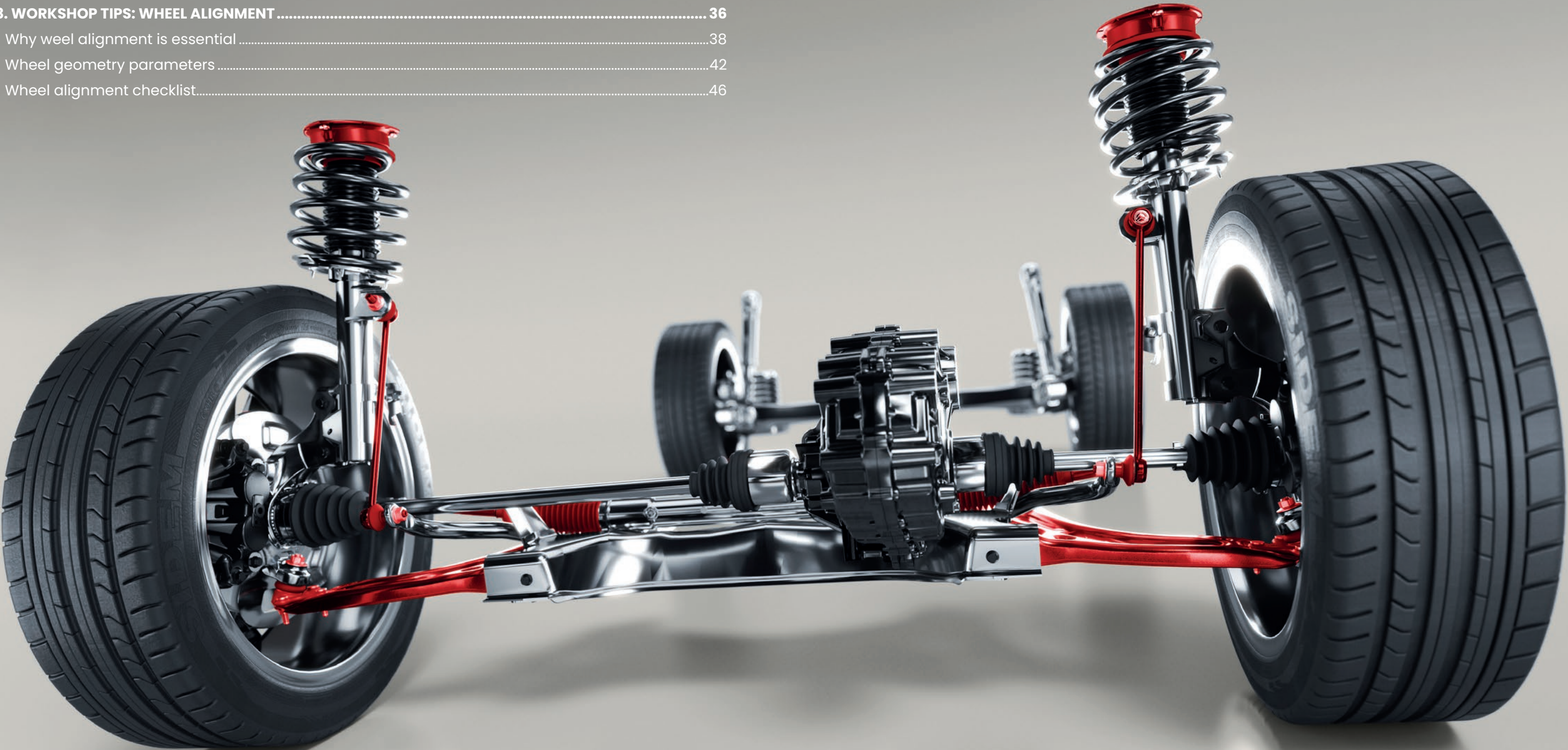
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01.

**DIAGNOSTIC
& SERVICE
ADVICE.**





DIAGNOSTIC ADVICE.

HOW TO CHECK ON WEAR AND TEAR?

1. TIRE INSPECTION

Before inspecting the steering and suspension parts, start by checking the tire pressure. Additionally, examine the wear of the tires. Incorrect wheel alignment or worn steering and suspension parts can cause uneven wear.



**TOE
WEAR**

Alignment problem,
thin inner or outer
edge



**CAMBER
WEAR**

Alignment problem,
exaggerated inner
or outerwear



**CENTER
WEAR**

Over inflation, thin
tread in center of
tire



**EDGE
WEAR**

Under inflation, thin
tread wear along
tire edges



**PATCH
WEAR**

Out of balance,
patchy tread wear
or flat spots



**CUP
WEAR**

Bent or worn-out,
suspension component
diagonal 'Scalloped'
tread wear

DIAGNOSTIC ADVICE.

2. STEERING BEHAVIOR

If the vehicle is pulling to one side or the steering wheel is not aligned with the direction of the front wheels, the wheel alignment and steering parts should be thoroughly checked and adjusted. The same applies in the case of vibrations on the steering wheel, play, heavy or loose steering.

There may be something wrong with a steering or suspension part if:

- you hear knocking or mechanical sounds while driving the car
- a proper wheel alignment is not possible.

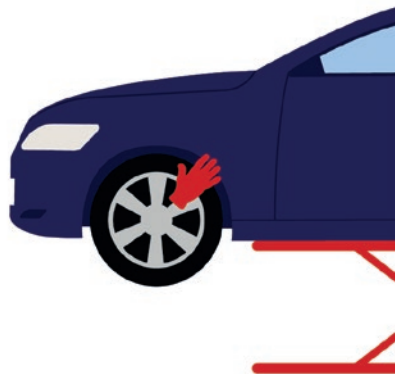
3. STEERING PARTS INSPECTION

- Always check all parts on the left and right side.
- Check the power steering fluid level. If the level is low, there may be a leakage in seals or hoses.
- Inspect the steering rack gaiters to ensure the rubber is in good condition without ruptures or cracks.
- Check the dust covers to ensure they are in good condition. Corrosion will occur if water and dirt penetrate, with an early wear as a consequence.
- Are all bolts and nuts securely fastened?

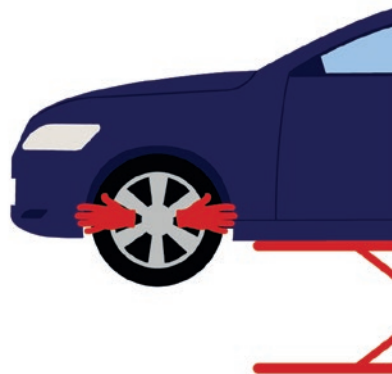
Check the tie rod ends and axial joints for play by shaking the front wheels, as shown on images below:



Checking for play on the wheel bearing



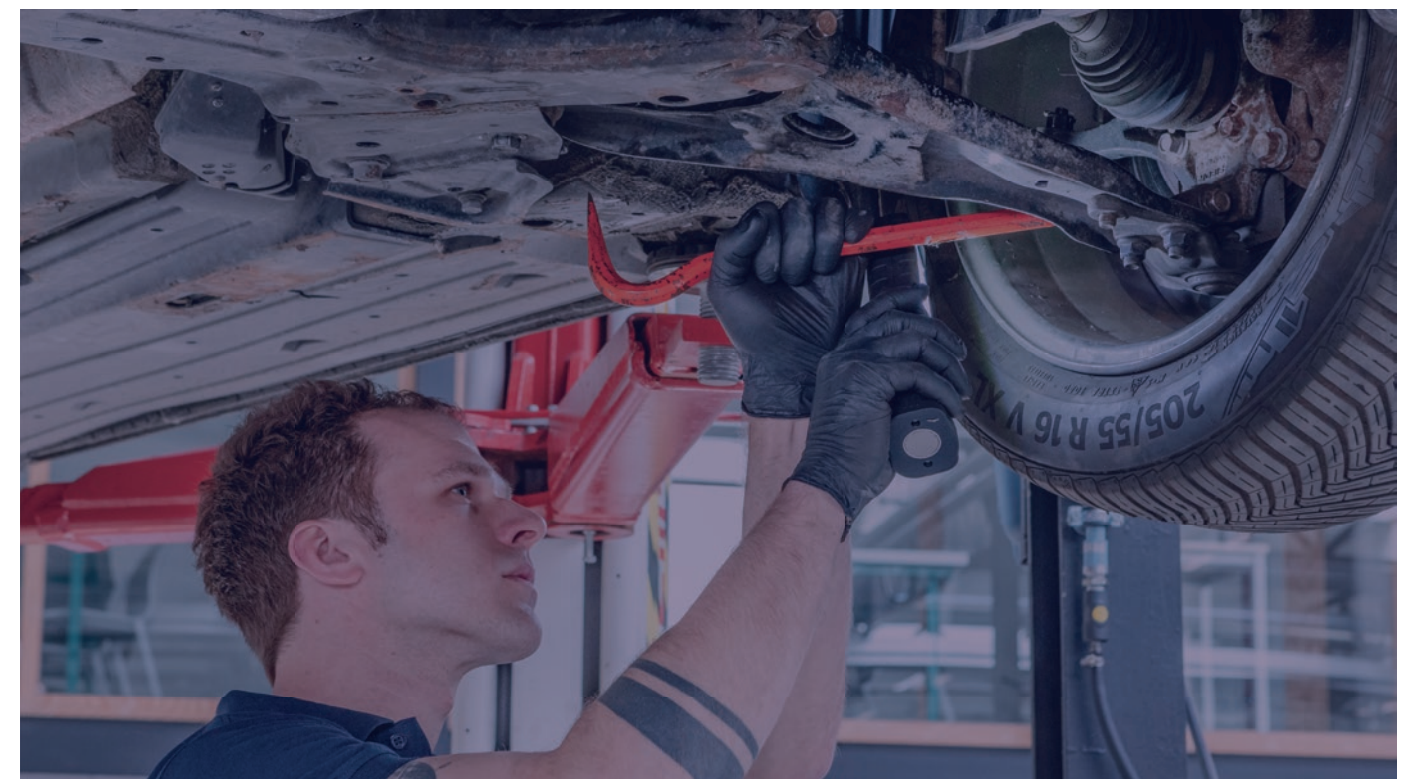
Checking for play on the ball joint



Checking for play on the tie rods

4. SUSPENSION PARTS INSPECTION

- Always check all parts of the vehicle, including the left and right sides, front, and back.
- Check for visible crack ruptures or leaks in the rubber of the silent blocks and ball joints.
- Use a lever to check for any play at silent blocks and ball joints.
- Additionally, inspect the dust covers to ensure they are in good condition. Corrosion will occur if water and dirt penetrate, making the part fail prematurely.
- Are all bolts and nuts securely fastened?





SERVICE ADVICE. HOW TO REPAIR STEERING AND SUSPENSION PARTS?

1. INSTALLATION INSTRUCTIONS

First of all, start with carefully reading the installation instructions. Sidem provides easy access to these guidelines through three methods:

- scanning the QR code on the Sidem packaging for direct access to the working instructions of that reference;
- searching for the correct reference code in the Sidem online catalogue or Sidem catalogue app;
- go through the 'How to' instruction videos on the Sidem Youtube channel.



2. COMPARE OLD AND NEW PARTS

Before starting the installation, compare the new Sidem part with the old one to ensure correct compatibility.

3. REPLACE IN PAIRS

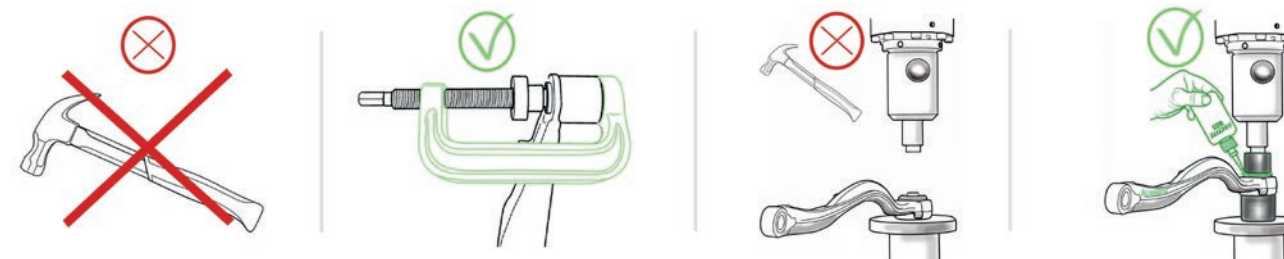
If one side is worn, it is advisable to change both sides at the same time to avoid extra costs and save time. The combination of new parts and old parts will also cause an imbalance in driving behavior.

Additionally, ensure that the left and right parts are mounted on the correct side of the car. If confusion is possible, Sidem will mark those stabilizers with 'left' and 'right'.



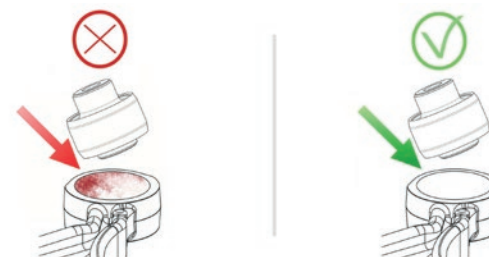
4. USE THE RIGHT TOOLS

To prevent damage to the components and surrounding areas, use appropriate pressing tools instead of hammers to dismantle worn parts. For safe and easy assembly we have developed special assembly tools, scan the QR code for more information.



5. CLEAN SURFACES

Clean the mounting holes and surfaces using a steel brush, cloth, degreaser or air pressure to ensure a proper fit for the new Sidem part.



6. LUBRICATE BALL PINS

To enable a smoother installation, lubricate the ball joint pins with oil or non-aggressive grease. This will also provide a protective layer and lubrication for the top of the dust cover, making it last longer.

7. USE NEW FASTENERS

Secure the installation by always using the new bolts and nuts provided by Sidem.

8. AVOID IMPACT WRENCH

Do not use an impact wrench to tighten, as it may cause over-torquing and potential damage (twisted or damaged dust cover; breaking ball stud).



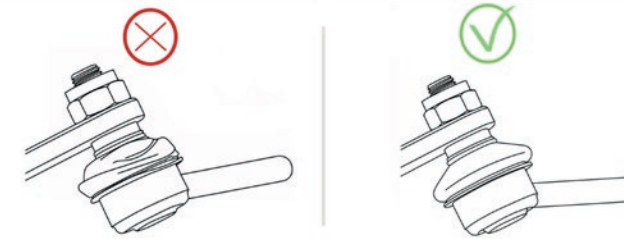
9. FOLLOW TORQUE INSTRUCTIONS

Follow the instructions described by the car manufacturer to tighten the bolts and nuts.



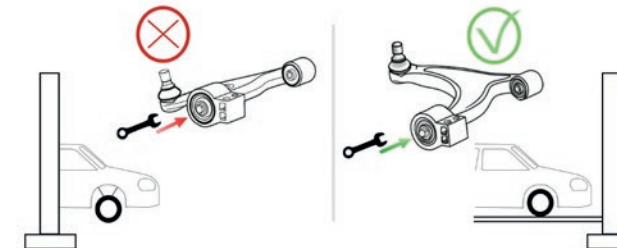
10. VERIFY DUSTCOVERS

Once installed, verify the dustcovers on the ball joints are properly in place. Twisted or damaged dustcovers will cause water infiltration with an early wear as result.



11. AVOID PRETENSION(S)

If you have replaced the silent blocks or track control arms, remember to only tighten the mounting bolts when the vehicle is back on the ground and the suspension is in its resting position. This will avoid pretension in the silent blocks and early failure.



12. AFTER INSTALLATION

- Always perform a wheel alignment.
- Finally, take the vehicle for a test drive to ensure that the initial problems have been fully resolved.



02.

WORKSHOP TIPS:

HOW TO INSPECT AND REPLACE STEERING & SUSPENSION PARTS?





WORKSHOP TIPS.

HOW TO INSPECT STEERING AND SUSPENSION PARTS?

CHECK STEERING AND SUSPENSION PARTS IN A FEW STEPS:

Worn steering or suspension parts can often be detected while driving: abnormal steering when driving straight ahead, play on the steering wheel, reduced straight-line stability, abnormal steering force or vibrations. Also pay attention to vibrations and noises when accelerating and braking.

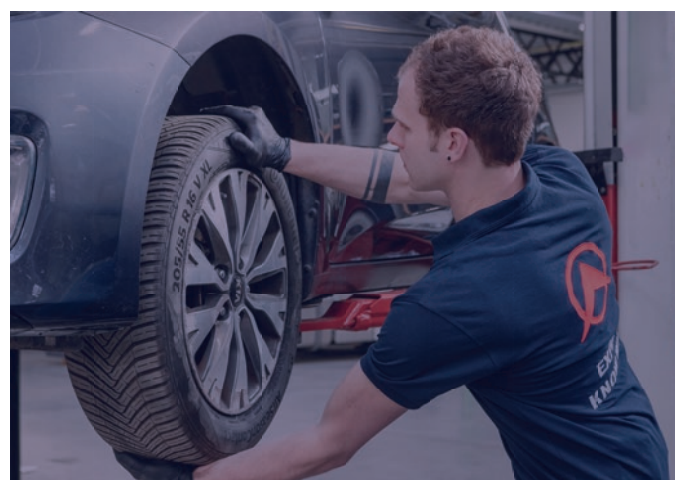
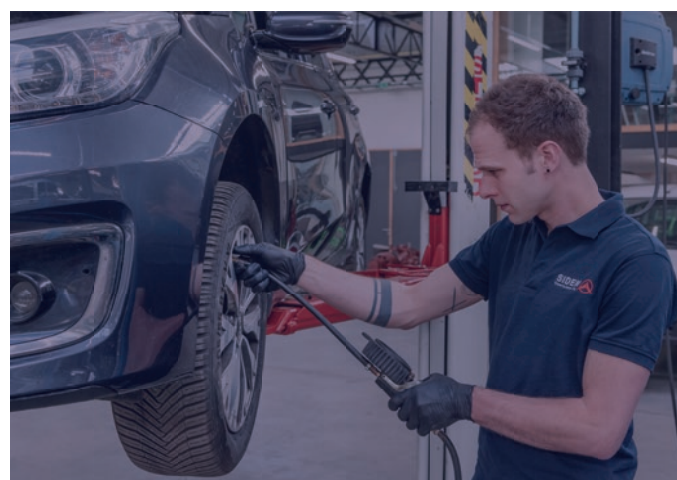
Check the level of the power steering fluid. A low level may indicate a leak in the pipes or seals and will noticeably affect the steering.

1. CHECK TIRE PRESSURE.

Check the tire pressure and inflate if necessary. Incorrect pressure affects the handling and accelerates tire wear. Regular checks are important.

2. WHEEL PLAY.

Check for play by pulling on the wheel. Place your hands vertically to check the wheel bearings, horizontally for the steering bars, and diagonally for play on the ball joints.



3. CHECK TIRE WEAR.

Check the tires for wear. Uneven or unusual wear may indicate misalignment, worn suspension parts, or incorrect tire pressure.



TOE
WEAR



CAMBER
WEAR



CENTER
WEAR



EDGE
WEAR



PATCH
WEAR



CUP
WEAR

4. CHECK SHOCK ABSORBERS AND SPRINGS.

Check shock absorbers and springs. Broken springs can be recognized by abnormal driving height or noises. Leaky shock absorbers cause an unstable drive. Both situations are unsafe and require replacement.

5. INSPECTION OF TRACK CONTROL ARMS.

Check the track control arms. Make sure the nuts and bolts are still tight. Use a pry bar to check for play between the arm and the steering knuckle for the ball joints, and between the arm and the chassis for the silent blocks. Look for torn or sagging dust covers, which can lead to water infiltration, grease loss, and increased wear. In such cases, always replace them.

HOW TO INSPECT STEERING AND SUSPENSION PARTS?

6. CHECK STABILIZATION.

Check the stabilization: inspect the condition of the stabilizer mountings for wear or cracks. Also check the stabilizer links: Is there any play? Is the dust cover in good condition and still in place?

7. CHECK TIE ROD ENDS.

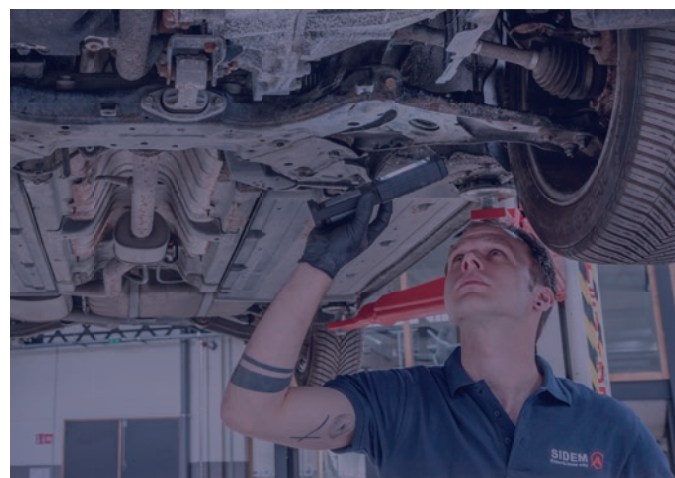
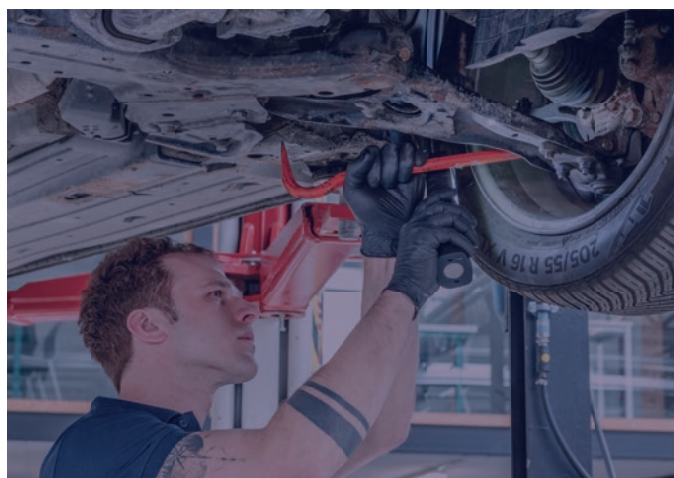
Check the tie rod ends: are the nuts tight and is there any play on the ball joints? Also check the condition of the dust cover. A torn or twisted dust cover increases the risk of corrosion of the tie rod ball joint. Premature failure is then inevitable. If in doubt, always replace.

8. CHECK STEERING RACK GAITERS.

Check the condition of the steering rack gaiters. Are there any visible tears, are the clamps still secure and do they fit properly? A torn cover will lead to grease loss, water and dirt infiltration, with a risk of corrosion of the axial rod and damage to the steering gear. In that case: always replace.

9. CHECKING THE AXIAL.

Check the axial for play. Hold the tie rod ends or the end of the axial and move them back and forth. If you previously felt play on the wheel but not on the tie rod ends, the cause is probably in the axial. It must then be replaced.



WATCH THE WORKSHOP TIP STEP BY STEP.

For a more detailed visual guide, scan the QR code to view the installation video. The video walks you through every step of the process and highlights important details to ensure a safe and ensure proper fitment.



**SCAN THE QR
CODE AND WATCH
THE FULL VIDEO.**



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WORKSHOP TIPS.

HOW TO REPLACE TRACK CONTROL ARMS ON A MACPHERSON SUSPENSION?

REQUIRED TOOLS.

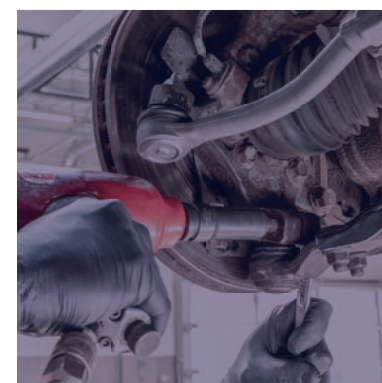
- Torque wrench
- Impact wrench
- Socket set
- Open-end wrenches
- Crowbar
- Universal pliers
- Chisel
- Punch
- Hammer
- Non-aggressive grease
- Steel brush
- Penetrating oil
- Work light
- Sidem track control arm
- New mounting hardware, if necessary

INSTALLATION STEPS.

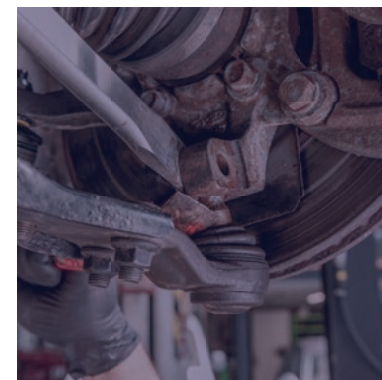
1. First scan the QR code on the Sidem packaging to read the installation instructions.



2. Clean the bolts and nuts which are to be removed with a steel brush. Spray penetrating oil on all nuts which will be removed. Loosen them with a ring spanner and impact wrench if you can reach them.



3. Pull the bolt out of the steering knuckle. Use a chisel to knock open the groove in the steering knuckle. Pull the ball joint loose with a crowbar between the steering knuckle and the track control arm, as straight down as possible to avoid tension. Then loosen the bolts and nuts on the silent blocks. You can do this with an impact wrench. Remove the old track control arm.



HOW TO REPLACE TRACK CONTROL ARMS?

4. Unpack the new track control arm and check that everything is in order: no damage and the part number is correct. Compare with the old arm. If everything is correct, install the new suspension arm.



5. Secure the bolts and nuts to the silent blocks, but do not tighten those on the horizontal silent block yet. You can tighten the vertical silent block to the torque specified by the vehicle manufacturer. Clean the contact surface of the steering knuckle and apply some grease to the dust cover of the ball joint. Insert the ball joint pin into the steering knuckle and fit the bolt and nut to secure it. Tighten as specified by the vehicle manufacturer.

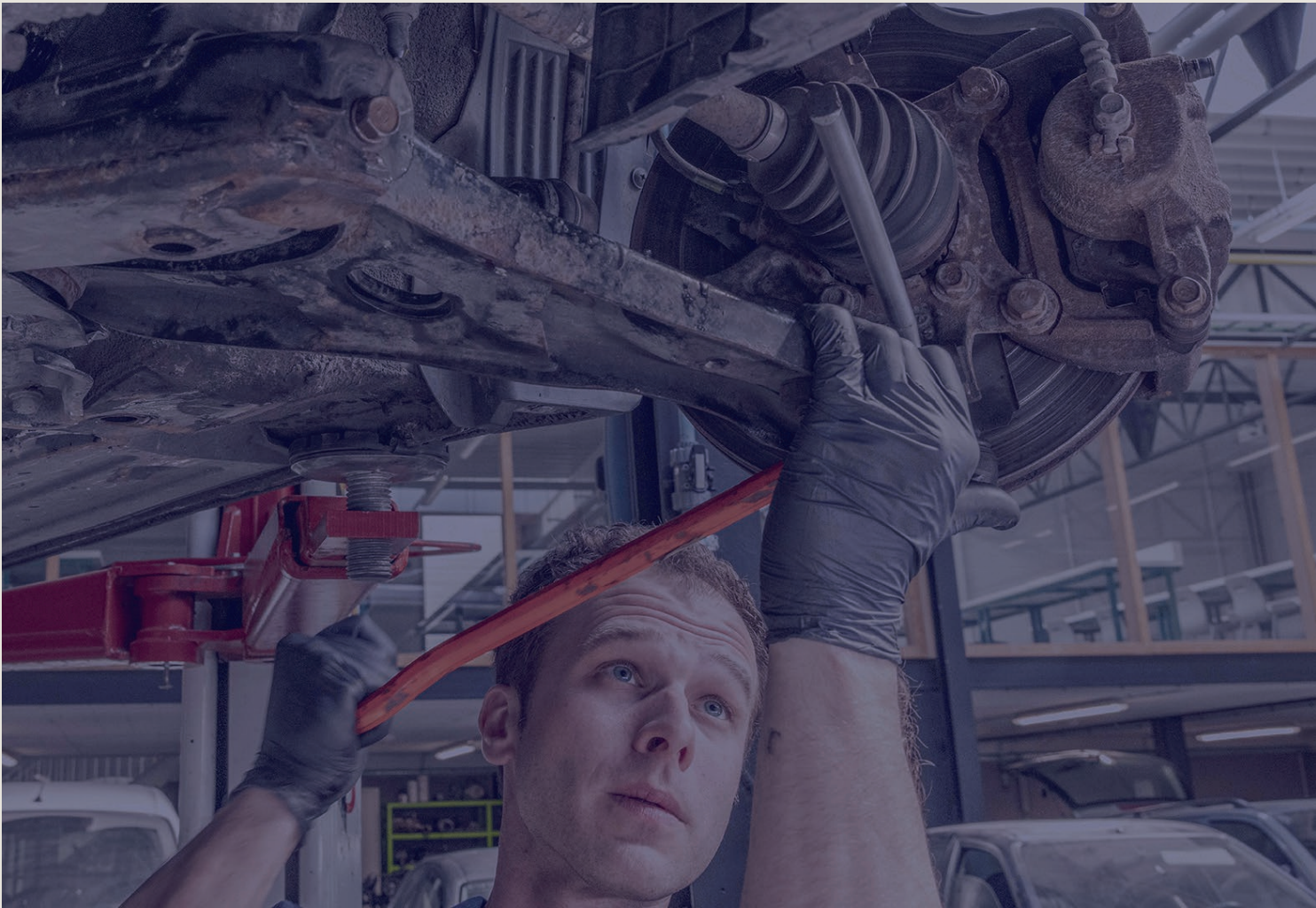


6. Then put the split pin back in place. Refit the wheel. Then lower the car completely until it rests on its own weight. Once the car is resting on its wheels, tighten the bolt on the horizontal silent block as specified by the vehicle manufacturer. This prevents preload and premature failure of the silent block. The repair is now complete and the car just needs to have a wheel alignment.



WATCH THE WORKSHOP TIP STEP BY STEP.

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WORKSHOP TIPS.

HOW TO REPLACE STABILIZER LINKS?

REQUIRED TOOLS.

- Torque wrench
- Socket set
- Spacer ring wrenches
- Allen or Torx set (depending on the type of stabilizer link rod)
- Steel brush
- Penetrating oil
- Work light
- Sidem stabilizer links

*Please note: stabilizer links are always replaced in pairs. We are only showing the left side here, as the procedure is identical on the right.

INSTALLATION STEPS.

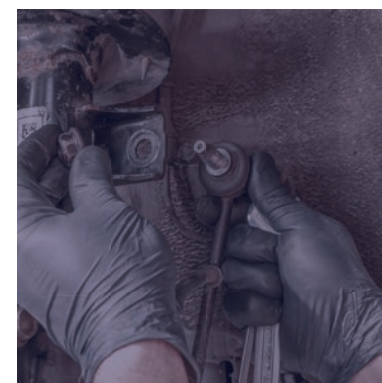
1. First scan the QR code on the Sidem packaging and read the installation instructions carefully.



2. Start by cleaning the thread and nuts which are to be removed with a steel brush. Then spray them with penetrating oil.

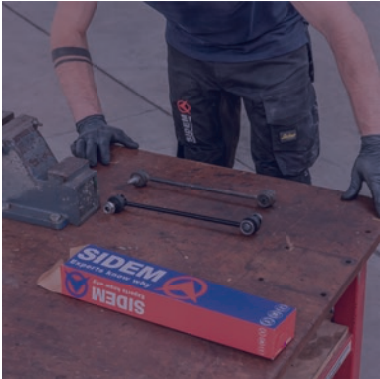


3. Hold the ball pin in place and loosen both nuts. Remove the old stabilizer link.



HOW TO REPLACE STABILIZER LINKS?

4. Take the new stabilizer link out of the packaging, making sure to note the left and right sides. Check that everything is OK. Compare the new stabilizer link with the old one.



5. Position the new stabilizer link correctly and tighten the nuts by hand first. Lubrication on the dust cap is not necessary here: stabilizer links have a metal mounting surface and do not come into direct contact with the top of the dust cap. Restrain the ball of the ball pin and tighten both nuts. Then tighten them to the torque specified by the vehicle manufacturer. Once the stabilizer links on the left and right have been replaced, the wheels can be put back on.



WATCH THE WORKSHOP TIP STEP BY STEP.

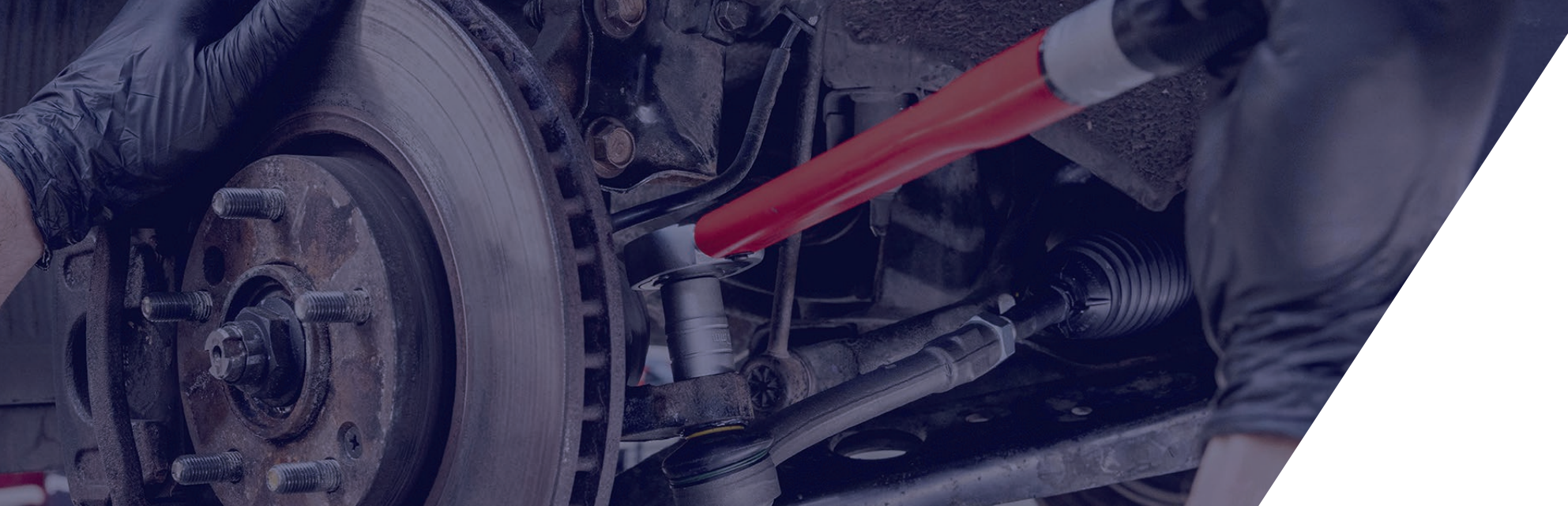
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WORKSHOP TIPS.

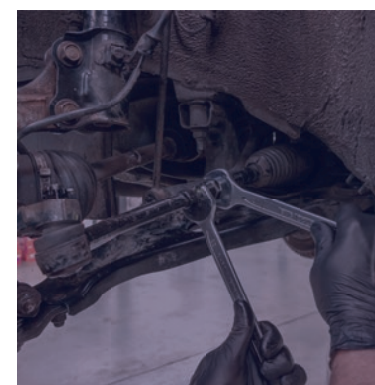
HOW TO REPLACE STEERING PARTS?

REQUIRED TOOLS.

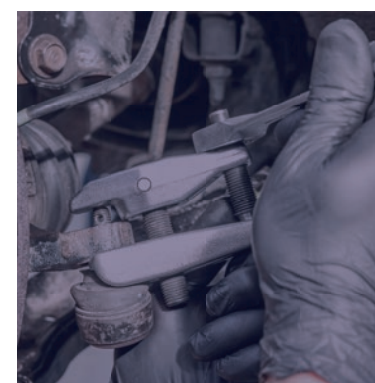
- Torque wrench
- Impact wrench
- Ratchet wrench
- Socket set
- Socket wrenches
- Track rod wrench
- Ball joint puller
- Flat screwdriver
- Pliers
- Hammer (optional)
- Non-aggressive lubricating grease
- Steel brush
- Penetrating oil
- Work light
- Sidem steering rack gaiter
- Sidem axial joint
- Sidem tie rod end

INSTALLATION STEPS.

1. First scan the QR code on the Sidem packaging and read the assembly instructions. We are replacing the tie rod ends, the axial and the steering rack gaiters, in that order. Even if you are only replacing the axial or the steering rack gaiter, the tie rod end must always be loosened first. Clean the nuts and screw threads which are to be removed with a steel brush. Then spray penetrating oil on the thread of the tie rod end and on the lock nut of the axial. Use two wrenches to loosen the lock nut. Then remove the split pin from the tie rod end and loosen the nut on the ball joint.



2. Use a ball joint puller to remove the tie rod end from the steering knuckle. If this is difficult, you can tap the steering knuckle lightly, but avoid this if possible. Unscrew the tie rod end from the axial. Count the number of turns it takes until it comes loose – it will help when installing the new part and make wheel alignment easier. Loosen the clamps on the steering rack gaiter. Use a small screwdriver to create some space between the gaiter and the axial, and spray some penetrating oil in between.



HOW TO REPLACE STEERING PARTS?

3. Pull the cover off the steering rack and slide it off the axial. Then remove the axial from the steering rack. If the axial does not have any wrench flats, or if there is little working space, use a special track rod wrench. Remove the new parts—tie rod end, steering rack gaiter, and axial—from the packaging and compare with the old parts to make sure everything is correct.



4. Next, turn the axial manually on the steering rack. Tighten it with a wrench and then apply torque according to the vehicle manufacturer's guidelines. Apply some grease or oil to the axial shaft. This will make it easier to slide the steering rack gaiter into place. Slide the large clamp over the steering rack gaiter. Install the steering rack gaiter correctly: on the steering rack and in the grooves of the axial. Secure the clamps to the new steering rack gaiter.



5. First, mount the lock nut on the axial, then turn the tie rod end on the axial according to the number of turns you counted earlier. Apply some grease to the top of the dust cap. Reinstall the tie rod end in the steering knuckle and tighten the nut. Tighten to the torque specified by the manufacturer. Finally, tighten the lock nut securely against the tie rod end to secure everything in place. After replacement, the wheels can be remounted on the car and it is ready for wheel alignment.



WATCH THE WORKSHOP TIP STEP BY STEP.

For a more detailed visual guide, scan the QR code to view the installation video. The video walks you through every step of the process and highlights important details to ensure a safe and ensure proper fitment.



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WORKSHOP TIPS.

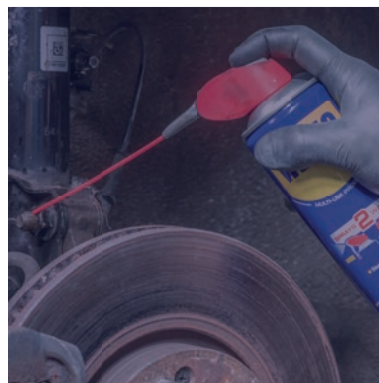
HOW TO REPLACE STRUT MOUNTS ON A MACPHERSON SUSPENSION?

REQUIRED TOOLS.

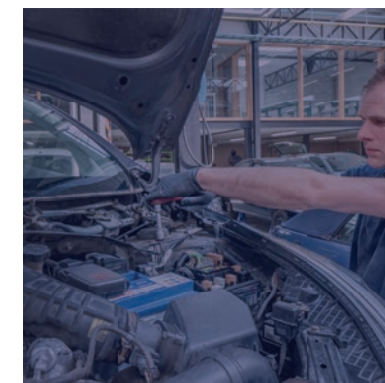
- Torque wrench
- Impact wrench
- Ratchet wrench
- Socket set
- Socket wrenches
- Flat screwdrivers
- Spring compressor
- Steel brush
- Penetrating oil
- Vise
- Sidem strut mount

INSTALLATION STEPS.

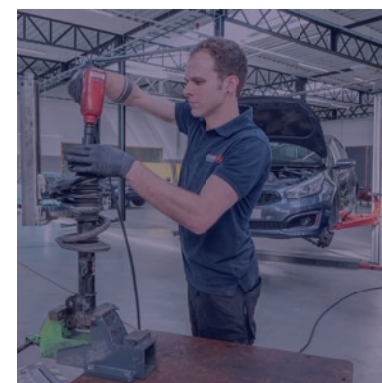
1. First, scan the QR code on the Sidem packaging and read the installation instructions thoroughly. Clean the bolts and nuts which are to be removed with a steel brush. This includes those on the bracket between the suspension strut and the steering knuckle, the suspension strut mounts themselves, and the top nut on the gas spring. Then spray all fasteners with penetrating oil. Check for any clamps for brake lines or sensor wiring that need to be removed and loosen them if applicable.



2. Next, remove the upper ball joint of the stabilizer link from the suspension strut. Then loosen the two bolts on the bracket between the suspension strut and the steering knuckle. Pull the steering knuckle away from the suspension strut. Lower the vehicle so that you can loosen the nuts on the suspension strut mounts. Next, pull the suspension strut out of the vehicle (by first removing the bracket from the steering knuckle). Place the suspension strut in a vice.



3. Tension the spring with a spring compressor. Remove the top nut on the gas spring. This is the mounting nut for the strut mount itself. Then remove the old strut mounts. Remove the bellows, bumper, and rubber spring seat and set them aside.

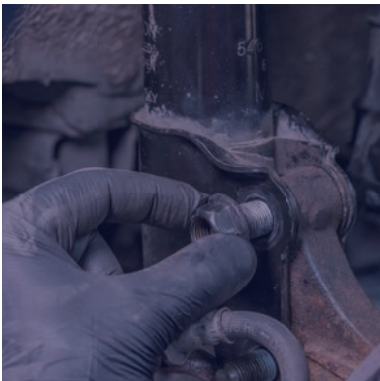


HOW TO REPLACE STRUT MOUNTS?

4. Unpack the new suspension strut mounts and compare them with the old ones. Mount the bellows, bumper, and rubber spring seat on the new suspension strut mounts. Use some penetrating oil to make this easier. Place the new strut mount on the gas spring and fit the top nut. When loosening the spring compressor, make sure that the spring is correctly seated in its seat. Then tighten the top nut to the torque specified by the vehicle manufacturer. Place the nuts at the strut mount seat under the hood, this will make it easier to mount the strut. Remove the suspension strut from the vise and take it back to the vehicle.



5. Place the suspension strut back in the car and mount the strut mount nuts manually while holding it in position. Now reattach the suspension strut bracket to the steering knuckle with the bolts and nuts. First tighten them manually, then to the torque specified by the vehicle manufacturer. Next, tighten the suspension strut mount nuts under the hood to the torque specified by the vehicle manufacturer.

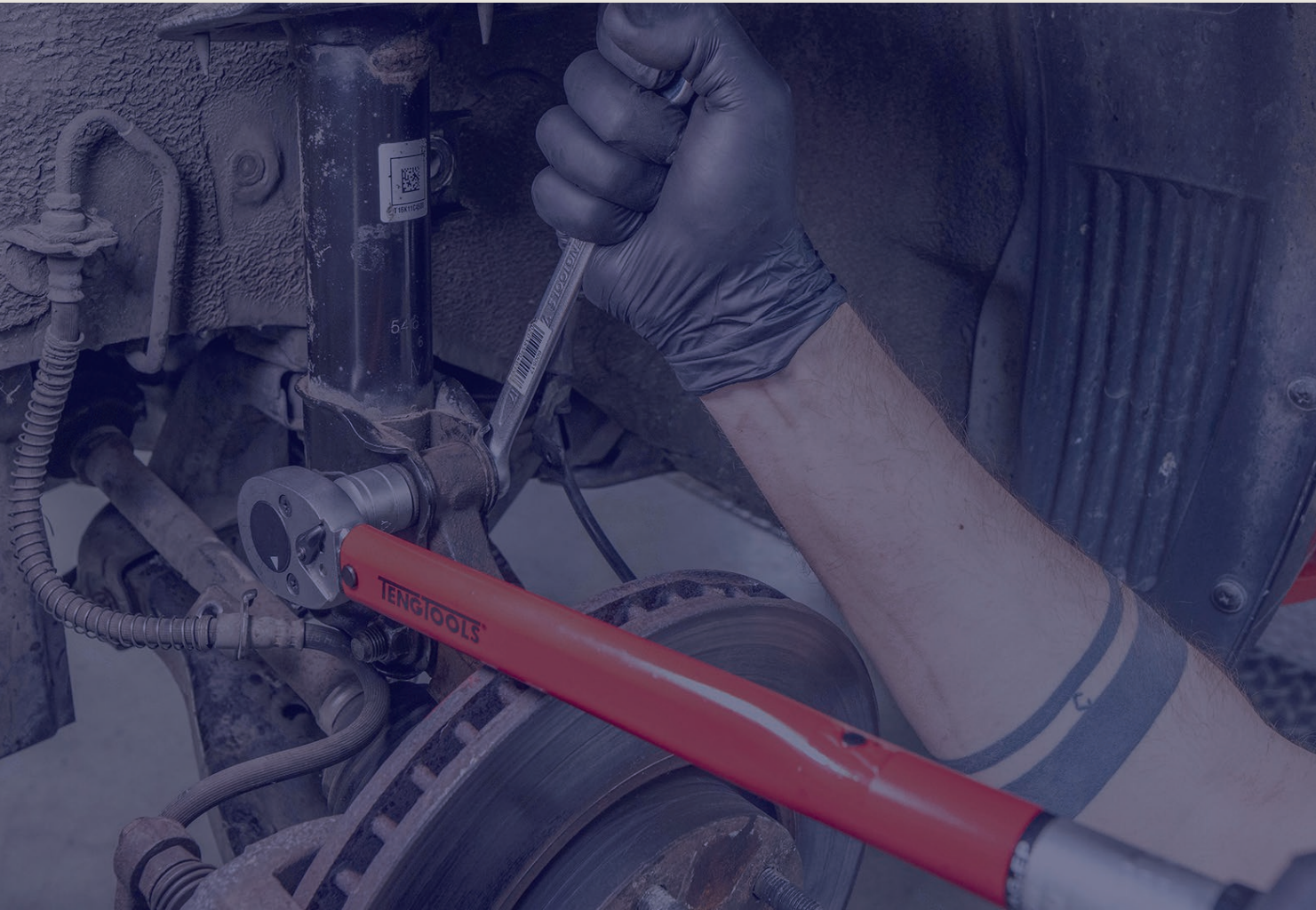


6. Reinstall the upper ball joint of the stabilizer link and reattach the brake line clamps and sensors. After replacement, the wheels can be remounted on the car and it is ready for wheel alignment.



WATCH THE WORKSHOP TIP STEP BY STEP.

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03.

**WORKSHOP
TIPS:**

**WHEEL
ALIGNMENT.**



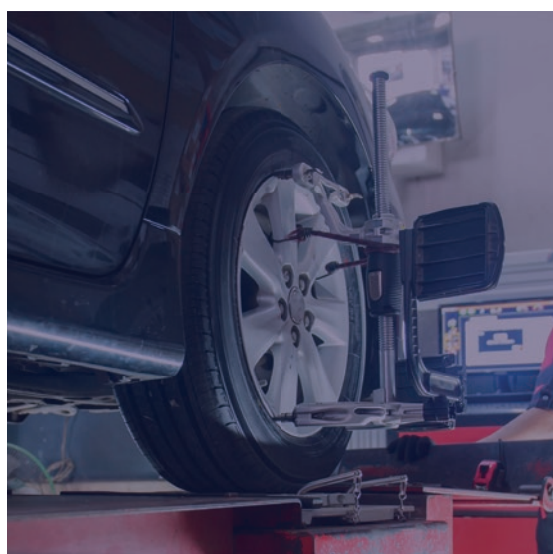


WORKSHOP TIPS. WHY WHEEL ALIGNMENT IS ESSENTIAL.

WHY WHEEL ALIGNMENT IS ESSENTIAL AFTER EACH SUSPENSION AND STEERING GEAR REPAIR JOB.

Each intervention at the suspension or steering parts directly affects the wheel positions. The smallest deviation in camber, caster or toe has an impact on tire wear, changed driving behavior and vehicle stability. Given the increasingly tight tolerances in the current vehicle generations, even a small deviation can have noticeable consequences.

A misaligned undercarriage generates extra load on parts, causing premature wear or play, which are reasons for a failed car inspection.



WHEEL ALIGNMENT: NO OBLIGATION, BUT A MUST.

Wheel alignment is not subject to the car inspection, but beware: the consequences resulting from misalignment can lead to a failed inspection. Some consequences:

1. UNEVEN OR EXCESSIVE TIRE WEAR.

Tire wear is checked closely at the car inspection. If any wear is visible at the inside or outside of a tire or if the tread is worn unevenly, this can lead to a failed inspection. This type of wear is often a direct consequence of incorrect wheel positions or wrong tire pressure.



TOE
WEAR



CAMBER
WEAR



CENTER
WEAR



EDGE
WEAR



PATCH
WEAR



CUP
WEAR

2. DEVIATING STEERING BEHAVIOR.

During the test drive or when moving the vehicle, the inspector can establish a deviating driving behavior. In case of a crooked steering wheel, the car will strongly pull to one side or the steering gear will react unnaturally, causing the inspector to check the car more closely or add comments to the inspection report.

WHY WHEEL ALIGNMENT IS ESSENTIAL.

3. PLAY IN STEERING & SUSPENSION PARTS.

Any visible damage to steering and suspension parts immediately means a failed car inspection. Moreover, a misaligned undercarriage generates extra load on parts, which can accelerate premature wear or play in e.g. steering balls or steering knuckle balls, another reason for a failed inspection.

BOTH TECHNICAL AND COMMERCIAL ADVANTAGE.

For a workshop, systematic alignment after repairs is not only technically sound, but also commercially smart. These are the advantages:

- **Quality guarantee:** less risk of complaints or repeat visits from clients with complaints about roadholding or driving behavior.
- **Lower consumption and longer tire life:** this advantage is directly measurable for the customer.
- **Better prepared for the car inspection:** especially when cars need to be inspected at short notice, it is crucial that the tires and driving behavior are OK.
- **Extra service:** mention the alignment on the work order and specify why it has been carried out, this increases your professionalism.

1. WHEN SHOULD YOU CARRY OUT AN ALIGNMENT?

Consider aligning as a **necessary finalization** after the following work:

- Replacement or disassembly of track control arms, steering knuckle balls, strut mounts, tie rods, steering racks or shock absorbers
- Adjusting or lowering the suspension (also aftermarket)
- Repair following an accident affecting the subframes or wheel houses
- Detection of deviating wheel position when driving straight ahead, instability when driving straight ahead, vibrations in the steering wheel or car and uneven or excessive tire wear.

2. A PROFESSIONAL JOB STARTS BY MEASURING.

Invest in a modern alignment rack using 3D or CCD technology and make sure your staff has been trained in carrying out and interpreting wheel geometry measurements. Work according to a standard procedure:

- Check **tire pressure** and **visible condition** of the tires.
- Compare the **camber, caster and toe** measurements to the values that are prescribed by the manufacturer.
- Make the necessary adjustments and **document** the final values in the work report.
- **Inform** the client, especially in case of deviations that can't be adjusted and might lead to a failed inspection.

3. HIGH-QUALITY PARTS MAKE THE DIFFERENCE.

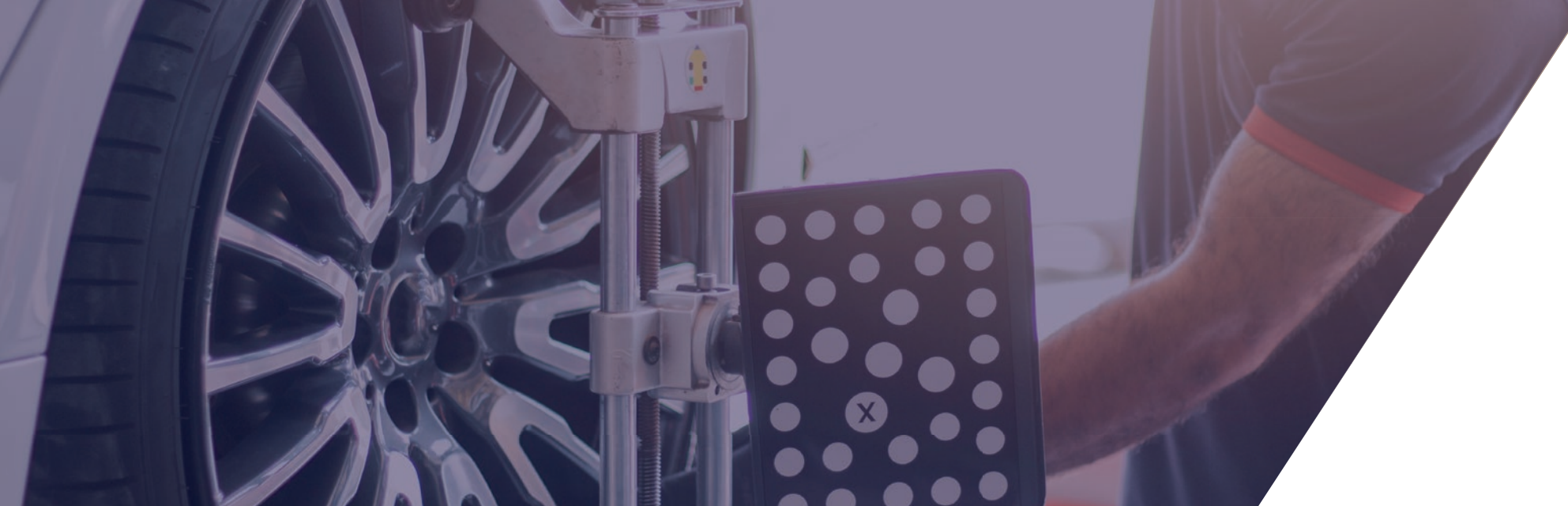
The quality of the mounted parts makes or breaks a correct wheel alignment. In case of repairs to suspension and steering gear, it is crucial to choose **high-quality, OEM-compliant parts**. Some examples are track control arms, steering knuckle balls, gaiters, steering balls and shock absorbers: these components have a direct impact on driving behavior, contact with the road and general car stability. Inferior or ill-fitting parts not only cause play or deformation faster, but also affect the precision of the alignment, which is at the expense of safety and comfort.

A car that has been repaired using quality parts offers a noticeably **higher driving comfort**, more stable steering and a **longer lifespan** for tires and components. Furthermore, there is less risk of experiencing new problems in the short term or getting negative comments at the car inspection. As the owner of a workshop or a car repair shop, this not only demonstrates your **technical know-how**, but also your commitment to **your customer's safety and satisfaction**. Best is cheapest, especially when dealing with the essential parts of the undercarriage.

CONCLUSION.

Wheel alignment is an absolute must after suspension or steering gear repairs. For professionals, this demonstrates skill; for clients, it's an added value; and within the context of the car inspection, it's a way of avoiding risk.

When there's no direct safety impact, the inspector will often mention a detailed check or an adjustment of the alignment as a recommendation as the wheel alignment isn't included in the inspection. By considering future impact and any additional costs, we should take this advice to heart, being responsible drivers.



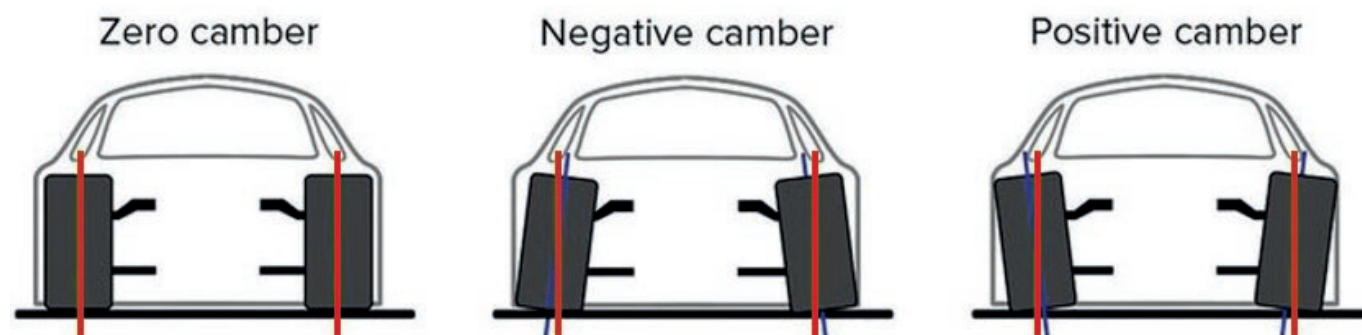
WORKSHOP TIPS.

WHEEL GEOMETRY PARAMETERS.

Each intervention at the suspension or steering parts directly affects the wheel positions. The smallest deviation These values are always compared with the manufacturer's guidelines, which can differ according to model, year of construction and even equipment level.

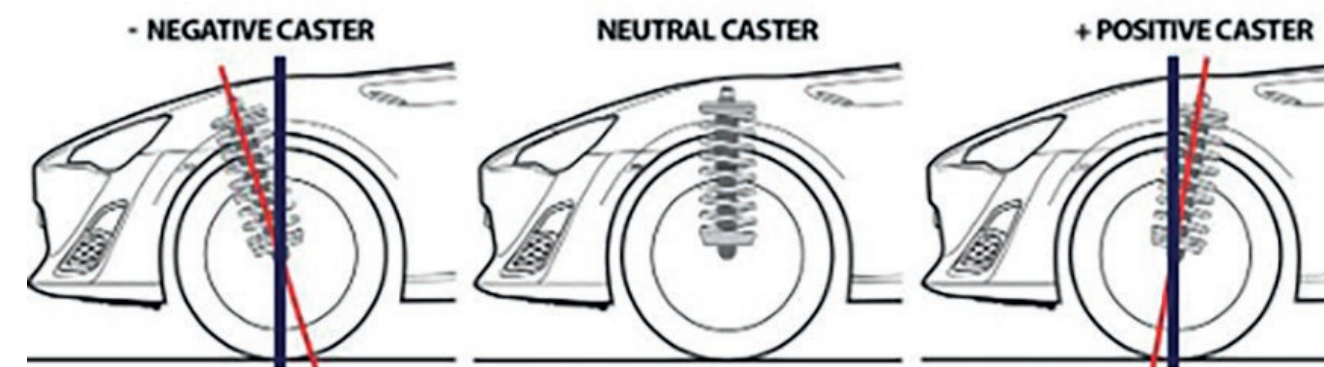
1. CAMBER.

This is the angle at which the wheel is positioned compared to the vertical axis. Positive camber means that the top of the wheel tilts outward; negative camber when it's tilting inward. Too much negative camber can generate wear at the inside of the tire, while too much positive camber generates wear at the outside. Zero camber means there's optimal contact between tire and road when the car is driving straight ahead. Manufacturers often design a slightly negative camber to improve stability during cornering, but within strict tolerances. Positive camber, on the other hand, is rather used in (light) trucks, where the wheel positions tend to change towards zero camber due to the load.



2. CASTER.

This is the angle between the steering shaft and the vertical axis. A positive caster or steering shaft angle allows for stability when driving straight ahead and the automatic return of the steering wheel after cornering. We should note here, however, that steering gets heavier. These days, negative caster or forward tilt and neutral caster are avoided because of instable steering and driving behavior. The arrival of servo control has ensured that modern vehicles are nearly always equipped with a positive caster, ranging from 2° up to sometimes more than 6°, according to type and segment. Caster cannot always be adjusted, except in sports or premium cars with adjustable track control arms.



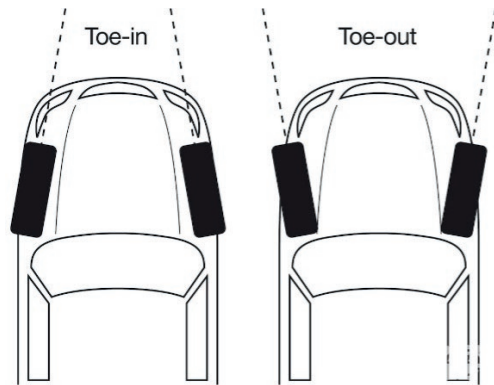
WHEEL GEOMETRY PARAMETERS.

3. TOE (TOE-IN AND TOE-OUT).

Toe refers to the direction in which the wheels are positioned seen from above. Toe-in means that the wheel fronts are pointing to each other; toe-out means that they are pointing outward. Depending on the type of vehicle and the drive, both toe-in and toe-out are applied in practice (FWD with toe-out; RWD with toe-in). Incorrect track adjustment causes increased tire wear. This value has the highest impact on the steering precision.

For each model, manufacturers provide **specific guidelines with both chosen values and tolerances** (mostly in degrees or millimeters, per axle). These are included in the alignment software or the technical documentation of the vehicle. These guidelines take into account the following:

- Load factor (sometimes with prescribed ballast weight)
- Driving height (in mm), important for lowered or loaded vehicles
- Wheelbase and gauge
- Vehicle specific geometry (McPherson, multilink, beam axle, etc.)
- Front wheel, rear wheel or four-wheel drive



4. IMPORTANCE OF CORRECT INTERPRETATION.

Only measuring isn't enough: an experienced technician must be able to also interpret deviations **according to the context**. For example:

- Is a deviating camber value caused by a **deformation in the undercarriage**?
- Does the deviation fall within the margins, or does it indicate **play in a bearing, steering knuckle ball or steering ball, or a worn rubber bushing**?
- Should the customer's attention be drawn to **worn tires or a previous accident**?

Furthermore, it is crucial to understand that **symmetry between left and right side** is sometimes more important than absolute values.

5. AND FINALLY.

Professional wheel alignment requires more than just modern equipment. It also requires insight into vehicle technology, interpretation of data as well as manufacturers knowhow. Anyone mastering this expertise will not only deliver a safe car that is driving perfectly, but will also stand out as a subject specialist in an increasingly technical work environment.



WORKSHOP TIPS.

WHEEL ALIGNMENT CHECKLIST.

1. VEHICLE PREPARATION AND INSPECTION.

- ☒ Check and correct the tire pressure according to the factory instruction.
- ☒ Remove any surplus load and ensure a neutral load condition.
- ☒ Carry out a visual check of the tires, rims and wheel suspension.
- ☒ Clean the rim edges to ensure correct mounting of the measuring equipment.

2. SUSPENSION AND STEERING GEAR INSPECTION.

- ☒ Check the steering knuckle balls, track control arms, gaiters, steering balls and bearings for play or wear.
- ☒ Check the driving height; sagged suspension springs affect the measurement.
- ☒ Repair defects before starting the alignment.

3. POSITIONING ON THE ALIGNMENT RACK.

- ☒ Position the vehicle straight and centered onto the alignment rack.
- ☒ Unlock the steering wheel; put the front wheels on turnplates, the rear wheels on slip-plates.
- ☒ Move the car slightly onto the springs to stabilize the suspension.

4. SETTING UP THE ALIGNMENT EQUIPMENT.

- ☒ Start the 3D or CCD system and select the correct vehicle data.
- ☒ Check the factory specifications for the wheel positions.
- ☒ Calibrate the system and make sure that sensors or cameras are correctly positioned.

5. MOUNTING THE MEASURING HEADS & RIM COMPENSATION.

- ☒ Carefully fix the measuring heads or reflectors to the rims.
- ☒ Perform a rim stroke compensation to neutralize any rim deviations.
- ☒ Ensure a clear view of the sensors or reflectors to the cameras.

6. CARRYING OUT THE ALIGNMENT MEASUREMENT.

- ☒ Carry out the measuring cycle as per the system's instructions.
- ☒ Measure camber, caster, and toe for each wheel.
- ☒ Analyze the measurement report; determine which angles should be adjusted.

7. ADJUSTING THE REAR WHEELS (IF ADJUSTABLE).

- ☒ Start by adjusting camber, followed by toe.
- ☒ Use eccentric bolts, adjustment arms or adjusting screws.
- ☒ Correct the thrust angle up to nearly 0°.
- ☒ Recheck the measurements after every adjustment.

8. ADJUSTING THE FRONT WHEELS.

- ☒ First adjust caster (if adjustable), then camber and finally toe.
- ☒ Work symmetrical and keep the steering wheel in the driving straight ahead position (use the steering-wheel lock).
- ☒ Adjust both tie rods proportionally to keep the steering wheel centric.
- ☒ Check after each intermediate step on the measurement screen.

WHEEL ALIGNMENT CHECKLIST.

9. FIXING AND LOCKING.

- ☒ Tighten all the bolts, nuts and lock nuts using the correct torque.
- ☒ Use a torque wrench; avoid pneumatic wrenches for fine-tuning.
- ☒ Replace corroded or damaged adjusting screws, if necessary.

10. FINAL MEASUREMENT AND REPORTING.

- ☒ Carry out a control measurement to confirm the final values.
- ☒ Generate a pre- and post-report using the alignment software.
- ☒ Document the report for the customers and for internal use.

11. TEST DRIVE AND FINALIZING.

- ☒ Make a test drive on a flat road; check the wheel position, driving straight ahead and steering-wheel return.
- ☒ Correct if necessary by fine-tuning.
- ☒ Check if the ADAS systems require recalibration after the alignment (cameras, radars).
- ☒ Finalize with customer information and professional advice.

SIDEM INSPECTION & REPAIR TIPS FOR EXPERTS.

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The company offers the most comprehensive range in the industry with over 10,000 references for private and light commercial vehicles.

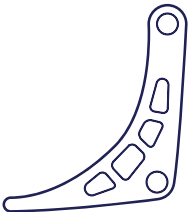
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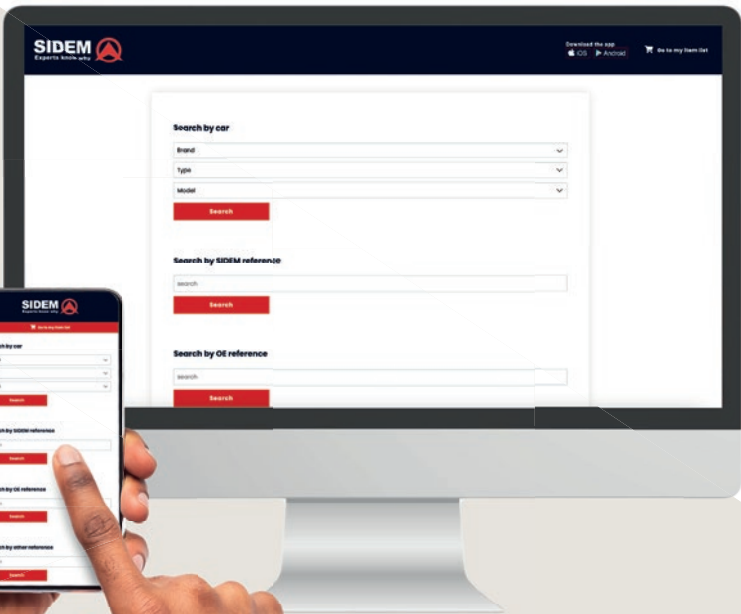
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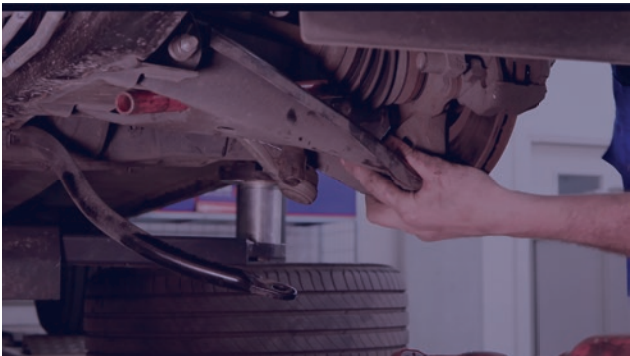
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INSTALLATION VIDEOS



How to install a track control arm with re-engineered ball joint?



How to install a track control arm without preload?



Right tools to install steering & suspension parts



How to recognize bad stabilizer links?



How to recognize bad tie rod ends or axial joints?



How to recognize a bad track control arm?



**WATCH THE
INSTALLATION
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