



ADJUSTABLE COILOVER SYSTEM

Thank you for joining the group of enthusiasts around the world that use Ksport suspension systems to maximize vehicle performance. Please keep in mind that these systems are for off road use only. This system is to enhance the handling, ride comfort and overall performance of the vehicle, but it will not necessarily have the same specifications as the OEM system.

All installation should be performed by either an authorized Ksport USA dealer or a professional who specializes in suspension tuning. Ksport cannot be held liable for damages resulting from improper installation. With proper care, Ksport suspension systems will provide exceptional performance and durability.

Need Help?

Our representatives are here to help you with any questions concerning the operation of the product, installation, available accessories or any other related issues.

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BEFORE INSTALLATION

Thank you for purchasing our suspension. In order to provide quality products for our customers, we stay committed to our research and development process. Our team is well equipped with extensive experience and advanced technology to participate in assembling exceptional products for personal use and international race events. Our products are tested through different procedures and are approved with TOV ISO 9001:2015 standards.

We aim to manufacture the best products with strict quality procedures in order to satisfy all the requirements from our customers. This manual includes instructions and additional important information. Please read the instructions carefully to ensure accurate product installation. Our company does not take any responsibility for loss, accidents, damages or death caused by misuse, improper installation, using parts not supplied by our company, or retrofitting this product without our permission.

The damping setting and spring rate for this product are different from the vehicle's original suspension. Each set of our suspension kits can be disassembled to change the damping setting for repair and maintenance. However, installing and disassembling the suspension can only be performed by certified and professional technicians.





For detailed information on installing and disassembling services, wages and time required, please contact your local dealer.

Be sure to observe local regulations regarding the usage of adjustable suspensions. Stay up to date with local road regulations, laws and rules. We are not liable for any violation of road regulations, laws or rules.






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BEFORE INSTALLATION







When using and installing the suspension system, basic safety precautions should always be followed to reduce the risk of damage or property loss to anyone. Please carry out the instructions and use the suspensions correctly. Be fully aware of the following signs before reading the manual and installing the suspension system.

 Danger	Ignoring this sign is dangerous and can result in moderate to severe injuries.
 Warning	Ignoring this sign can result in moderate to severe injuries.
 Attention	Ignoring this sign can result in moderate to severe injuries and or damaged products.
 Suggestion	Ignoring this sign can result in damaged suspensions and poor performance.

SUSPENSION INSTALLATION

 Danger	The suspension can only be installed on the car model it was designed for. Do not attempt to modify any parts of this product, otherwise, it may cause damage to your car and the suspensions.
 Warning	Please do not use any pneumatic tools to disassemble the suspensions. Improper wrenching may cause the nut of the inner strut to loosen and may damage the product.
 Warning	Please be careful when using or applying torque wrenches. Due to the hollowness of the suspension piston shaft, it can be damaged if the torque is improperly applied.
 Attention	After installing the suspensions, please check if the tires or wheels conflict with the suspensions. Move the wheels throughout the entire range of motion to verify brake line placement. Binding, pinching, kinking, stretching or other anomalies must be avoided. The installer should take full responsibility if there is any damage, injury or loss of property caused.
 Danger	If tires and wheels other than the standard size are installed, ensure they will not conflict with the suspensions. Non-standard wheel sizes are a common cause for suspension and car damage. We will not be liable for any damages caused by installing non-standard wheel sizes.

 Danger	<p>This product contains high-pressure gas inside. Please do not disassemble the suspension. Keep this product away from fire to avoid explosion due to high compressed gas. Do not install this product if it is found having been disassembled before.</p>
 Attention	<p>Please ensure all components on the suspension are tightened after installation, such as upper mount screws, pillow ball screws, bracket holder, adjustable end link mountings, etc. After installation, proper clearance must be verified prior to closing hood.</p>
 Suggestion	<p>Due to space limitations, certain applications do not include dust covers. Products without a dust cover should be cleaned regularly on the surface of the cylinder to ensure quality performance and to increase product life span.</p>
 Danger	<p>When installing this product, please wear gloves and use proper tools to avoid injury.</p>
 Attention	<p>When removing or tightening bolts on the top mount, do not use any tool to clamp the cylinder at the top of the shock or clamp the shock body onto the place where there are threads to avoid scratching. If the cylinder has been scratched, the seal may be damaged and cause the suspension to leak.</p>
 Suggestion	<p>Some newer model vehicles are equipped with electronic damping adjustment such as an EDC system. When the suspension is upgraded to aftermarket suspension kits, the original Electronic Damper system will display an error signal and begin function inadequately. A viable solution we offer at an extra cost is the cancellation kit.</p>

 Attention	<p>All anti-rust coating materials are in accordance with ISO standards. However, rust may surface in unsuitable environments. Consider purchasing anti-rust oil and use it on necessary spare parts. Items that rust naturally are not covered with warranty.</p>
 Warning	<p>This aftermarket product is designed for racetrack purposes. We will not be responsible for any property loss, injuries, or casualties resulting from non-racetrack use of this product.</p>
 Attention	<p>The installer should take full responsibility for the installation of the product whether it is used in vehicles operating on normal road conditions or not. We will not be liable for any damages or injuries.</p>
 Attention	<p>We reserve the right to change and modify the design of the products. To ensure the improved quality of our products, we will not announce any design changes in advance.</p>
 Attention	<p>After the suspensions have been disassembled or assembled, the vehicle is required to visit an approved vehicle alignment center to ensure the alignment and setup are accurate and secure.</p>
 Suggestion	<p>If insurance is needed, the customer can insure with a local insurance company.</p>

RIDE HEIGHT ADJUSTMENT



Attention

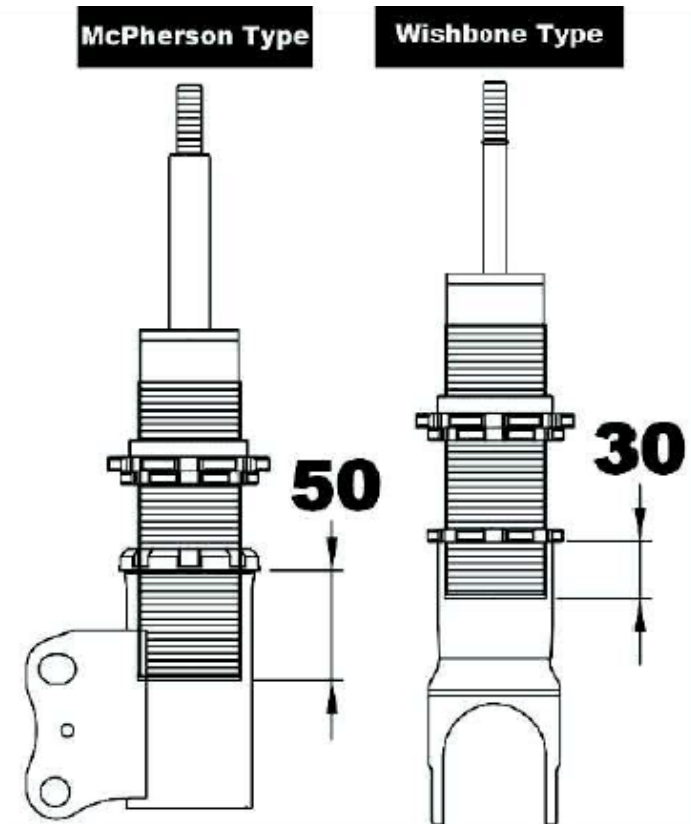
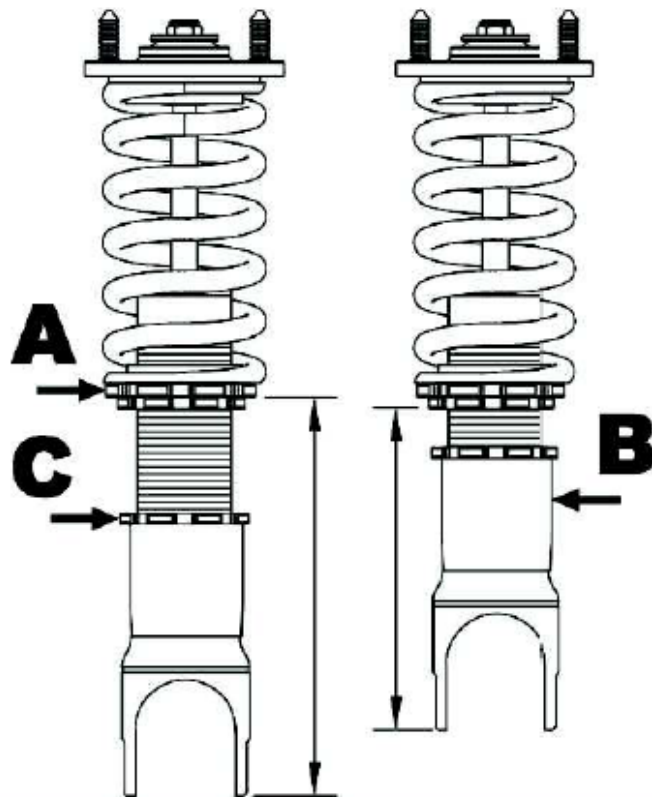
In order to prolong the life span of the suspension and avoid unusual damage, please do not adjust Part A to compress the spring. Please change the ride height by adjusting **Part B** (Lower Mount) and tighten **Part C** (Lower Mount Locking Collar).



Warning

To avoid damage or injury, please understand the range between the longest and shortest length of a lower mount before adjustment. Adjusting in an inaccurate position can cause an accident or damage to the vehicle while driving.

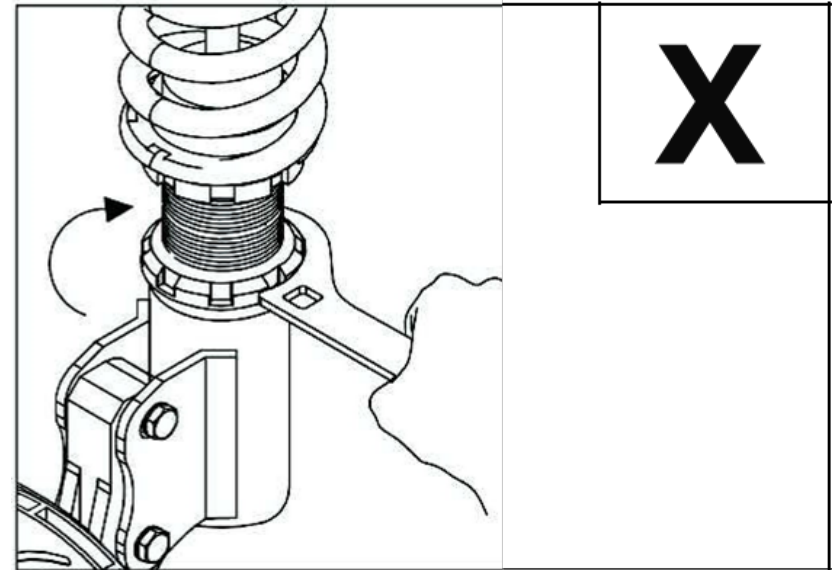
When the desired ride height is reached, insert the strut of the McPherson type into the lower mount to approximately 50mm; for a Wishbone design and a Rear Separated type, insert the strut into the lower mount to approximately 30mm.





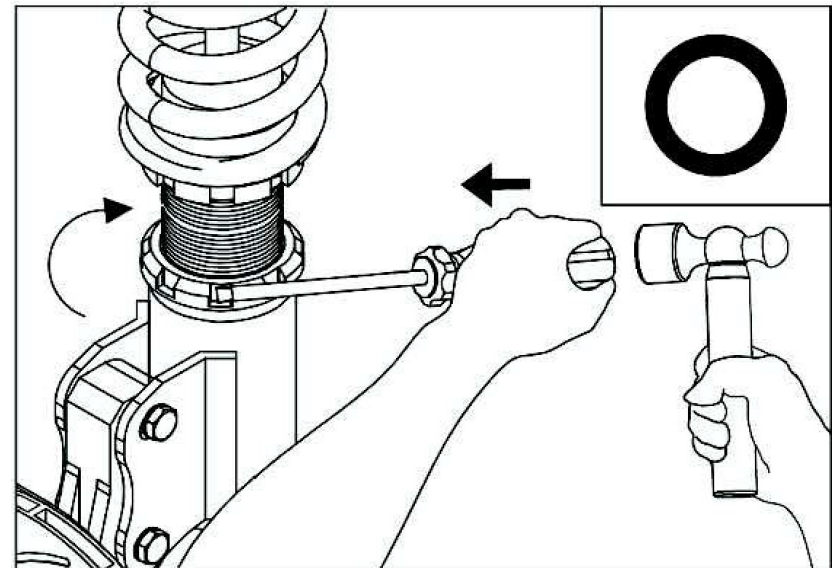
Attention

The spanner in the tool kit is for adjusting the length of the strut. Please do not use it to tighten the spring perch, lower the mount plate or ride height adjustment plate. Doing any of these will result in unusual noises due to looseness.



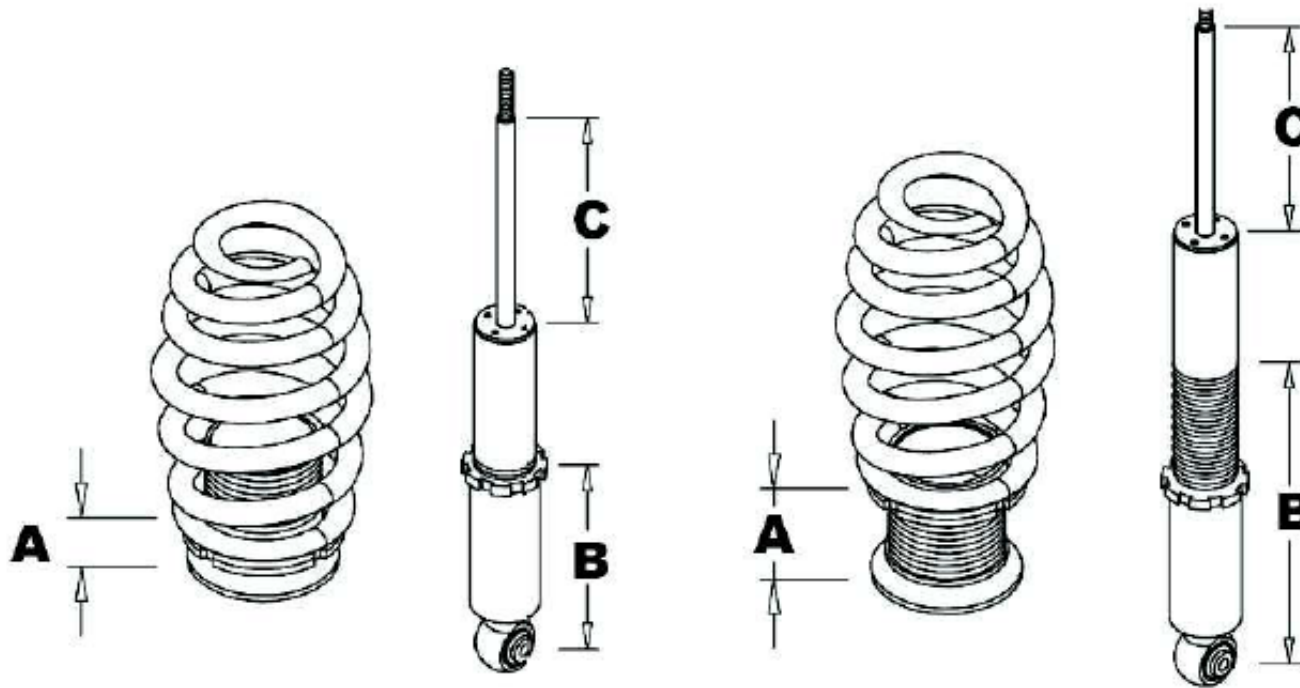
Attention

Please use the hammer and screwdriver to tighten the spring perch and the lower mount plate.



Warning

If the lower mount plate and the spring perch are not locked tightly, it will cause an accident/ damage to the vehicle or result in unusual noises stemming from the suspensions.



Attention

- **Part A** is used to lower or raise the ride height.
- When you are comfortable with the ride height, it's essential to adjust the length of the suspension to your desired position by adjusting **Part B**.
- After the desired ride height is reached, put the tire on and move the vehicle around 5M to 10M. Adjust **Part B** so that **Part C** can be inserted 1/3 into the strut. Leave 2/3 of it outside of the strut; tighten the locking for the spring perch of **Part B**.
- If the adjustment length of the suspension is inaccurate, unusual noises and damage to the car may occur.



Warning

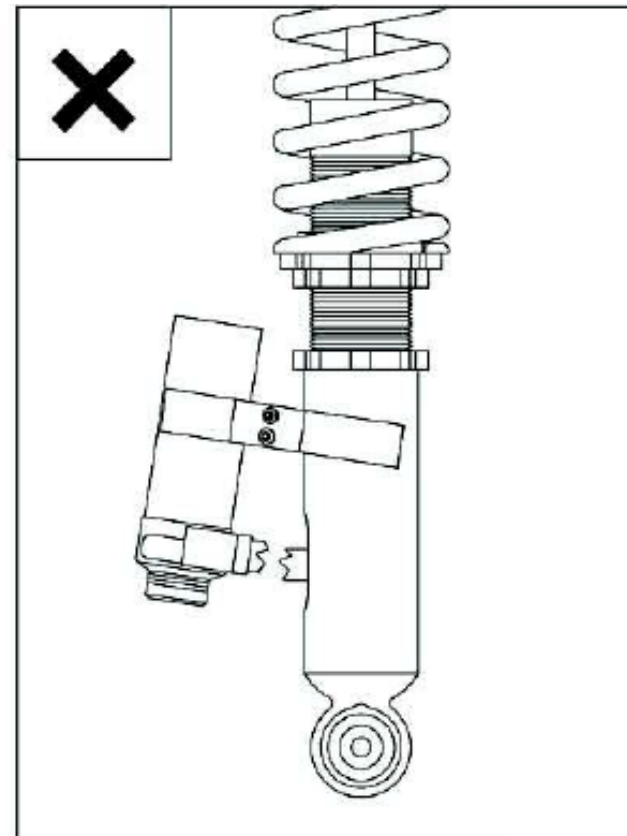
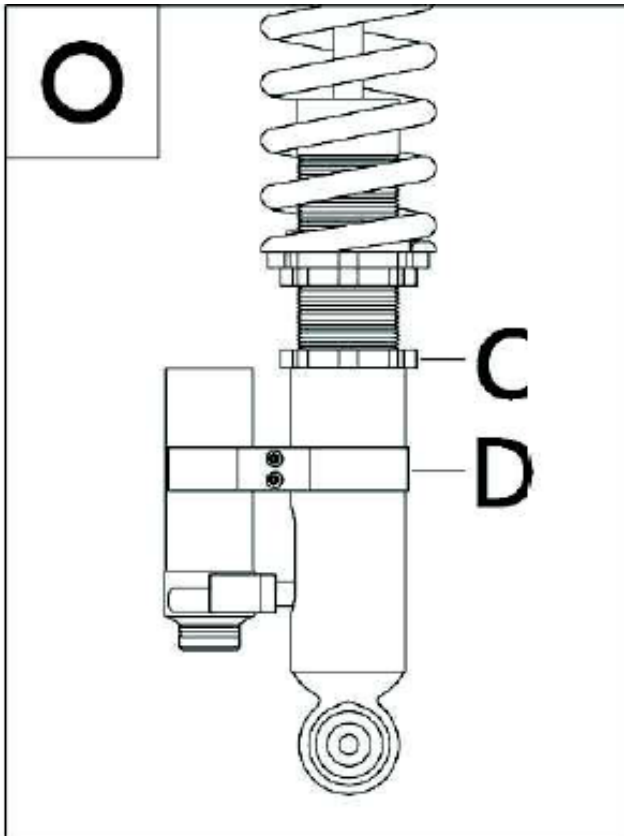
Please understand the range between the longest and shortest length of the lower mount before adjusting. Adjusting inaccurately may result in an accident/ damage to your vehicle. When the desired ride height is reached, insert the strut into the lower mount 30 mm.

RIDE HEIGHT ADJUSTMENT OF NITROGEN RESERVOIR SUSPENSION

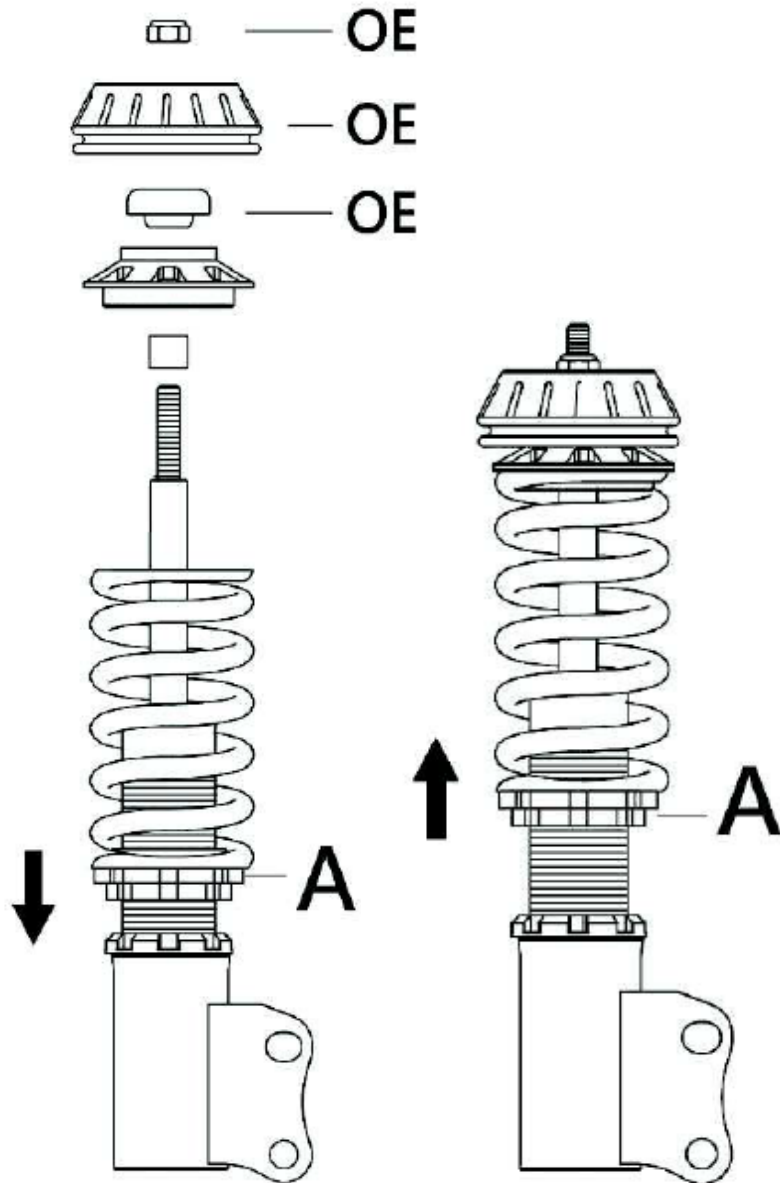


Attention

When you adjust the ride height of the nitrogen reservoir suspension, you must loosen the bolt on the fixing ring (D). Then, loosen the locking ring of the lower mount. After this, you can adjust the length of the suspension to your desired ride height. After the adjustment, fasten the locking and fixing rings of the nitrogen reservoir. Double check if there is any conflict after the nitrogen reservoir is fixed. If you adjust the length of the suspension without loosening the fixing ring of the nitrogen reservoir, damage may occur to the related components.



HOW TO CONVERT THE OE TOP MOUNT



1. Please loosen the spring by lowering the spring perch (**Part A**) to avoid compression on the spring when installing the top mount.
2. Install the spring upper plate, the OE bearing and the OE top mount and then tighten the nut. Please adjust the spring perch (**Part A**) to fix the spring.
3. After reaching the desired ride height, adjust the spring perch and the lower mount plate according to the ride height adjustment.



Danger

Different car models have different installation processes for suspension parts. The installer should bear full liability for any broken cylinder, loss of property and/or injuries resulting from incorrect assembly.

CAMBER ADJUSTMENT FOR MACPHERSON STRUT TYPE SUSPENSIONS

Vehicles equipped with MacPherson strut type suspensions have two (2) methods of camber adjustment. One or both methods may be used on a single vehicle, but it is recommended that the settings are symmetrical across the vehicle, or the SAME on each side of the vehicle. Example: If the top camber plate is use on the LEFT side, use the top camber plate on the RIGHT side as well.

- The upper mount (**Figure D, Item A**) is used for small camber adjustments, such as dialing in different settings for varying track conditions.
- Set baseline camber by using the elongated hole (**Item B**) in the lower mount (**Item C**).
- The camber adjustment tracks should run parallel to the vehicle's windshield, so that when the bolts in the Pillowball camber plate are loosened, the shock shaft travels parallel to the windshield (**Diagram E, Pg. 14**).

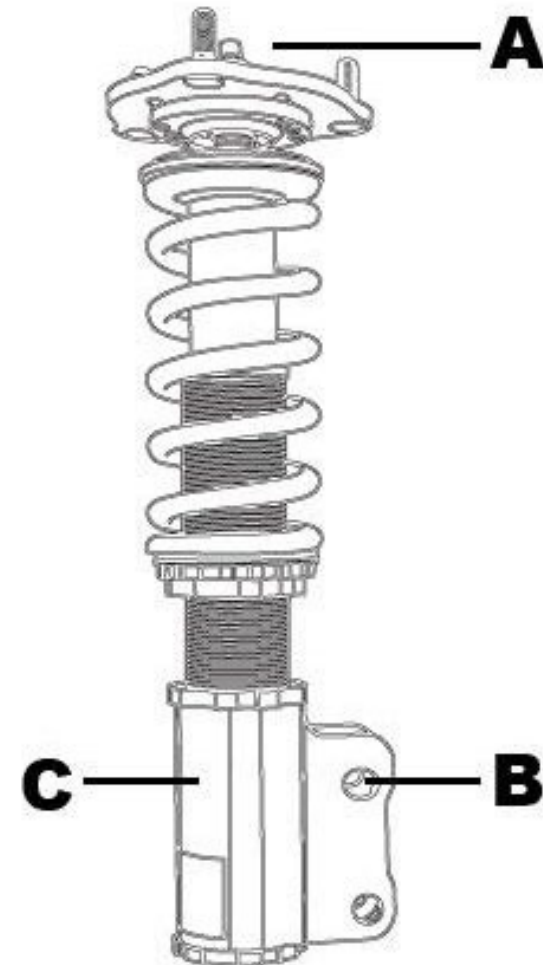
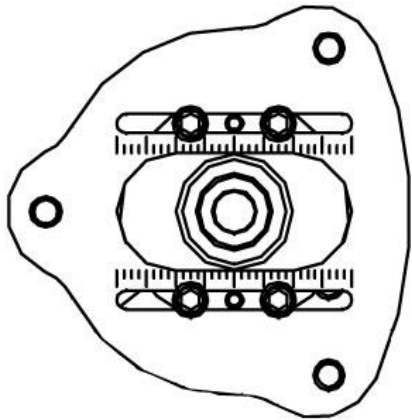


Figure D.

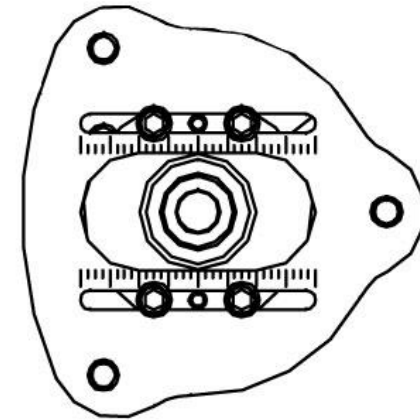
Figure E.

windshield



Pillowball is close to center of upper mount

Camber adjustment is parallel to windshield



If the Pillowball is at an extreme angle, you may experience noise. This should be avoided as it is a sign that you are stressing the Pillowball. If your Pillowball is at an excessive angle, please reset camber by using the elongated hole in the lower mount. Ksport coilover systems for vehicles with double-wishbone type suspensions do not have adjustment for camber settings. Please refer to the Ksport USA catalog for options regarding camber adjustment on double-wishbone equipped vehicles. The Ksport USA catalog is located at <https://ksportusa.com>.

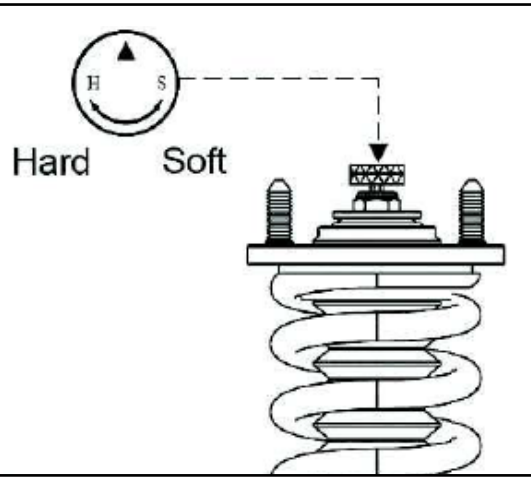
NOTE: Please torque top stud nuts to mfg. (oem) specs

DAMPING ADJUSTMENT

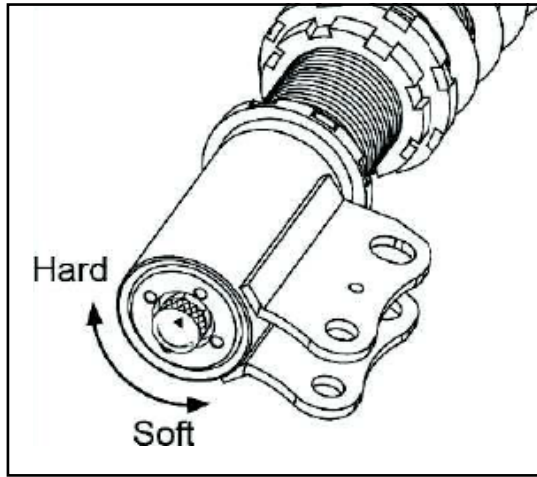


Attention

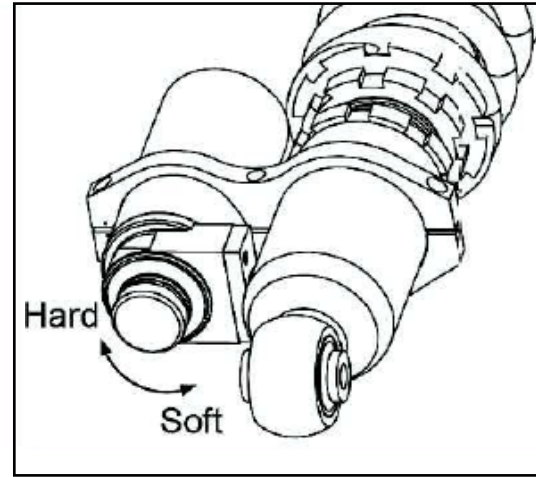
The damping knob is composed of tiny parts inside the shock body. Be careful when adjusting and do not try and force the knob past its limits as it could damage the shock and or get stuck. If the knob is stuck and will not turn, we suggest that you use a lubricating oil such as (WD-40) to spray in the shock damping knob hole and wait a short while, then attempt to turn the damping knob again.



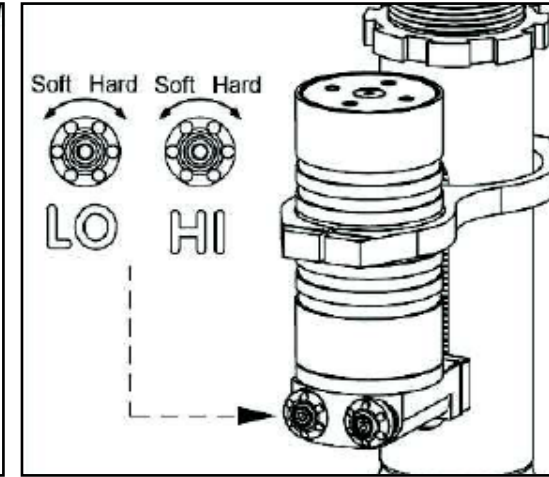
General Top Mount



Inverted Strut



Single Adjustment Knob of Nitrogen Reservoir



Two Adjustment Knobs of Nitrogen Reservoir

DAMPING INSTRUCTIONS FOR REAR INTEGRATED SUSPENSION

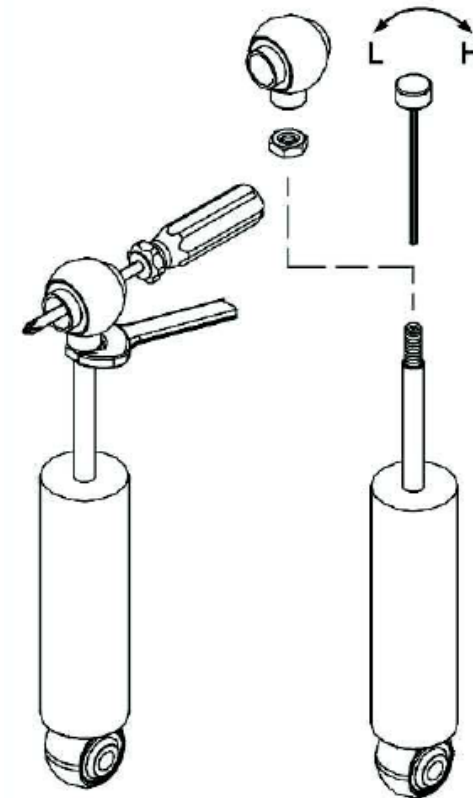
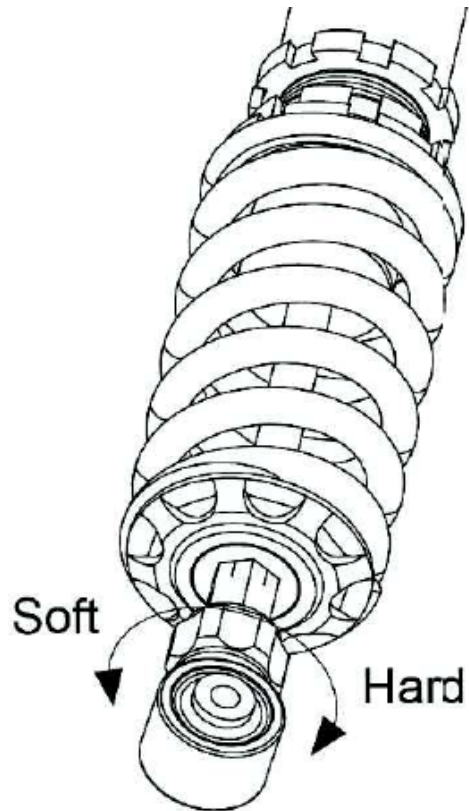


Attention



Any gravel or objects in the adjusting hole or over adjustment will probably result in a function failure of the damping adjustment. Please note that all damaged parts of the damping adjustment are not covered by warranty after 30 days of purchase.

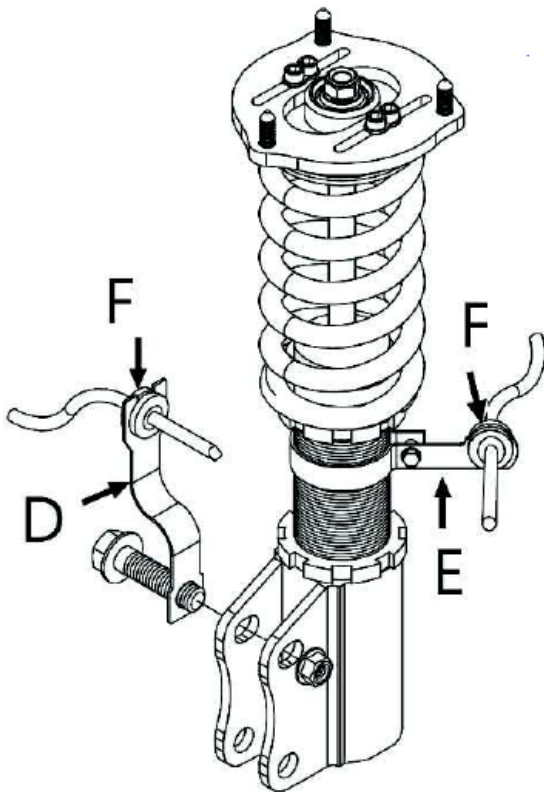
Because the suspension is designed as a top and bottom eye-bolt type, one side of the piston rod should be removed prior to adjusting the damping.

After the adjustment, please tighten the nut.




HOW TO FIX THE BRAKE HOSE AND THE ABS SENSOR WIRE

 Attention	Some models may already have a fixed seat for the brake hose and the ABS sensor wire. The assembled brake hose will differ depending on the country.
 Attention	Some models do not have a fixed seat for the lower mount of the suspension. Our tool kit offers a universal fixing bracket.



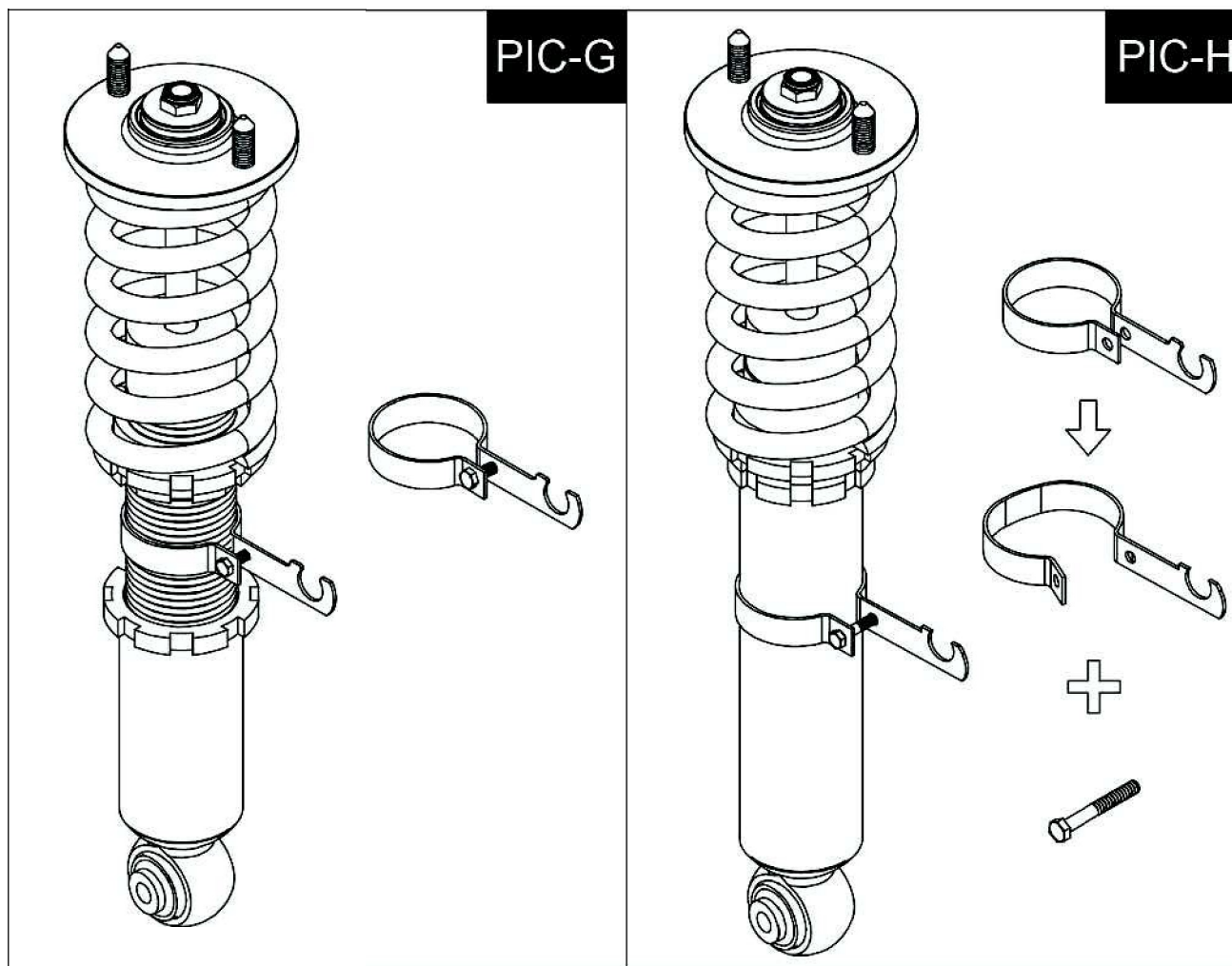
D-E is used to fix the brake hose or the ABS sensor wire. Choose the suitable fixing bracket (**D or E**) depending on the position of the brake hose and the ABS sensor wire.

F is the round rubber in the tool bag. Insert the brake hose into the round rubber and then put the round rubber into the groove of the metal ring.

 Attention	After it has been installed, make sure the brake hose and the ABS sensor wire do not conflict with the wheel when moving or while turning the steering wheel.
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A FIXED RING FOR THE HOSE OF THE WISHBONE SUSPENSION

1. Fasten the fixed ring of the O-type brake hose onto the thread of the strut, as shown in *picture G*.
2. You can also fasten it onto the lower mount. The bigger the outer diameter of the lower mount, the more you must enlarge the fixed ring of the O-type and then replace the longer screw to match *picture H*.

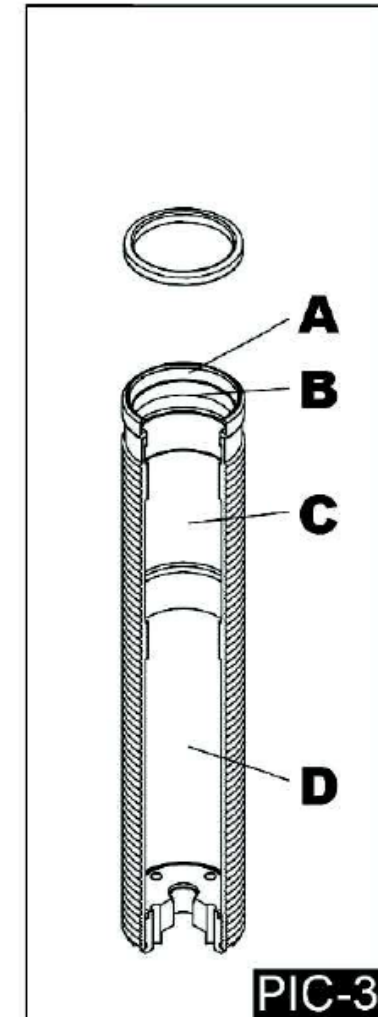
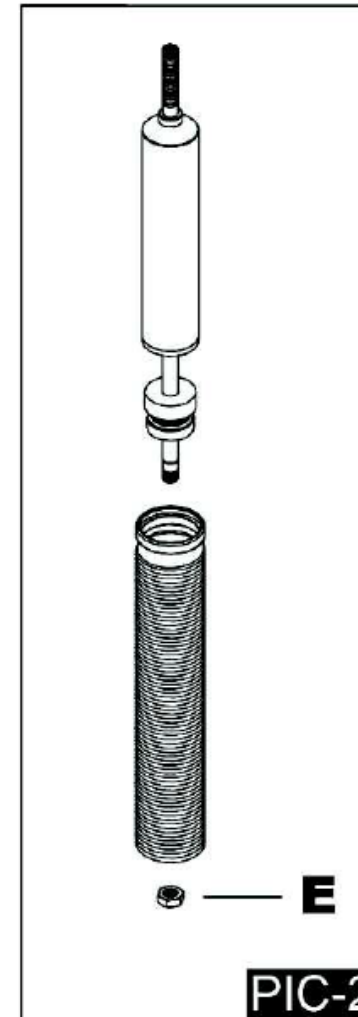
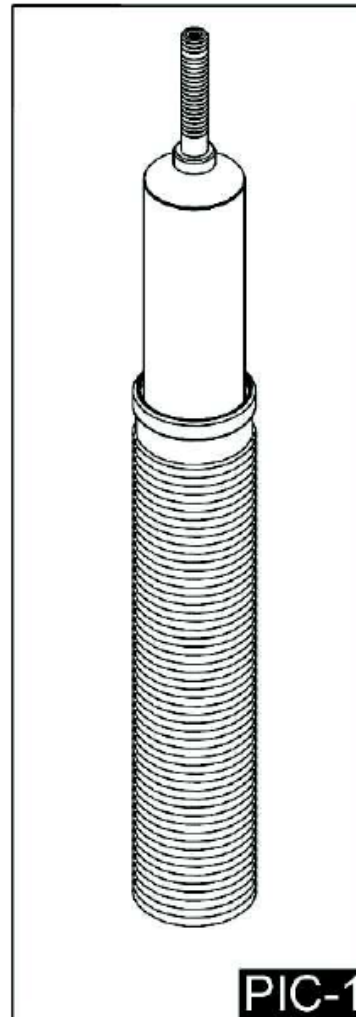


NOTICE OF INVERTED STRUT

Inverted suspensions are designed for specific racing purposes and are mainly made of steel materials in order to enhance the structure for safety and prolong the lifespan of oil seals. After a certain period of usage, this product may begin to produce some unusual noises. The unusual shock noises depend on the frequency of driving. In general, rally gravel or rally snow inverted suspensions are likely to have more shock noises than when used during drifting.

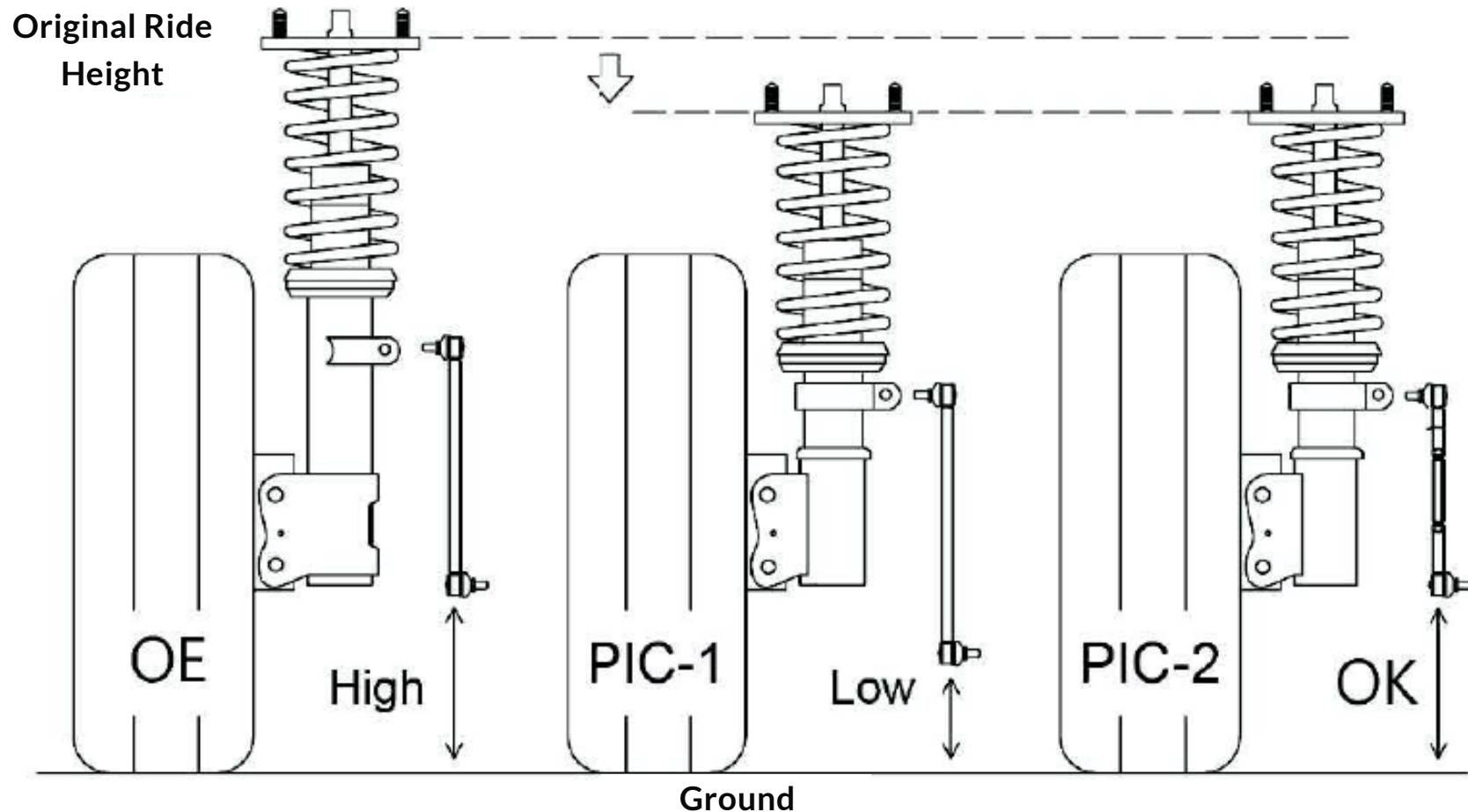
Please carry out the following maintenance steps when you hear shock noises:

1. Remove each component of the suspension including the top mounts, springs, locking brackets, lower mounts, etc. (*pic. 1*)
2. Unscrew the nut from the bottom of the suspension with a pneumatic tool, and then take the tube apart from the shock body. (*pic. 2*)
3. Remove the oil seal out of the inner shock body (A) and clean the dust. Clean parts A, B, C and D with naphtha or volatile alcohol. Grease part B and C with a stick that is covered with lubricating oil (*pic. 3*). Afterwards, grease the oil seal and put it back to part A.
4. Clean the strut with a clean rag. To prevent oil leakage and damage to the oil seal, avoid soaking the whole strut in detergent, stain-removing oil, any volatile liquor, or petrol because the strut already contains built-in oil seal.
5. Before installing the strut into the shock body, examine if the lubricating oil on the strut is smeared evenly.
6. Once all maintenances are completed, re-install all the components following the steps backwards. Use a pneumatic tool to screw the nut (*E*) back to the strut and use an anti-loose glue for additional security.





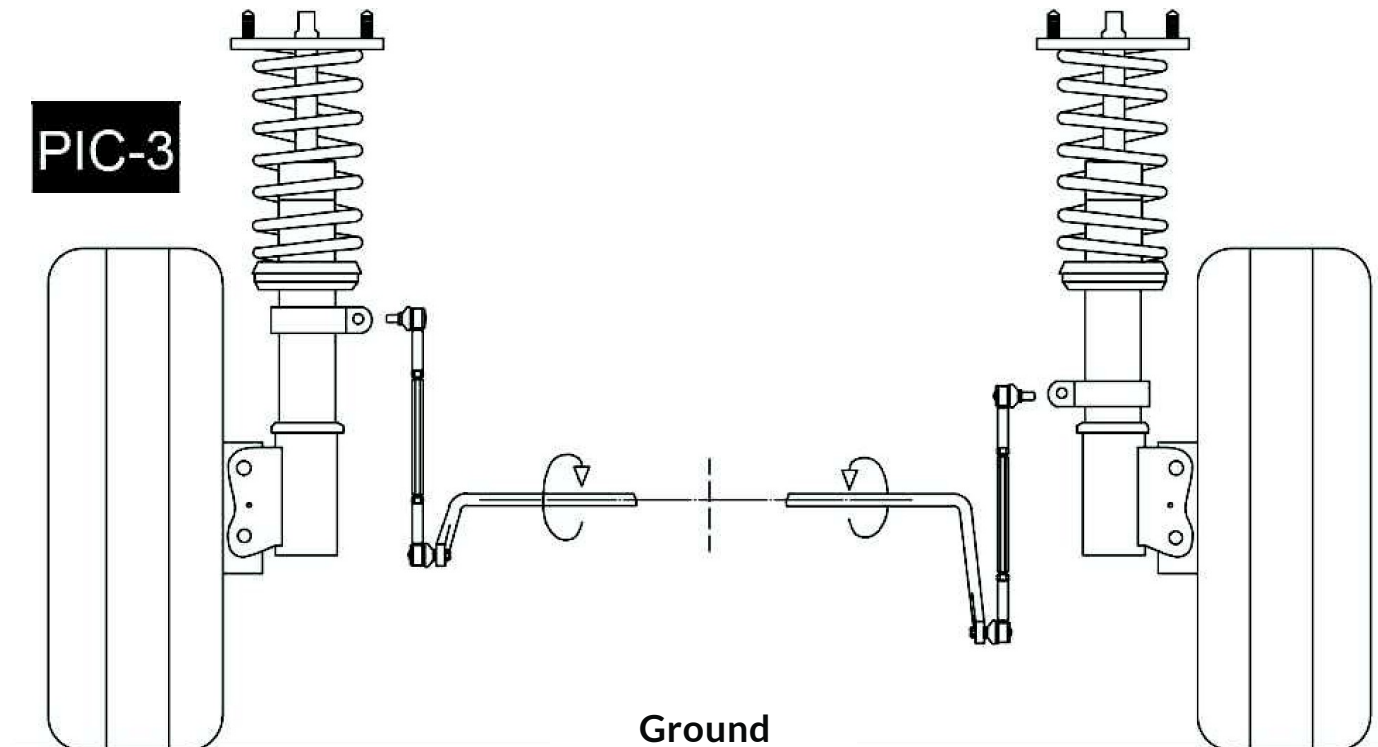
SWAY BAR VS END LINK

The key features of the adjustable end link mountings and adjustable end links are as follows. When you lower the ride height, it will cause both sides of the sway bar to extend to the ground and lose the best angle if one side of the sway bar connects to the car body and another side connects to the suspension (shown as *pic.1*). After the lower ride height is adjusted, the sway bar will move close to the ground and may hit other objects and cause damage to the suspension. The adjustable end link mountings and adjustable end links can adjust the stabilizer bar to the appropriate position.



SWAY BAR VS END LINK

 Attention	To adjust the length of the end link mountings or adjustable end link mountings, adjust both the left and right sides to the same height. If the left and right sides are unequal (<i>pic. 3</i>), the sway bar will twist when the car is not in motion. This situation will cause damage/deformation to the end link and end link mountings.
 Suggestion	Please install the suspension first and then adjust the ride height to your liking. Then install or adjust the end link mountings or adjustable end link.

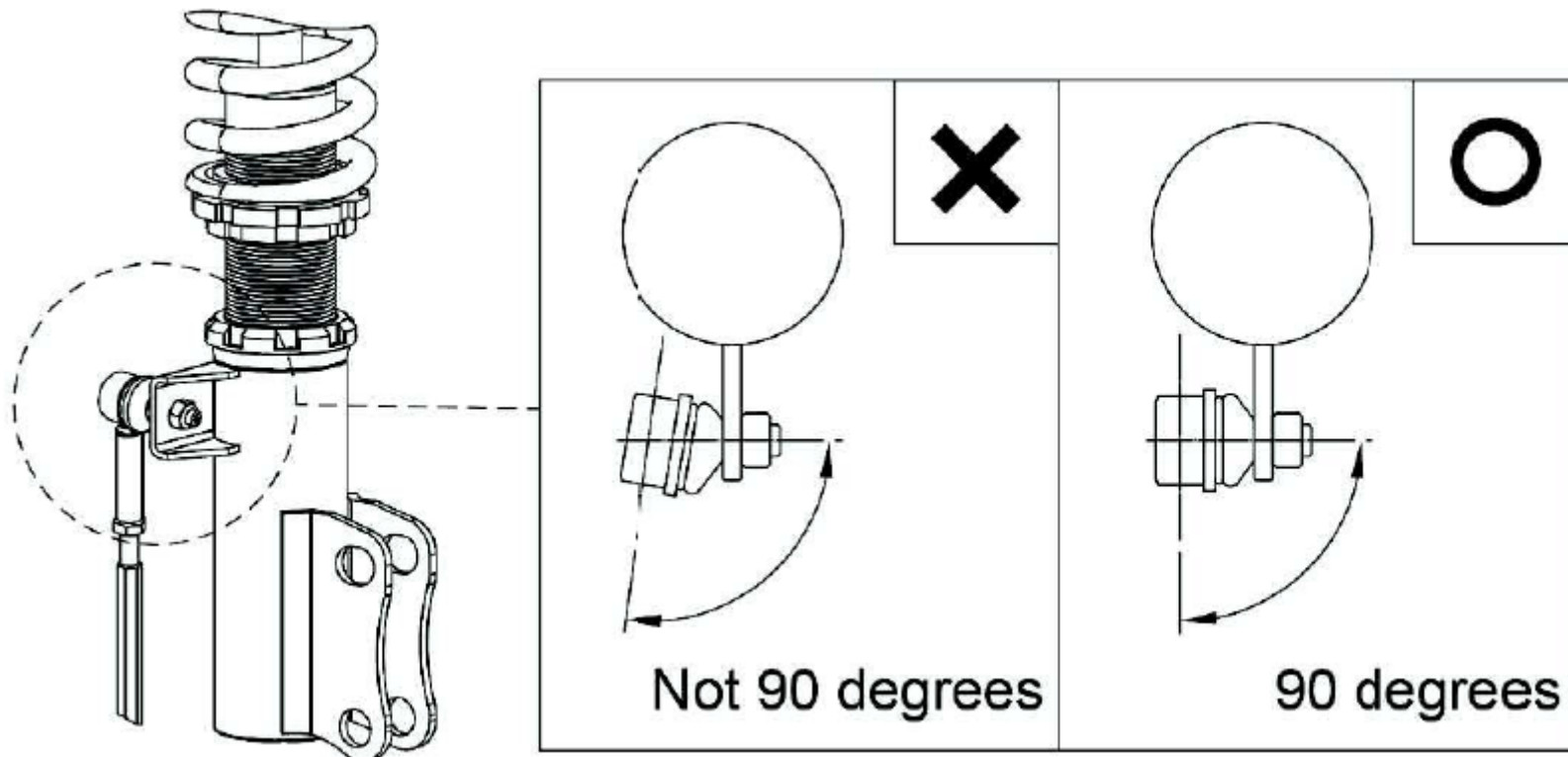


ADJUSTABLE END LINK & END LINK MOUNTING ADJUSTMENTS

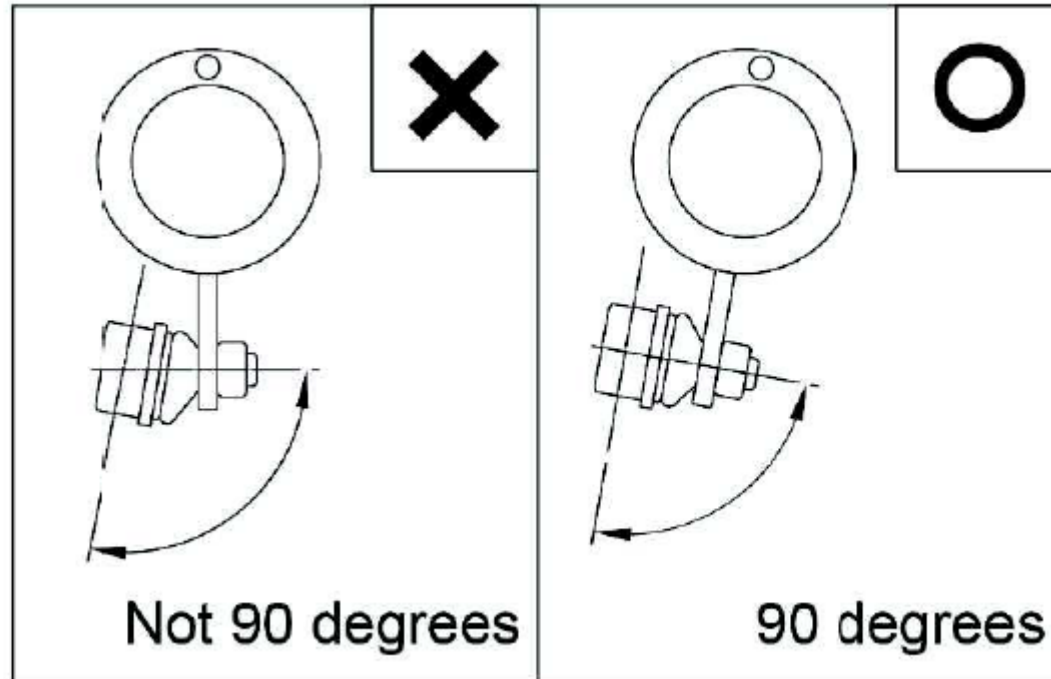
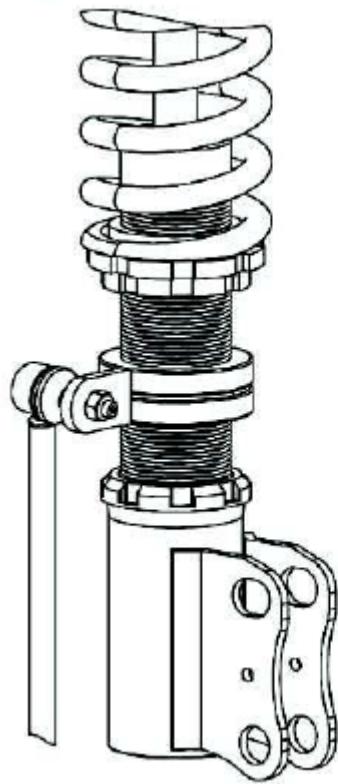
If the car is a McPherson type and the end link is fixed on one side of the suspension, you must consider the steering problems of the front wheel when you install the end link and end link mountings.

Follow the steps below for installation:


1. Install the suspension and adjust the ride height to your preference.
2. Turn the steering wheel until it is aligned in the center, install the end link and adjust it to the appropriate length.
3. Adjust the joint of the end link and fix the bracket to 90 degrees.



4. When using the OE end link with the movable end link mountings, adjust the end link mounting and the OE joint of the end link to 90 degrees.

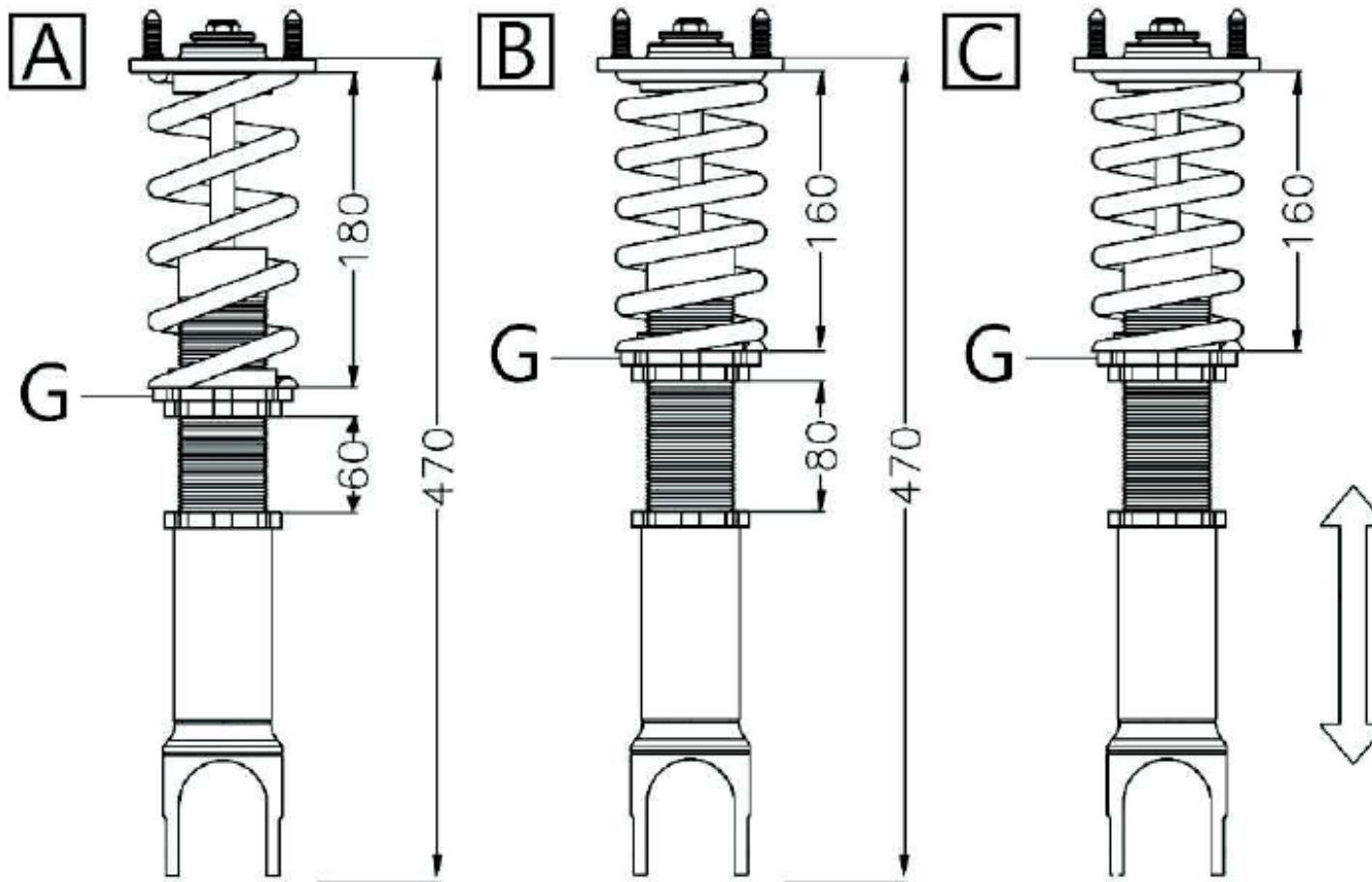


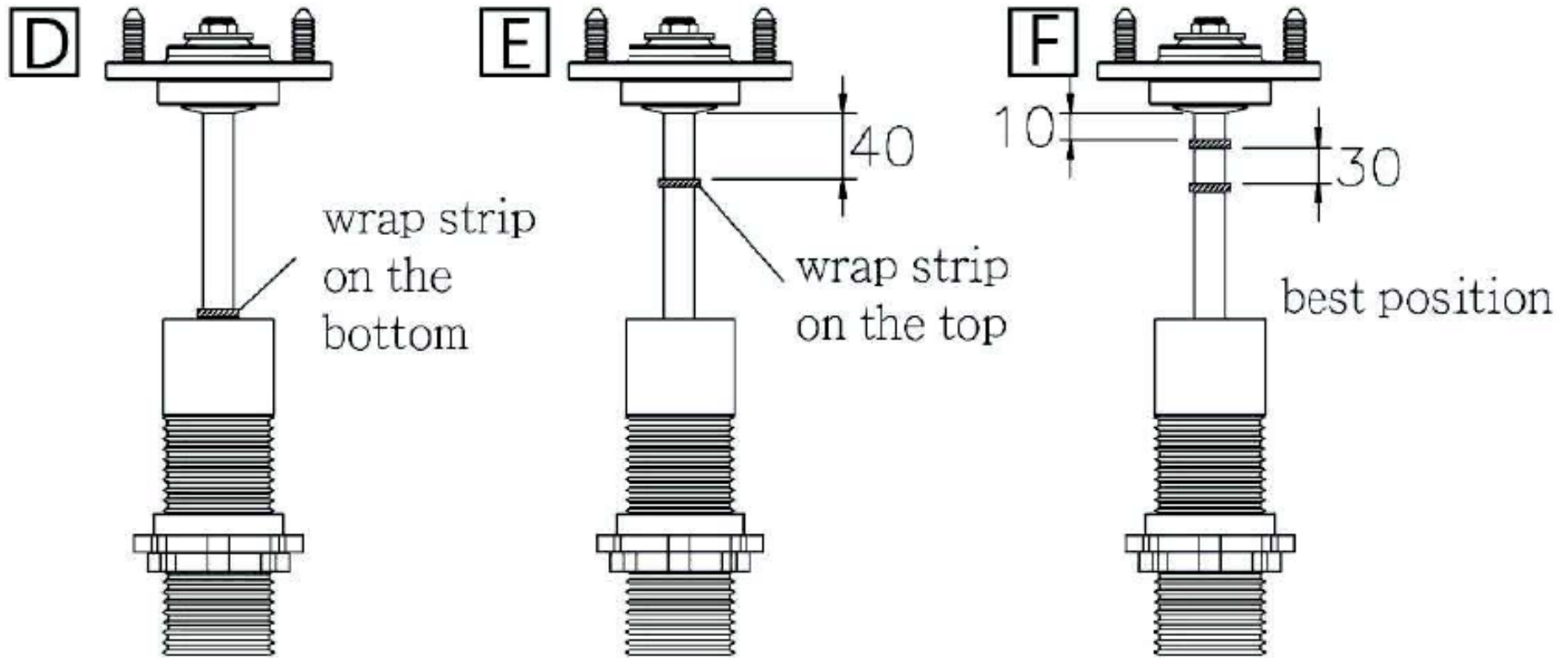
5. Adjust the end link and the joint of the end link to 90 degrees. Make sure the end link has sufficient space to turn left or right when the steering wheel is rotated. Tighten the nut or screws after the installation and ensure the end link and end link mounting are in the appropriate angle when turning the steering wheel.

 <p>Attention</p>	<p>If you do not adjust to the appropriate angle when installing, it will cause damage and cracks on the end link or end link mountings. The installers must take responsibility if there is property loss or personal injury.</p>
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TROUBLESHOOTING BOTTOMED-OUT SUSPENSION AFTER CHANGING SPRING

Two primary features of the adjustable suspension include: ride height adjustment without having to change the spring, and that the spring rate and the ride height are adjustable and will not cause bottoming out of damage to the suspension. All vehicle owners can harden or soften the spring rate to their liking. Many will ask for softer springs but are unsure of how to properly make the adjustment. The pictures below can assist in checking to see if the suspension has bottomed-out.



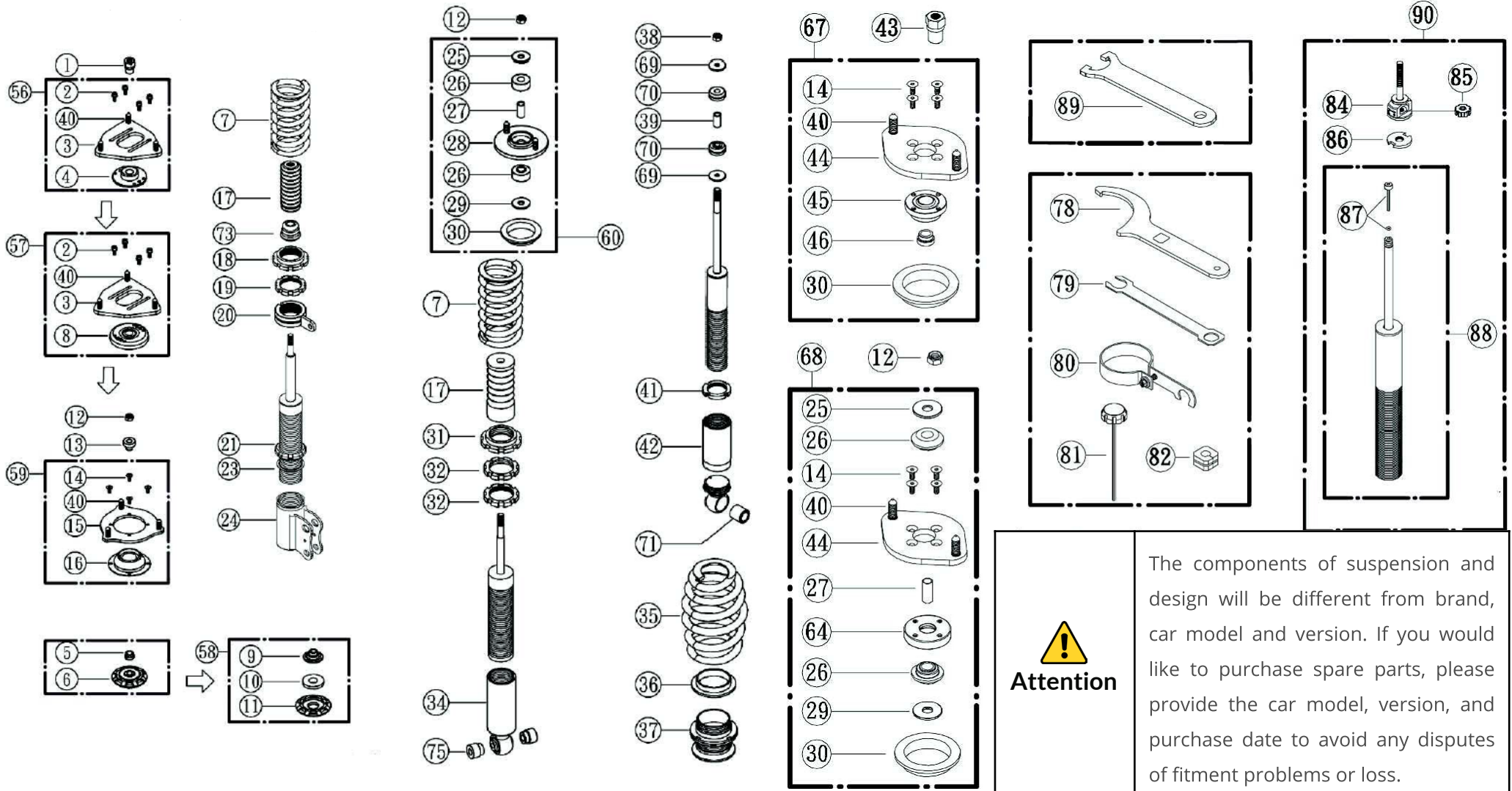


Please remove the dust cover and rubber after you insert the softer springs. Then, fix the wrap strip on the axle center and adjust the wrap strip to the bottom of the axle center (**pic. D**). Install the suspension on the car and lower it to the ground. Later, raise the car back up to check the position of the wrap strip. If the distance between the wrap strip and the top is within 40 mm (**pic. E**), the strut will hit the bottom while driving.

Adjust the spring perch G upward to compress the spring.

To extend traveling when lowering the car, compress the spring of picture A into the situation of picture B. Then drive the car again to see if the wrap strip is in the correct position (the best place of wrap strip is using the 1/3 of the whole traveling when putting the car down. The highest position of the wrap strip needs to be within 30 mm after driving (**pic. F**). After making sure the wrap strip is in the correct position, reinstall the rubber and dust cover back to the original place. Finally, adjust the lower mount to the height you need for your car (**pic. C**).

LIST OF COMPONENTS






Attention

The components of suspension and design will be different from brand, car model and version. If you would like to purchase spare parts, please provide the car model, version, and purchase date to avoid any disputes of fitment problems or loss.

NUMBER	ITEM	NUMBER	ITEM	NUMBER	ITEM
SP01	Nut	SP25	Washer	SP58	Bearing Assembly
SP02	Screw	SP26	Rubber Plate	SP59	Harness Rubber Top Mount Assembly
SP03	Top Hat Aluminum Plate	SP27	Tube	SP60	Aluminum Top Mount Assembly
SP04	Steel Plate	SP28	Aluminum Top Plate	SP64	Base for Aluminum Top Mount
SP05	Tube Washer	SP29	Washer	SP67	Pillowball Top Mount Assembly
SP06	Cone Cover	SP30	L-Type Rubber	SP68	Aluminum Top Mount Assembly
SP07	Spring	SP31	Spring Perch	SP69	Washer
SP08	Top Mount Plate	SP32	Lock ring for Spring Perch	SP70	Rubber for Top Mount
SP09	Tube Washer for Bearing	SP34	Lower Mount	SP71	Bushing
SP10	Bearing	SP35	Spring	SP73	Bump Stop
SP11	Cone Cover	SP36	L-Type Rubber	SP75	Bushing
SP12	Nut	SP37	Hi-Low Kit	SP78	C Type Spanner
SP13	Tube Washer	SP38	Nut	SP79	Brake Line Spanner
SP14	Screw	SP39	Tube	SP80	Brake Line Fixed Ring
SP15	Plate of Top Mount	SP40	Screw	SP81	Adjustment Rod
SP16	Rubber Plate	SP41	Lock Ring	SP82	Six-Square Rubbers
SP17	Dust Cover	SP42	Lower Mount	SP84	Bracket for External Damping Adjustment
SP18	Spring Perch	SP43	Nut	SP85	External Damping Adjustment Knob
SP19	Locking Ring for Spring Perch	SP44	Camber Plate	SP86	Washer for External Damping Adjustment
SP20	End Link Mountings	SP45	Pillowball Plate	SP87	Adapter and O-Ring
SP21	Locking Ring for Lower Mount	SP46	Tube Washer	SP88	Strut with External Damping Adjustment
SP23	Metal Ring	SP56	Pillowball Top Mount Assembly	SP89	Spanner for washer of External Damping Adjustment
SP24	Lower Mount	SP57	Pillowball Rubber Top Mount Assembly	SP90	Strut with External Damping Adjustment Assembly

BARCODE AND WARRANTY

 <p>1-02-05-158 AD0258 EF45 SUSPENSION</p>	<p>We label the fragile sticker with the bar code number on the strut and the package box. The bar code includes the production date, buyer's information, brand, car model, and the type of suspension. Please do not tear off the sticker as the warranty period will be difficult to determine.</p>
 <p>NO:00212010001234 A-01</p>	<p>This fragile sticker will be labeled on each strut of the suspension. It includes the strut number and damping type. Please do not tear it off.</p>

All products sold are subject to the following warranty:

Autoline Industries warrants the shock absorbers and steering stabilizers to the original retail consumer against defects and workmanship when used on light trucks and car applications under normal operating conditions for a period of 12 months. This warranty does not apply to shocks and steering stabilizers that have been improperly installed. Our warranty does not cover shock absorbers that are to be used in racing applications. Exterior finish on all Ksport products is not covered by warranty; consumers are responsible for the maintenance of paint and or chrome or plated finish. Shock boots are also excluded from any type of warranty. ALL SHOCK BOOTS should be removed prior to returning to the Distributor from which the product was originally purchased. Rusted shock shafts will also be denied as a warranty claim; consumers are responsible for the upkeep and maintenance of all chrome rods. The consumer will be responsible for the removal and freight costs both to and from the Distributor from which the product was originally purchased. Proof of purchase is mandatory in order to receive warranty replacement; original invoice from the Distributor from which the product was originally purchased must accompany the product in question for warranty. Autoline Industries or Autoline Industries distributor has the right to refuse a warranty claim if procedures are not met by the original consumer. All returns must have an R.M.A. approval from Autoline Industries prior to shipping direct to the Autoline Industries facility. Exclusions from this warranty are sales outside of the United States, damage to the finish, dents, rust, or any condition caused by abnormal use or neglect. The loss of use of product, loss of time, inconvenience, commercial loss or damages are not covered. Autoline Industries reserves the right to change, modify, or discontinue the design of the products previously manufactured without assuming any obligation to the consumer. Any consumer which qualifies for a replacement of said discontinued product will only be allowed to receive new product which replaces the discontinued. Autoline Industries is not responsible for a pair of any product, if a single product has an issue.

Autoline Industries reserves the right to refuse any and all warranty claims from any Distributor which has not purchased the original Ksport product directly from Autoline Industries. Autoline Industries also reserves the right to refuse any Return Goods Authorization of said merchandise in which it is believed to be fraudulent or distressed merchandise not originally purchased from Autoline Industries.

This warranty does not apply to any Ksport product which has been modified, customized, painted, dented, rusted or improperly installed. For questions or further information regarding product warranty or service, please email service@ksportusa.com