ANNEX
SUSPENSION GROUP

PERFORMANCE SUSPENSION

OWNER'S MANUAL

PRODUCT ASSEMBLY SHEET

For warranty service, please keep this Product Assembly Sheet and your receipt to validate proof of purchase.

Customer Name: Date:
Assembly Number:

Product Information
Part Number:
Serial Number:

<table>
<tr><td rowspan="2">Spring Rate + Length (F/R)</td><td colspan="3">F: kg / mm</td><td rowspan="2">Preload</td><td rowspan="2">mm</td></tr>
<tr><td colspan="3">R: kg / mm</td></tr>
<tr><td rowspan="2">Swift Spring Upgrade (ID:60mm)</td><td>F: Y/ N</td><td>F: kg / mm</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>R: Y/ N</td><td>R: kg / mm</td></tr>
<tr><td colspan="5">Note:</td></tr>
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Assembled by: Final QC by:

ABOUT ANNEX SUSPENSION GROUP™

Annex is a team of deeply passionate engineers, road racers, and enthusiasts who all have the same goal: maximizing the enjoyment of driving the car you love, every day. Each application has received countless hours of designing, manufacturing, measuring, logging, and road testing to ensure this goal is met before being released to our customers. Annex believes that performance and comfort can go hand in hand and it influences every aspect of our product design. A suspension designed just to go fast simply isn't enough – comfort is also required to truly enjoy your vehicle throughout its life cycle. Annex Suspension Group™ products are designed to inspire you to keep what you love for the many miles ahead.

PLEASE READ BEFORE PROCEEDING

Annex Suspension Group™ cannot be held responsible for any damage to the product, vehicle, or injury to any persons as a result of the use of this product. The product warranty will only remain in effect if the installation instructions and maintenance guidelines are adhered to. Please read the disclaimer at the end of this document.

That being said, we are here to help. Please contact Annex Suspension Group™ technical support if any part of the installation procedure is unclear.

NOTE The suspension is an important part of the vehicle and will affect the vehicle's stability. Use proper care when test driving and test fitting the product.

- Please make sure that you fully understand all the instructions and the user's guide before using or installing your suspension.
- This product must be installed by a certified mechanic. Damage as a result of improper installation will not be covered by the product warranty.
- If the suspension makes any unusual noises or leaks any fluids during operation, please return to your installer or authorized dealer for inspection.

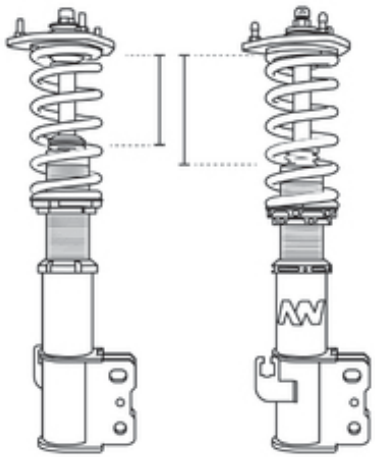
NOTE The operating manual is considered a part of the product. If the product is ever sold, the user guide should be given to the new owner.

- Each product has been developed solely for the vehicle in which it is intended for and should only be installed on that vehicle model in the original condition as delivered from the vehicle manufacturer.

CONTENTS

FASTROAD PRO™ BACKGROUND

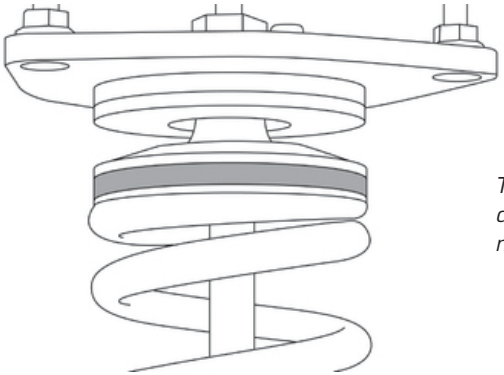
Your **FASTROAD PRO™** system is optimized for spirited driving in real world conditions. Each application is carefully designed and tuned to provide a high level of driving performance with an improved ride quality, and more useable suspension travel when compared to other coilover suspension systems. The dampers have 24 levels of adjustment that provide a wide range in damping; this provides confidence and control in aggressive track use, yet allows for a very supple ride when driving at a slower pace.



FASTROAD PRO™ was designed to have more useable stroke than typical coilovers resulting in superior grip and comfort.

The shock absorber piston valving is the heart of every Annex Suspension Group™ coilover system. Extensive time and resources are spent on each application to ensure that the valving is optimized utilizing linear or digressive valving depending on the needs of the application. First, a development vehicle is equipped with data acquisition sensors to collect vehicle specific data over a range of driving conditions. Then, vehicle dynamics simulators are utilized to model the car, which leads to a shock valving profile that is tested on an in house Roehrig® shock dynamometer to verify that an ideal damping curve is produced. After developing and testing the shock valving profile, some real-world tests are performed; a vehicle is driven on a test loop to get subjective feedback on the ride and handling by our test drivers. Every product goes through this process until perfected. For the end user, this means that they can trust that each application is carefully designed to provide an optimal balance between performance, comfort, and practicality.

NVH – or noise, vibration, and harshness – is an engineering term for ride attributes that can cause discomfort for occupants inside a vehicle. Generally, NVH is increased when installing performance suspension. Most often, this means excessive noise and even accelerated wear of the vehicle's chassis and components. However, we developed an NVH reducer that was engineered to greatly reduce road noise when compared with typical pillow ball camber plates without adversely affecting response time from rapid driver inputs. Road noise is often either the same or only slightly more noticeable after the **FASTROAD PRO™** system (with or without pillow ball camber plates) is installed on an otherwise stock vehicle!



The NVH reducer was created to reduce road noise and discomfort while maintaining steering precision.

On applications using a front strut design, a high-quality Koyo® sealed bearing has been incorporated in the suspension top hats/camber plates to increase steering feedback. These bearings also reduce steering effort and suspension noise as they allow the spring to rotate freely when the wheel is turned.

It is important to note that the **FASTROAD PRO™** system is optimized for a moderate drop (40mm +/- 10mm) and is not intended for extreme lowering! However, if you have a custom application, please contact our staff for possible options.

NOTICE Applications retaining OEM strut hats do not include NVH reducers as the OEM top hat already offers NVH reduction properties.

CLUBSPEC PRO™ BACKGROUND

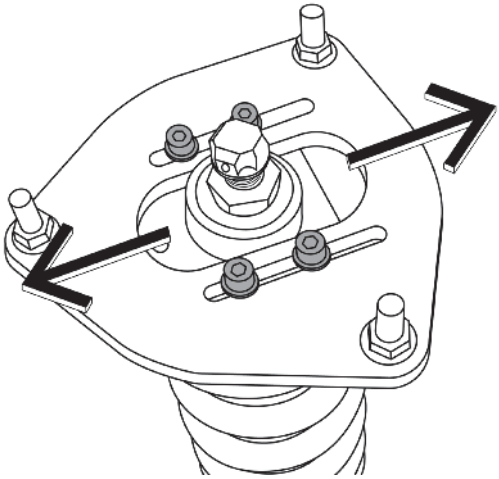
Building off of the success of FastRoad Pro™, we introduced ClubSpec Pro™, a product for a more dedicated track enthusiast. ClubSpec Pro™ is targeted towards club racers or those that primarily use their car for competitive events. However, care is still taken to ensure that the product is still streetable if the driver can accept spring rates and valving designed to work with the stickiest of tires available. Despite its race winning pedigree, road manners are still considered. It may not be your significant other's favorite car, but we still want the drive to and from the track to be as enjoyable as possible.

Many of the same development principles from FastRoad Pro™ carry over to this product as well such as maximizing stroke, careful per-vehicle valving, and using sophisticated sensors to measure the suspension's movements as often as 500 times a second. A great deal of attention is spent on enhancing the suspension's performance over berms at the track, and optimizing the vehicles responses to driver inputs and transitional speed. ClubSpec Pro™ systems are often equipped with Annex helper springs, a necessary component in maximizing droop and grip on our competition-oriented products. Helper spring setups require special attention when setting up on a vehicle. Be sure to see the application notes for setting up systems with helper springs.

Much of the information gained from our racing activities directly influence the valving and performance of all of our coilover suspension products!

CAMBER ADJUSTMENT AND TORQUE SPECS

If your suspension system includes camber plates, camber adjustments can be made by moving the strut top hat's position either inward or outward on the camber plate. To adjust camber, ensure the vehicle is secured from rolling (i.e. wheels chocked), and that the vehicle's is off the ground and secured. Loosen the four camber plate allen bolts just enough so that the top mount can be slid inwards or outwards to reach the desired camber setting.



Camber is adjusted by sliding strut laterally relative to camber plate.

TIGHTENING TORQUE TABLE	
FASTENER	TORQUE SPEC (FT-LB/NM)
Camber Plate Bolts	10 / 13.5
Top Nut (M12)	30 / 40.5
Top Nut (M14)	50 / 67.8

Do not use any tools to grab the chrome shock shaft when tightening the top nut. Use a torque limiting adapter if using an impact gun to tighten the top nuts or the shock may be permanently damaged.

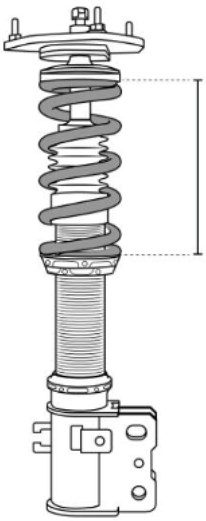
Only loosen the camber plate allen bolts enough to allow the strut to slide inwards or outwards. The strut assembly may fall out if the bolts are loosened too much, resulting in possible injury.

Be sure to follow the torque specs in this manual

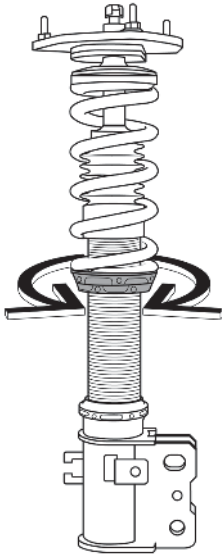
Camber plate adjustment marks are for reference only. Please take vehicle to a qualified alignment center to ensure the desired alignment settings are achieved.

SPRING PRE-LOAD AND LOCK RINGS

The Annex Suspension system has adjustable-height spring perches. When the height of these perches is changed, the amount of spring pre-load will also change. Pre-load is defined as the amount the spring is compressed when compared to its free length. Unless otherwise stated, all of the Annex Suspension Group™ products come with the springs already pre-loaded to the appropriate specification.



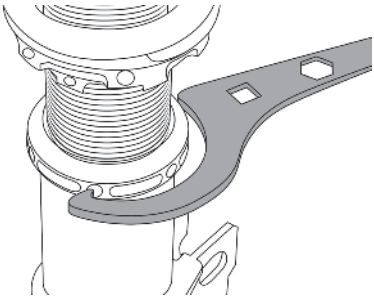
Pre-load is the amount the spring is compressed versus its free length – the spring's natural length when the spring perches are no longer compressing the spring.



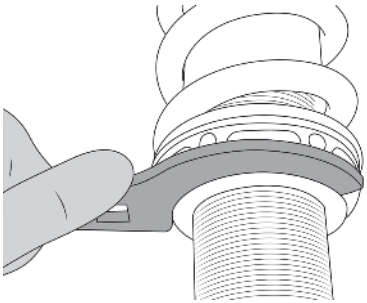
Spring seats are rotated up and down to change pre-load. Seats must be locked tight when finished.

Proper spring pre-load is important for safety, comfort, and performance. **Do not use the spring perches to adjust vehicle height;** All Fast Road Pro systems have an independent height-adjustment which is covered in Height Adjustment. Some applications include a proprietary NVH reducer underneath the top hat – please note systems with this isolator have a different pre-load spec.

Use the supplied spanner wrenches to adjust spring pre-load as needed. Tighten the lock rings to the specified torque value when finished.
It is important to note that the spanner tips must be inserted into the guide circles for proper grip. Once the guide circles are engaged, the spanner will be locked in place, reducing the risk of scrapes and bruises.



It is important to insert the end of the spanner into the locating hole of the lock rings for a sure grip.



Rotate the lock rings with the included spanner to raise, lower, tighten, or loosen.

For vehicles with divorced spring perches, spring pre-load is set by adjusting shock absorber length so that the spring is captured.

1. Extend the shock length until you can only just see threads through the sight hole or the maximum shock height is achieved *(see Height Adjustment)*. Adjust the divorced spring perch until the desired ride-height is achieved.
2. Set the shock length so that the rear spring is pre-loaded as stated in the table below.
3. Tighten the lock rings to 25ft-lb/34Nm by using a ½" drive torque wrench.

NOTE Some divorced spring perches will be too large for the included spanner wrenches and would need to be tightened with a mallet and a flat screw driver.

Never adjust the spring pre-load with the vehicle on the ground to avoid damaging the shock. Either lift the car or set the pre-load with the suspension on a work bench.

Always ensure that the springs are pre-loaded before operating the car and that there is no free play in the springs. This will ensure that the spring is safely captured and seated on the perch. Always lock the adjustment collars fully before operating.

To tighten the lock rings on the shock body, you can lay the suspension flat onto a soft material or foam pad and press down towards the ground to tighten them against each other.

The lock rings' sharp edges have been smoothed to reduce the chance of injury to the installer but please take care when working with the lock rings and wear proper protection.

SPRING SEAT TYPE	PRELOAD SPEC (MM / INCHES)
With NVH Reducer	8 / 0.32
W/o NVH Reducer	4 / 0.16
Divorced Spring Perch	10 / 0.4

MOUNTING AND HEIGHT ADJUSTMENT

Never adjust the vehicle ride height with the vehicle loaded or on the ground as damage to the shock absorber or personal injury may result. Always have the vehicle supported on a lift or with jack stands.

When raising or lowering the vehicle's ride height, always check that suspension arms, tires, and other parts have adequate clearance. Carefully check that there is no interference before operating the vehicle. Lower the car to the ground slowly to check for any binding or interference.

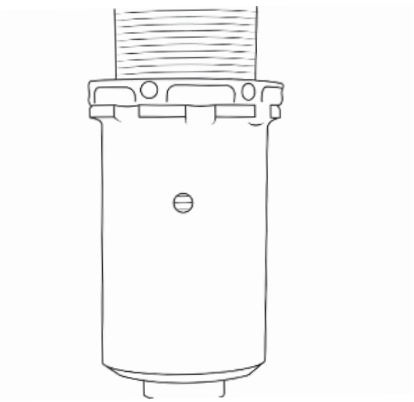
For your safety, this suspension must be installed by a qualified technician. Improper installation could result in injury or death.

There must always be at least 50mm of shock body threaded into the lower bracket for McPherson strut configurations, and at least 20mm of shock body threaded in for double A-arm or multi-link suspension configurations.

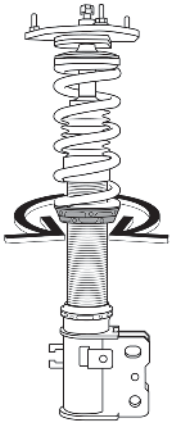
Unless stated otherwise by Annex Suspension Group™, the appropriate vehicle service manual should be followed when installing this suspension.

It is important to note that the **FASTROAD PRO™** system is optimized for a moderate drop (30mm +/- 5mm) and is **not** designed or intended for extreme lowering.

Please pay attention to the maximum extension length of the bracket by using the sight hole on the bottom bracket. Never extended the shock body beyond this point or damage to the suspension or personal injury could occur. If there is not a sight hole, please observe the warning above.



Shock body is threaded into lower bracket until thread is visible. If there is no sight hole, see the specifications in the warning section above.

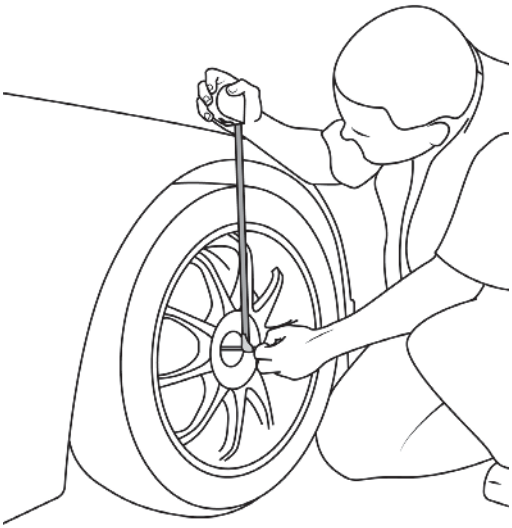


Loosen bottom lock nut and rotate shock body to adjust shock length.

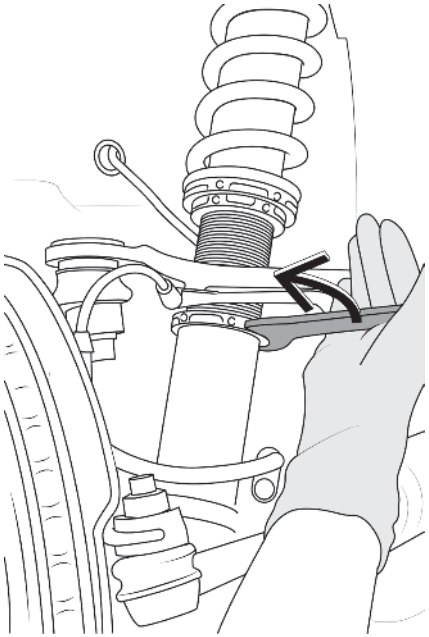
Proper ride height settings are a critical part of optimizing your vehicle's handling. To measure ride height, it is recommended to use the wheel gap method.

1. Place the vehicle on the ground and measure from the wheel hub center to the highest point on the fender arch/wheel opening. You may find it is helpful to use a pen or straight object at the end of your measuring tape so that the center of the wheel is more easily found.
2. Write this measurement down and repeat for all four corners of the vehicle. This measurement is the "wheel gap".
3. Raise and support the vehicle so that the wheels are off of the ground. Be sure to check that it is stable so the vehicle cannot fall down.

4. Adjust the shock length to the desired amount on each corner using by rotating the shock body. Hand tighten the lock nut and carefully lower the vehicle to ensure that that there is adequate clearance of the tires and suspension components.
5. Roll the car forward and back to help the springs settle.
6. Measure the wheel gap on all four corners again and record them. If the target wheel gap is not achieved, adjust shock length again as needed. As a very general rule of thumb (this varies due to suspension geometry), adjust the shock length by 80% of the desired wheel gap change. For example, to raise the car 10mm the shock would be lengthened 8mm. Repeat this process until the desired ride height is achieved.
7. Be sure to lock the bottom bracket lock ring and do a final nut and bolt check of the vehicle suspension before your test drive. The bottom lock ring should be torqued to **90ftlbs / 122Nm**. If you cannot safely use a torque wrench on the spanner for the lower lock ring, you may use a spanner and give several firm taps with a rubber or wooden mallet. Be sure this ring is adequately tightened!
8. Torque the wheels to manufacture spec and road test.



Use a tape measurer and a straight object to measure the wheel gap.



Be sure to tighten the lower lock ring before going on a test drive. It is essential that the lock ring is properly tightened with a torque wrench or with a torque wrench to 90ftlbs / 122nm or by tapping the spanner with a mallet.

Be sure that the lock rings and the bottom bracket lock ring are properly tightened before every drive as possible loss of control of the vehicle may result.

It is common for the springs to settle another 5-10mm after the car has been driven for a few miles. It is recommended to set the initial ride height to 5-10mm higher than the desired final ride height.

Always clean off the threads when adjusting the ride height as dirt or grit can damage the threads. See Maintenance section for more information.

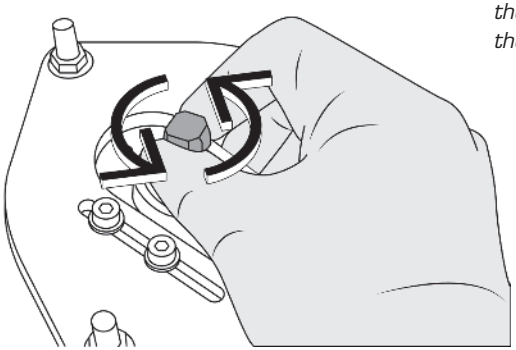
DAMPING ADJUSTER

Annex Suspension Systems feature adjustable dampening. The number of "clicks" is counted from full tight (fully clockwise) to full soft (fully counter clockwise). -0 is full tight, -24 clicks from full tight means the shock is at full stiff.

Do not force the adjuster pass the limit stops as the shock may be damaged.

Always check the position of the damper adjuster after installing the suspension.

Never grab or twist the damper adjuster with anything but your hands. The shock may be permanently damaged if it is twisted or bent by a tool. Take care when installing on vehicle to avoid bumping or hitting the adjuster mechanism.



Adjust the shock dampening with the adjuster knob. Do not force the adjuster past the limit stops.

SETTING THE DAMPING ADJUSTERS

When adjusting the dampers, do not change damper adjustments more than 4 positions at a time in between road tests.

Ensure damping adjustment are even for both the driver and passenger sides for safe handling.

Some applications require the adjustment knob to be installed after the dampers are fitted to the vehicle. Use the included hex key to attach the knob to the adjuster mechanism.

Your Annex Suspension system may come with recommended settings as a baseline. Turn the adjuster to the fully open position (soft) and turn clock wise until you reach the recommended setting.

If a baseline has not been provided for you application, start at -12 from full stiff on both front and rear. Road test over various road surfaces. Continue to increase the damping until the ride quality begins to suffer, and then back off by 2-3 positions. This will give you a good baseline for general purpose use.

At the track or during spirited driving, you can increase the damping to position 20 and then use the chart below to help dial in the handling characteristics -6 from full stiff for the best lap times:

HANDLING ISSUE	FRONT ADJUSTERS	REAR ADJUSTERS
Car understeers or "pushes"	Decrease Stiffness	Increase Stiffness
Car oversteers or "handles loose"	Increase Stiffness	Decrease Stiffness
Car feels nervous or skips over bumps	Decrease Stiffness	Decrease Stiffness
Car feels sloppy, slow to take a set on cornering line	Increase Stiffness	Increase Stiffness

MAINTENANCE

Proper cleaning and care will extend the service life of your suspension.

1. Every 10-20,000 miles / 16-24,000 km a cleaning service should be performed. If you operate the vehicle in areas with harsh condition this service may need to be performed more frequently.
   a. Clean the exterior of the suspension with a mild detergent and warm or cold water and dry with a clean towel. Compressed air can be used to dry hard to reach areas. Do not use strong solvents or chemicals as the surface finish and seals may be damaged.
   b. Lift the shock absorber dust boot and remove any accumulated dirt around the shaft seal. Preventing build up here will extend the life of your oil and shaft seals!
   c. Lightly oil the shock body threads with a light oil (5w shock oil, Air Filter Oil, or similar) to prevent seizing and galling.
   d. Check the shocks for any visible external damage.
   e. Check the rubber bushings for wear.
   f. Check the shock absorber mounting brackets and hardware for any looseness or damage.

Never attempt to open or service the shock absorber. The shock contains high pressure nitrogen and could explode if disassembled incorrectly. Any rebuilding or servicing should be performed by Annex Suspension Group™ or an authorized service center.

TROUBLESHOOTING

Your Annex Suspension Group system was designed to be silent when in operation. If you have any unusual noises, perform these steps to rectify the problem:

1. Vehicle emits clunking noises when passing over small bumps on road.
   a. Suspension Top Nut not properly tightened. Tighten to specified torque value with an impact wrench and torque limiting adapter.
   b. Suspension Lock Ring not properly tightened. Tighten to specified torque value with a torque wrench.
   c. Preload not properly set causing spring movement. Set spring pre-load to specified value.
   d. Sway bar end links not tightened. Check to ensure sway bar end links are tightened in accordance with the applicable vehicle service guide.
2. Vehicle emits squeaking noises from suspension when moving.
   a. Vehicle sway bar and suspension bushings can squeak after the vehicle is lowered. Inspect the bushings and lubricate or replace if necessary.
3. Vehicle emits clunking noise when steering wheel is turned.
   a. Vehicle sway bar end link lengths may need to be adjusted. Check if the sway bar or end links are binding. If necessary, replace or change with adjustable length end links or change the vehicle ride height so that the binding no longer occurs.

ADDITIONAL INFO

All Annex Suspension Group™ products are for motorsports use only and can never be used on vehicles that will be driven on a public road or highway. Motorsports can be dangerous and result in injury or death.

Annex Suspension Group (the "Seller"), shall not be responsible for the Product's proper installation, use and service. Rather, the Buyer (or, if applicable, the installing dealer who installs the Product) shall be solely responsible for the installation of the Product and any damage that may be done to vehicle components as a result of modifications made by the Buyer (or the dealer, as the case may be).

The Buyer is responsible to fully understand the capability and limitations of his/her vehicle according to manufacturer specifications, warnings and instructions and agrees to hold the Seller harmless from any damage resulting from failure to adhere to such specifications, warnings and/ or instructions. The Buyer is also responsible to obey all applicable federal, state, and local laws when operating his/her vehicle, and the Buyer agrees to hold Seller harmless from any violation thereof. Consult your vehicle warranty before using this Product. Under no circumstances will the Seller be liable for the voidance of the Buyer's vehicle warranty. Rather, the Buyer assumes all risk and responsibility if an automotive manufacturer and/or dealer voids the Buyer's vehicle warranty due to use of this Product. Operate your vehicle at all times in a safe manner. In no case will the Seller be held liable, and the Buyer assumes all risk and responsibility, for any property damage, personal injury and/or death that may occur in the event the Buyer operates the vehicle in an unsafe manner or violates the law.

All orders placed with the Seller (phone, fax, mail, verbal, or e-mail), either directly or through another dealer, constitute the acknowledgement and acceptance of all of the conditions listed below:

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