

# STaSiS Engineering

## Installation Instructions for Track Sport Coil Over kit

### Hyperco Springs/Custom Valved KONI Threaded Cadmium-plated Dampers

**Application:** 2000-2002 Audi S4, 1996-2001 Audi A4 Quattro

#### Parts List

| QUANTITY | PART Number   | Description  |
|----------|---------------|--|
| 1        | SA00400TDK300 | 2 front and 2 rear KONI cadmium-plated threaded dampers with bump stops and locknuts                 |
| 2        | SA00400UPO8R0 | Black anodized aluminum upper rear spring perch with ultra high molecular weight polyethylene insert |
| 2        | SA00400IS00R0 | 1/8" thick black neoprene isolator   |
| 4        | SA00400LPTS00 | Red anodized aluminum lower spring perch   |
| 2        | SA00400BTUPR0 | Socket head cap screw with nylon patch for upper rear spring perch                                   |
| 4        | SA00400BTLP01 | Socket head cap screw with nylon tip for lower spring perch  |

WARNING – These COMMON INSTALLATION ERRORS will adversely affect the handling of the vehicle.

- A. DO NOT ADJUST dampers as they have been preset and tested to match the spring rates chosen for this kit. **This is not a standard KONI damper.**
- B. Vulcanized rubber suspension bushings must be tightened at ride height or adverse handling and premature failure of the bushings will result. (see instructions)
- C. Proper ride height is a function of vehicle usage and spring rate. Ride heights below 25" will require proper spring rates and possible alignment corrections to avoid adverse handling. (please call tech support)
- D. Front upper suspension mounts require drilling. Damage will occur if the instructions are not followed properly.

Please read ALL instructions prior to attempting installation. Please torque all fasteners to specifications

Access to damper adjustment points will require modification of the vehicle – please review with the customer.

#### Torque Specifications




|   |                             |
|---|-----------------------------|
| Lower spring perch set screw                                    | 1 Nm (10 lb <b>inch</b> )   |
| Upper spring perch to body locknuts (f)                         | 20 Nm (15 lb ft)            |
| <a href="#">Lower shock clevis nut</a> (f)                      | 90 Nm (66 lb ft) *          |
| <a href="#">ARB link to lower control arm</a> (f)               | 41 Nm (30 lb ft) + ¼ turn*  |
| <a href="#">ARB link to ARB</a> (f) early model                 | 100 Nm (74 lb ft) *         |
| <a href="#">ARB link to ARB</a> (f) late model                  | 41 Nm (30 lb ft) + ¼ turn * |
| OEM wheel bolts (f/r)   | 121 Nm (89 lb ft)           |
| <a href="#">Upper shock &amp; control arm mount to body</a> (r) | 55 Nm (41 lb ft)            |
| <a href="#">Upper shock eye to upper mount</a> (r)              | 70 Nm (52 lb ft) + ¼ turn   |
| <a href="#">Lower shock eye to lower control arm</a> (r)        | 70 Nm (52 lb ft) + ¼ turn * |
| <a href="#">Upper control arm to upright</a> (r)                | 50 Nm (37 lb ft) + ¼ turn * |

\* must be tightened with vehicle at or near ride height.


## Instructions

Before removing any parts, park the car on a secure, stable and level surface, loosen (but do not remove) the wheel lug nuts, jack the vehicle up and place the car on four stable jack stands or use a professional vehicle lift. We recommend having two people available for certain steps of the installation.

### Front Install Instructions

|  |   |
|--|---|
| 1. Securely support both front corners of the car (relieving tension on the ARB).  |   |
| 2. Remove front wheels.  |   |
| 3. Remove <a href="#">nut and bolt that attach the ARB link</a> to the front lower control arm on both sides of the vehicle. Use a tappet wrench on the shaft to hold the stud (older design). (16mm)                          |    |
| 4. Loosen (but do NOT remove) the <a href="#">bolt that attaches the ARB link to the ARB</a> .   |   |
| 5. Rotate the ARB and links out of the way with ends pointing down.  |   |
| 6. Remove the <a href="#">plastic body plugs</a> from the strut tower (located in the engine compartment) exposing the upper spring perch nuts. This will ruin the plastic plugs. (Available from STaSIS in our accessory kit) |  |
| 7. Remove the upper spring perch nuts (*Note* be careful not to drop the nuts as they would likely be difficult to recover). (13mm)  |   |
| 8. Remove the spring and shock assembly from the vehicle. Be careful not to damage the front wheel speed sensor wire! (*Note* you may have to pull down on the upright slightly to facilitate removal).                        |   |

**You will be able to do steps 9 - 29 with the dampers off of the car**

|  |   |
|--|---|
| <p>9. Use an appropriate spring compressor to remove the tension from the spring, following the spring compressor manufacturer's instructions.</p>   |   |
| <p>10. Remove the nut from the top of the shock shaft and disassemble the OEM assembly, removing the <a href="#">upper spring perch rubber bushing</a>, <a href="#">shock shaft load-distributing washer</a>, <a href="#">upper spring perch</a>, <a href="#">OEM bump stop rubber</a> and plastic splash shield. (19mm)</p> <p>(*Note* do NOT score the shock shaft. If you need to hold the shaft to prevent it from turning when you loosen the lock nut you may use a hex top 19mm deep socket and a 6mm Allen key. Use an open-end wrench on the flats of the socket and hold the shaft with the 6mm Allen key. You may purchase a special tool, #3353 from an Audi dealer or Zelenda tools (888.892.8348), which will allow you to remove the nut while holding the shaft stationary.)</p> |  |
| <p>11. Extend KONI shock shaft to maximum extension. (*Note* this will be time consuming for kits with aggressive rebound dampening).</p>  |   |
| <p>12. Optional: Install the OEM shock body protective cap on the KONI shock in place of the white KONI protective disk (*Note* this may take some force).</p>   |   |
| <p>13. Install the (shortened) bump stop (included in kit) over the KONI shock shaft.</p> <p>WARNING: STaSIS suspensions are designed for optimal handling at ride heights from 25"- 26.5". For ride heights below 25" several steps must be taken to achieve proper handling. These include but may not be limited to proper spring rate, bump stop length and alignment settings. Please call for recommendations.</p>   |   |
| <p>14. Install the spring so it seats on the lower spring perch.</p>   |   |
| <p>15. (Ignore this step if you have purchased the STaSIS Accessory Kit as you have been provided a modified upper spring perch.) The upper spring perch must be modified to accommodate the 2 1/2" Hyperco spring. This is best done by using a hot cutting tool or hacksaw to remove the portion of rubber isolator material designed to accommodate the tapered end of the OEM spring, thus creating a 2 1/2" OD flat seat for the new spring.</p>  |   |

16. Install the new (or modified) [upper spring perch](#) (\*Note\* if the shock shaft is truly fully extended, there should be approximately one-inch of shaft showing above the upper spring perch).



17. Install the [shock shaft load-distributing washer](#), followed by the [upper spring perch rubber bushing](#) on the threaded part of the shock shaft (\*Note\* there are two indents on the [rubber bushing that need to line up with the bolts on the upper spring perch](#)).






18. Install the included lock nut on the threaded part of the shock shaft and tighten until all free play is removed (\*Note\* do NOT score the shock shaft. A scored shaft will damage the internal seals of the damper.) If you need to hold the shaft to prevent it from turning when you tighten the lock nut you can use a set of vice grips with an appropriate material (rubber/heavy cloth) on the jaws to prevent scoring of the shaft. You'll want to grab the shaft at the upper most portion as close to the threading as possible (as this area of the shaft will always be covered by the bump stop and won't damage the seals).

19. Adjust the lower spring perch so that the distance from the lower clevis eye to the seat of the lower spring perch is 12.5". (\*Note\* this is an initial height setting as fine tuning of ride height will be done later. Make sure the locking ring and perch are hand tightened together).

20. We recommend that you use a new locking nut on the clevis bolt. Additionally the upper spring perch to body nuts and the ARB link to ARB nuts should all be replaced with new locknuts. We recommend using Original Equipment (OE) Audi locknuts, which can be obtained from your local dealer or in the optional STaSiS Accessory Kit.

## CONCENTRIC FRONT DAMPERS REQUIRE THE FOLLOWING STEPS

|  |   |
|--|---|
| <p>21. Concentric shaft front dampers have a small tab at the top of the damper. These will require drilling of the upper suspension mount for proper clearance or the damper will be damaged.</p>   |   |
| <p>22. For adjustability an access hole can be drilled through to the engine compartment. Please verify that the customer would like this access point inside the engine bay. If the customer would prefer not to have external access to the damper, apply the following steps to the aluminum upper suspension mounts only.</p>  |   |
| <p>23. With the suspension removed, you can drill a small pilot hole through the upper shock mount and into the engine bay. On the Driver's side, take note not to damage any wires or brake lines when drilling. On the Passenger side, take EXTRA care not to damage the AC lines that will be very close. The angle of the hole is important as this will need to be in a straight line from the lower shock clevis mount (on the lower control arm) to the center of the upper shock mount. If you are uncertain as to the proper angle of the hole, please tie a string from the lower shock mount to the center of the upper shock mount. This angle will be the proper angle of the hole.</p> |   |
| <p>24. <a href="#">Driver's side upper shock mount pilot hole</a> will pass through the center of the upper shock mount, and into the engine bay at the center of the steel support. The <a href="#">Driver's side upper engine bay pilot hole</a> should be in the center of the support.</p>   |   |
| <p>25. With the Driver's side pilot hole drilled, use a 9/16" drill bit (unibit recommended) to create the proper size hole. Before drilling verify that the pilot hole follows the line of the damper from the lower shock clevis to the upper shock mount. <a href="#">The Driver's side complete 9/16" hole from the engine bay.</a></p>  |  |
| <p>26. The <a href="#">Passenger side upper engine bay pilot hole</a> is located along the same steel support as the Driver's side, just inside of the AC line. Be extra careful when drilling not to damage the AC line. It may help to place a piece of metal between the line and the hole you are drilling to ensure that no damage is caused to the line. The <a href="#">Passenger side upper shock mount hole</a> is in the same position as the Driver's side, in the center of the mount. Follow the same steps as the Driver's side in verifying the proper angle of the line, again, use a string if necessary to get the correct angle before drilling the main hole.</p>                |  |


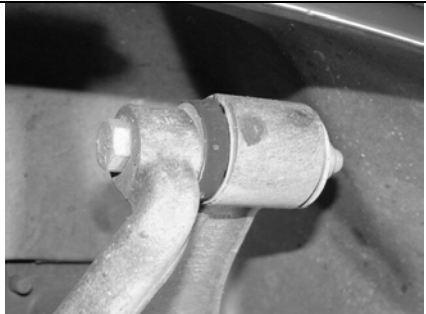
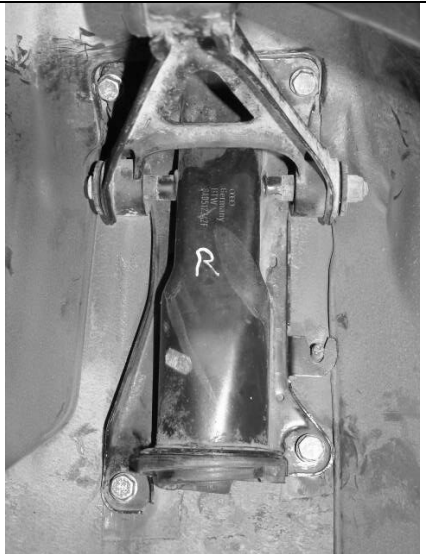
27. With the Passenger side pilot hole drilled, use a 9/16" drill bit (unibit recommended) to create the proper size hole. Before drilling verify that the pilot hole follows the line of the damper from the lower shock clevis to the upper shock mount. [The Passenger side complete 9/16" hole from the engine bay.](#)



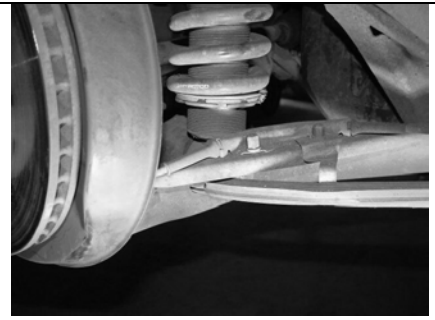
28. Installation of the assembled front dampers is the reverse of removal.



## Rear Install Instructions

|  |   |
|--|---|
| 1. Securely support both rear corners (relieving tension on the ARB).  |   |
| 2. Remove rear wheels.   |   |
| 3. Remove the <a href="#">bolt that goes through the lower control arm and the lower shock mounting point</a> (*Note* do NOT try to pull the shock from the lower control arm). (19mm, 19mm) |    |
| 4. Remove the <a href="#">upper control arm outer mounting bolt</a> . (*Note* make a note of the orientation of the concave washer). (18mm, 19mm)  |    |
| 5. Push down on the upright assembly with just enough force so that the lower control arm pulls free from the lower shock eye.   |   |
| 6. Remove the <a href="#">four bolts that hold the spring and upper control arm bracket to the body of the car</a> . (17mm)  |  |

7. Remove the spring, shock, upper control arm and mount as a unit from the car. Be careful not to damage the [rear wheel speed sensor wire](#)! (\*Note\* you may have to push down on the lower control arm assembly to facilitate removal).



**You will be able to do steps 8-20 off of the car**

8. Use a spring compressor to remove the load from the spring, and then remove the bolt that holds the top of the damper. Follow the spring compressor manufacturers instructions on how to compress the spring. (19mm, 18mm)

9. Remove the spring and damper assembly from the mount.

10. Remove the [upper rubber spring perch](#) from the mount, save it in case you want to re-install the OEM springs in the future.

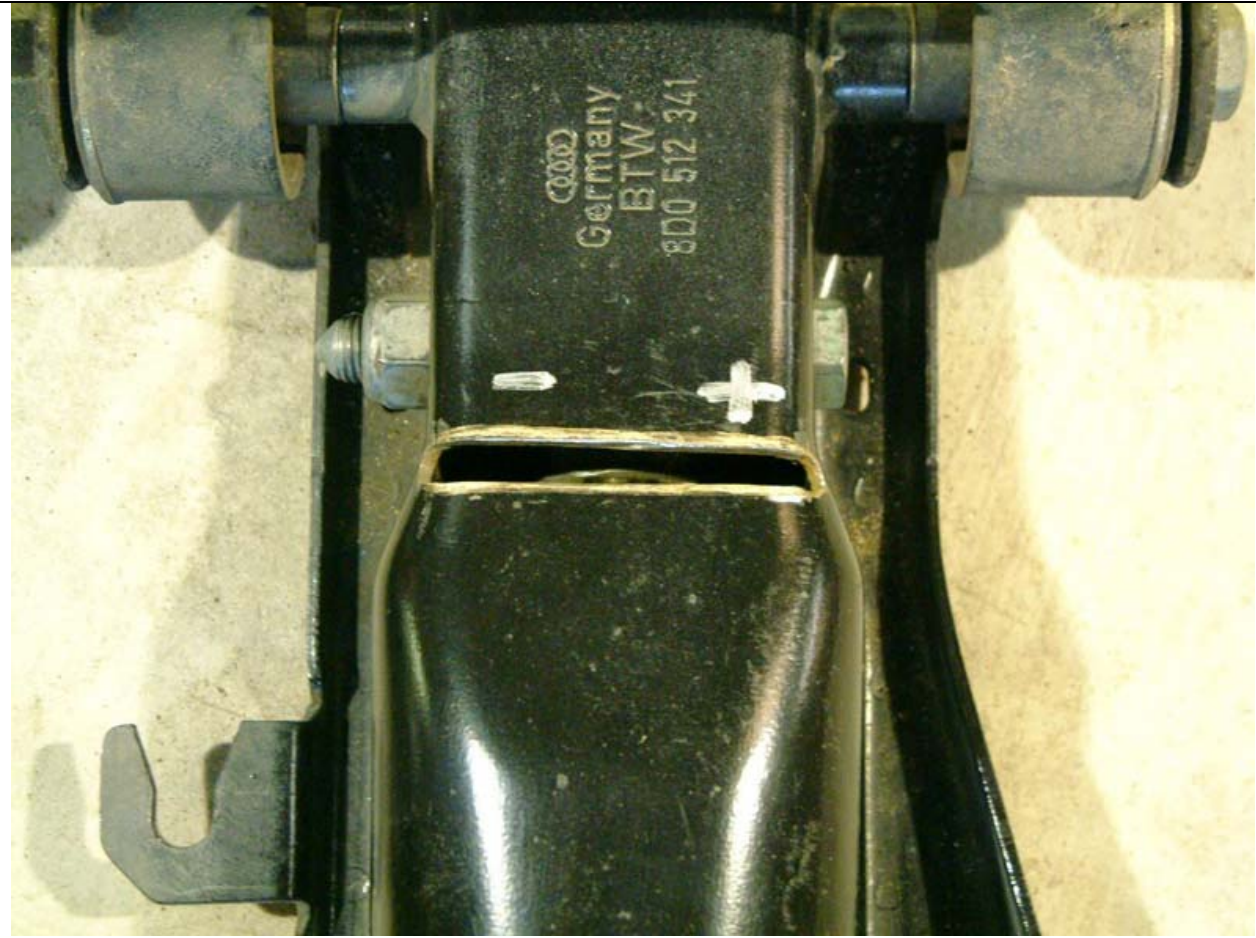


11. Using the provided template, drill a 3/16" hole in the outboard flange of the mount. This provides a hole to secure the rear perch adaptor in position. It is important to place the locator hole in proper position with the screw and STaSIS logo facing outboard. Otherwise the shock may rub on the spring.



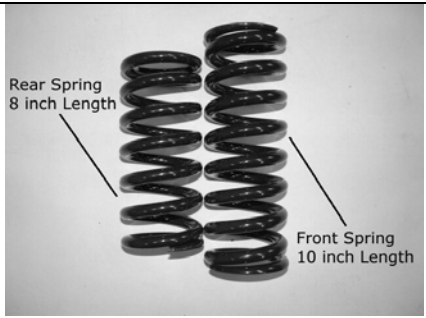


## EXTERNAL ADJUSTMENT OF REAR DAMPERS REQUIRE THE FOLLOWING STEPS

- The rear suspension mount can be modified to allow for access to the rebound adjustment with the suspension installed on the car. Please verify that the customer would prefer this modification.
- Using a proper cutting tool and safety glasses cut a slot across the mount below the upper rear shock mount. Verify first that you will be able to access the KONI rebound adjustment wheel then widen the slot so that it is both long enough and wide enough to allow for a full sweep of the wheel. **DO NOT ADJUST THE DAMPERS.** These have been preset by STaSIS for the customer's valving and spring rates.



- Once the slot has been complete, spray the slot with some type of anti-rust corrosion resistance spray.

|  |  |
|--|--|
| <p>12. Install the provided <a href="#">upper rubber isolator</a> onto the upper mount. It goes into the position where the OEM rubber spring perch used to be.</p>  |   |
| <p>13. Install the <a href="#">upper spring perch adaptor</a> onto the upper mount and tighten provided locator screw hand tight (15 in lb). The upper rubber insulator should now be sandwiched between the mount and the adaptor. The STaSIS logo should be facing outboard.</p> <p>WARNING: STaSIS rear suspensions shipped after March 15, 2002 have been preset to accommodate ride heights from 25"- 26.5". For ride heights below 25" several steps must be taken to achieve proper handling. These include but may not be limited to proper spring rate, bump stop length and alignment settings. Please call for recommendations.</p>   |   |
| <p>14. Extend the shock body to maximum extension (*Note* this will be time consuming for kits with aggressive rebound dampening)</p>  |  |
| <p>15. Place the <a href="#">spring</a> over the shock body and seat it on the lower perch.</p>  |  |
| <p>16. Making sure the shock body is fully extended, insert the shock body into the upper mount and install the upper shock bolt and locknut. STaSIS recommends using a new locknut.</p>   |  |
| <p>17. Install spring/shock/upper control arm and mount into car as one assembly. Reverse the install procedure starting at step 6 and working towards step 1. When you are installing the lower control arm to shock connection, line up the shock eye with the suspension arm and then press up on the upright to push them together. This requires a bit of force, as it is a slight interference fit. Use NEW locknuts on the lower shock mount and the upper control arm to upright attachment points. The final torque of these two attachment points should to be done with the vehicle on the ground and at the approximate ride height to properly set the rubber bushings. We recommend using Original Equipment (OE) Audi locknuts, which can be obtained from your local dealer or in the optional STaSIS Accessory Kit.</p> |  |

If you have any questions during this installation, please email ([info@stasisengineering.com](mailto:info@stasisengineering.com)) or call STaSIS Engineering at 408-353-2855.

# STaSiS Engineering

## Ride Height Adjustment for Track Sport Coil Over kit

Hyperco Springs/Custom Valved KONI Threaded Cadmium-plated Dampers

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Final ride height adjustment procedure:

1. After completing installation of the kit set the vehicle on the ground and **MAKE SURE IT'S ON A LEVEL SURFACE. VERY IMPORTANT!**
2. Measure the ride height of the vehicle at four points for future reference. We recommend measuring from the center of the wheels to the bottom of the fender lip.
3. If you are pleased with this ride height then you are done, save the measurements for future reference. If not continue to step 4.
4. Calculate the difference between the actual ride height and the ride height you would like the car to sit at for the right front wheel. For optimum handling we recommend this be done with the driver in the car and  $\frac{3}{4}$  of a tank of fuel. We recommend that the distance between the center of the wheels and the bottom of the fender lip be 13.50 inches. Below 13.0 inches the suspension is operating too close to its maximum bump travel and handling can be negatively impacted.
5. The ratio between shock body motion and wheel motion is about 0.7 to 1. This means that the wheel travels about 1 inch for every 0.7 inches of shock body travel. Therefore, for example, if you wanted to lower the car  $\frac{1}{2}$  inch from its current ride height at the right front wheel, then you would have to lower the lower spring perch on the right front shock body by  $\frac{1}{2} \times 0.7 = 0.35$  inches.
6. Repeat steps 4 & 5 for the left front, left rear and right rear wheels.
7. Armed with the data from steps 4,5 & 6, securely jack the car up and place it on four jack stands. Remove the wheels if necessary to reach the lower spring perches. Loosen the lower perch set screw and thread the lower perch up or down by the amount you have calculated in step 5. Record the location of the perch so you can have it as a future reference if needed. Once the desired height is attained, torque the lower perch set screw to 1NM (10 lb inch).  
  
**\*Note\*** Always place a generous amount of Anti-Seize compound on the lower spring perch set screws before securing for extended periods of time. This prevents oxidation and facilitates removal of the set screws after many months of use.
8. Place the wheels back on the car and lower it to the ground. Go to step 2. Make sure the car is in the exact same location as before and press up and down on the car 3 or 4 times at each of the four wheels to settle the suspension before you make any measurements.

# STaSIS Engineering

## Maintenance Instructions for Track Sport Coil Over kit

Hyperco Springs/Custom Valved KONI Threaded Cadmium-plated Dampers

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Yearly maintenance:

The STaSIS Coil Over system is designed to provide superior service for the lifetime of your vehicle with a minimum of preventative maintenance. We recommend the following steps are performed a minimum of once a year, preferably before winter season. Vehicles that are exposed to more abusive environments, such as sea salt, road salt or dirt roads may necessitate more frequent maintenance.

1. Securely support the vehicle on four jack stands and remove the road wheels.
2. Clean the threaded portion of the damper with a non metallic brush using soap and water.
3. We recommend lowering or raising the lower spring perch to allow access to clean the threaded portion of the damper that is covered by the perch.
4. Lubricate the threaded portion of the damper with a lithium or silicon based grease.
5. Return the perches to their original location and torque the set screws to 1NM (10 lb inch).

**\*Note\*** Always place a generous amount of Anti-Seize compound on the lower spring perch set screws before securing for extended periods of time. This prevents oxidation and facilitates removal of the set screws after many months of use.

6. Secure the road wheels and return the vehicle to the ground. Watch that the springs seat properly on the spring perches.

Post Service maintenance:

The STaSIS Track Sport Coil Over system is designed to be as maintenance free as possible. However, some basic observations of the system can mitigate potential problems most often encountered after service work is performed on the vehicle.

While the system is designed to be self-aligning, we encourage you to observe that the springs are properly seated on the lower spring perches after the vehicle has been lifted for maintenance. Lower ride heights will leave a gap between the spring and lower perch when the road wheels are allowed to hang at full droop for an extended period of time. This is necessary to provide the range of adjustment designed into the suspension. In road going use the damper should not allow the spring to part from the spring perch.

When checking the spring seats or cleaning the threaded bodies, we encourage you to look for any signs of wear on the inside of the springs or the threaded portion of the damper that the spring was misaligned after maintenance was performed on the vehicle. If you observe this situation on an ongoing basis please call technical support at 408-353-2855