

Venice Service Manual

Suspension



13. Suspension

13.1. Front Suspension

13.1.1. Description and Operation

The front suspension has 2 primary purposes:

- Isolate the driver from irregularities in the road surface.
- Define the ride and handling characteristics of the vehicle.

The front suspension absorbs the impact of the tires travelling over irregular road surfaces and dissipates this energy throughout the suspension system. This process isolates the vehicle occupants from the road surface. The rate at which the suspension dissipates the energy and the amount of energy that is absorbed is how the suspension defines the vehicle's ride characteristics. Ride characteristics are designed into the suspension system and are not adjustable. The ride characteristics are mentioned in this description in order to aid in the understanding of the functions of the suspension system. The suspension system must allow for the vertical movement of the tire and wheel assembly as the vehicle travels over irregular road surfaces while maintaining the tire's horizontal relationship to the road.

This requires that the steering knuckle be suspended between an upper and a lower control arm. The lower control arm attaches from the steering knuckle at the outermost point of the control arm. The attachment is through a ball and socket type joint. The innermost end of the control arm attached at 2 points to the vehicle frame, through semi rigid bushings. The upper control arm attaches to the upper control arm bracket and is part of the Push rod shock assembly that bolts to the body.

This up and down motion of the steering knuckle as the vehicle travels over bumps is absorbed predominantly by the coil spring. The vertical movement of the steering knuckle as the vehicle travels over irregular road surfaces will tend to compress the spring and spring tension will lead the spring to return to the original, at rest state. This action isolates the vehicle from the road surface. The upper and lower control arms are allowed to pivot at the vehicle frame in a vertical fashion. The ball joint allows the steering knuckle to maintain the perpendicular relationship to the road surface.

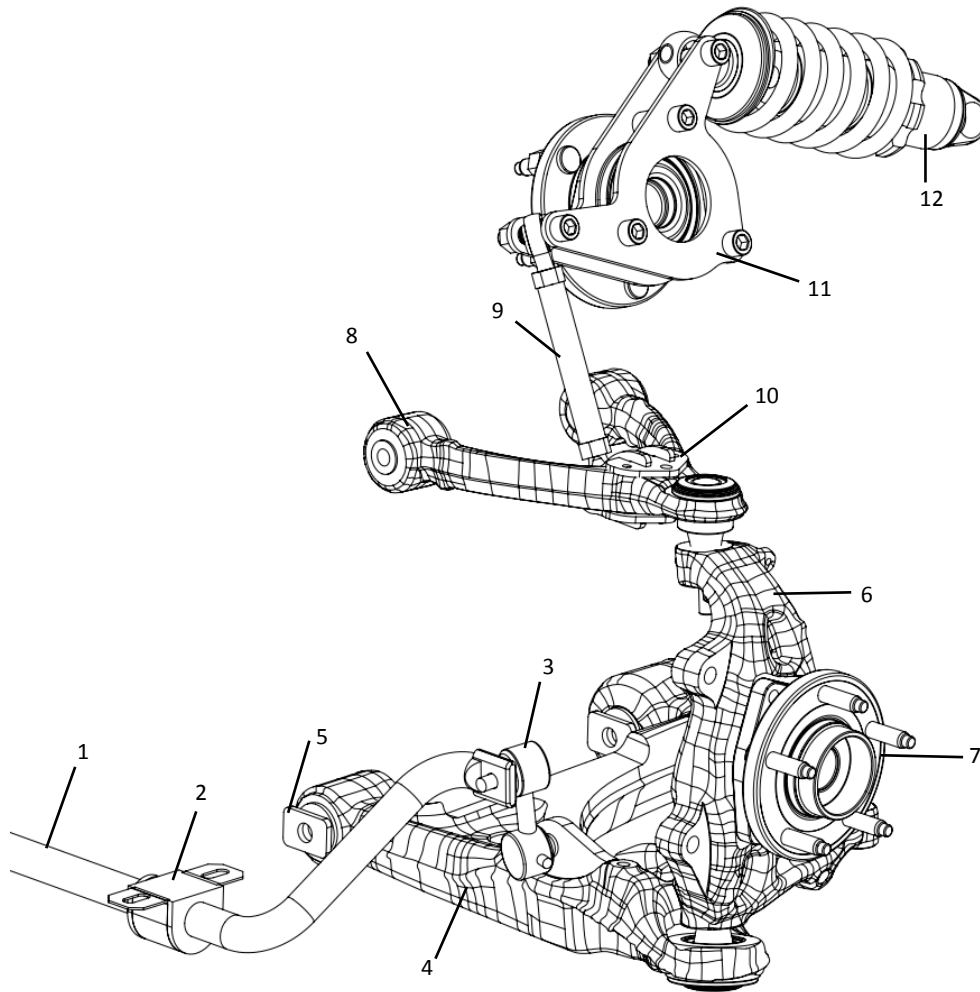
The up and down motion of the upper control arm rotates the suspension rocker. The design of the suspension rocker allows for a progressive spring rate. As the spring is compressed by the motion of the wheel the force applied by the spring increases non-linearly, providing a more "Sporty" feel.

A shock absorber is used in conjunction with this system in order to dampen out the oscillations of the coil spring. A shock absorber is a basic hydraulic cylinder. The shock is filled with oil and has a moveable shaft that connects to a piston inside the shock absorber. Valves inside the shock absorber offer resistance to oil flow and consequently inhibit rapid movement of the piston and shaft. Each end of the shock absorber is connected in such a fashion to utilize this recoil action of a spring alone.

Front suspensions systems utilize an anti-sway bar. The anti-sway bar connects between the left and right lower control arm assemblies through the anti-sway bar end link and anti-sway bar bushings. This bar controls the amount of independent movement of the suspension when the vehicle turns. Limiting the independent movement defines the vehicle's handling characteristics on turns.

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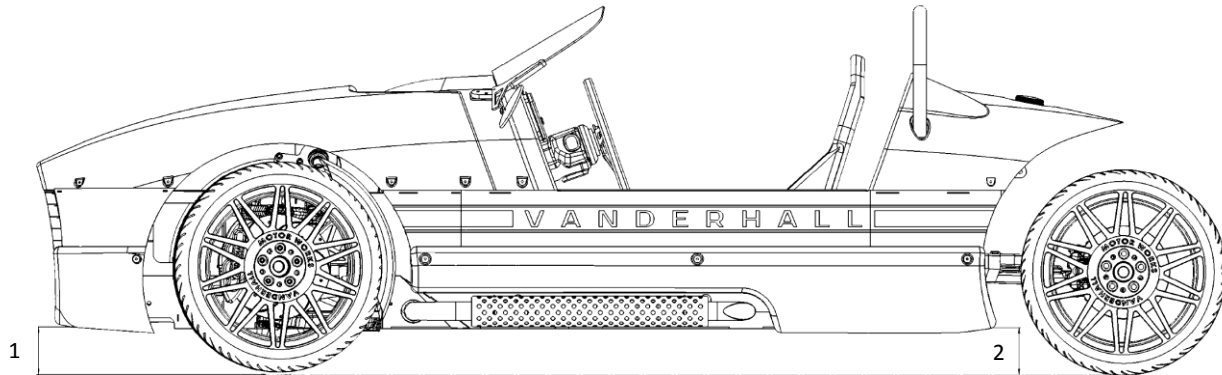
1. Anti-sway bar
2. Anti-sway bar bushing
3. Anti-sway bar end Link
4. Lower control arm
5. Camber Plate
6. Steering knuckle
7. Wheel bearing hub
8. Upper control arm
9. Pushrod
10. Upper Control Arm Link
11. Suspension Rocker
12. Coil over Shock

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13.1.2. Specifications

13.1.2.1. Trim Height



Trim Height Specifications

Application	Specifications	
	Metric	English
Front Valance to Ground (1)	140 mm	5.5 in
Rear Rocker to Ground (2)	140 mm	5.5 in

13.1.2.2.

Fastener Specifications

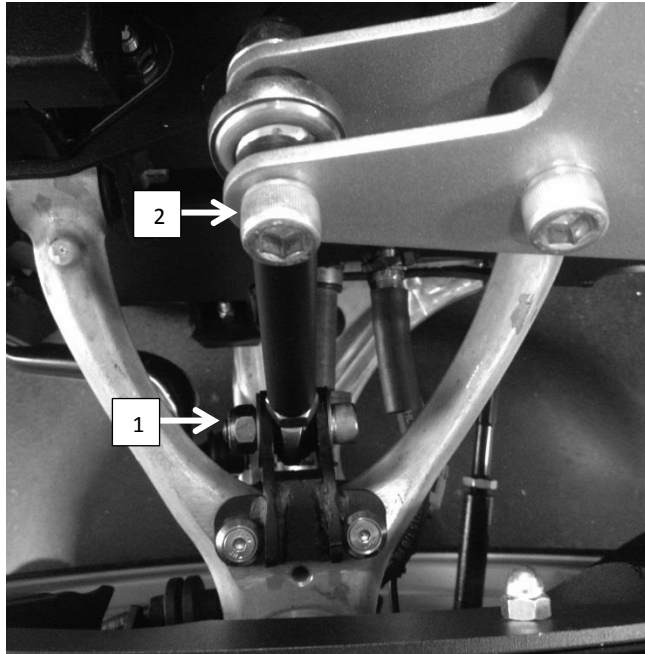
Application	Specifications	
	Metric	English
Lower Ball Joint Nut		
First Pass	40 Nm	30 lb. ft.
Second Pass	Plus 135°	
Lower Control Arm to Frame Nut	165 Nm	122 lb. ft.
Coil Over Shock to Frame	72 Nm	53 lb. ft.
Coil Over Shock to Rocker	72 Nm	53 lb. ft.
Sway bar End link Nuts	65 Nm	48 lb. ft.
Sway bar Bushings	55 Nm	41 lb. ft.
Tie Rod End Nut		
First Pass	30 Nm	22 lb. ft.
Second Pass	Plus 115°	
Upper Ball Joint Nut		
First Pass	30 Nm	22 lb. ft.
Second Pass	Plus 150°	
Upper Control Arm to Frame Bolt	110 Nm	81 lb. ft.
Wheel Hub Bolt	115 Nm	85 lb. ft.
Suspension Rocker to Frame	108 Nm	80 lb. ft.
Suspension Rocker Plates to Bearing	108 Nm	80 lb. ft.
Pushrod Upper nut	72 Nm	53 lb. ft.
Pushrod Lower Nut	72 Nm	53 lb. ft.
Upper Control Arm Link	13 Nm	10 lb. ft.

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13.1.3. Repair instructions

13.1.3.1. Pushrod



13.1.3.1.1.Tools

10mm Hex key
19 mm Wrench

13.1.3.1.2.Removal

1. Remove pre-load from Coil Spring, Refer to **Front Coil over shock, ,Removing Spring Pre-Load**
2. Remove upper pushrod bolt (2)
3. Remove lower pushrod bolt (1)

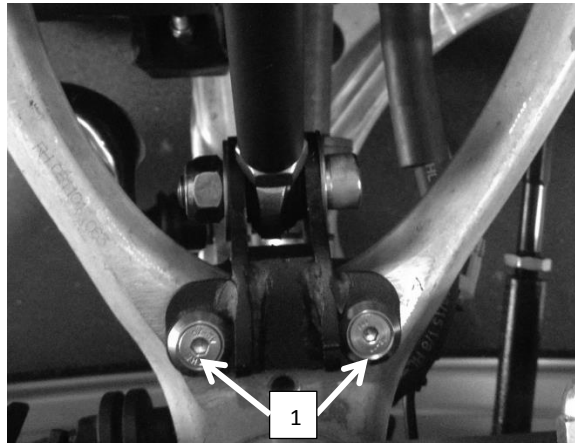
13.1.3.1.3.Installation

1. Apply grease to lower joint
2. Install lower pushrod ball joint seals
3. Install upper and lower pushrod bolts
4. Set Spring Pre-load, Refer to **Front Coil over shock, Setting Spring Pre-Load**

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13.1.3.2. Upper Control Arm Link Replacement



13.1.3.2.1.Tools

4 mm Hex key
10 mm wrench

13.1.3.2.2.Removal Procedures

1. Remove pre-load from Coil Spring , Refer to Front Coil over shock
2. Remove lower bolt from push rod, Refer to Pushrod
3. Remove bolts through upper control arm (1)

13.1.3.2.3.Installation Procedures

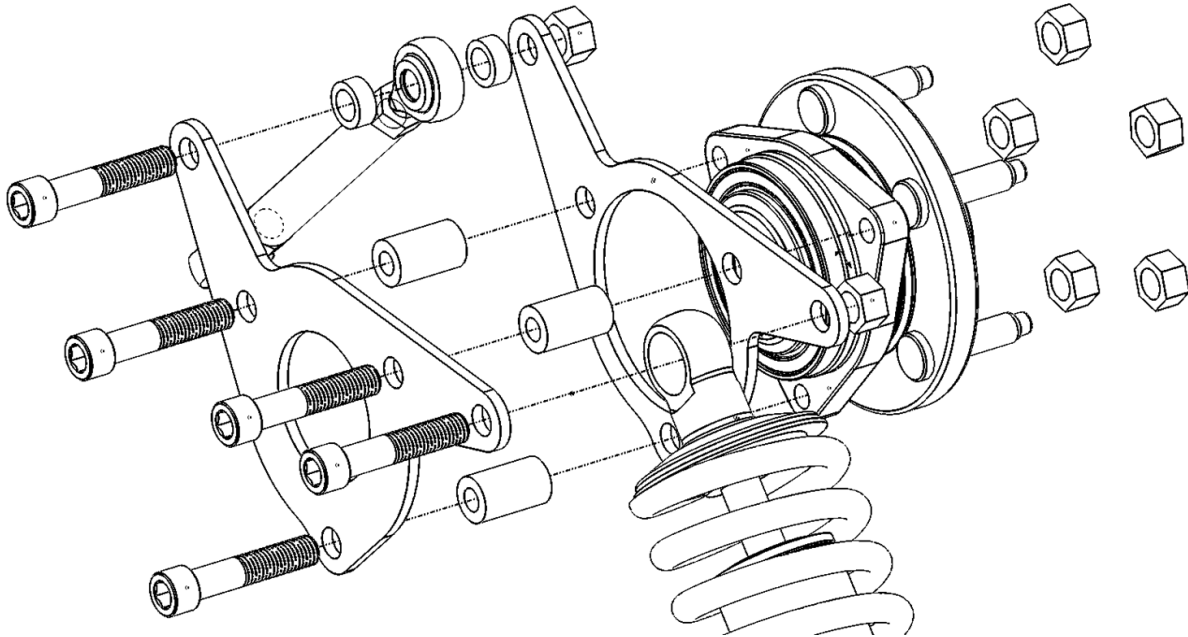
1. Install bolts through upper control arm (1)
2. Connect lower pushrod mount, Refer to Pushrod
3. Set Spring Pre-load , Refer to Front Coil over shock

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13.1.3.3. Suspension Rocker Replacement



13.1.3.3.1.Tools

10mm Hex key
19 mm Wrench
19 mm socket and ratchet

13.1.3.3.2.Removal Procedures

1. Remove pre-load from Coil Spring, Refer to Front Coil Front Coil over shock
2. Break the torque on the three bolts around the center of the rocker assembly
3. Remove upper push rod bolt
4. Remove shock bolt
5. Remove the three bolts of the rocker assembly
6. Remove the 5 bolts on the back side of the hub assembly

13.1.3.3.3.Installation Procedures

1. Install the bearing hub to the chassis and 5 nuts
2. Assemble the suspension rocker plates and spacers
3. Install shock bolt.
4. Install pushrod rocker bolt
5. Set Spring Pre-load, Refer to Front Coil over shock

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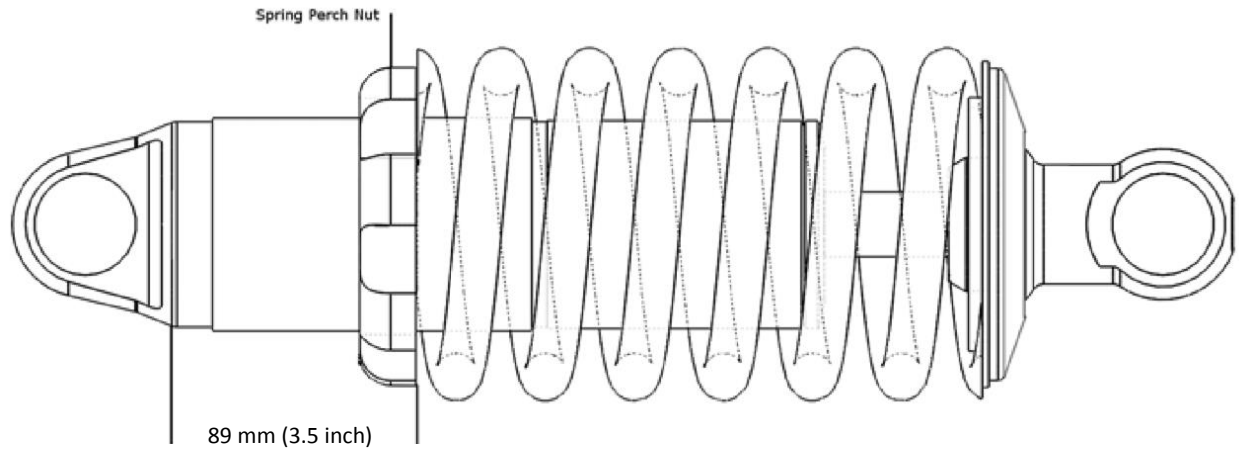
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13.1.3.4. Front coil over shock Replacement

13.1.3.4.1.Tools

10mm Hex key
19 mm Wrench
Spring wrench

13.1.3.4.2.Removing and setting spring Pre-load



13.1.3.4.2.1.Removing Spring Pre-load

Lift and support the vehicle
Loosen the spring perch nut until the spring can be moved by hand

13.1.3.4.2.2.Setting Spring Pre-load

Center spring on spring perches
Tighten spring perch nut until the spring as shown.
Perform the Vehicle Trim Height Inspection, Refer to [Trim Height Inspection](#)

13.1.3.4.3.Removal Procedures

Remove pre-load from Coil Spring, see above
Remove the shock

13.1.3.4.4.Installation Procedures

Install the shock Tightening to 72 Nm (53 lb. ft.)
Set Spring Pre-load, see above

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13.1.3.5. Anti-sway bar Replacement

13.1.3.5.1.Tools

- 5 mm Hex key
- 14mm Wrench
- 15mm offset box end Wrench
- 15 mm Socket and Ratchet

13.1.3.5.2.Removal Procedures

- Lift and support the vehicle
- Disconnect Anti-sway bar End Link from Anti-sway bar, Refer to [Anti-sway bar End link Replacement](#)
- Remove the Anti-sway bar Bushings

13.1.3.5.3.Installation Procedures

- Lubricate the inside of the anti-sway bar bushing
 - With a synthetic water resistant marine-grade grease
- Install anti-sway bar bushings
- Install anti-sway bar end link

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13.1.3.6. Anti-sway bar Bushing Replacement

Tip: Before removing the Anti-sway bar Bushing, clean the area around the Bushing and apply a small amount of silicone spray.
See Anti-sway bar for removal and installation of anti-sway bar bushing

13.1.3.7. Anti-sway bar End Link Replacement

CAUTION
Excessive rotation of end link shaft can tear the end link boot. Hand tools must be used to keep the ball stud from rotating. Insert an Hex key in to prevent rotation during removal and installation see figure


13.1.3.7.1.Tools

- 5 mm Hex key
- 14mm Wrench

13.1.3.7.2.Removal Procedures

- Remove upper and lower end link nuts
- Remove end link

13.1.3.7.3.Installation Procedures

- Install end link
- Tighten Nuts to 65 Nm (48 lb. ft.)

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13.1.3.8. Lower control Arm Replacement

Caution

Excessive rotation of ball joint shaft can tear the boot. Hand tools must be used to keep the ball stud from rotating. Insert an Hex key in to prevent rotation during removal see figure



13.1.3.8.1.Tools

Vanderhall Alignment Rack
21mm Wrench
6 mm Hex key
21 mm socket and Ratchet
Ball Joint Separator

13.1.3.8.2.Removal Procedures

Remove pre-load from Coil Spring, Refer to [Front Coil Over Shock, Removing Spring Pre-Load](#)
Remove the Front wheel, Refer to [Front Wheel Replacement](#)
Remove anti-sway bar end link Refer to [Anti-Sway bar end link Replacement](#)
Remove nut from Lower Ball Joint

- Loosen but DO NOT remove the nut until the ball stud has been separated from the knuckle.

Separate lower ball joint from the steering knuckle
Remove front and rear lower control arm bolts

13.1.3.8.3.Installation Procedures

Install lower control arm front and rear bolts
Install lower ball joint nut
Install anti-sway bar end link, Refer to [Anti-Sway bar end link Replacement](#)
Install the Front wheel, Refer to [Front Wheel Replacement](#)
Set Spring Pre-load, Refer to [Front Coil Over Shock, Setting Spring Pre-Load](#)
Align the vehicle Refer to [Wheel Alignment](#)

13.1.3.9. Bump stop Replacement

13.1.3.9.1.Tools

14mm socket and ratchet

13.1.3.9.2.Removal Procedures

Remove nut
Remove bump stop

13.1.3.9.3.Installation Procedures

Install bump stop

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13.1.3.10. Upper Control Arm Replacement

Caution

Excessive rotation of ball joint shaft can tear the boot. Hand tools must be used to keep the ball stud from rotating. Insert an Hex key in to prevent rotation during removal see figure



13.1.3.10.1. Tools

2 16mm wrenches
18 mm wrench
5 mm Hex key
Ball Joint Separator

13.1.3.10.2. Removal Procedures

Remove pre-load from Coil Spring, Refer to [Front Coil over Shock, Removing spring Pre-load](#)
Remove Front wheel fender, Refer to [Front Wheel Fender Replacement](#)
Remove Front wheel, Refer to [Front Wheel Replacement](#)
Remove Upper Control Arm Link, Refer to [Upper Control Arm Link Replacement](#)
Remove nut from upper control arm ball joint
Remove front and rear upper control arm nuts and bolts

13.1.3.10.3. Installation Procedures

Install upper control arm front and rear bolts
Install Upper Control Arm Link, Refer to [Upper Control Arm Link Replacement](#)
Install upper control arm ball joint to knuckle
Install the Front wheel, Refer to [Front Wheel Replacement](#)
Set Spring Pre-load [Refer to Front Coil over Shock, Setting Spring Pre-load](#)
Install wheel fender

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13.1.3.11. Wheel Bearing Replacement

13.1.3.11.1. Tools

15 mm wrench

13.1.3.11.2. Removal Procedures

Remove pre-load from Coil Spring, [Refer to Removing Spring Pre-load](#)

Remove Front wheel, [Refer to Front Wheel Replacement](#)

Disconnect wheel speed sensor harness

Remove nut from CV axel

Remove wheel fender

Remove brake caliper

Remove brake rotor

Remove three bolts holding wheel bearing

13.1.3.11.3. Installation Procedures

Install wheel bearing on to steering knuckle

Install brake rotor

Install brake caliper

Install CV axel nut

- a new CV axel nut must be installed

Connect Wheel Speed sensor

Install wheel

Install wheel fender

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13.1.3.12. Steering Knuckle Replacement

13.1.3.12.1. Removal Procedures

Remove Wheel Bearing, [Refer to Front Wheel Bearing Replacement](#)

Remove anti-sway bar end link, [Refer to anti-sway bar end link Replacement](#)

Disconnect the Tie rod end, Refer to Tie Rod End Replacement

- Remove the upper control arm ball joint Loosen but DO NOT remove the nut until the ball stud has been separated from the knuckle.

Remove lower control arm ball joint

- Loosen but DO NOT remove the nut until the ball stud has been separated from the knuckle.

13.1.3.12.2. Installation Procedures

Connect lower control arm ball joint

Insert CV Axel through Steering knuckle

Connect upper control arm ball joint

Connect Tie Rod End Link

Install wheel bearing, Refer to [Front Wheel Bearing Replacement](#)

Connect anti-sway bar end link

Install brake rotor

Install brake caliper

Install CV axel nut

- a new CV axel nut must be installed

Connect Wheel Speed sensor

Install wheel

Install wheel fender

Set Spring Pre-load, [Refer to Setting the Spring Pre-Load](#)

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13.1.3.13. Trim Height Inspection

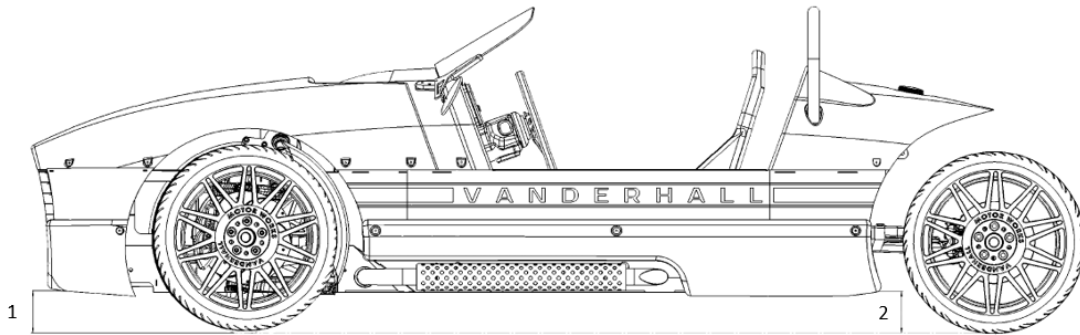
13.1.3.13.1. Trim Height Measurements

Trim height is a predetermined measurement relating to vehicle ride height. Incorrect trim heights can cause bottoming out over bumps, damage to the suspension components, and symptoms similar to wheel alignment problems. Check the trim heights when diagnosing suspension concerns and before checking the wheel alignment.

Perform the following before measuring the trim heights:

1. Set the tire pressures to the pressure shown on the certification label and/or in the Owners Manual.
2. Check the fuel level. Add additional weight if necessary to simulate a full tank.
3. Make sure the vehicle is on a level surface,
4. All dimensions are measured vertical to the ground. Trim heights should be within -10 mm to +10 mm to be considered correct.

13.1.3.13.2. Measuring the front and rear dimension



Use the following procedure to check the front and rear dimensions:

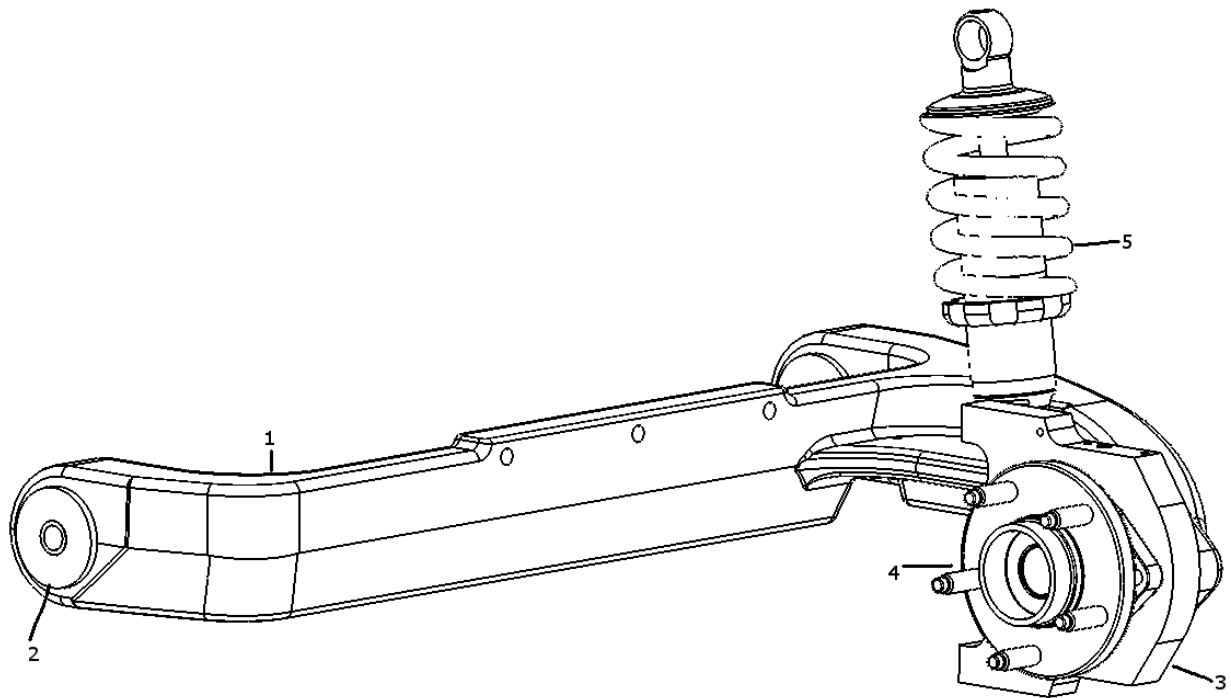
1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**.
2. Set the front spring preload to 89 mm (3.5 in), Refer to **Front Coil over shock**
3. Fully loosen the rear spring perch
4. Lower the vehicle
5. Drive the vehicle for a minimum of 1 mile to settle the suspension
6. Park the vehicle on a hard level surface
7. Measure each of the corners of the valance to the ground
 1. Compare the measurement to the specification table. Refer to **Trim Height Specifications**.
 2. Adjust front spring preload to raise and lower the valance
8. Measure each of the corners of the rear rocker to the ground
 1. Compare the measurement to the specification table. Refer to **Trim Height Specifications**.
 2. Adjust rear spring preload to raise and lower the rocker
9. Drive the vehicle for a minimum of 1 mile to settle the suspension
10. Repeat steps 6-9 as necessary to achieve the appropriate Trim height

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13.2. Rear Suspension

13.2.1. Description and Operation



1. Trailing arm
2. Trailing arm bushing
3. Rear brake and hub adaptor
4. Wheel hub
5. Coil over shock

13.2.2. Fastener Specifications

Application	Specifications	
	Metric	English
Trailing Arm to Frame	215 Nm	158 lb. ft.
Coil Over Shock to Frame	72 Nm	53 lb. ft.
Coil Over Shock to Trailing Arm	72 Nm	53 lb. ft.
Wheel Hub Bolt	115 Nm	85 lb. ft.

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13.2.3. Repair instructions

13.2.3.1. Coil over shock Replacement

13.2.3.1.1.Tools

19 mm Wrench
10 mm Hex key

13.2.3.1.2.Removal Procedures

- Lift and support the vehicle, [Refer to Lifting the Vehicle](#)
- Remove the rear wheel, [Refer to Rear Wheel Replacement](#)
- Remove rear fender, [Refer to Rear Fender Replacement](#)
- Support trailing arm
- Remove Lower bolt from coil over shock assembly
- Remove Upper bolt from coil over shock assembly

13.2.3.1.3.Installation Procedures

- Install Lower Bolt through shock
- Install upper bolt through shock
- Install rear fender, [Refer to Rear Fender Replacement](#)
- Install rear wheel, [Refer to Rear Wheel Replacement](#)

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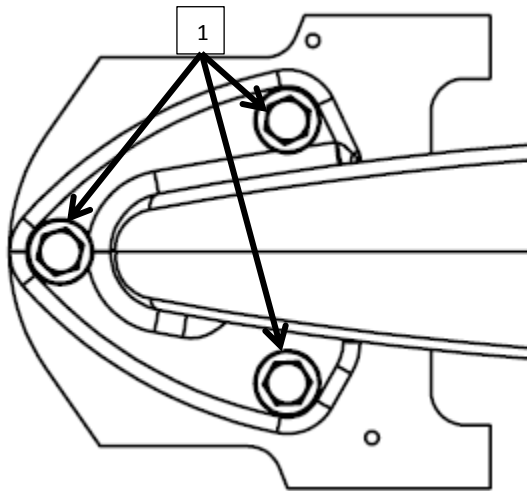
13.2.3.2. Rear brake and hub adaptor

13.2.3.2.1.Tools

- 10 mm Allen
- 8 mm Allen
- 10 mm Wrench

13.2.3.2.2.Removal procedures

1. Lift and support the vehicle, Refer to [Lifting the Vehicle](#)
2. Remove the Rear Hub Cover, Refer to [Rear Hub Cover](#)
3. Remove the Rear Wheel, Refer to [Rear Wheel](#)
4. Remove Rear Brake Caliper bolts, Refer to [Rear Brake Caliper Replacement](#)
5. Remove the Rear Brake Caliper and position it out of the way
6. Remove Rear Brake Rotor
7. Remove the upper and lower Vehicle Speed Sensor, Refer to [Rear Wheel Speed Sensor Replacement](#)

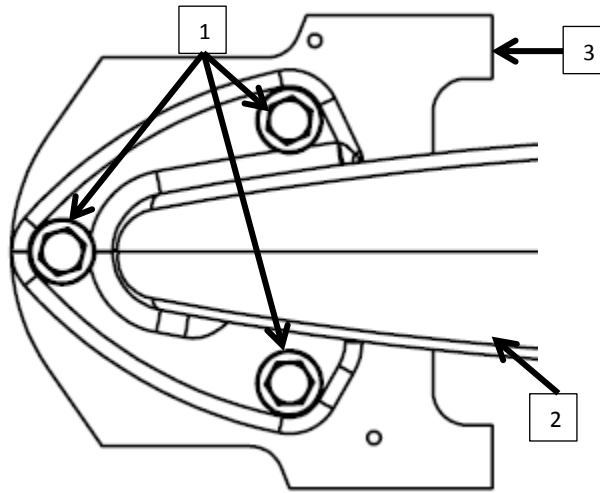


8. Remove the three bolts (1) from the Wheel Hub

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13.2.3.2.3. Installation Procedures



1. Install the three bolts (1) through the Trailing Arm (2) and the new Rear Brake and Hub Adaptor (3) in to the Wheel Hub and tighten to: 115 Nm (85 lb. ft.)
2. Install Vehicle speed sensors, Refer to [Rear Wheel Speed Sensor Replacement](#)
3. Install rear brake Rotor
4. Install rear brake Caliper, Refer to [Rear Brake Caliper Replacement](#)
5. Install rear wheel, Refer to [Rear Wheel](#)

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13.2.3.3. Wheel hub Replacement

See Removal and Installation of Rear brake and hub adaptor, Refer to Rear Hub and Adaptor Replacement

13.2.3.4. Trailing arm Replacement

13.2.3.4.1.Tools

Two 24 mm Wrenches

13.2.3.4.2.Removal Procedures

- Lift and support the vehicle [Refer to Lifting the Vehicle](#)
- Remove rear wheel, [Refer to Rear Wheel Replacement](#)
- If equipped remove rear fender, [Refer to Rear Fender Replacement](#)
- Remove Rear Brake Caliper, [Refer to Rear Brake Caliper Replacement](#)
- Remove Rear Brake Rotor
- Remove Rear Hub and hub adaptor, [Refer to Rear Hub and Adaptor Replacement](#)
- Remove the Body Rocker Panels, [Refer to Body Repair in Body Repair](#)
- Support hub end of trailing arm
- Remove rear shock, Refer to Rear Shock Replacement
- Using a pair of 24mm wrenches remove bolts through trailing arm bushings on both left and right sides of vehicle
- The Trailing Arm can be removed from vehicle

13.2.3.4.3.Installation Procedures

- Insert Trailing arm in to chassis
- Install bolts through trailing arm bushings
- Install Rear shock, [Refer to Rear Shock Replacement](#)
- Install Rear Hub and Hub adaptor plate, [Refer to Rear Hub and Hub Adaptor Plate Replacement](#)
- Install the Rear Brake Rotor, [Refer to Rear Brake Rotor Replacement](#)
- Install the Rear Brake Caliper, [Refer to Rear Brake Caliper Replacement](#)
- If equipped install rear fender, [Refer to Rear Fender Replacement](#)
- Install rear wheel, [Refer to Rear Wheel Replacement](#)
- Install the Body Rocker Panels, [Refer to Body Rocker Panels in Body Repair](#)

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13.2.3.5. Trailing arm bushing Replacement

13.2.3.5.1.Tools

- Hammer
- Dead blow hammer
- 3/4" cold chisel

13.2.3.5.2.Removal Procedures

- Remove Trailing Arm, [Refer to Trailing Arm in this section](#)
- Knock out bushing sleeve
- Knock out both bushing halves

13.2.3.5.3.Installation Procedures

- Thoroughly clean trailing arm bushing pockets
- Using dead blow hammer install bushings halves
- Install busing sleeve
- Install Trailing Arm, [Refer to Trailing Arm in this section](#)

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13.3. Tires and Wheels

13.3.1. Description and Operation

The factory installed tires are designed to operate satisfactorily with loads up to and including the full rated load capacity when these tires are inflated to the recommended pressures.

The following factors have an important influence on tire life:

- Correct tire pressures
- Correct wheel alignment
- Proper driving techniques
- Tire rotation

The following factors increase tire wear:

- Heavy cornering
- Excessively rapid acceleration
- Heavy braking

13.3.2. Fastener Specifications

Application	Specifications	
	Metric	English
Wheel Lug Nut	140 Nm	100 lb. ft.

13.3.3. Tire and Wheel Specifications

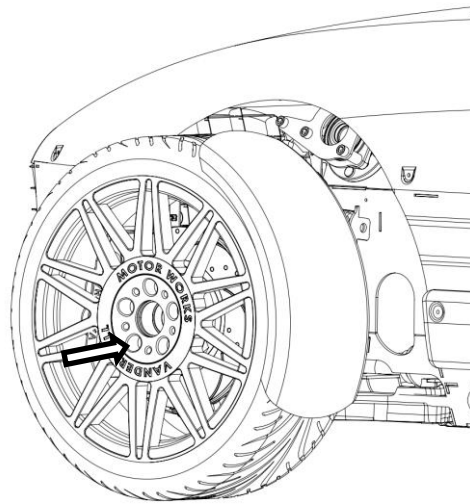
Base Model					
Tires	Wheels	Front		Rear	
		kPa	Psi	kPa	Psi
225/40ZR18	18x8.5	172	25	-	-
285/30ZR18	18x12	-	-	172	25

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13.3.4. Repair instructions

13.3.4.1. Front wheel Replacement



13.3.4.1.1. Tools

- Lug nut key
- 21 mm socket and wrench

13.3.4.1.2. Removal Procedures

- Lift and support the vehicle [Refer to Lifting the Vehicle](#)
- Remove the 5 wheel lug nuts
- Remove the wheel and tire assembly

13.3.4.1.3. Installation Procedures

Warning

Never grease or lubricate wheel nuts, studs and mounting surfaces. Wheel nuts, studs, and mounting surfaces must be clean and dry. Tightening the lubricated parts can cause damage to the wheel studs. This can cause a wheel to come off when the vehicle is moving, causing loss of control and possibly personal injury.

Caution

Improperly tightened wheel bolts or nuts can lead to brake pulsation and rotor damage. In order to avoid expensive brake repairs, evenly tighten the wheel bolts or nuts to the proper torque specification following a star pattern.

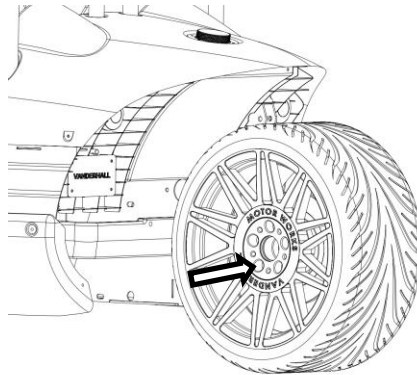


1. Place wheel and tire assembly on the wheel bearing lug studs
2. Hand tighten wheel lug nuts in a star pattern
3. Torque wheel lug nuts in a star pattern

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13.3.4.2. Rear wheel Replacement



13.3.4.2.1. Tools

- Lug nut key
- 21 mm socket and wrench

13.3.4.2.2. Removal Procedures

1. Lift and support the vehicle **Refer to Lifting the Vehicle**
2. Remove the 5 wheel lug nuts
3. Remove the wheel and tire assembly

13.3.4.2.3. Installation Procedures

Warning
Never grease or lubricate wheel nuts, studs and mounting surfaces. Wheel nuts, studs, and mounting surfaces must be clean and dry. Tightening the lubricated parts can cause damage to the wheel studs. This can cause a wheel to come off when the vehicle is moving, causing loss of control and possibly personal injury.

Caution
Improperly tightened wheel bolts or nuts can lead to brake pulsation and rotor damage. In order to avoid expensive brake repairs, evenly tighten the wheel bolts or nuts to the proper torque specification following a star pattern.


1. Place wheel and tire assembly on the wheel bearing lug studs
2. Hand tighten wheel lug nuts in a star pattern
3. Torque wheel lug nuts in a star pattern

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13.4. Wheel Alignment

13.4.1. Description and Operation

Wheel Alignment is the process of adjusting the angle of the front wheels, To ensure the vehicle drives and brakes straight without pulling to one side. Beyond keeping the vehicle straight Proper wheel alignment is important for:

- Vehicle ride quality
- Braking Distance
- Tire wear
- Fuel Economy

13.4.2. Specifications

Application	Specification
Toe Angle	0°

13.4.2.1. Special Tool

- Steering column Alignment Pin
- Vanderhall Alignment Rack

13.4.3. Alignment Procedures setting the toe

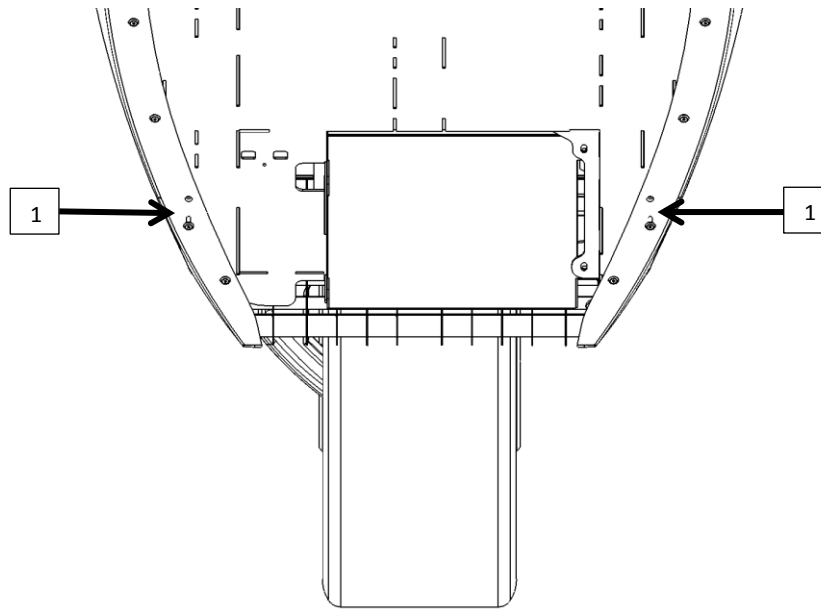
1. Position the front wheels in the straight ahead position



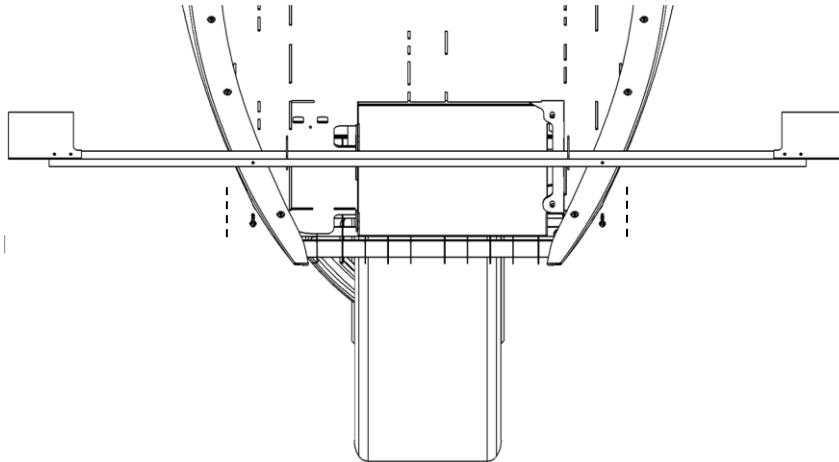
2. Lock the steering column in the straight ahead position with the Steering column Alignment Pin (1)

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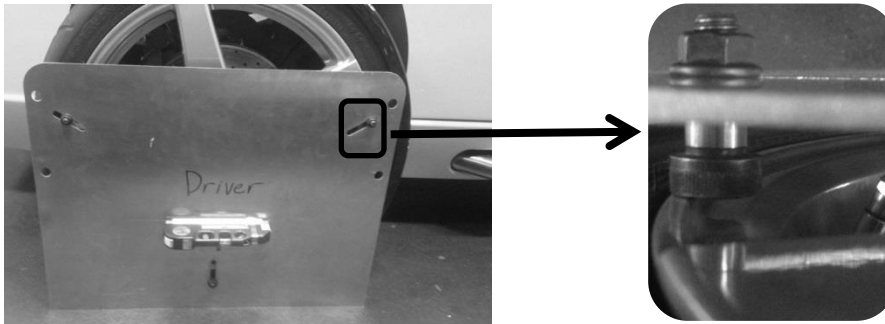
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3. Remove the second from the rear Rocker Panel bolt (1) from either side



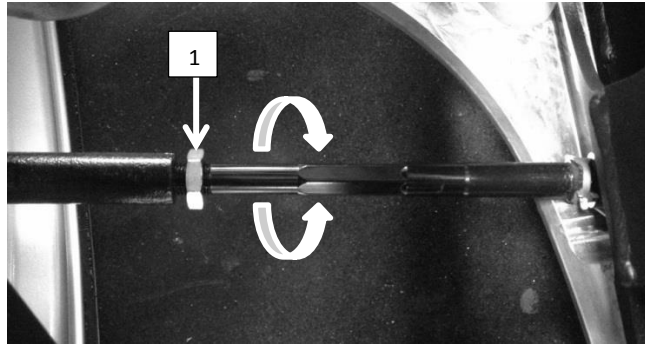
4. Mount the laser targets to the vehicle chassis in to the Rocker Bolt, Removed in Step 3
 - 4.1. Tighten to 3.5 Nm (30 in lb)



5. Position the front wheel plate against the wheel and adjust the bolt heads until they rest on the outer lip of the wheel
 - 5.1. Secure plates to wheel with bungee cords
6. Turn on the Laser
 - 6.1. Adjust the laser to display a vertical line

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7. Loosen the tie rod lock nut (1)
8. Using the Tie Rod (2) adjust the vehicle toe to the appropriate angle
9. Tighten the tie rod lock nut (1) to 30 Nm (22 lb ft) +128 degrees
10. Repeat steps 5-8 on other wheel
11. Remove the laser target
12. Remove the steering column alignment pin
13. Drive the vehicle for at least 1 mile
14. Repeat steps 4-12 to verify the alignment
15. Re-install the Rocker mounting bolt