

**Thank you for purchasing your new SOLO WERKS S1 Coilover suspension.**

### **IMPORTANT PLEASE READ BEFORE BEGINNING INSTALLATION:**

Please take a moment to review this installation process and verify that your kit is complete and all components have been received. If there are any questions during the process, contact us directly.

Technical support: **888-679-3278**

SOLO WERKS recommends that you have this kit installed by a qualified professional. Solo Werks or its authorized agents are not responsible for damage or failure resulting from an improper or modified installation. Do not use a pneumatic impact gun to torque the upper strut nut as damage may occur.

All suspension related components must be inspected and in good working condition. You should inspect all bushings, tie rods, hubs, bearings, strut mounts, sway bar end links, wheels, tires, etc. and replace if necessary.

This suspension system was designed to work best with the factory wheel/tire combination. Any deviations from these specifications could result in significantly altered handling characteristics and/or increased interference risk to other vehicle components.

**SOLO WERKS TIP: *Depending on the offset & size your wheels/tires, wheel spacers may be required for proper fitment.***

If suspension is lowered past the recommended measurements there can be possible interference with multiple vehicle components; (i.e. modification may be necessary to fender lips, seams etc.). This will also void your Solo Werks warranty.

After installing the suspension system, a four-wheel alignment must be performed according to manufacturer's specifications. Check and reset load- dependent brake compensator, ABS system and headlight aim according to manufacturer's specifications (If applicable).

**ALL RUBBER- MOUNTED STRUT/ DAMPER ATTACH-MENTS MUST NOT BE FULLY TIGHTENED UNTIL AFTER THE SUSPENSION SYSTEM IS LOADED (WHEELS ON THE GROUND). OTHER MOUNTING FASTENERS (FOR EXAMPLE BRACKETS) MUST BE SECURELY TIGHTENED BEFORE LOAD IS PLACED ON THE SUSPENSION SYSTEM**

Every effort has been made to avoid printing errors in our literature. However, if there are any application or specification errors or omissions we must disclaim responsibility.

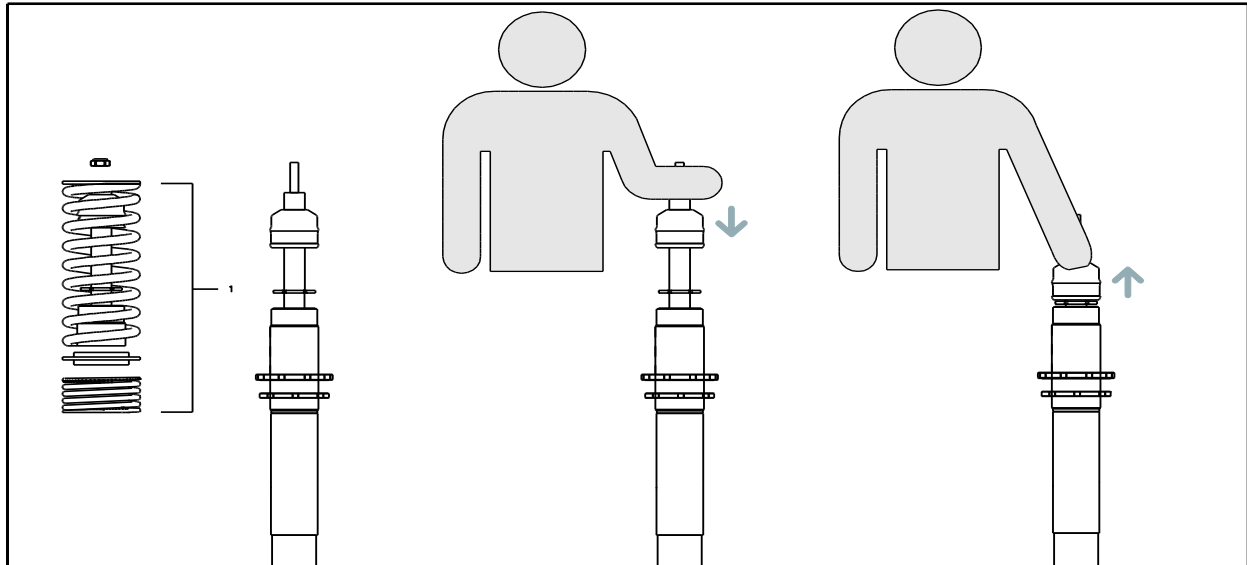
### Original Suspension Removal- Front:

1. Due to the age of this platform, soaking all associated attaching bolts in penetrating oil prior to disassembly can aid in removal of hardware.
2. Support Lower Control Arm/Spindle with floor jack
3. Remove any lines, hoses, headlight sensors, etc. from original suspension strut mounts
4. Remove OEM sway bar endlink from lower control arm. (**Not** absolutely necessary but can aid in creating more space for removal of strut housing)
5. Disconnect the steering tie rod end from steering knuckle (**Not** absolutely necessary but can aid in creating more space for removal of strut housing)
6. Remove the pinch bolt to disconnect both upper control arms from steering knuckle
7. Remove two upper strut mount bolts that attach strut to the chassis. Access to these require removal of two plastic plugs in cowl.
8. Remove Lower strut bolt/nut (18mm) from lower control arm
9. While pushing down on the suspension you will now be able to remove the OEM strut as an assembly (strut housing, spring, upper strut mount, upper control arms)
10. Precautionary measures can be taken by applying masking tape to the painted surface of your fender to avoid scratches during removal.

**NOTE:** If you are using your existing upper strut mount, control arms (Fig 1 #2&3) you must remove these items from the strut assembly. These items are under extreme pressure from the front spring and must be removed using an appropriate spring compressor to relieve the pressure. Follow the directions given by the manufacturer of the Spring Compressor to safely remove the spring and disassemble the Strut Assembly.

**SOLO WERKS TIP:** *OEM suspension components such as strut mounts bearings, control arms, etc. are a consumable/wear item and are a known fail point on this chassis. Solo Werks recommends using new mounts with new OEM Bearings and leaving your original suspension as an assembly. These parts are available from your Solo Werks Dealer or your local VW/Audi parts dealer.*

## Solo Werks Coilover Pre-Assembly – Priming the Dampers



**SOLO WERKS TIP:** *As the suspension is shipped and stored in a horizontal position, it is advisable to exercise or Prime the shock absorber before you install them to ensure that the internal contents are in the correct chambers. Therefore, we advise that before you assemble the front coilover shock absorber, take a moment to purge the shock absorber.*

*To do this, one side at a time remove the following from one of the front Coilover Assemblies (if equipped):*

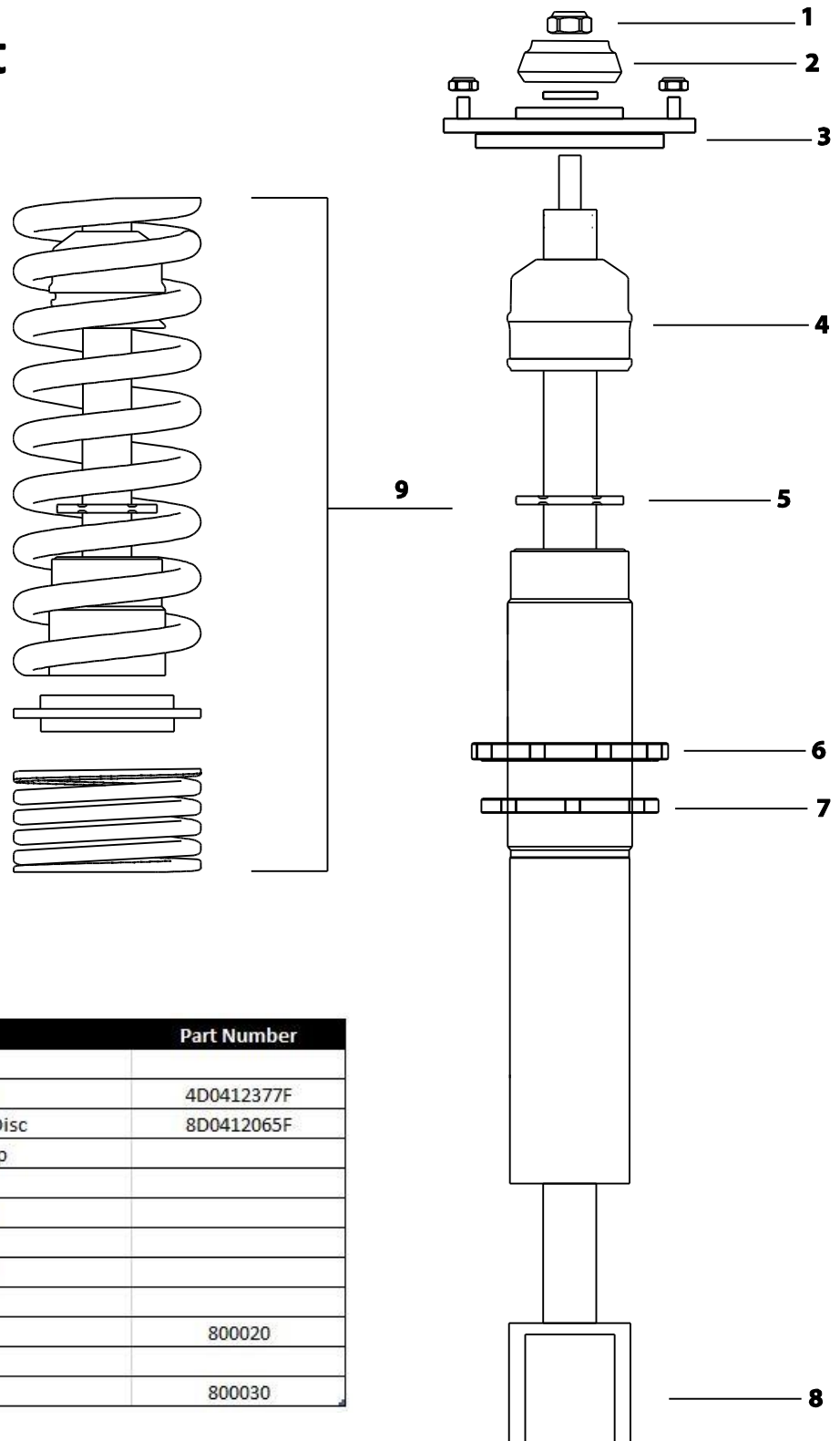
- *Two Upper fasteners (lock nut and securing nut)*
- *Upper Spring Perch*
- *Main Spring*
- *Spring Isolator*
- *Helper Spring*

*You will then be left with the coilover strut with the bumpstop and vent disc on the shaft. Pull the bumpstop up to the top of the chrome shock shaft, just before the threaded portion.*

*With the shock upright (as it would be installed in the vehicle) compress the shock shaft until the bump stop touches the shock housing, and then pull to extend the shock shaft back to full extension.*

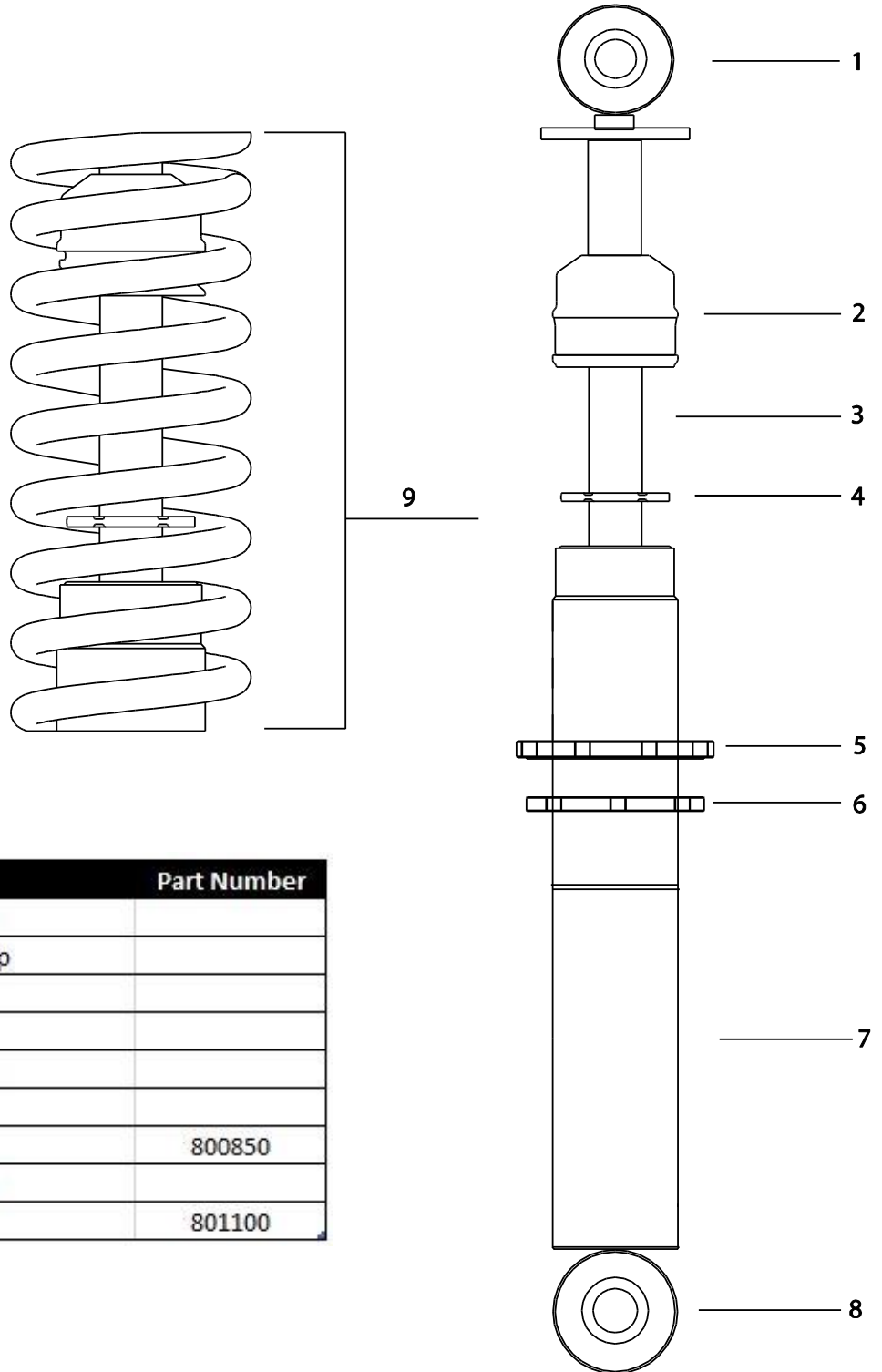
*Repeat 3-5 time minimums. You will notice the shock forces getting progressively harder each time. Once they feel consistent each way, you are ready to install.*

**Fig. 1 Front**



#	Description	Part Number
1	Top Nut Nyloc	
2	Oem Upper Mount	4D0412377F
3	Oem Upper Spring Disc	8D0412065F
4	Elastomer Bumpstop	
5	Vent Disc	
6	Lower Spring Perch	
7	Lock Ring	
8	Lower Strut mount	
9	Spring Assembly	
	Main Spring	800020
	Spring Isolator	
	Helper Spring	800030

**Fig. 2 Rear**



#	Description	Part Number
1	Upper Shock Mount	
2	Elastomer Bumpstop	
3	Damper Shaft	
4	Vent Disc	
5	Lower Spring Perch	
6	Lock Ring	
7	Strut Housing	800850
8	Lower Shock Mount	
9	Rear Spring	801100

### Solo Werks Coilover Assembly and Installation – Front:

***Work in the OEM Upper Bearings - Rotate the bearing a few times to break it in***

- a. We have found that brand new or even existing bearings can get stuck as they have a very limited rotation when installed***
- b. If they are stuck or too hard to move, they will not allow the assembly to rotate as it should and will create a spring bind that will produce a “boing” or “clang” sound of the springs recoiling***

1. Assemble the coilover assembly with the OEM Strut Mount using the provided hardware as in the diagram Fig.1 making sure the upper spring pad is clocked correctly on the spring.
  - a. Top nut should be torqued to 44 ft.-lbs. (Fig. 1 #1)
  - b. Once assembled, we recommend starting the main perch at 25mm (1”) of thread remaining below the main perch/spring seat using the included spanner wrench – actual vehicle height will be set later in the process. (Fig.1 # 5&6)

**NOTE:** Use of an anti-corrosion spray such as the Boeshield T-9 on the threads & main perch/spring seat at this point (Fig.1 # 5&6) can make the adjustment process much easier and will add an extra layer of protection. Boeshield T-9 is available from your Solo Werks dealer.

2. Insert strut assembly into vehicle
  - a. Reinstall the two upper strut mount bolts but do not tighten at this time.
3. NOTE: Before proceeding with the next step, inspect the lower control arm is clean and free of debris (rust/dirt etc. (Fig.1 #8) before installation of the new strut assembly.
4. Raise suspension and reinstall bottom strut mount bolt into lower control arm
  - a. Do not torque at this time (Fig.1 #8)
5. Reinstall both upper control arms into steering knuckle
6. Reinstall the tie rod end into steering arm
7. Reinstall the sway bar endlink to lower control arm and torque to 30 ft.-lbs.
8. Reconnect any lines/hoses or headlight sensors
9. Once vehicle is placed back on the ground under its own weight, Torque upper strut mount bolts to 50 ft-lbs and bottom strut bolt to 66 ft-lbs.
10. Make sure all attaching bolts are torqued properly.

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### Original Suspension Removal- Rear:

1. While Supporting lower trailing arm in the compressed position (loaded as if it is on the ground)
2. Remove the lower shock bolt (19mm) that attaches the shock to the control arm. (Fig.2 #8)
  - a. It may be necessary to move the parking brake cable for added access.
3. Remove the upper control arm bolt (19mm) that attaches the control arm to the spindle.
  - a. **BE AWARE:** The control arm is under a fair amount of pressure, expect it to pop up once the bolt is removed.
4. Remove the four bolts (17mm) attaching the upper shock housing to the chassis.
  - a. Make note of orientation of OEM parts to be reinstalled later.
5. Disconnect sway bar endlink from lower control arm
6. Remove the shock as an assembly by pushing the bottom of the shock inboard and pulling the top of the shock out first.
7. Take care as space is tight and accidental damage could occur if the upper shock housing comes into contact with the fender.
  - a. Precautionary measures can be taken by applying masking tape to the painted surface of your fender to avoid scratches during removal.
8. Use of a properly rated spring compressor is recommended at this point.
9. Remove the upper shock bolt that attaches the shock to the housing.
10. Remove original shock.

### Solo Werks Coilover Assembly and Installation – Rear:

**SOLO WORKS TIP:** *Just like the front struts, it is advisable to Prime the rear shocks as well. To purge the rear shocks: Refer to procedure on page 3.*

In the vertical position (as it would be installed in the vehicle):

1. Extend the shock rod to its full extent
2. Compress until 1" of the chrome shock rod is visible outside of the shock housing
3. Repeat 3-5 times or until the strokes feel consistent.

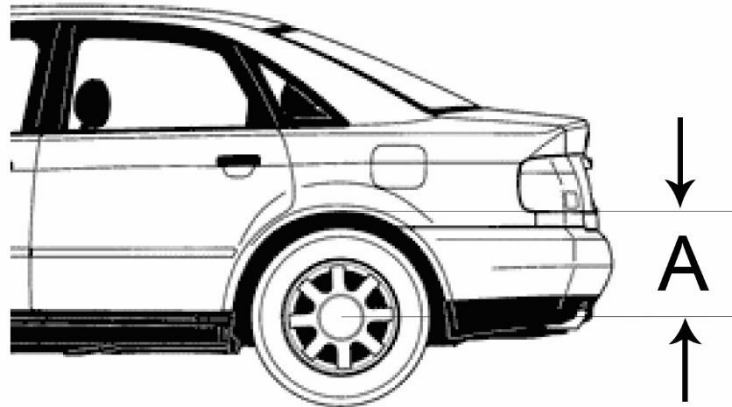
### Solo Werks Coilover Assembly and Installation - Rear

Remove the upper factory spring pads from the housing and ensure that the area is clean and free of any dirt or debris.

1. Reinstall upper OEM spring pad on top of the Solo-Werks spring making sure the pad is clocked properly to the spring.
2. Reinstall the upper shock bolt attaching the new Solo-Werks shock to the oem upper shock housing.
3. Carefully reinsert the shock assembly into position and attach the four (17mm) bolts and secure the shock housing to the chassis.
4. Re install the lower shock bolt (19mm) through the opening in the lower control arm.
  - a. Do not torque lower shock bolts until all weight is on vehicle.
  - b. Torque lower shock bolts to 90 ft.-lbs.
5. Reinstall the upper control arm bolt attaching the control arm to the spindle. Torque to spec.
6. Reattach sway bar endlink and torque to 30 ft.-lbs.
7. Make sure all attaching bolts are torqued properly
8. Adjust final height



## Solo Werks Coilover Final Details – Heights & Working Ranges



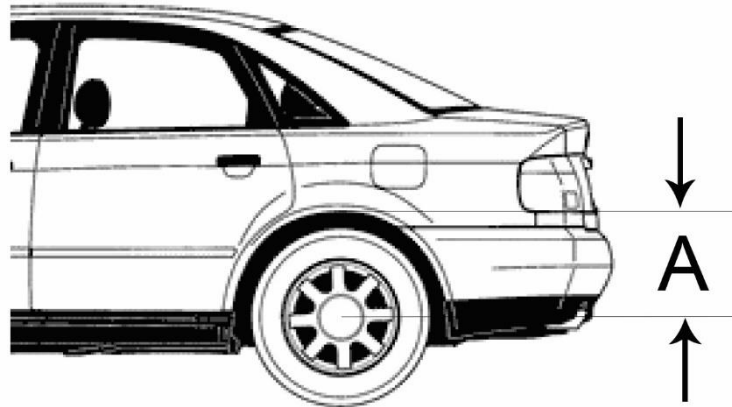
Model	Year	DESIRED LOWERING			
		in mm		in inch	
		Front	Rear	Front	Rear
Audi A4 S4 inc Avant	96-02	40-75	40-75	1.5-3.0"	1.5-3.0"

Front Measurement					
Max low mm	Max low Inch	Max high mm	Max High Inch	OEM mm	OEM Inch
320	12.5"	360	14.25"	395	15.5"

Rear Measurement					
Max low mm	Max low Inch	Max high mm	Max High Inch	OEM mm	OEM Inch
320	12 1/2	360	14.25"	395	15.5"

- These measurements are in place to allow both front and rear dampers to operate properly and allow for ample shock travel.
- All measurements will be referenced from "center of wheel hub to bottom lip of fender" (see example figure "a")
- Using this system outside of this range can cause premature failure and is cause to void your manufacturer specified warranty.
- Helper springs are intended to keep preload on the main spring under full suspension extension, do not remove!

## My Setup - Heights & Working Ranges



Use this page to record your setup heights for easy future reference

Front Measurement						
Date	Max low mm	Max low Inch	Max high mm	Max high Inch	OEM mm	OEM Inch
Solo Spec	320	12.5"	362	14.25"	394	15.5"

Rear Measurement						
Date	Max low mm	Max low Inch	Max high mm	Max high Inch	OEM mm	OEM Inch
Solo Spec	320	12.5"	362	14.25"	394	15.5"