



Installation Instructions

SA-MODELS



SA-01
SA-01F
SA-01TI

SA-04
SA-04HD
SA-04HDD

SA-05
SA-08
SA-10
SA-10HD

SA-06
SA-06HD
SA-06HDD
SA-06CH

SA-06F
SA-06HDF
SA-06HDDF

SA-07
SA-07HD
SA-07HD 3/4



Sulastic Rubber Springs have been designed for vehicles that have not had any suspension modification. Any modification to the vehicle's suspension could affect the Sulastic performance and/or installation process.

Please take a moment to read this important information.

Take all safety precautions during installation by following the instructions and safety information from the manufacturers of all tools to be used for the installation.

When holding up your vehicle make sure jack stands are properly secured, positioned and locked. Remember a hydraulic jack can fail, and you can be seriously injured.

Protect yourself by wearing safety glasses, mechanic's gloves and any other safety equipment recommended by the manufacturer for the installation.

It is not required, but disconnecting the negative battery cable could help to avoid any electrical issues during the installation.

Installer must consult in advance and have on hand the vehicle manufacturer's manual for specific information for your vehicle such as correct bolts torque, locations to hold up your vehicle and how to remove or replace the leaf spring shackle.

The images in the following installation instructions are for reference only. Your kit may vary in appearance and application.

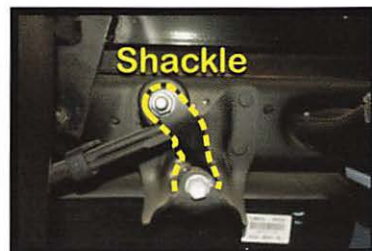
IMPORTANT INFORMATION BEFORE PERFORMING THE INSTALLATION



Notice: Before installation begins, it is the customer's and/or installer's responsibility:

- 1) To make sure that all parts are on hand. Every Sulastic Shackles kit includes the following for a standard installation: 2 sulastic shackles and (4 to 24) steel washers. If any parts are missing, please contact our customer service representatives at (210) 492-4469 or by email at info@sulastic.com
- 2) Read and understand all installation instructions included in this manual before installation begins. In addition Sulastic highly recommends that a qualified and/or certified mechanic performs this installation.
- 3) To make sure that the model received fits on the truck, It is important to check:
 - a) Shackle-Leaf spring position:
SA-Models: Are correct when the truck has the shackle **BELOW** the leaf spring.
SC-Models: Are correct when the truck has the shackle **ABOVE** the leaf spring
 - b) Leaf spring bushing width will fit inside the Sulastic's U-shaped bracket
 - c) Hanger width will be enough to fit the Sulastic's bushing.
(Detailed information of the above on page 2)
 - d) Sulastic shackle won't hit during or after installation any other truck component previously built or installed.
 - e) Bolts size diameter will fit the suspension components.
- 4) It is recommended to keep the original shackles of the truck in case it is required or desired to return the truck to its original condition.

a) Shackle-Leaf spring position: Identify the Leaf spring suspension components by looking underneath your truck



SA-Models are correct for your truck when the shackle is located BELOW the leaf spring

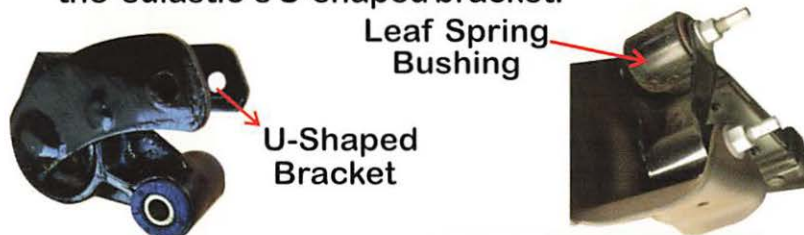


If the shackle is ABOVE the Leaf Spring, a SC-Model is required



IMPORTANT INFORMATION BEFORE PERFORMING THE INSTALLATION

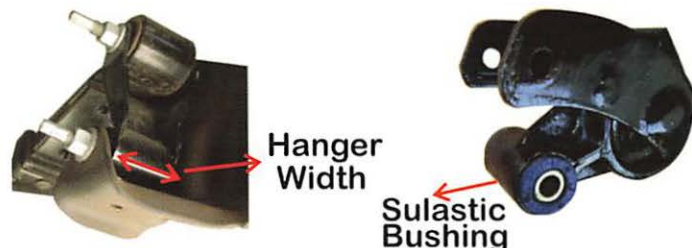
b) Leaf spring bushing width must fit inside the sulastic's U-shaped bracket.



Why the sulastic U-Shaped bracket is wider than the Leaf spring's bushing?

Provides an easier installation while passing the bolt through the leaf-spring's bushing.

c) Hanger width must be enough to fit the sulastic's bushing.



Why the sulastic bushing width is smaller than the original shackle's bushing?

*Provides an easier installation while passing the bolt through the sulastic's bushing.
Can be adapted to different hanger widths by adding washers,
Allows to accept tolerances of the leaf spring alignment in reference to the hanger.*

Calculate how many metal washers are required

	Record Value
Sulastic U-Shaped Bracket Width	<input type="text"/>
- Leaf Spring Bushing Width	- <input type="text"/>
Must be Possitive Value (+)	R1 <input type="text"/>
Hanger Width	<input type="text"/>
- Sulastic Bushing Width	- <input type="text"/>
Must be Possitive Value (+)	R2 <input type="text"/>

$$R1 + R2 = \text{Inches} \quad 1 \text{ inch} = 25.4 \text{ mm}$$

$$\div 0.125'' \text{ Washer Thickness}$$

$$\text{ } \times 2 = \text{Total Washers Required}$$



Have on hand all required tools and plan your installation.

Please use the following tools list as a reference and not as a complete list of all tools required.

Measure Tape

Wheel chocks

Hydraulic Floor Jack

Jack Stand (Recommended lift height 30" and Enough to support the truck)

Pry Bar(s) and a Pin punch

Ratchets, extensions and Deep Sockets

Wrenches

Torque Wrench

Breaker Bar

Masking Tape



3/8" Hex Key For SA-06F, SA-06HDF and SA-06HDDF models

Fastener socket and wrench chart sizes

Bolt Diameter Standard SAE	Wrench Standard SAE	Bolt Diameter Metric ISO	Wrench Metric ISO
9/16"	13/16"	M14	21mm
5/8"	15/16"	M18	24mm
3/4"	1- 1/8"	M20	29mm
7/8"	1-5/16"	M22	34mm

Note:

Most common size fasteners for shock absorber and shackle.

This table is for reference only and can be different of actual truck's fasteners.

STEP 1. Prepare to lift up the truck

Park the vehicle making sure the tires are straight on a flat / leveled surface, put the vehicle on park (or in first gear if you have manual transmission) and fully apply the parking break.



Place chocks on front wheels to prevent the vehicle from moving forward



STEP 2. Measure truck's height

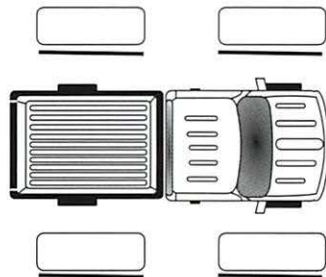
Starting with any tire, measure the distance from the ground to the bottom of the fender straight through the center of the tire.(see diagram)

Write down your measurement on the diagram provided below, and repeat the same steps until you have measurements of all wheels.



QUICK TIP

Stick a piece of masking tape on the fender and mark on the tape where you took the measurement, so that after installation you will have the marks to reference, and repeat the measurements.





It is important to carefully read the truck's owner's manual(s).



It is recommendable to remove the spare tire before lifting the vehicle and while performing the installation.

a) Find the appropriate place to position the hydraulic jack to lift the vehicle, be sure to check your owner's manual(s).



Remember to place the hydraulic jack in a place that will not interfere with the jack stand (Most of the times at the differential).

b) Lift the vehicle using the hydraulic jack to get the rear tires 3" to 3-1/2" off the ground.



c) Place and raise the jack stands under the vehicle and lock them in place.



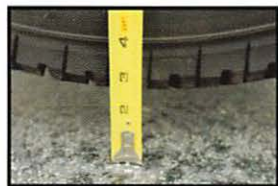
When holding up your vehicle, make sure jack stands are properly secured, positioned and locked.

d) Lower the hydraulic jack until the vehicle is resting on the jack stands.



Wiggling the vehicle will tell you whether you have the jack stands placed properly. If it moves, sways or it is unstable re-adjust the jack stands.

e) Measure the distance from the ground to the bottom of the rear tires. If it is less than 2.5", lift up the vehicle again and raise the jack stands 1/2" more than on step b) and repeat steps as described on c), d).



f) Make sure the vehicle is resting securely on the jack stands.

STEP 4. Jack up the differential and remove the shock absorbers bottom bolts

a) Place the hydraulic jack under the differential and at the center of the axle.



b) By small increments lift the hydraulic jack until it starts to hold the differential weight.



c) Remove the bottom nut of the vehicle's left side shock absorber using a pair of wrenches.

d) Place a wrench on the bolt's head, for safety measures ask a helper to lift up the axle slowly, in small increments, and at the same time turn the bolt until it loosens. Once it is loose, stop lifting and remove the bolt.



e) Use a pry bar to remove the shock absorber and move it out from the bracket in a position in which the shock absorber won't interfere with the vertical axle movement



f) Lower the jack in the same position as on step b) and repeat steps c), d), e) for passenger's side shock absorber



Important: Keep the hydraulic jack at the differential, holding the weight for next steps.

a) Remove the NUTS. Locate the bottom (hanger) shackle's head-bolt on the vehicle's LEFT side and place a wrench on it.



b) Remove the shackle's bottom NUT. Usually the nut has a handle that won't allow the nut to turn around avoiding the use of a second wrench. Otherwise, use a second wrench.



c) Using a pair of wrenches remove the shackle's top-bolt-NUT on the bolt's head and turn on the nut side.



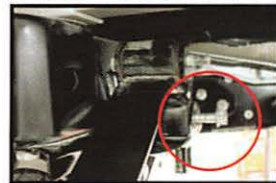
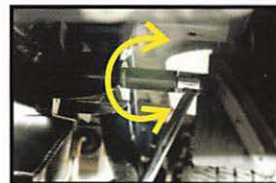
d) Repeat steps a), b) and c) on the vehicle's RIGHT side



Avoid being underneath the nut or wrenches in case they fall down.

e) To remove the BOTTOM BOLT. Place a wrench on the bolt's-head at the vehicle's RIGHT side.

For safety ask a helper to lift up the axle slowly in small increments and at the same time turn the bolt until it loosens, once loose stop lifting and remove the bolt.



When performing step (e), the bolt should come out easily unless the shackle's bushing bolt and metal bushing are corroded.

f) Remove the vehicle's LEFT side bottom bolt. if it won't come out easily, start by lowering the jack in the position of holding only the axle weight and repeat steps e) and f)



Scan QR Code to watch a video for step e and f



STEP 6. Remove the stock shackle Part II

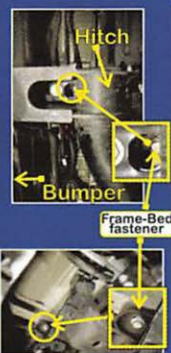
a) Use the hydraulic jack to lift or lower the axle where the top shackle's bolt can be easily removed. This can be done in two different ways depending on the year and model of the truck:

Option 1: Lift the jack under the differential and at the center of the axle until the shackle's top bolt can pass in-between the frame and the truck's bed.



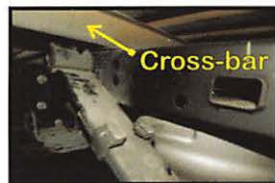
If the bolt's head can't pass in-between the frame and truck's bed consult your owner's manual or contact dealership. Usually, by loosening the frame-bed's fasteners, you can make enough clearance to pass the bolt through.

It is important not to loosen the fasteners next to the cabin to keep the box's alignment. Use wood piece(s) to hold the bed's weight while removing the bolts.



QUICK TIP

It maybe required to lift the vehicle from the frame more than 2.5" as described on step 3.



b) For safety ask a helper to hold the shackle while removing the shackle's upper bolt.

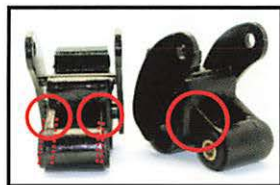


c) Repeat step (b) on the other side. If required lift or lower the axle.

a) Identify if the sulastic shackles are bilaterally asymmetric and/or labeled as Left (Driver's side) and Right (Passenger's side).

Below are the asymmetric features on the sulastic models:

I) On the bushing and nerve connection as the SA-01-TI model.



II) On the Sulastic U-Shaped bracket as the following models: SA-06F, SA-06HDF and SA-06HDDF.



QUICK TIP

Contact us if your sulastic shackles are asymmetric and the label is missing.



By not matching widths between the components could damage the vehicle or the Sulastic shackle.

b) Find how many washer(s) will be required on the Sulastic's bushing side by comparing it to the hanger width.

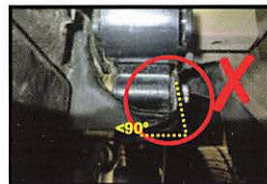
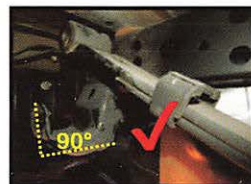


c) Find how many washer(s) will be required on the Sulastic's U-shaped side by comparing it to the leaf spring bushing width



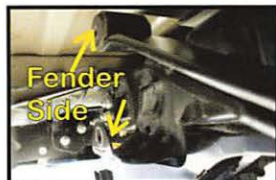
QUICK TIP

Not placing enough washer(s) will modify the hanger U-shaped and could make the sulastic hit the frame.



STEP 8. How to divide the metal washers on each side.

Determine how many washers will be installed on each side (Frame side and Fender side) of the leaf spring's bushing and the sulastic's bushing.

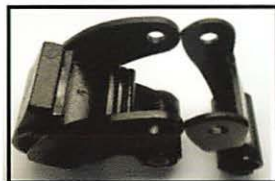


Option 1) When sulastic shackles are symmetric.

Hanger: Start with one washer for the FRAME SIDE and then divide the washers for both sides.



Leaf-spring: If required take one washer for the FENDER SIDE and then divide the washers for both sides.

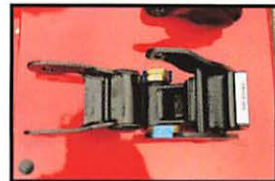


Option2: When sulastic shackles are asymmetric

Hanger: Use all washers on the frame side, this will push the sulastic away from the hanger

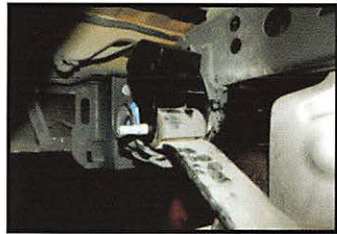


Leaf spring: Use all washers on the fender side.



For an easier installation use masking tape to tape the washer(s) together. Remember to make the hole in order to pass the bolt through.

a) Install the Sulastic on the leaf spring making sure to pass the bolt in the direction from the frame to the fender. Use the supplied bolts if included in the kit.



Passing a tool such as a pin punch on the opposite direction (fender to frame) makes it easier to hold and align the Sulastic shackle, and it will come out while inserting the bolt.



b) Install the nut and with a pair of wrenches make sure it connects with the sulastic U-shaped bracket but do not tighten. Tightening will not allow you to turn or move sulastic freely.



c) Align VERTICALLY the sulastic's bushing to the hanger bolt's hole and with a pair of wrenches tighten the bolt-nut to the required torque.



d) Repeat on the opposite side.



To avoid injury do not be underneath any tool or object in case they fall down.

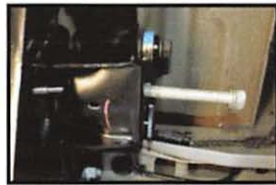
STEP 9. Install the sulastic shackle. Part II

d) Option 1. When top shackle's bolt is removed between the frame and the bed:

Align the shackle's bushing and the hanger's bolt hole by slowly lowering the jack while using a ply bar to keep the Sulastic shackle bushing vertically aligned to the hanger bolt's hole.



It is recommendable to use a tool (as a pin punch) to maintain the Sulastic's bushing aligned to the hanger's bolt hole.



Option2: When top shackle's bolt is removed below the frame:

Align the shackle's bushing and the hanger's bolt holes by slowly lifting the jack while using a ply bar to push and align the Sulastic shackle's bushing and the hanger's bolt hole.



e) Install the shackle's bottom bolt in the same direction as original.



f) Install the nut and tighten the bolt-nut to the required torque.

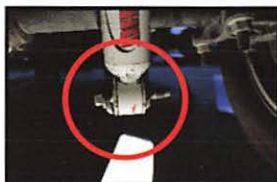
g) Repeat on the opposite side.

a) Reinstall the shock absorbers. Using the hydraulic jack to lower the axle to a position where it is just holding the axle's weight.

Option 1) If the shock absorber's bushing is on the top of the bracket, lift the axle using the jack until the bottom shock absorber bushing is aligned to the bracket holes and insert the bolt in the same direction as it was removed.



Option 2) if the shock absorber's are longer. A pry bar can be used to make pressure to the shock absorber and help to align the shock absorber to the bracket holes, then insert the bolt in the same direction as it was removed.



b) Install nut and tighten to the torque specification.

Application	Leaf Spring Shackles Nut Ft Lb (Nm)	Shock Absorber Lower Nut Ft Lb (Nm)	Shock Absorber Upper Nut Ft Lb (Nm)
2005-2010 F-250, F-350	166 (225)	66 (90)	46 (62)
1997-2000 F-150 & F-250	72-97 (98-132)	56-75 (77-103)	22-29 (30-40)
2007-2012 Silverado 1500/2500/3500	73 (95)	85 (115)	85 (115)
2006 Toyota Tundra	125 (170)	64 (87)	15 (20)

Note:

This table is for reference only and can be different from current Manufacturer's Specifications. Please refer to the OEM manual for correct torque.

c) Repeat this step on the opposite side.

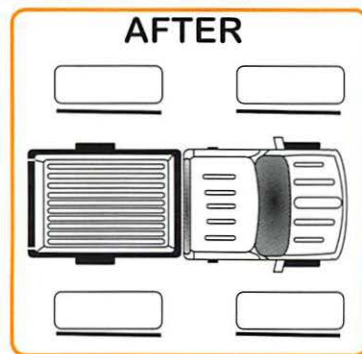
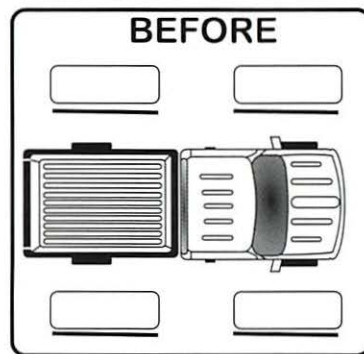
d) Completely Lower the hydraulic jack.



STEP 11. Lower vehicle to the ground and check installation

- a) Remove tools used for installation.
- b) Position the jack to the place used to lift up.
- c) Remove the jack stands on both sides.
- d) Lower the vehicle to the ground.
- e) Re-torque to specifications all bolts and nuts loosen and/or installed.
- f) Check on both sides of the truck to make sure there is no contact or interference between the sulastic shackles and any other truck's component.
- g) Remove the chocks.
- h) Test the truck for a short distance (Around 5 miles) to make sure all the components are in place and park on a level surface.

i) Take height measurements, record below and compare to the original values from Step 2, difference should be no more than 0.25" :



?

If difference on height is MORE than expected or desired, use the truck for two weeks and repeat measurements before contacting our customer's service.

If difference on height is LESS than expected or desired, contact our customer's service.

What Does This Warranty Cover?

American Sulastic, Corp. ("Sulastic") warrants, to the original purchaser (the "Purchaser") only of any Sulastic products during the warranty period. Sulastic only warrants the Products purchased from authorized Sulastic resellers.

What Does This Warranty Not Cover?

The warranty does not cover any Sulastic product(s) that were damaged under the following circumstances:

1. Were installed in vehicles with higher load range than the one established in the vehicle's specification.
2. Misuse, abuse, neglect, alteration, repair or any and all modifications and/or alterations made to the Sulastic product.
3. Negligent use of the product. Were used under abnormal working conditions.
4. The device is welded, burned, or heated beyond product specifications
5. It was not installed in accordance with the instructions.
6. Use of replacement parts not supplied by Sulastic
7. Accident, fire, flood or other Acts of God.

What Is the Period of Coverage?

All Sulastic shackle components are covered for **three** years from the date of purchase.

What Will We Do?

In case that some rubber or steel part breaks or damages we will replace the Sulastic product at no cost to the purchaser, **within the warranty period.**

What Won't We Do ?

We will not be liable for any incidental or consequential damages, including the cost of installation, reinstallation or personal injury. Some states do not allow limitations on how long a warranty lasts or the exclusion or limitation on incidental or consequential damages. So the above exclusions or limitations may not apply to you.

How to Apply the Warranty?

Only within the **thirty (30) days** of purchase you can return the product to the place of purchase for a refund (shipping charges will not be refunded), or exchange. **After thirty (30) days**, but before the end of the **three (3) year** warranty period, you may return the product with all parts and accessories using the original packaging or the equivalent and you must assume the risk of damage or loss during shipment.

If returning the Product to Sulastic, you must obtain a **Return Authorization Number** provided by,

Customer Service Department
Sulastic Rubber Springs
(210) 492 4469
or
info@sulastic.com

To provide a **Return Authorization number** Sulastic will require the Sulastic's order number or a copy of the original dated bill of sale, receipt or invoice.

In all warranties, the product will be sent at no cost within the **U.S.** The shipping costs **are not** covered for **International Customers**.

We recommend that you retain your original packing material and the **original shackle** in the event you need to return the product. When sending your product include your **name, address, phone number, proof of date of purchase, and a brief description of the problem.**

What Must You Do to Keep The Warranty in Effect?

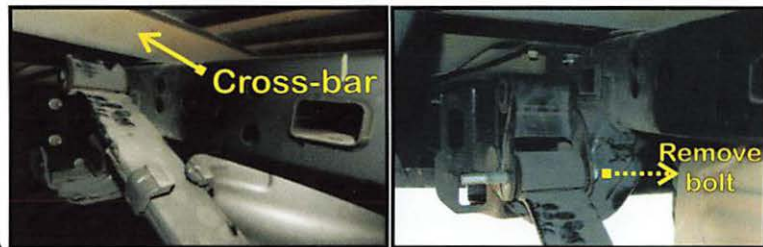
- 1.- Install and use the device according to instructions.
- 2.- Keep proof of the date of purchase.

How Does State Law Relate to This Warranty?

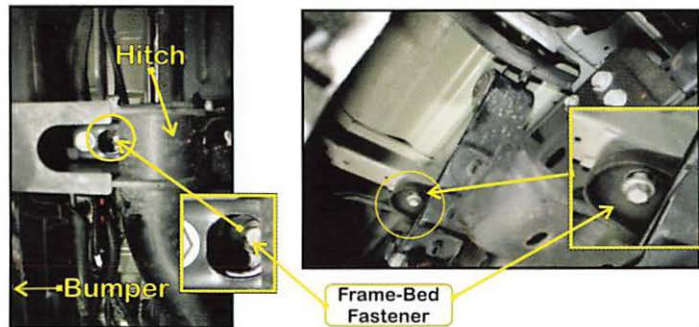
This warranty gives you specific legal rights and you may also have other rights that may vary from state to state. This warranty is the only one Sulastic gives for the product, and it sets forth all our responsibilities regarding our product. There are no warranties which extend beyond the description set forth above.

Steps Reference Photos

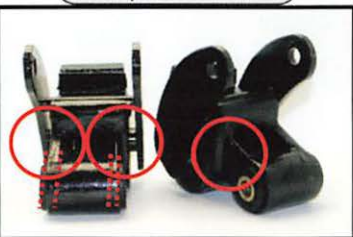
Step 6 Option 2 Photos



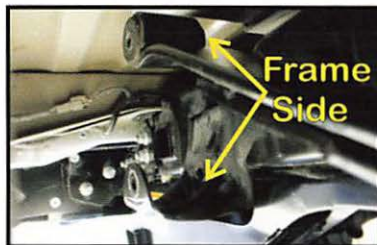
Step 6 Quick Tip Photos



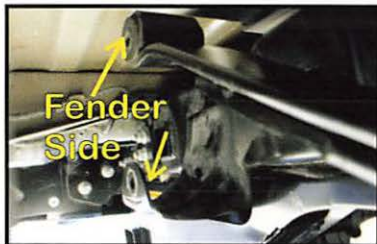
Step 7a Photo



Step 8 Photos



Step 9c Photo



Step 8 Option 1 Photos



Step 9 e

