

86-95 Suzuki Samurai Complete Contact Spring Over Axle Pads (SKU# SSP-CCSP4)

Revised 4/17/18

Installation Instructions



Front Pads (SSP-CCFP)



Rear Pads (SSP-CCRP)

CAUTION: Safety glasses should be worn at all times when working with vehicles and related tools and equipment.



For additional copies of these and other instructions go to:
www.lowrangeoffroad.com and click on the "Tech and Instructions" tab.

Suggested Tools:

- Sawzall with metal cutting blade
- Twin Post Lift & 3 Jack stands (or a Floor Jack and 5 Jack Stands)
- Die Grinder with a flap disc & cut-off wheel
- Standard Screwdriver
- Sockets: 10,12,14,17 & 21mm
- Ratchet
- Allen Socket: 6 mm
- Impact Wrench: 1/2" Drive
- Impact Socket: 17 & 19 mm
- Deep Socket: 14 mm
- Tubing wrench: 10 & 14mm
- Combination Wrenches: (2)10,(2)12 & 14 mm
- Magnetic Angle Gauge
- Ball Peen Hammer
- Cold Chisel
- Angle Grinder with Abrasive Wheel.
- Paint: Aerosol (Your choice of Color)
- Drain Pan (to collect brake fluid)
- Brake Fluid: DOT 3



Things to consider when installing LROR Spring Over Axle Pads:

Shock Absorbers: The OEM (Original Equipment Manufacturer) shock absorbers will not be the correct length which will cause shock absorber damage and limit axle travel. We recommend measuring for new shocks and using the ones best suited for your vehicle. Click [HERE](#) for instructions on how to measure for correct shock size.

Shock Mounts: The (OEM) upper and lower shock mounts will not work out very well after installing these new axle pads. We recommend installing new shock mounts on top and bottom in both the front and rear. Click [HERE](#) for more information on the lower shock mounts (front and rear) and [HERE](#) for upper REAR shock mounts and [HERE](#) for upper FRONT shock mounts. We have also created full color step-by-step instructions showing how to install these mounts for your convenience.

Brake Lines: The OEM brake lines will be too short. We recommend installing 21" flexible brake lines, front and rear. Click [HERE](#) to see what Low Range has to offer. We also have full color step-by-step instructions on how to install these brake lines.

Drive Shaft Spacers: After installing the Spring Over Axle Pads, both front and rear drive shafts will be over extended, resulting in a weak yoke joint. We strongly recommend installing drive shaft spacers to remedy this concern. Click [HERE](#) to see our drive shaft spacers. We also have step-by-step, full color instructions for installing these spacers.



Lifting and Supporting the Vehicle



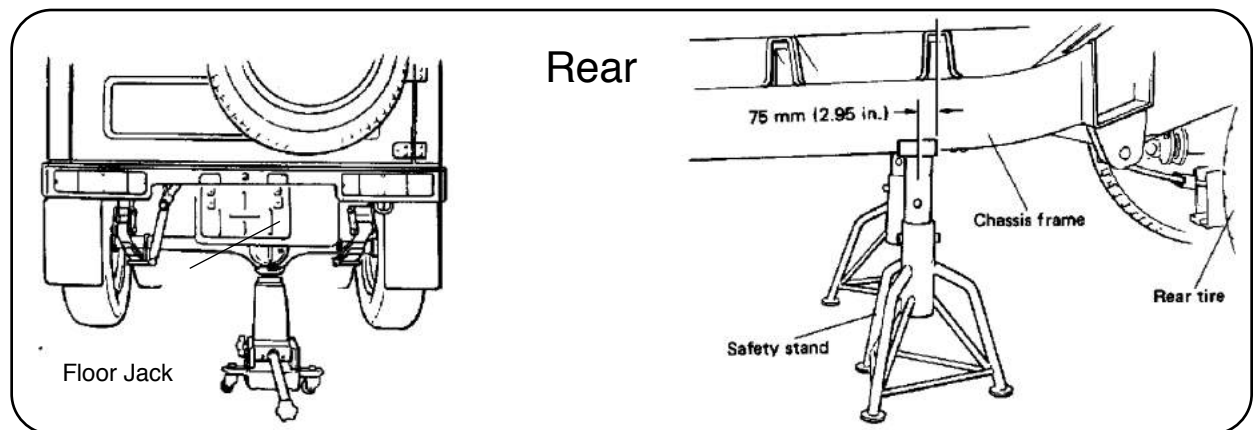
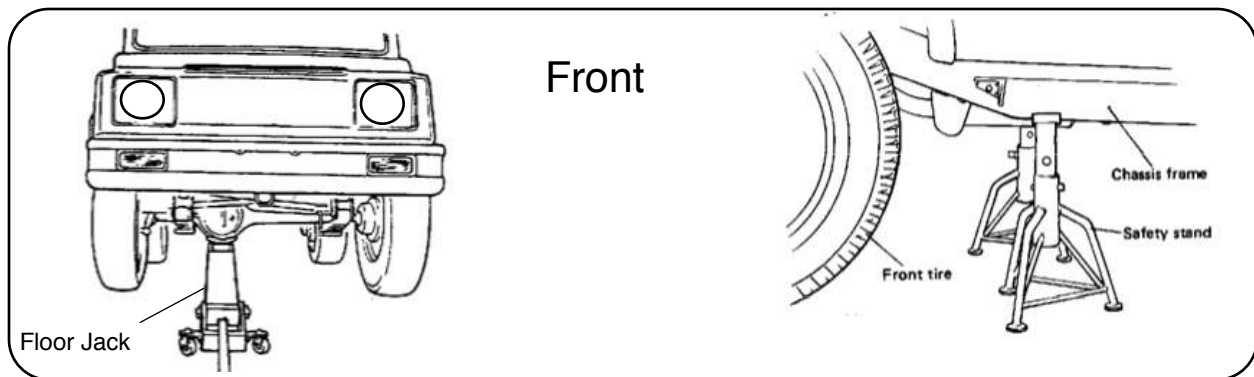
Tech Tip

When working on suspension, brakes or drive train parts it is a good idea to spray all fasteners with penetrating oil a day ahead. If not done a day ahead, an hour or even minutes before is helpful.

Step 1

Lift and support the vehicle on a twin post lift.

Note: We used a twin post lift, but this job could also be done with a floor jack and (5) safety stands.



Front Spring Pad Installation



Step 1 (Optional)

These LROR (Low Range Off-Road) Spring Over Axle Pads have been designed to maintain proper pinion angle. Although it is not necessary, you may want to measure pinion angle before you install the spring over axle pads to confirm that this angle has not been negatively affected, when the job is done.

Note: Be sure this is done with the vehicle level.

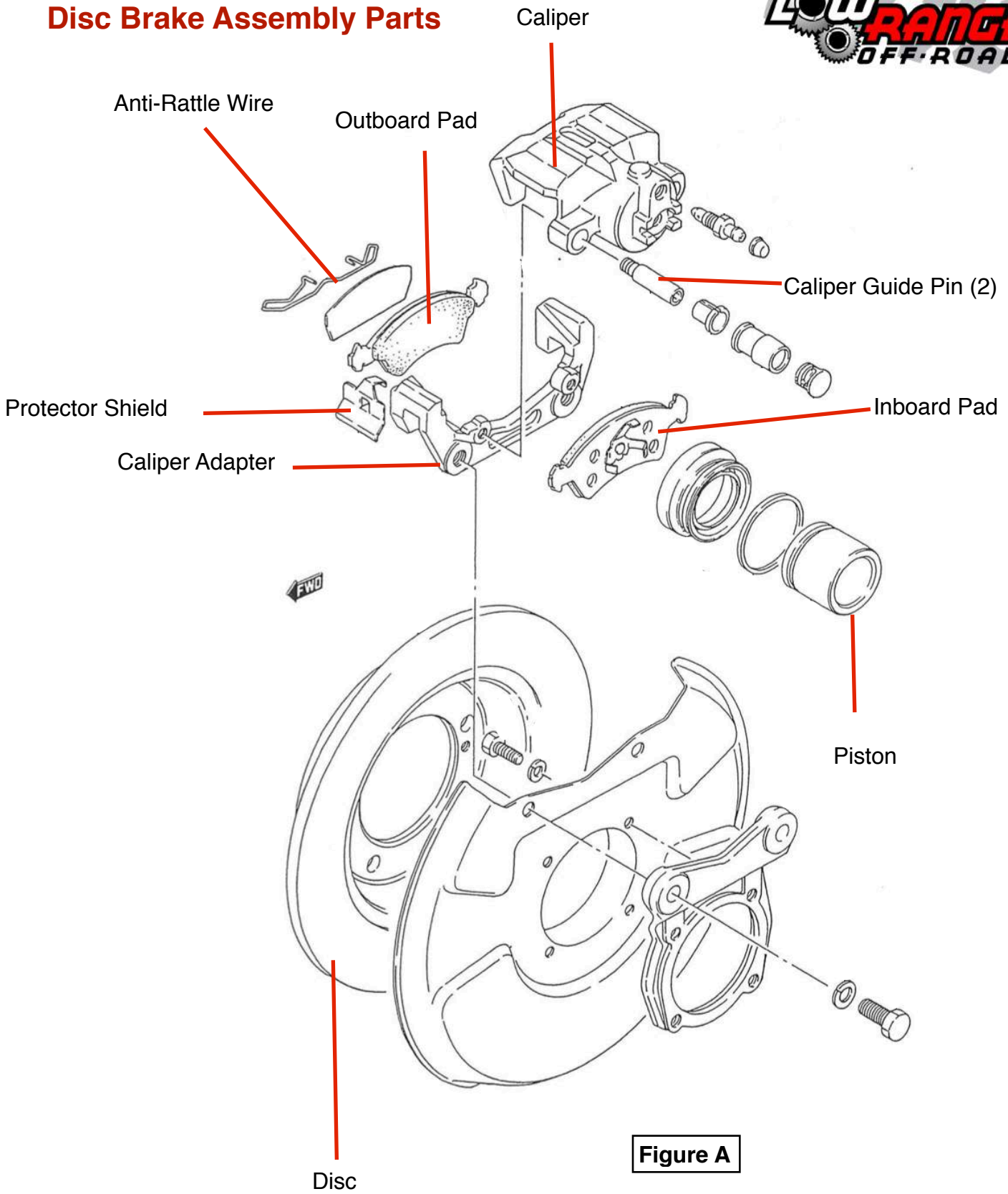


Step 2

Remove both front wheels using a 19 mm socket.



Disc Brake Assembly Parts



Removing the Disc Brake Components



Step 3

Place a standard screwdriver between the disc and the inboard brake pad and pry so that the tip of the screwdriver pushes against the pad and the shaft of screwdriver pushes against the disc. (See Figure A)



Step 4

Remove the (2) caliper guide pins using a 6 mm allen socket.

Note: Some of these guide pins require a 12 mm socket for removal.



Step 5

Remove the front protector shield.



Step 6

Remove the rear protector shield.



Step 7

Remove the anti-rattle wire using a standard screwdriver.



Step 8

Remove the brake caliper by lifting it straight up.

Note: The outboard pad will probably fall out. Be sure to note its position so it can be properly reinstalled later.



Step 9

Suspend the caliper from the fender using a piece of wire, rope or coat hanger.

Caution: Do not let the caliper hang by the brake hose. It can damage or weaken the hose.



Caution:

Do **NOT** depress the brake pedal while the calipers are off. The caliper pistons will come out of the caliper, fluid will go everywhere and you will have a lot of unnecessary work putting things back together.





Step 10

Repeat **Steps 3 through 9** on the driver side wheel.



Front Suspension Parts Identification

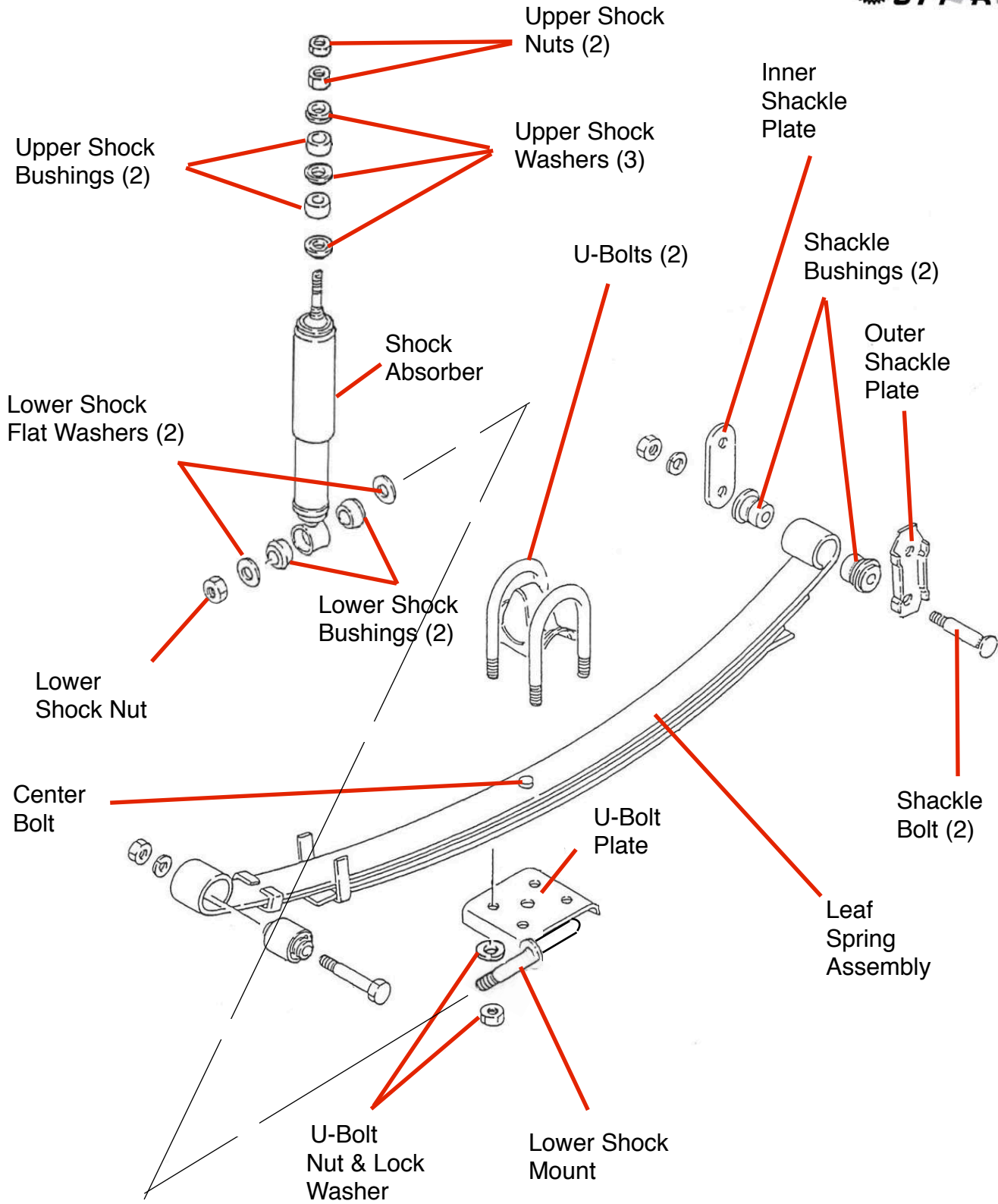


Figure B



Removing the Shock Absorber



Step 11

Begin disconnecting the upper shock absorber by holding the lower nut with a 14mm open end wrench and turning the upper nut counter clockwise with a 14 mm socket. (See Figure B)



Step 12

Remove the top nut.



Step 13

Hold the top of the shock absorber with your hand and loosen the second nut using a 14 mm deep socket.



Step 14

Remove the second nut.



Step 15

Remove the (2) washers and bushing as shown.



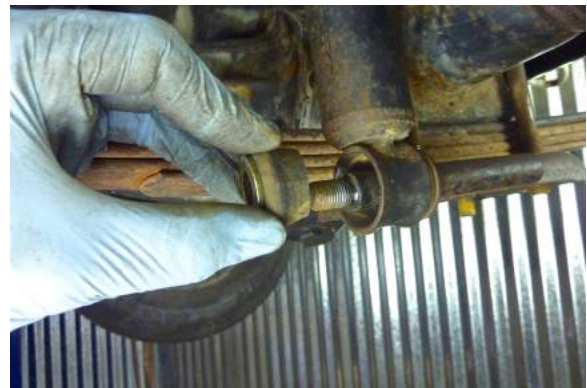
Step 16

Loosen the lower shock absorber by removing the nut using a 17 mm socket.



Step 17

Remove the nut.



Step 18

Remove the washer and bushing.



Step 19

Remove the shock absorber by sliding the bottom of the shock off the mount and lowering the shock as shown.



Step 20

Repeat steps 11 through 19 on the driver side wheel.



Step 21

This Spring Over Axle Kit will not work with the stock steering system. We recommend our **Suzuki Samurai Align-Correct HD Crossover High-Low Steering Kit**, or equivalent, be used with these spring-over pads. The Samurai used in these instructions has been fitted with the Align-Correct Steering Kit. For more information on this Kit Click [HERE](#).



Step 22

Begin cotter pin removal by straightening the legs using diagonal cutting pliers.



Step 23

Remove the cotter pin as shown.



Step 24

Loosen the castle nut using a 19 mm box end wrench.

Note: Leave the nut in place, with 3 or 4 threads engaged, to protect the threads.



Step 25

Strike the steering arm using a ball peen hammer as shown.

Note: This may take a lot of force. Don't be shy. Hit it hard, until the drag link tapered joint becomes dislodged.



Step 26

Remove the drag link as shown.



Step 27

Tie the drag link up out of the way using tie wire or a coat hanger.



Step 28

Disconnect the front drive shaft. This is done by removing the (4) bolts by holding the bolt using a 12 mm box end wrench and turning the nut using a second 12 mm box end (or open end) wrench.

Note: To maintain drive shaft balance, it is wise to mark the drive shaft and the pinion flange so they can be reinstalled in their original relationship.



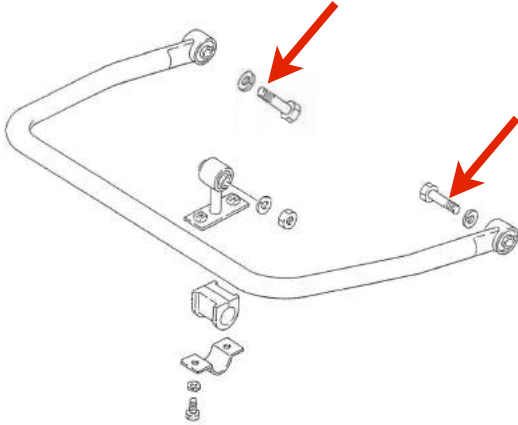
Step 29

Once the bolts are removed, lightly strike the drive line to jar it loose from the pinion flange using a ball peen hammer.



Step 30

Tie the drive shaft up, out of the way, using tie wire or a coat hanger.



Step 31

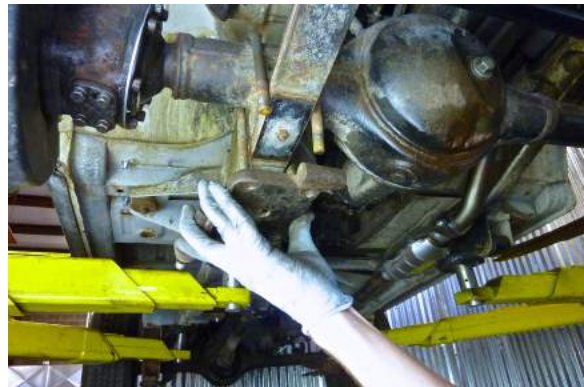
This vehicle did not have a stabilizer bar on it. If the vehicle you are working with has a stabilizer bar, simply remove the bolts shown by the arrows and let it drop down out of the way.

U-Bolts & U-Bolt Plate Removal



Step 32

Loosen the (4) passenger side U-bolt nuts using a 17 mm socket.



Step 33

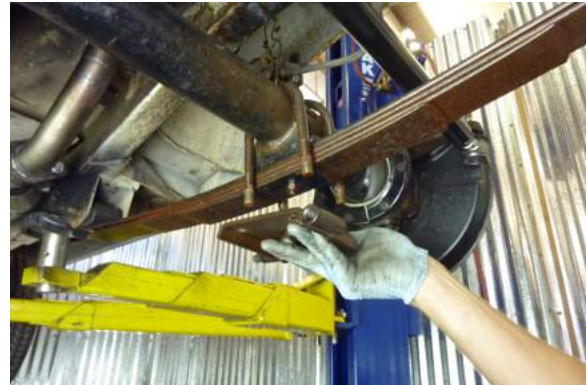
Remove the U-Bolt nuts, lock washers and the U-Bolt plate.





Step 34

Remove the (2) U-bolts.



Step 35

Repeat **Steps 32 through 34** on the driver side.



Step 36

Replace the (2) front wheels and secure them with two lug nuts on each wheel. Snug the lug nuts enough to keep the wheels in place.



Disconnecting the Shackles



Step 37

Remove the (2) passenger side shackle nuts and washers using a 14 mm socket.



Step 38

Remove the shackle plate as shown.



Step 39

Repeat **Steps 37 and 38** on the driver side shackle.



Step 40

Lower the vehicle until the front axle assembly is no longer being supported by the leaf spring.

Note: This is when clearance can be noted as shown by the arrow.



Step 41

Disconnect the passenger side leaf spring from the vehicle by removing the remaining portion of the shackle and lower the leaf spring to the floor.

Note: This may take a bit of pounding and prying. Do not damage the threads of the shackle bolts.



Step 42

Disconnect the driver side spring in the same way as the passenger side.



Step 43

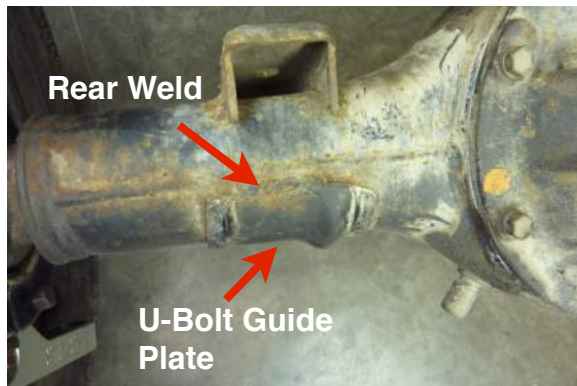
Raise the vehicle enough to allow the axle assembly to be rolled forward. Then roll the front axle assembly forward, out from under the vehicle.



Step 43 (Continued)

Front Axle assembly removed.

Removing the U-Bolt Guide Plates



Step 44

Remove the U-bolt guide plate by grinding the front and rear welds.



Step 45

Grind the rear weld of the U-bolt guide plate using a die grinder and cut-off wheel.

Caution: Do not grind through the weld into the axle housing. This can weaken the axle housing leading to premature





Step 46

Work the U-bolt guide plate away from the axle housing using a hammer and cold chisel.



Step 47

Rotate the axle housing so the front of the U-bolt guide plate can be accessed.



Step 48

Grind the front weld of the U-bolt guide plate as you did the rear.

Caution: Remember do not damage the axle housing.



Step 49

Work the U-bolt guide plate away from the axle housing using a hammer and cold chisel.



Step 50

Remove any rust and paint in preparation for welding by using an angle grinder with “Flap Disc” or equivalent.



Step 50 Continued

This shows the axle housing properly prepared for welding.

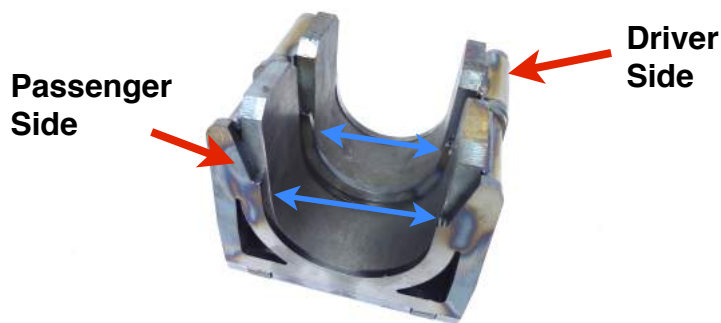
Note: You will also need to clean the existing spring pad in the front and rear.



Step 51

Repeat **Steps 44 through 50** on the driver side spring pad location.

Positioning the LROR Spring Pads



Tech Tip

Notice that the passenger side spring pad has a larger inside diameter. Insure that the larger pad is positioned on the passenger side.

Step 52

Position the (larger) LROR spring pad over the passenger side of the axle housing, directly above the existing spring pad.



Step 52 Continued

This shows the LROR spring pad properly fit to axle housing and centered on the existing spring pad.

Step 52 Continued

Insure that the LROR spring pad rests on the existing spring pad as shown.



Step 53

Insure that the front axle assembly is level using an angle gauge. If it is not level; level it by placing it on jack stands or something similar.

Note: Leveling could also be done by letting the air out of one of the tires.



Step 54

Insure that the spring pad is level. There is a small amount of movement intentionally designed into this fit to allow for some minor adjustment of the spring pad before tack welding.



Step 55

Tack weld the LROR spring pad to the axle housing in at least 4 places.



Step 56

After tack welding the passenger side spring pad, level the entire rear axle assembly (front-to-rear) by placing the angle gauge on the passenger side spring pad (as shown) and rotating the entire rear axle assembly.



Step 57

Position the driver side LROR spring pad directly above the existing spring pad as shown.



Step 58

Insure that it is level side-to-side and . . .



Step 59

. . . that it matches the same angle as the passenger side spring pad you tack welded earlier. The passenger side spring pad should still be 0°.

Example: If the passenger side spring pad is 0° the driver side spring pad should be 0°.



Step 60

Tack weld the driver side spring pad in at least 4 places.



Welding the LROR Spring Pads -Driver Side



It is best to **NOT** weld one entire side in one pass. This can generate excessive heat and cause warpage. We recommend making several smaller passes in the sequence shown below.



Step 61

First pass.



Step 62

Second pass.



Step 63

Third pass.



Step 64

Forth pass.





Step 65

Fifth pass.

Note: This is welding the LROR spring pad to the existing spring pad.



Step 66

Sixth pass.

Note: This is welding the LROR spring pad to the existing spring pad as well.



Step 67

Paint all exposed metal to improve appearance and reduce rust.



Step 68

Repeat **Steps 61 through 67** on the passenger side spring pad.



Step 69

If the spring bolt is oriented with the head facing up, clamp the springs together securely and remove the bolt.



Step 70

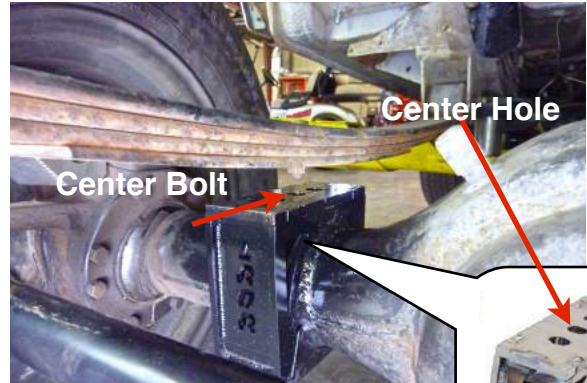
Orient the bolt so that the head is on the bottom, reattach and tighten. After nut is secured and tightened then unclamp spring.



Step 73

Lift-up both front leaf springs and roll the front axle assembly under them.

Note: The leaf springs will be resting on the spring pads.



Step 74

Align the center hole of the passenger side spring pad with the center bolt of the passenger side leaf spring.





Step 75

Repeat the previous step on the driver side.



Step 76

Reconnect the passenger side shackle to the leaf spring and body mount.



Step 77

Install the passenger side shackle plate.



Step 78

Install the (2) lock washers and (2) nuts. Torque the nuts to 22 to 39.5 ft. lbs.



Step 79

Repeat **Steps 76 through 78** on the driver side shackle.



Step 80

Lower the vehicle. While lowering, insure that the passenger side leaf spring center bolt fits in the center hole of the spring plate.

Note: You may need to force the springs slightly, in or out, to accommodate this fit.

Passenger Side

Driver Side



Step 81

Also, insure that the driver side fits properly as well.

Tech Tip

The passenger side U-Bolts (2) are larger than the driver side U-Bolts (2).





Step 82

Install the smaller U-Bolts and U-Bolt plate on the driver side. Install all 4 lock washers and nuts.



Step 83

Snug the nuts in a criss-cross fashion using a 19 mm socket.



Step 84

Repeat **Steps 82 and 83** on the passenger side.



Step 85

Torque all (4) passenger side nuts in a progressively tighter criss-cross pattern until 43.5 to 57.5 ft. lbs. is reached. Repeat this step on the driver side U-Bolt nuts as well.



Step 86

Raise the vehicle and remove both front wheel assemblies.



Step 87

Reconnect the front drive shaft. Torque the nuts to 17-21.5 ft. lbs.

Note: Be sure to align the marks on the pinion flange and drive shaft if marked during disassembly.





Step 88

Reinstall the drag link tapered joint in the steering arm.



Step 89

Install the drag link castle nut.



Step 90

Torque the nut to 50 ft. lbs.



Step 91

If the cotter pin holes align, continue to the next step. If not, continue tightening the nut until the holes do align.

Caution: NEVER LOOSEN this nut to align the cotter pin holes.





Step 92

Install a new cotter pin and bend the legs to secure it.



Step 93

Reposition the passenger side disc brake caliper.

Note: Be sure both (inboard and outboard) brake pads are positioned properly.



Step 94

Install the caliper guide pins and torque them to 18.5 to 21.5 ft. lbs.



Step 95

Install the anti-rattle wire.



Step 96

Install both (front and rear) protector shields.



Step 97

Repeat **Steps 93 through 96** on the driver side disc brakes.

SUZUKI SAMURAI REAR 15 INCH BRAKE LINES



Notice:

Be advised that the OEM flexible brake lines will likely be too short after installing our LROR spring over axle pads. We recommend installing longer ones like our high quality **Coated Stainless Steel Braided Brake Lines**. Click [HERE](#) for more information. We found that the 21" brake lines worked well here. We also sell 15" lengths.



A Word About Reusing the Shock Mounts

Some have found reasonable success in reusing the lower shock mounts by swapping U-bolt plates side-to-side and orienting the lower shock mounts in basically the same position as before. We, at Low Range, strongly recommend that you **NOT** do this. You will be better served by welding on new lower

shock mounts (like the ones shown here) and either reusing the existing upper shock mounts or installing new ones here as well. An example of one option of the upper shock mount is shown below.



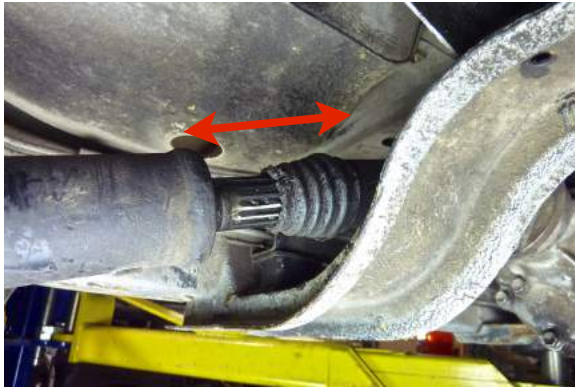
If you are interested in either of these products. Click [HERE](#) for more information on our upper shock mounts and [HERE](#) for more information on our lower shock mounts.



Step 98

Regardless of what type of shock mounts you use, you will need to measure the vehicle to determine which shock absorber to use. Click [HERE](#) for instructions on how to measure a vehicle for shock absorbers.





Notice:

After installing the LROR Spring-Over Axle Pads, the front drive shaft slip yoke will likely be extended too far. This makes this joint weak. To resolve this concern we recommend installing a drive shaft spacer. Click [HERE](#) for more information. We found that the 3/4" spacer worked well here. We also sell, 1/2", 1", and 1 1/4" spacers. (See Next Photograph)

LROR Drive Shaft Spacers



Step 99

Replace both wheel assemblies and tighten the lug nuts in a progressively tighter criss-cross pattern until 36.5 to 57.5 ft. lbs. is reached. Lower the vehicle to the floor.

Caution:

If you move the vehicle at this point, be sure to pump the brake pedal several times before rolling. This will push the brake caliper pistons back in contact with the brake pads allowing the vehicle to be stopped. Failure to pump the brake pedal several times could result in brake failure the first time brakes are applied.





Step 100 (Optional)

Measure the pinion angle to insure that pinion angle has not been negatively affected.

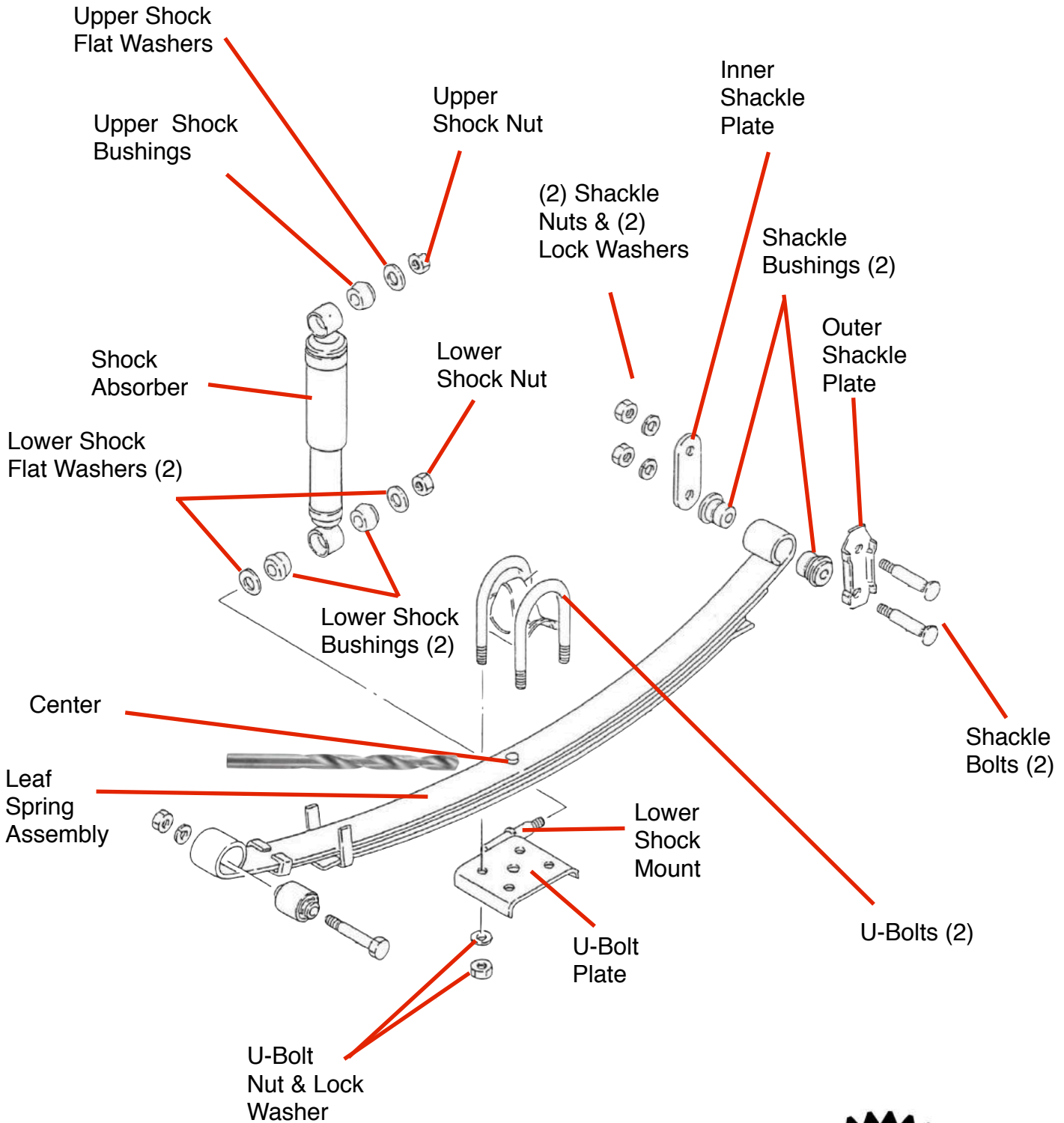
Note: Be sure this is done with the vehicle level.



Rear Spring Over Axle Pads

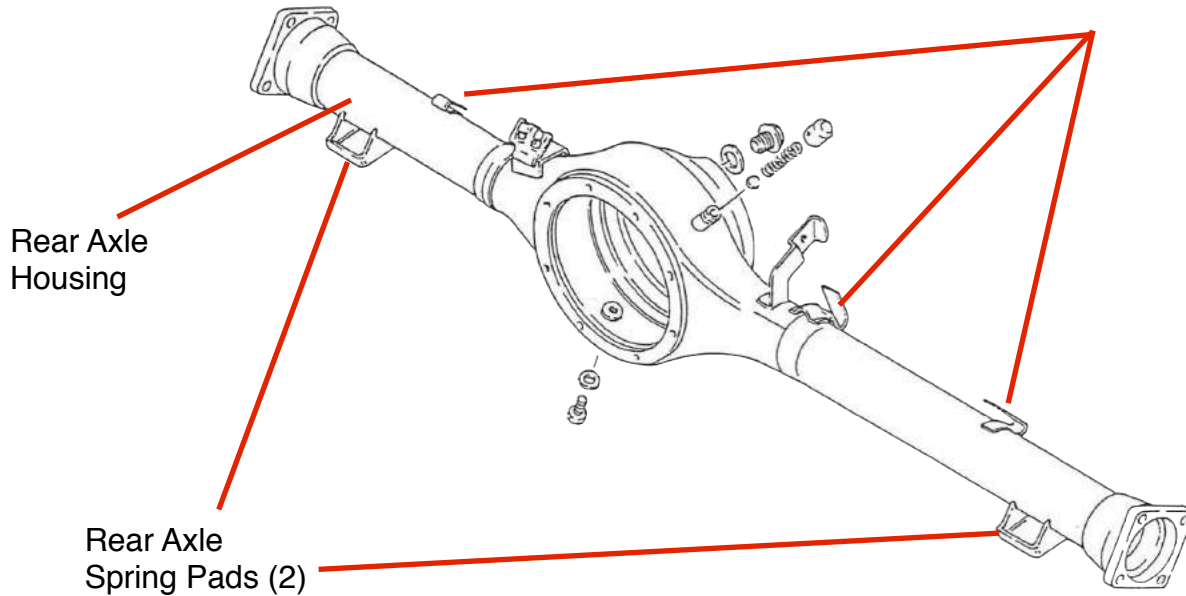


Rear Suspension Parts Identification



Rear Suspension Parts Identification (Continued)

Brake Line
Clips (3)



Step 101 (Optional)

These LROR (Low Range Off-Road) Spring Over Axle Pads have been designed to maintain proper pinion angle. Although it is not necessary, you may want to measure pinion angle before you install the spring over axle pads to confirm that this angle has not been affected when the job is done.

Note: Be sure this is done with the vehicle level front-to-rear.



Disconnecting the Drive Shaft



Note: If not done earlier, raise and support the vehicle using a twin post lift or floor jack and jack stands.



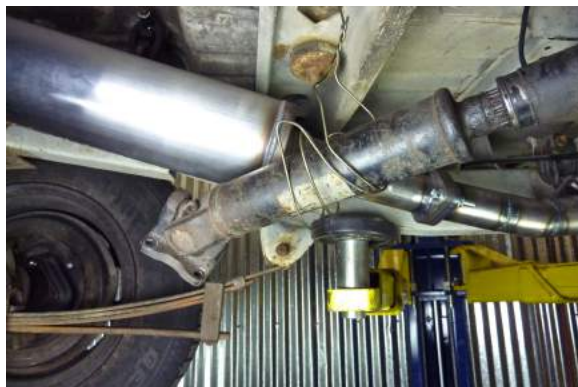
Step 102

Disconnect the rear drive shaft. This is done by removing the (4) bolts by holding the bolt using a 12 mm box end wrench and turning the nut using a second 12 mm box end (or open end) wrench.

Note: To maintain drive train component balance, it is wise to mark the drive shaft and the pinion flange so they can be reinstalled in their original relationship.

Step 103

Once the bolts are removed, lightly strike the drive shaft to jar it loose from the pinion flange using a ball peen hammer.



Step 104

Tie the drive shaft up, out of the way, using tie wire or a coat hanger.



Disconnecting the Shock Absorbers

Note: It may be necessary to lift up on the rear axle assembly to make shock removal easier. This is done by using an under hoist jack stand if you are working with a twin post lift or a floor jack if you are working with jack stands.



Step 105

Remove the upper shock absorber nut using a 17 mm socket.

Note: It may be necessary to lift up on the rear axle assembly (using an under hoist jack stand or a floor jack) to make shock removal easier.



Step 106

Remove the washer and bushing.



Step 107

Remove the upper shock absorber.



Step 108

Remove the lower shock absorber nut using a 17 mm socket.



Step 109

Remove the washer and bushing.



Step 110

Remove the shock absorber by sliding the bottom of the shock off the mount and lowering the shock as shown.

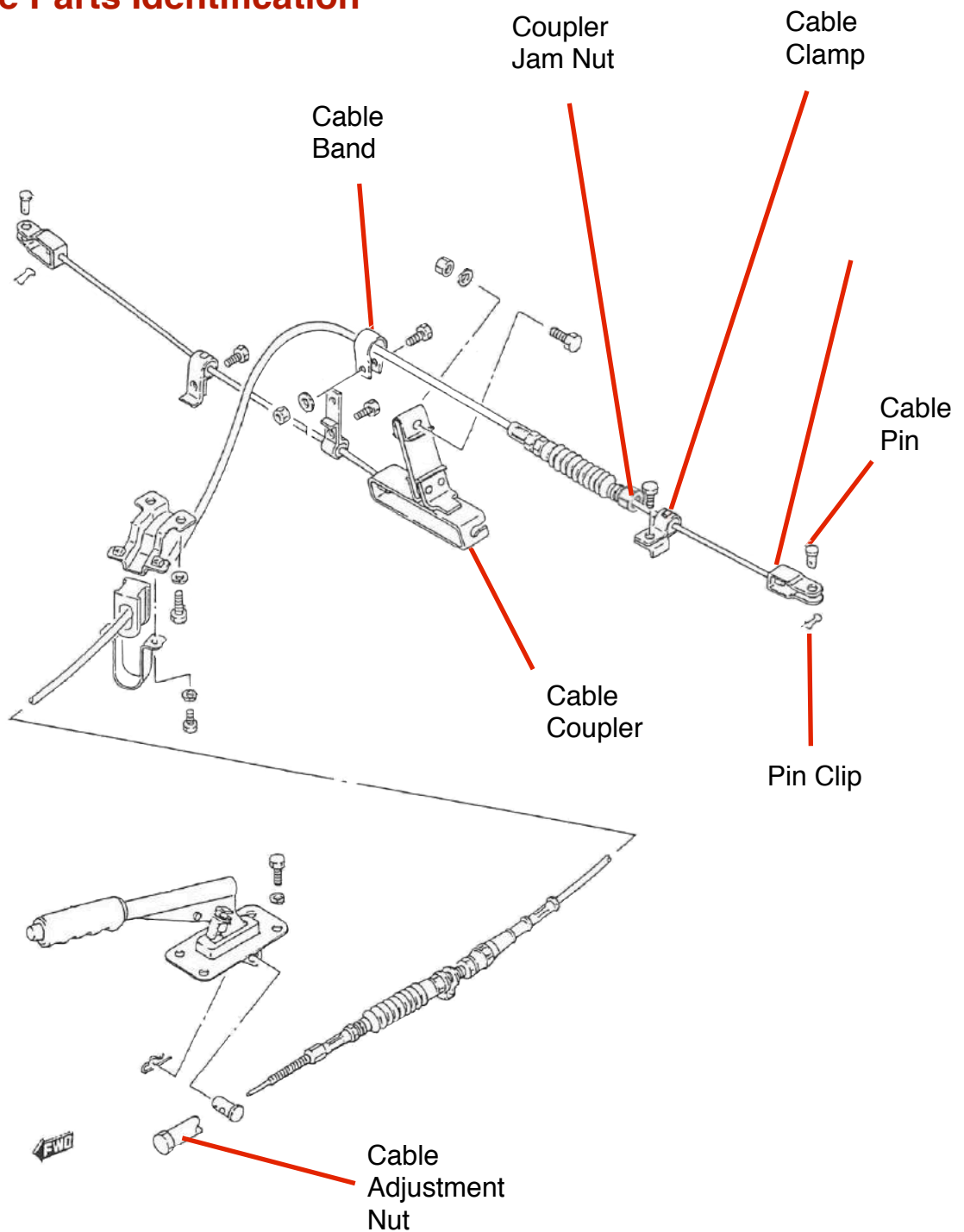


Step 111

Repeat **Steps 4 through 9** on the driver side.



Park Brake Parts Identification



Disconnecting the Park Brakes



Step 112

Remove the driver side pin clip using a flat screwdriver.

Note: Do **NOT** remove the passenger side parking brake cable.



Step 113

Using a punch and hammer, tap the pin upward.



Step 114

Release the park brake cable by removing the cable pin.



Step 115

Remove the coupler jam nut using a 14 mm tubing wrench. Slide the nut back on the cable toward the left.

Note: It may be necessary to hold the coupler with pliers.



Step 116

Slide the cable to the right, releasing the coupler from the cable.



Step 117

Loosen the passenger side cable clamp bolt using a 10 mm socket.



Step 118

Remove the cable clamp bolt.

Note: Leave the cable clamp attached to the cable. Reinstall the bolt for safe keeping.



Step 119

Remove the cable band nut by holding the bolt with a 10 mm box end wrench and removing the nut with another 10 mm wrench.



Step 120

Disconnect the cable band but leave it on the cable.

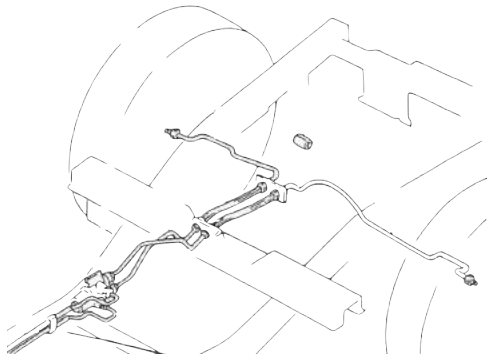
Note: Reinstall the bolt nut and lock washer for safe keeping.



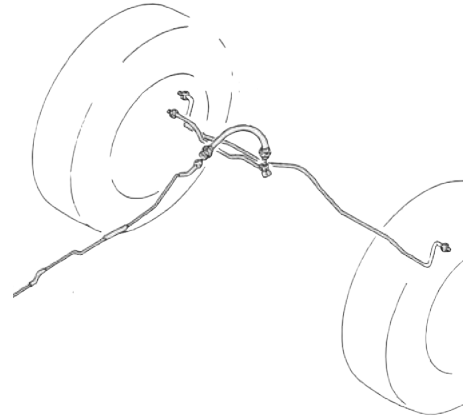
Disconnecting the Brakes Lines



Tech Tip: 1986 to 1988.5 Samurai's have two flexible rear brake lines and the 1988.5 to 1995 models have only one flexible rear brake line. We are working on a 1987 Samurai with 2 flexible brake lines.



1986 to 1988.5 Suzuki Samurai



1988.5 to 1995 Suzuki Samurai



Step 121

Place a drain pan under the brake lines being disconnected.



Step 122

Disconnect the passenger side brake line using a 10 mm tubing wrench.





Step 123

Remove the brake hose retainer clip using a standard screwdriver.



Step 124

Slip the flexible brake line out of the back of the bracket as shown.



Step 125

Kink the brake hose using a “zip tie” (or equivalent) to prevent fluid lose.



Step 126

If there is a second brake line, repeat **Steps 122 through 125** on the 2nd brake line.



Disconnecting the U-Bolts and U-Bolt Plates



Step 127

Remove the (4) driver side U-bolt nuts and lock washers using a 17 mm socket.



Step 128

Remove the U-Bolt plate.



Step 129

Remove the (2) U-bolts and bump stop.



Step 130

Repeat **Steps 127 through 129** on the driver side.

Caution: The rear axle housing will most likely rotate 45° when the second set of U-Bolts are removed. Be careful that it does not hurt you.

Disconnecting the Leaf Springs



Step 131

Beginning on the driver side, loosen the lower shackle nut using a 14 mm socket.



Step 132

Remove the nut and lock washer.



Step 133

Remove the nut and lock washer from the upper shackle bolt.



Step 134

Remove the shackle plate.



Step 135

Repeat **Steps 131 through 134** on the passenger side shackle.



Step 136

Lower the vehicle to the floor until all the weight of the rear axle assembly is resting on the wheels.



Tech Tip

This shows a small amount of gap between the leaf spring and the existing spring pad. The leaf spring should be completely separated from the existing spring pad.



Step 137

Begin removing the remaining portion of the driver side shackle by tapping it with a hammer.



Step 138

When the shackle becomes loose , support the leaf spring and remove the shackle. Lower the leaf spring to the floor.



Step 139

Repeat **Steps 137 & 138** on the passenger side leaf spring.



Step 140

Raise the vehicle up so the rear axle assembly can be rolled out from underneath.



Step 140 Continued

This shows the rear axle assembly removed.

Welding on the Spring Pads



Step 141

Using an angle grinder with a “Flap Disk” or grinding disc to remove any rust or paint in preparation for welding the LROR spring pads.

Caution: Before welding the spring pads in place, carefully unclip and bend the brake lines out of the way such that they will not be damaged during the grinding or welding process.



Step 143

Using an angle grinder with a “Flap Disc” or grinding wheel, clean off any rust and/or paint from the existing spring pads. Grind the front and rear of both existing spring pads.



Step 142

Repeat the previous step on the other side of the rear axle assembly.

Note: Again unclip and bend the brake lines out of the way.



Step 144

Position and tack weld the driver side spring pad.

Note: The LROR spring pads are to be positioned directly above the existing spring pad. (See next Tech Tip)





Tech Tip

This shows the positioning of the LROR spring pad.



Step 145

Place an angle gauge on the spring pad as shown and rotate the entire rear axle assembly so that the spring pad is level. Or at least close to being level. Take note of the angle indicated on the angle gauge. You may need to rest the pinion flange of the differential on a jack stand (or something similar) to keep the rear axle assembly in position.



Step 146

Position the passenger side spring pad in place and adjust it to the exact same angle as the driver side pad measured in the previous step.

Example: If the driver side spring pad was 3° the passenger side spring pad needs to be positioned at 3°.



Step 147

Once the pad is in place, tack weld it in at least 4 places, 2 on each side.





Step 148

Place the rear axle assembly on (2) jack stands and remove both rear wheel assemblies using a 19 mm socket. This will allow better access to the spring pads for welding.



Step 149

Weld the spring pads by repeating **Steps 61 through 67** on the driver and passenger side spring pads.

A Word About Reusing the Shock Mounts

Some have found reasonable success in reusing the lower shock mounts by swapping U-bolt plates side-to-side and orienting the lower shock mounts in basically the same position as before. We, at Low Range, strongly recommend that you NOT do this. You will be better served by welding on new lower

shock mounts (like the ones shown here) and installing new ones on the top as well. An example of one option for upper shock mount replacement is shown below.



Removing the Existing Lower Shock Mounts



Step 150

Remove the original lower shock mount from the U-bolt plate using a sawzall, cutting torch or hacksaw.



Step 151

Grind the U-bolt plate smooth to improve appearance and remove sharp edges.



Step 152

Paint the U-bolt plate to improve appearance and reduce rust.



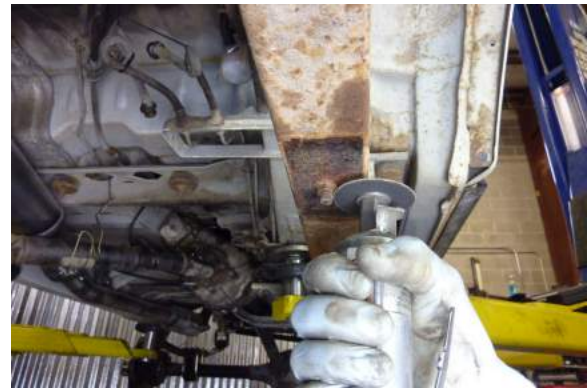
Step 153

Repeat **Steps 150 through 152** on the other U-bolt Plate.



Step 154

Replace both wheel assemblies and progressively tighten the lug nuts in a criss-cross pattern until 36.5 to 57.5 ft. lbs. is reached.



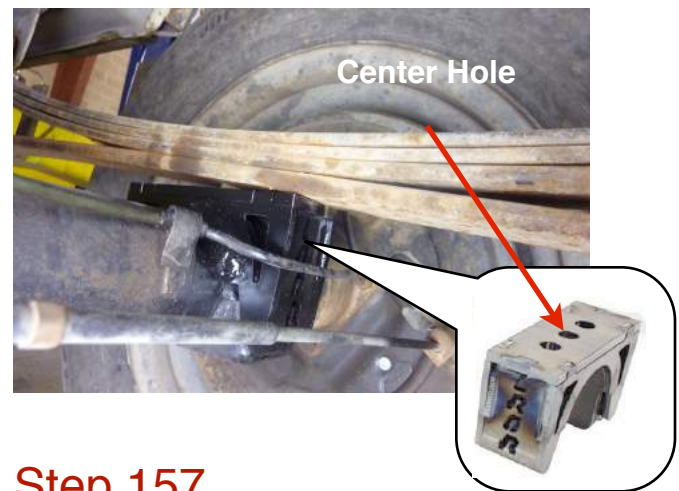
Step 155

Using a cut-off wheel, cut off ONLY that portion of the bolt that extends below the nut of the center bolt. Do the same thing on the other leaf spring center bolt.



Step 156

Remove the rear axle assembly from the jack stands, lift the leaf springs over the spring pads and roll the rear axle assembly into place.



Step 157

Position the center hole of the spring pad directly under the leaf spring center bolt on both leaf springs.



Step 158

Beginning on the driver side, position the U-Bolt plate and one U-Bolt as shown.



Step 159

Install the (2) lock washers and (2) U-Bolt Nuts.



Step 160

Install the second supplied U-Bolt, lock washers and nuts.



Step 161

Snug all 4 nuts using a 19 mm socket. Then torque the nuts in a progressively tighter chris-cross pattern until 43 to 57.5 ft. lbs. is reached.



Step 162

Repeat **Steps 158 through 161** on the passenger side.



Step 163

Lower the vehicle and install the shackle bolts as shown.

Note: Be sure the (2) outside shackle bushings are positioned properly.



Step 164

Install the (2) inside shackle bushings if not already in place.



Step 165

Install the shackle plate.



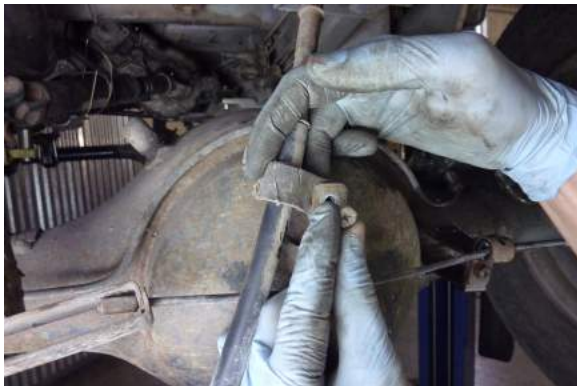
Step 166

Install the (2) lock washers and (2) nuts. Torque the nuts to 22 to 39.5 ft. lbs.



Step 167

Repeat **Steps 163 through 166** on the driver side shackle.



Step 168

Reconnect the parking brake band as shown.



Step 169

Reconnect and tighten the parking brake coupler jam nut.



Step 170

Reconnect the parking brake cable clamp.



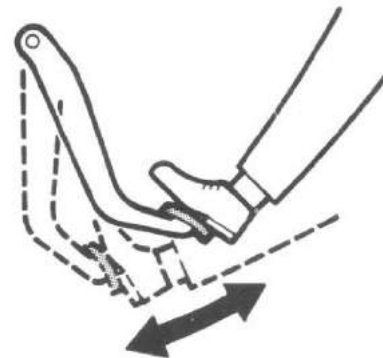
Step 171

Reconnect the parking brake cable at the driver side wheel.



Tech Tip

The OEM (Original Equipment Manufacture) brake lines will be too short in this application. If not done previously, you will need to install longer ones. Click [HERE](#) to see what is available through Low Range Off Road.



Caution:

After installing new brake lines be sure to bleed the brake system before attempting to move the vehicle. For detailed full color instructions on how to bleed the braking system click [HERE](#), or go to the "Instructions" tab on our home page and look in the Samurai Section for "Samurai Brake System Bleeding".





Step 172

Reconnect the drive shaft. Torque the nuts to 17-21.5 ft. lbs.

Note: If you made marks during disassembly, align them as part of this step.



Step 173

After installing the LROR Spring-Over Axle Pads, the rear drive shaft slip yoke will likely be extended too far. That makes this joint weak. To resolve this concern we recommend installing a drive shaft spacer. Click [HERE](#) for more information. We found that the 1.0" spacer worked well here. We also sell, 1/2", 3/4", and 1 1/4" spacers. (See Next illustration)



LROR Drive Shaft Spacers



Step 174 (Optional)

Measure the pinion angle to insure that pinion angle has not been negatively affected.

Note: Be sure this is done with the vehicle level.





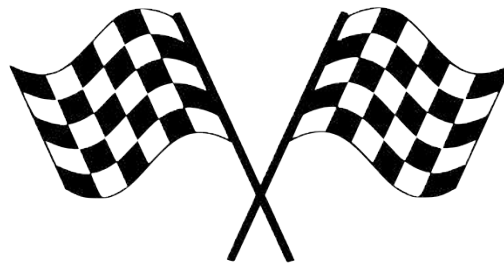
Step 175

Regardless of what type of shock mounts you use, you will need to measure the vehicle to determine which shock absorber to use. Click [HERE](#) for instructions on how to measure a vehicle for shock absorbers.



Step 176

Replace all 4 wheel assemblies and tighten the lug nuts in a progressively tighter criss-cross pattern until 36.5 to 57.5 ft. lbs. is reached. Lower the vehicle to the floor.



Congratulations:

You have successfully installed your LROR spring over axle pads. We hope these instructions have been helpful.



As always, If you experience any difficulty during the installation of this product please contact Low Range Off-Road Technical Support at 801-805-6644 M-F 8am-5pm MST. Thank you for purchasing from Low Range Off-Road.



These instructions are designed as a general installation guide. Installation of many Low Range Off-Road products require specialized skills such as metal fabrication, welding and mechanical trouble shooting. If you have any questions or are unsure about how to proceed, please contact our shop at 801-805-6644 or seek help from a competent fabricator. Using fabrication tools such as welders, torches and grinders can cause serious bodily harm and death. Please operate equipment carefully and observe proper safety procedures.

Rock crawling and off-road driving are inherently dangerous activities. Some modifications will adversely affect the on-road handling characteristics of your vehicle. All products sold by Low Range Off-Road are sold for off road use only. Any other use or application is the responsibility of the purchaser and/or user. Some modifications and installation of certain aftermarket parts may under certain circumstances void your original dealer warranty. Modification of your vehicle may create dangerous conditions, which could cause roll-overs resulting in serious bodily injury or death. Buyers and users of these products hereby expressly assume all risks associated with any such modifications and use.

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