

86-95 Suzuki Samurai LROR Sport Cage – Front (SKU# SRC-SCF)

Installation Instructions



Front and Rear Cage Combined

SUZUKI SAMURAI FRONT SPORT CAGE KIT



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 and click on the
“TECH AND INSTRUCTIONS” tab.

Suggested Tools:

- MIG (or Stick) Welder (and related safety equipment)
- Ratchet Strap
- 7/16" Drill Bit (Supplied)
- Power Drill
- 3/8" Nut Driver Bit (for installing Self Drilling Screws)
- Sockets: 10, 12, 14 mm
- Ratchet
- Felt Tip Marker
- Measuring Tape (Inches)
- Hammer
- Center Punch
- Paint (Your Choice on Color)
- Welding Blanket (or Deflection Paper)
- Angle Grinder with a Buffing Wheel

Hardware

- | | |
|--|----------------------|
| 1. 4 - M6X1.0X25 | Flange Bolts |
| 2. 4 - M8X1.25X45 | Flange Bolts |
| 3. 4 - M10X1.25X30 | Flange Bolts |
| 4. 4 - M10X1.25 | Serrated Flange Nuts |
| 5. 8 - M8X1.25X10 | Flange Bolts |
| 6. 6 - 1/4X1" | Self Drilling Screws |
| 7. 4 - .95" OD X .59 ID X .500 Long (Aluminum Spacers) | |
| 8. 7/16" | Drill Bit |

Parts Identification

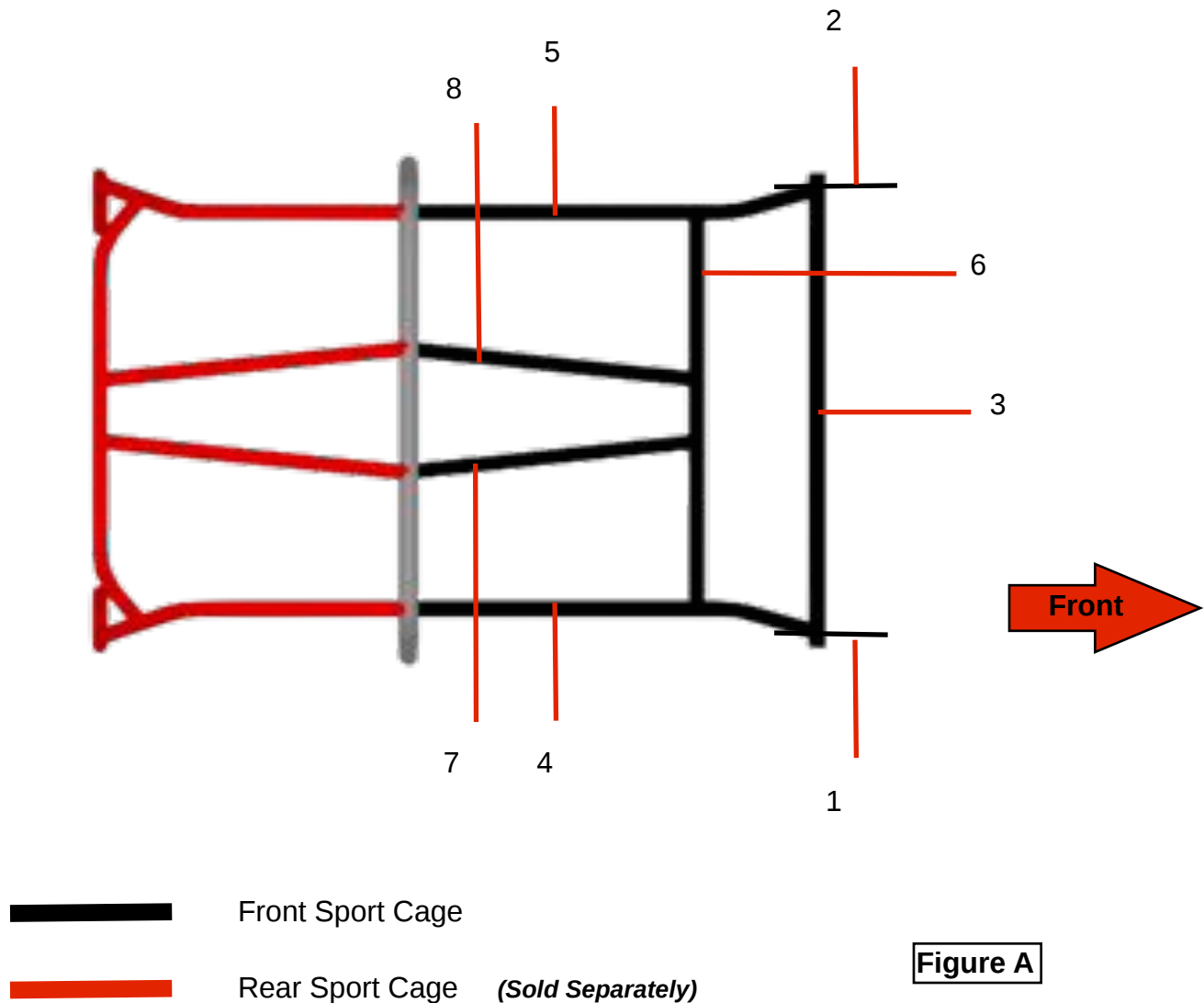


Figure A

Click [HERE](#) for more information on door straps.



Tech Tip 1

Once installed, this roll cage is difficult to remove. Therefore, we recommend you inspect the speakers and door limiter straps for condition. If they are found to be worn out (or nearly worn out), we recommend you consider replacing them.

Tech Tip 2

There are several ways to install, weld, and paint this sport cage. The first sport cage we installed was tacked welded together inside the vehicle, removed from the vehicle and welded outside. We then painted and reinstalled it in the vehicle. Reinstallation was very difficult. Therefore, we recommend the following approach: Paint the sport cage parts outside the vehicle before installing them. Be sure to leave the ends unpainted so as not to interfere with the welding process. Once the paint is dry, install the sport cage pieces as shown in these instructions and tack weld them in place. Once you are satisfied that all the pieces are in proper placement, weld all the joints. You will of course, want to protect the interior from sparks and spatter by using a non-flammable protective blanket or deflection paper. 3M makes a good deflection paper. After welding all the sport cage joints, clean the joints with a wire brush or sand paper and paint them.



Tech Tip 3

We did our installation with the carpet out of the vehicle. You could do a similar "install" by peeling the carpet back out of the way, installing the sport cage and trimming it to fit around the cage pieces.

Another option is to install the sport cage on top of the carpet.

Beginning on the Passenger Side



Step 1

Remove these (2) under dash screws using a 12 mm socket.



Step 2

Position the passenger side bracket.



Step 2 Continued

This shows the bracket in proper position.



Step 3

Position one of the supplied spacers behind the bracket aligned with the hole as shown.



Step 4

While holding the spacer in place, insert one of the supplied M8X1.25X45mm flange bolts through the bracket and spacer and thread it into the hole in the kick panel.

Note: This hole is where the bolt was removed previously.



Step 5

Repeat the previous step with the second bolt and spacer.



Step 6

Tighten the (2) bolts 3 or 4 turns **ONLY** using a 12mm socket. Tighten them just enough to prevent them from coming out. They will be tightened later.



Step 7

Install the (2) M6X1.0X25 securing the bracket to the dash.



Step 8

Tighten both bolts to 5 ft. lbs. (or 60 in. lbs.) using a 10mm socket.



Step 9

Tighten the (2) under dash bolts to 12 ft. lbs.



Step 10

Mark the location of the holes to be drilled with a center punch and hammer.



Step 11

Using a 3/8" nut driver bit in a drill, install the (3) supplied self drilling screws as shown.



Step 12

Repeat Steps 1 through 12 on the driver side.



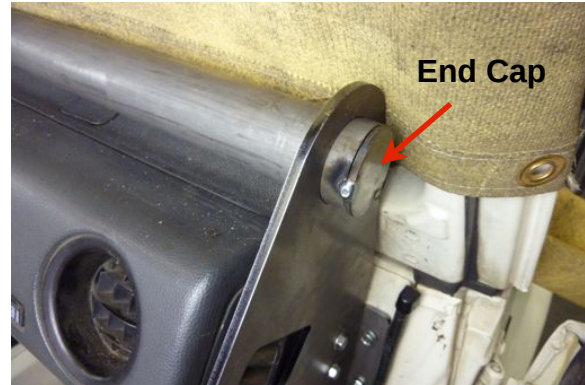
Tech Tip

Notice that there may be a body shim on the driver side that will fall out when the two bolts are removed. This spacer will need to be reinstalled with the new bolts. Since it is a bit difficult to hold and align several parts at once, we found it helpful to glue this shim in with a fast drying glue like weather-strip or emblem adhesive.



Step 13

Insert the dash bar (#3) through the side brackets as shown.



Step 14

Tach weld the end caps on both ends of piece #3.

Note 1: If you have chosen to weld the cage inside the vehicle, weld these end caps all the way around. ONLY weld the end caps for now.

Note 2: Be sure to protect things with a non-flammable blanket or deflative paper.



Step 15

Center piece #3 such that it extends equally out of both side braces (pieces #1 and #2).



Step 16

Tach weld piece #3 as shown.



Step 17

Remove the paint from the existing roll bar using an angle grinder or buffing wheel. This is done to insure a clean weld.



Step 18

This shows the roll bar properly cleaned, ready for welding.



Step 19

Install piece #4. This is done by placing the back end of the bar against the existing roll bar in the location you just cleaned, and sliding the front along piece #3 into position. See the next picture.



Step 19 Continued

This shows piece #4 properly positioned.



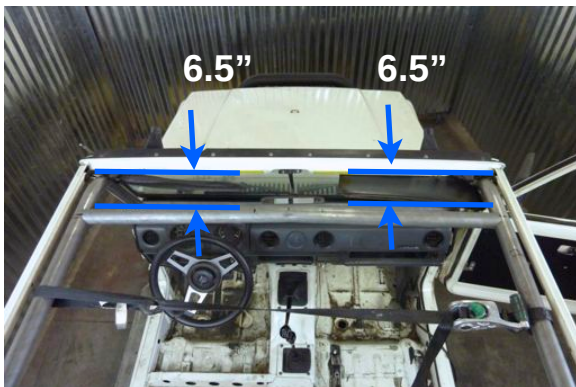
Step 20

Repeat **Steps 17 through 19** on the driver side using piece #5.



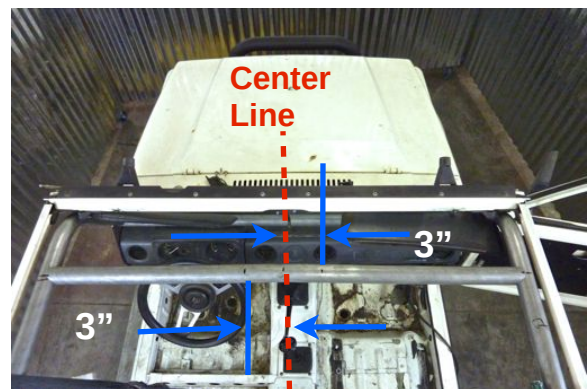
Step 21

Place piece #6 as shown and hold it in place by drawing piece #4 and #5 together using a ratchet strap.



Step 22

Piece #6 should be equally distanced away from the windshield assembly. We recommend it being about 6.5 inches to begin with. This distance will likely change in the next few steps. But whatever the distance, it should be equal on both sides.



Step 23

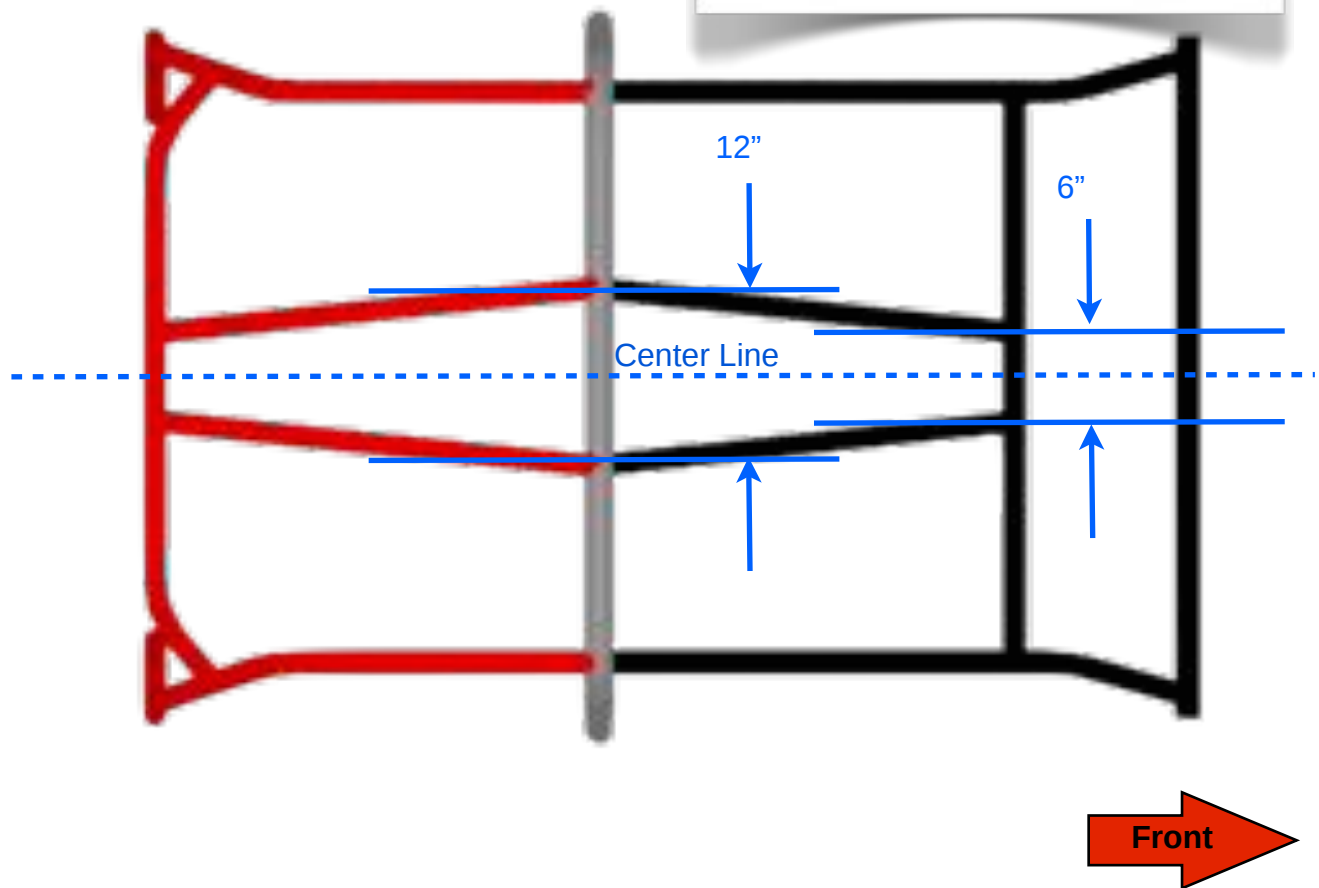
Measure and mark the center of piece #6 (See **Figure A**) by measuring the the total length and dividing by 2. Then measure and mark 3" to the right and 3" to the left. These two marks become the location for pieces #7 and #8. (See **Figure B**)

General Dimensions

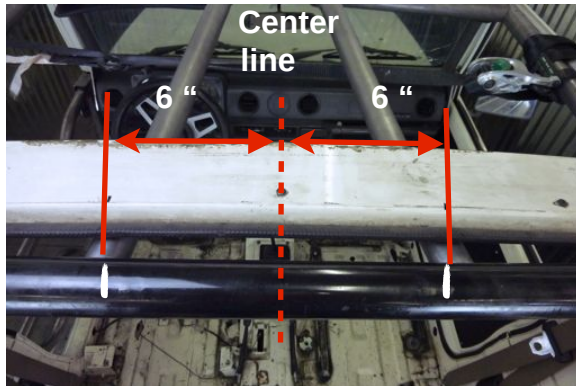
Notice:

All dimensions shown here came from our original design drawings. They are intended to be used as guidelines only. You are welcome to make adjustments to suite your own needs and preferences.

Figure B



-  Front Sport Cage
-  Rear Sport Cage *(Sold Separately)*



Step 24

The location of piece #7 and #8 is established by finding the center of the targa bar and measuring out 6" in both directions. Then make marks on the existing roll bar.



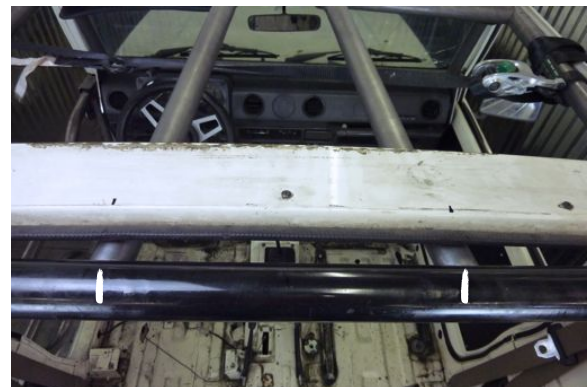
Step 25

Once the approximate locations of pieces #7 and #8 are established on the existing roll bar, grind or buff the paint from the areas where pieces #7 and #8 will be welded. This is to insure a clean weld.



Step 26

Position the front of the pieces #7 and #8 in the front against piece #6 and . . .



Step 27

. . . position the rear of pieces #7 and #8 against the existing roll bar as shown.

Note: If the coped joints do not match up, try swapping pieces #7 & #8, side-to-side.

Piece #7
and #8



This bend goes toward the front of the vehicle.



Step 28

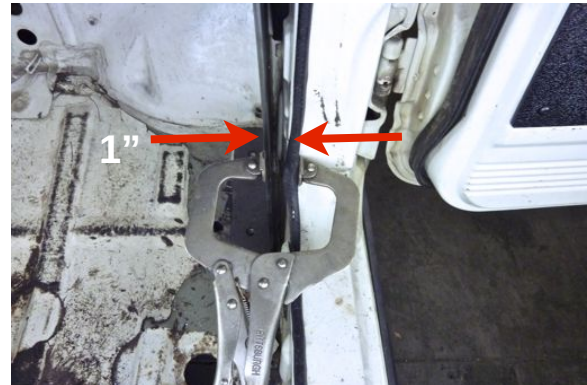
Work with pieces #7 and #8 until they are 3" both sides of center in the front and 6" both sides of center in the rear. Also check to see that piece #6 is parallel (equal distance on both sides) to the windshield assembly. Once you are satisfied that pieces #6, #7 and #8 are positioned properly, tack weld them into place.



Step 30

Drill the (2) mounting holes in the vehicle floor panel using the supplied 7/16 drill bit.

Caution: Be sure to look below the floor panel to insure you are not drilling into any brake lines, fuel lines or electrical wiring.



Step 29

Using vice grip clamping pliers, draw the passenger side bracket (piece #1) to where there is about a 1" gap between the bracket and the vehicle kick panel.



Step 31

Install the supplied M10X1.25X30mm flange bolts with the flange nuts on the bottom side. Tighten them using a 14 mm box end wrench on the bolt and a 14 mm socket on the nut. Then torque the nut to 25 ft. lbs.



Step 32

Repeat **Step 29 through 31** on the driver side.



Step 33

Position and tack weld the driver side handle as shown.



Step 34

Position and tack weld the passenger side handle as shown.



Step 35

Install the (2) speaker covers on the driver and passenger side using the supplied M8X1.25X10mm flange bolts. Tighten them using a 14 mm socket.



Step 36

Once you are sure all the pieces are in the correct place, tack weld all the joints not done previously. Be sure to protect all painted body parts, plastic accessories, interior upholstery, etc. from sparks and heat associated with the welding process. A good way to protect vehicle components is using a non-flammable blanket or deflection paper.

Once all the pieces are tack welded; weld all the joints. Some joints cannot be welded completely. Simply, weld as much as possible.

Note: If you are going to remove the sport cage for welding, the tack welds need to be very strong; welded in at least two places at each joint, possibly even three.



Step 37

Remove the ratchet strap. Clean and paint all the exposed metal to reduce the risk of rust and improve appearance.

Note: If you are painting the sport cage inside the vehicle, protect the areas that are not being painted with a drop cloth or paper and masking tape.



Step 38

If you painted the sport cage outside the vehicle, wait till the paint dries, reinstall the cage and touch-up any scratches that may have occurred during reinstallation.

Note: This photograph shows the complete (front and rear) sport cage. The rear sport cage is sold separately.



Congratulations!!!!

You have successfully installed the Front Sport Cage.



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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86-95 Suzuki Samurai LROR Sport Cage – Rear (SKU# SRC-SCR)

Revised 9-6-16

Installation Instructions



Picture shows front and rear cage



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“Instructions” tab.

Suggested Tools:

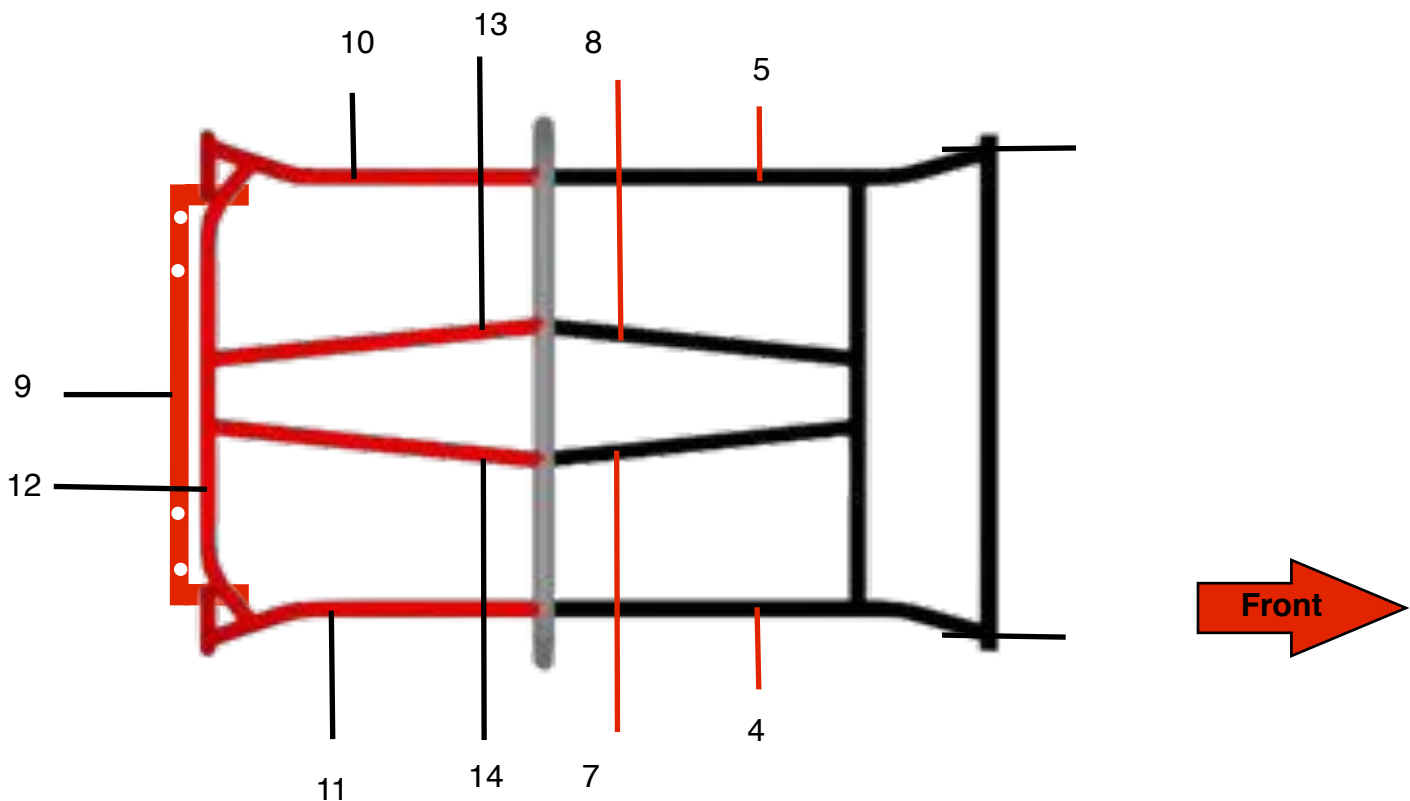
- MIG (or Stick) Welder (and related safety equipment)
- Phillips Screwdriver: #3
- Ratchet Strap (2 each)
- 7/16" Drill Bit
- Power Drill
- Socket: 14 mm
- Ratchet
- Combination Wrench: 14mm
- Permanent Marker: White
- Measuring Tape (Inches)
- Welding Blanket (or Deflection Paper)
- Angle Grinder with a Buffing Wheel
- Wire Brush
- Paint (Your Choice of Color & Brand)



Hardware

- | | |
|---------------------|-------------------------------|
| 1. 4 - M10X1.25X40 | Flange Bolts |
| 2. 4 - M10X1.25 | Serrated Flange Nuts |
| 3. 2 - 7/16X20X1.25 | Flange Bolts (for Seat Belts) |

Parts Identification



- Front Sport Cage *(Sold Separately)*
- Rear Sport Cage

Figure A

Tech Tip 1

There are several ways to install, weld, and paint this sport cage. The first sport cage we installed was tacked welded together inside the vehicle, removed from the vehicle and welded outside. We then painted and reinstalled it in the vehicle. Reinstallation was very difficult. Therefore, we recommend the following approach: Paint the sport cage parts outside the vehicle before installing them. Be sure to leave the ends unpainted so as not to interfere with the welding process. Once the paint is dry, install the sport cage pieces as shown in these instructions and tack weld them in place. Once you are satisfied that all the pieces are in proper placement, weld all the joints. You will of course, want to protect the interior from sparks and spatter by using a non-flammable protective blanket or deflection paper. 3M makes a good deflection paper. After welding all the sport cage joints, clean the joints with a wire brush or sand paper and paint them.



Tech Tip 2

We did our installation with the carpet out of the vehicle. You could do a similar "install" by peeling the carpet back out of the way, installing the sport cage and trimming the carpet to fit around the cage pieces.



Step 1

Remove both rear seat belts using a 14 mm socket.

Note: If you will be welding the sport cage inside the vehicle, temporarily peel the carpet forward, out of the way.



Step 2

Position piece #9 as shown.



Step 3

Center piece #9 (side-to-side) and install the supplied 7/16X20X1.25" bolts in the two outside holes. Then torque the bolts to 42 ft. lbs.



Step 4

Remove the paint from the existing roll bar in 4 locations (see next picture) using an angle grinder and a buffing wheel.

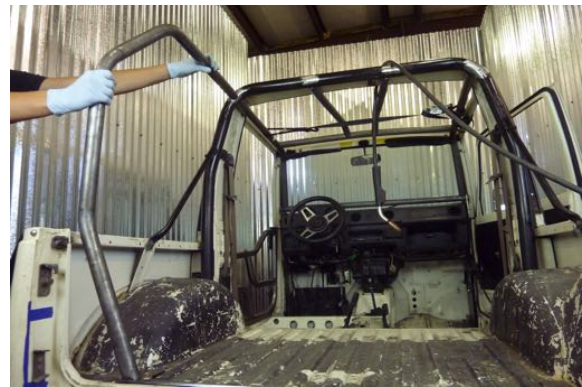
Note: This is done to insure a good clean weld.



Step 4 Continued

This shows the four locations where paint is to be removed.

Note: The rear sport cage bars will align with the front sport cage bars.



Step 5

Position piece #10 as shown. See Figure A for parts identification.



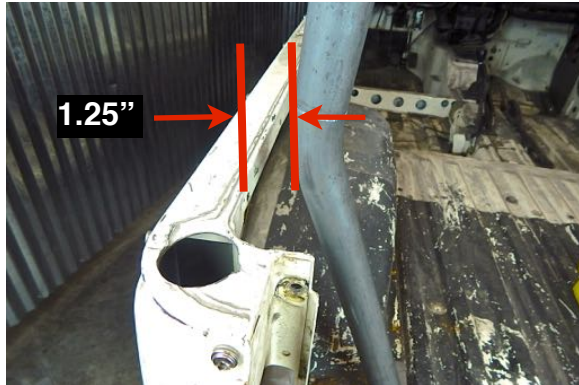
Step 5 Continued

The front of piece #10 should line up with piece #5 of the front sport cage.



Step 5 Continued

The rear of piece #10 should be positioned on piece #9 as shown.



Step 5 Continued

Piece #9 should be about 1.25" away from the inside of the fender.



Step 6

Once piece #10 is in place, tack weld it at both ends. One tack at each end is good enough for now.



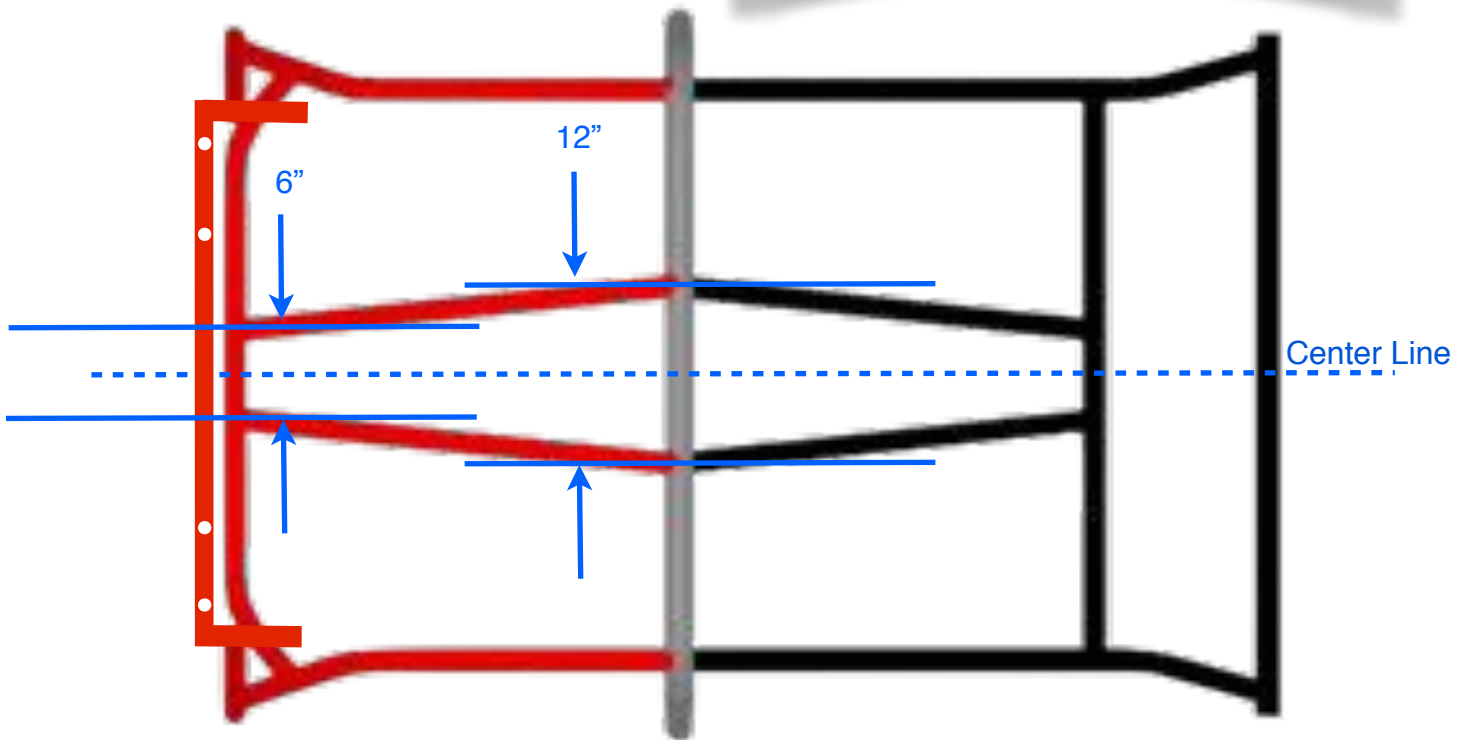
Step 7

Repeat Steps 5 and 6 on the passenger side (piece #11) and tack weld it in place.

General Dimensions

Notice:

All dimensions shown here are from our original design drawings. They are intended to be used as guidelines only. Feel free to make adjustments to suite your own needs and preferences.

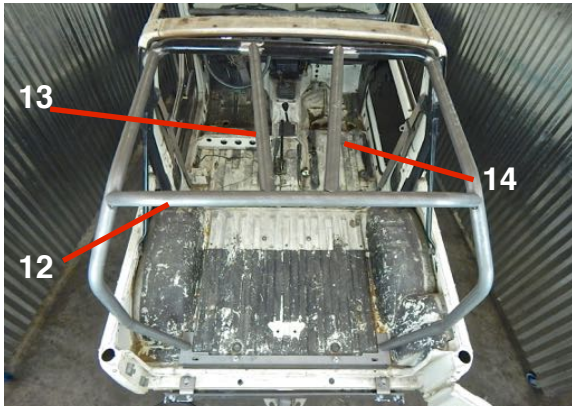


-  Front Sport Cage (Sold Separately)
-  Rear Sport Cage

Figure B

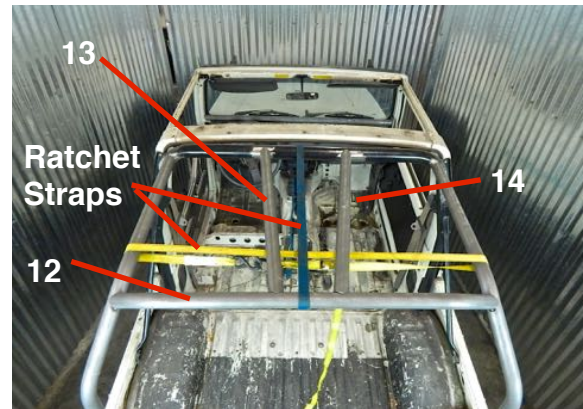


Approximate Positioning of Pieces 12, 13, and 14



Step 8

Have an assistant hold piece #12 positioned as shown in the picture above. Have another assistant hold pieces #13 and #14 positioned as shown above.



Step 9

While holding pieces #12, 13 and 14 in position, install and cinch two ratchet straps as shown here.

Exact Positioning of Pieces 12, 13, and 14



Step 10

Determine the center of piece #12 by measuring the overall length and dividing by 2. Then make a mark in the center using a permanent marker.

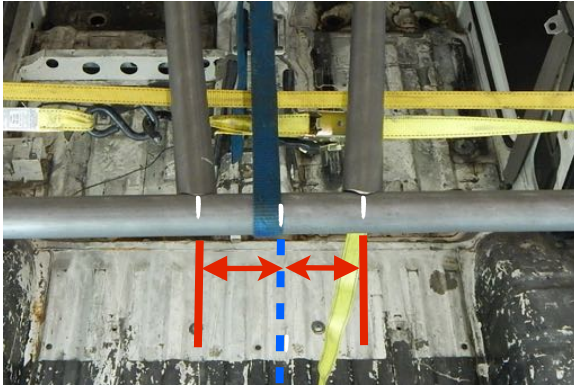
Note: You could use the edge of the ratchet strap as a center reference mark.



Tech Tip 10

Be sure that pieces 13 and 14 are oriented correctly. The coped ends should fit the existing (2" Dia.) roll bar in the front and (1.5" Dia.) piece #12 in the rear, with little to no gap.

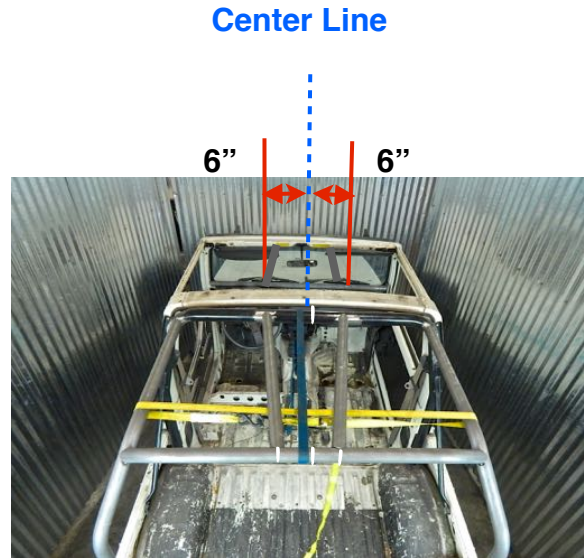




Center Line

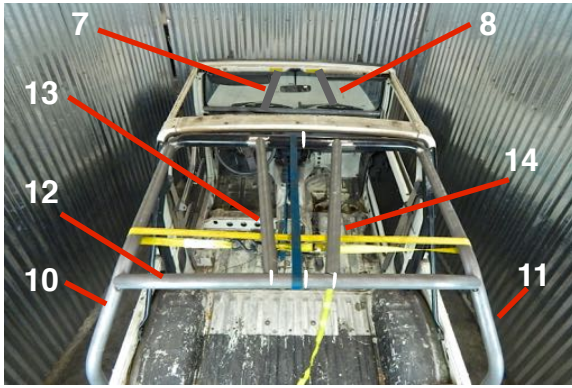
Step 11

Measure out 3" right and 3" left and make marks indicating the location of pieces #13 and #14. Center pieces #13 and #14 on the marks.



Step 12

Repeat steps 10 and 11 at the front of pieces #13, & #14, the only difference being, that the pieces are 12" apart instead of 6".



Step 13

Make final adjustments (if needed) according to the following guidelines.

Note 1: Be sure the front of piece #13 and #14 are centered on the existing roll bar, are about 12" apart and aligned with pieces #7 and #8 of the front sport cage.

Note 2: The rear of pieces #13 and #14 should be about 6" apart and centered on the center mark of piece #12.

Note 3: Piece #12 should be level and in the same location on both ends where it contacts pieces #10 and #11.

Note 4: Once all pieces are positioned properly, tack weld them into place and remove the ratchet straps.

Checking the Soft Top Brace for Proper Clearance



Step 14

If removed earlier, install the soft top brace and snug the (4) screws using a #3 phillips screwdriver.



Step 15

Position both brace brackets toward the rear of the vehicle as shown.



Step 16A

Move the brace back and forth near piece #12 to be sure there is clearance. There should be about .5" of clearance. If the brace hits piece #12, you will need to break the tack welds on pieces #12, 13 and 14, reposition these pieces according to need and re-tack them.



Step 16B

It's a good idea at this point to also put your top on to verify nothing will interfere with getting it all zipped up. If any changes need to be done, now is the time to do so before final welding.



Installing the Handles



Step 17

Determine where the driver side handle will be welded to the existing roll bar by holding it in place. Notice where the paint will need to be removed from the existing roll bar in preparation for welding.



Step 18

Clean the paint from the roll bar so that a clean weld can be made.

Note: Clean an area about 2" in diameter.



Step 19

Hold the handle in position and tack weld it into place.



Step 20

Repeat **Steps 17 through 19** on the passenger side handle.

Welding and Painting



Step 21

Once all the pieces are positioned and tack welded, and you are SURE everything is exactly the way you want it, fully weld all the joints.

Caution: Be sure to protect interior and exterior parts from the spatter and heat associated with welding. You could use a non-flammable blanket or deflection paper. (See Page 3)

Step 22

Once all the joints are welded and cooled, use a wire brush to smooth and clean the welded joints. Paint any exposed metal to reduce rust and improve appearance.

Note: Be sure to cover interior components to protect from paint overspray.

Securing the Rear of the Sport Cage to the Floor



Step 23

Beginning on the passenger side, remove the body plug.



Step 24

Check to see if there are any electrical wires near the area to be drilled. Move them if needed.



Step 25

Drill the mounting hole in the vehicle floor using a 7/16" drill bit.



Step 26

Insert the supplied serrated flange nut through the body hole as shown. Thread the supplied M10X1.25X40mm flange bolt into the nut.



Step 27

While holding the flange nut with your finger, tighten the bolt using a 14 mm box end wrench or socket. Torque the bolt to 25 ft. lbs.

Note: The serrations on the nut should keep it from turning. If the nut turns with the bolt, you will need to put a wrench on the nut from underneath.



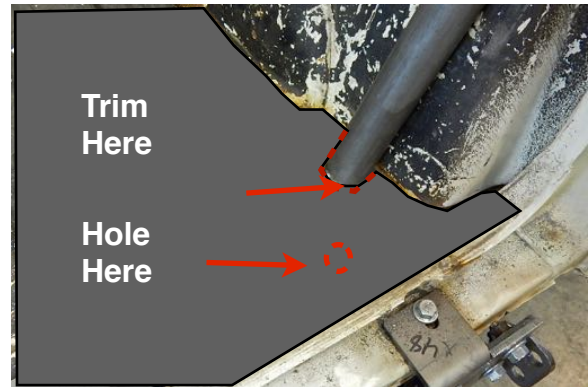
Step 28

Replace the body plug.



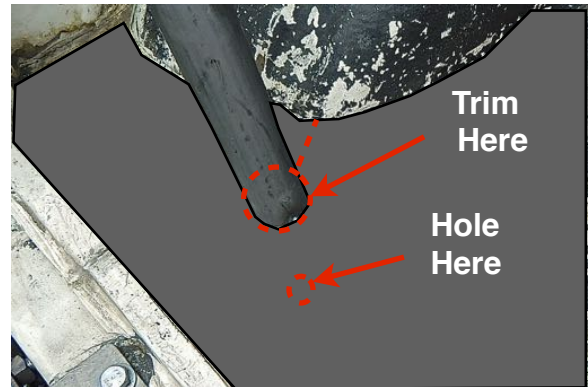
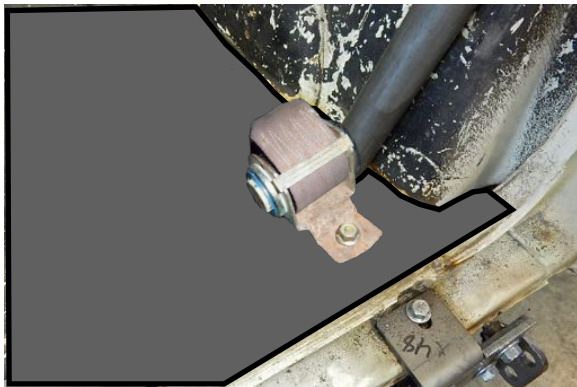
Step 29

Repeat **Steps 23 through 28** on the driver side bolt and nut.



Step 30

Reposition the carpet and trim out a hole such that the carpet can be fitted around the Sport Cage using a utility knife or carpet scissors. Also, you will need to make a hole for the seat belt bolt.



Step 31

Install the seat belt and torque the bolt to 40 ft. lbs.

Note: If you are not installing a seat belt the bolt is still needed to secure the sport cage.

Step 32

Repeat **Steps 30 and 31** on the driver side.



Congratulations!

You have successfully installed the Rear Sport Cage. We hope these instructions have been helpful. If you have suggestions on how to make these instructions (or products) better, please email us at: sales@lowrangeoffroad.com



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.



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