

build instructions together with pictures

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<https://www.dropbox.com/s/jut30zw69vhukqn/80install.doc?dl=0>

[https://www.4x4labs.com/products/landcruiser-80-series-rear-bumper?\\_pos=6&\\_sid=b56e4a127&\\_ss=r](https://www.4x4labs.com/products/landcruiser-80-series-rear-bumper?_pos=6&_sid=b56e4a127&_ss=r)

If you are building the bumper on the vehicle you will need to cut your stock cross member first. Refer to the Bumper installation document for directions.

-Make sure you have all of the parts and are familiar with them before you start.

-Some Land Cruiser frames will have slightly different dimensions. After the rear cross member is removed you will be able to move the frame horns in or out a bit as needed to fit the shell to the sides. We build our bumpers on a fixture with constant dimensions. You will not have this luxury unless you build a fixture so you may have to fiddle with the sides and shell before you get them to fit right.

Building the basic bumper-

Start by bolting the sides onto the rear frame horns. Leave the bolts loose as you will need to position the parts to fit your bumper. See Pic 1



Fit the shell to the side parts. Some grinding will be needed to get the parts to fit together perfectly. See Pic 2



Once the sides are fitted to the shell, tack together well and remove. Place the tow cross member between the two sides.

The cross member should be positioned  $\frac{3}{4}$ " below the top edge of the sides. See Pic 3



To get the depth of the tow cross member, place the tow receiver into the hole in the shell. The receiver is 2.5" square and the cross member is 2" square, the top of the receiver tube should be flush with the top of the cross member. The  $\frac{1}{2}$ " difference will give you a small open slot in the bottom of the receiver. I like to leave this open for drainage of slop that gets into the receiver hole.

The face of the receiver should be flush with or just sticking out of the front of the shell. Tack cross member and tow receiver into place. See Pic 4



Slide the recovery points into the rectangular holes in the shell flush against the cross member and tack. See Pic 5





Tack towing gussets into place on either side of the receiver. The large holes in the gussets are meant to be used by the safety chains when towing. See Pic 6



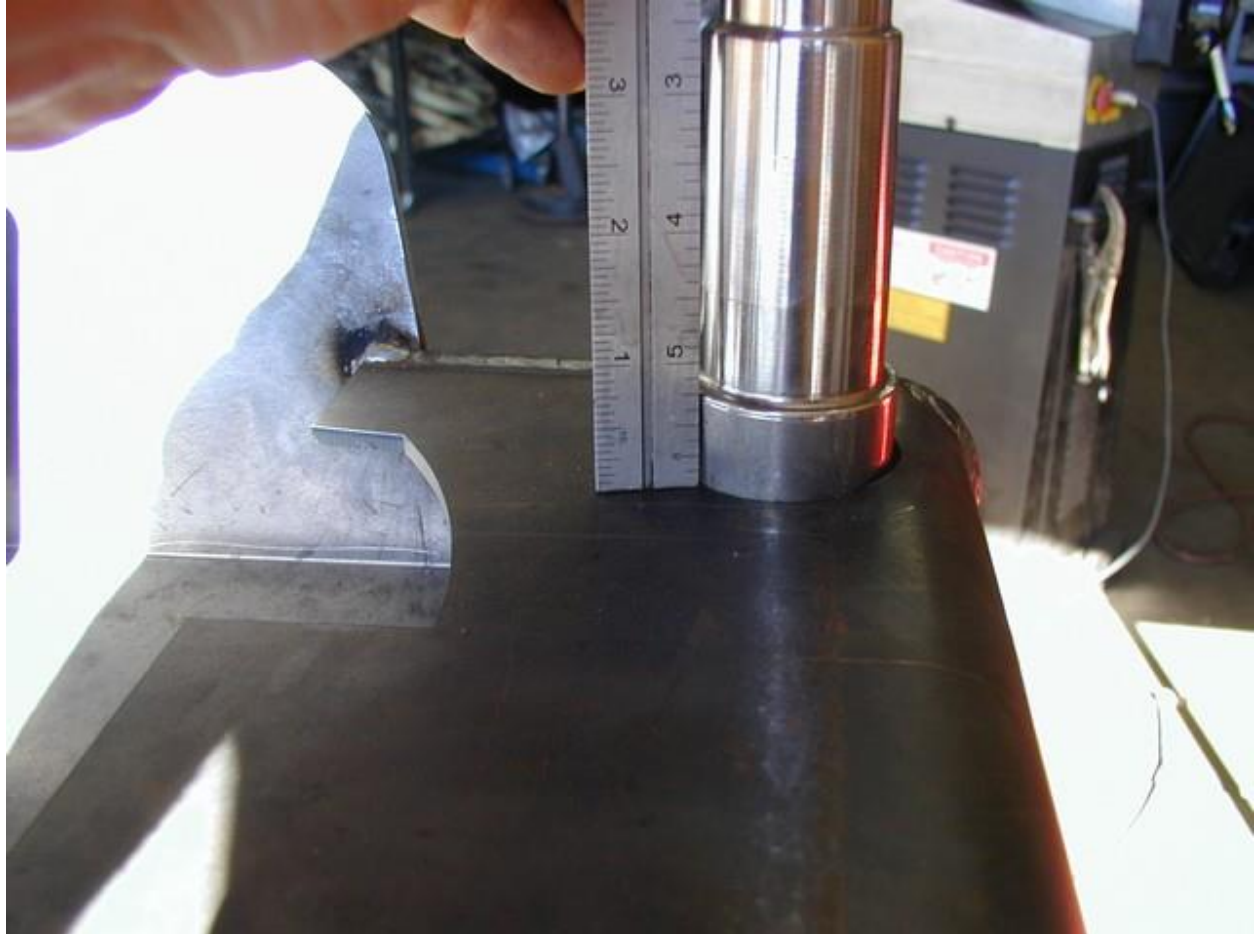
Fit the assembly to the truck and verify that the sides are where you want them relative to the side of the vehicle.

Fit the top tubes onto the bumper assembly while it is on the truck. There is room for adjustment on the top tubes if one side is further away from the truck than the other.

Finish weld the bumper assembly before going any further to prevent distortion of swing arm assemblies.

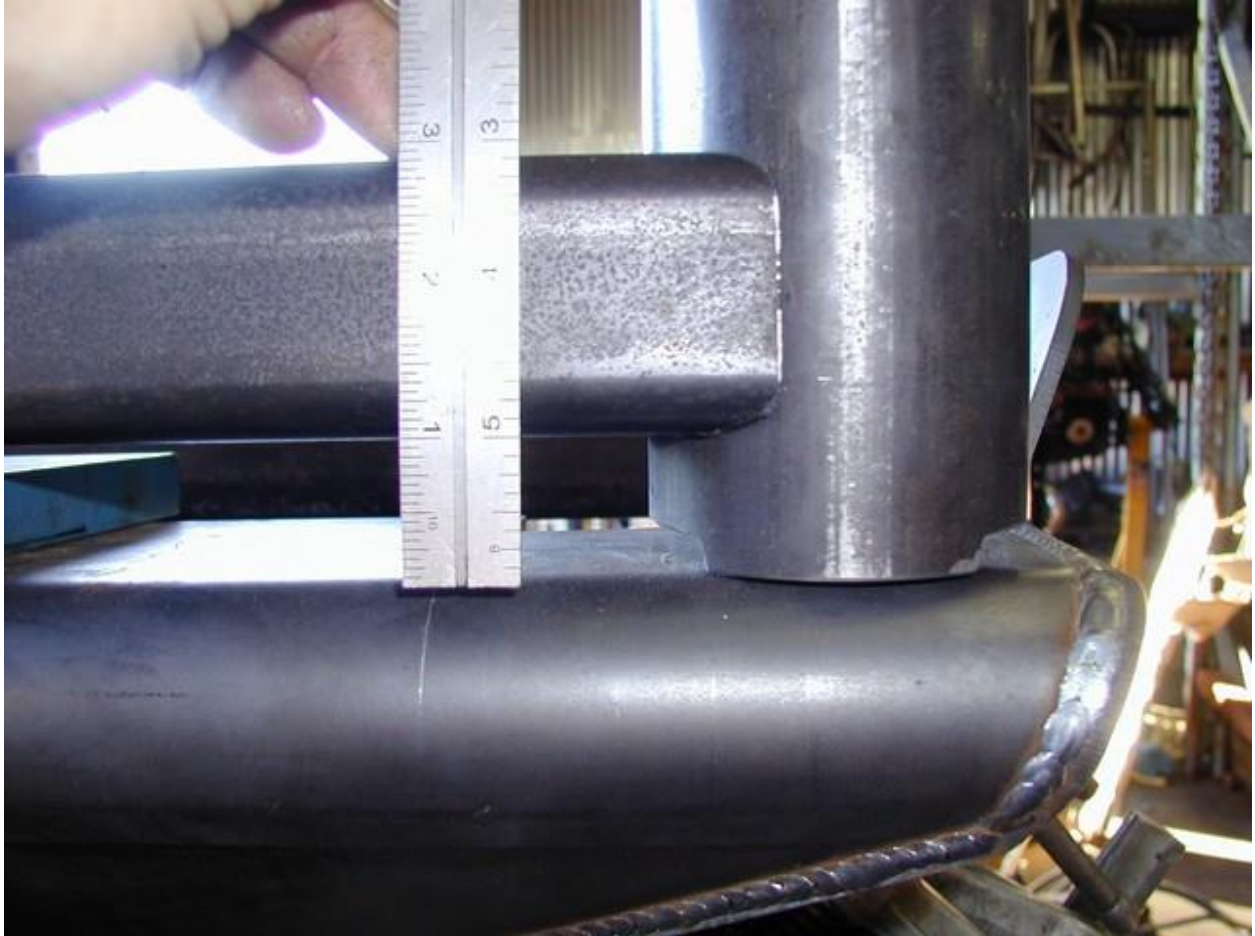
## Spindles and swing arms

Spindle attachment is fairly straightforward but you will need to be sure that the spindle shell is the correct distance from the bumper shell for the stops to work properly. Drop the spindle into the hole in the bumper shell and measure to the first machined ridge. You will need at least  $\frac{3}{4}$ ". See Pic 7



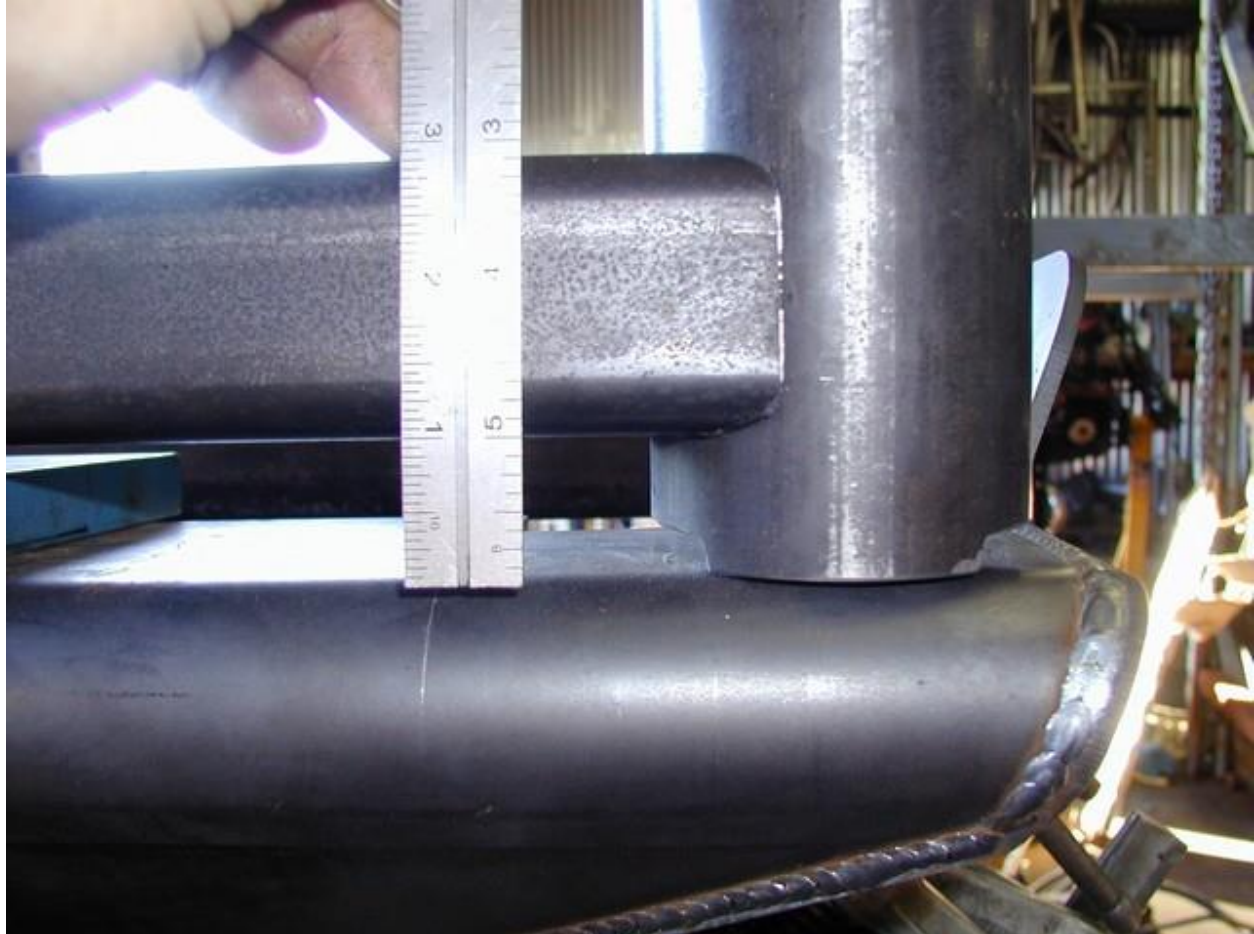
Assemble the bearings and spindle shell to the spindle and drop it back into the hole as a unit. Place a square against the spindle shell and tack the spindle to the bumper. Check square again on two sides. If you are running two spindles, set up both first, then finish weld them fully before going any further to prevent distortion of swing arm assemblies.

The spindle shells have a tooth cut into the bottom that is used as the open position stop. Position this 'tooth' so that it is centered facing out. See Pic 8



The long swing arm is for the tire and the short one is for the other accessory. I typically put the tire on the driver side and the other accessory on the passenger side. They will go either way if you wish to change it. It is advisable to use the long arm for the tire due to the positioning of the latch handle.

Set the swing arms onto the shell of the bumper with a 1" spacer and tack to the shell. You will need 1" between the shell and the swing arm for the gas shocks to fit. See Pic 8

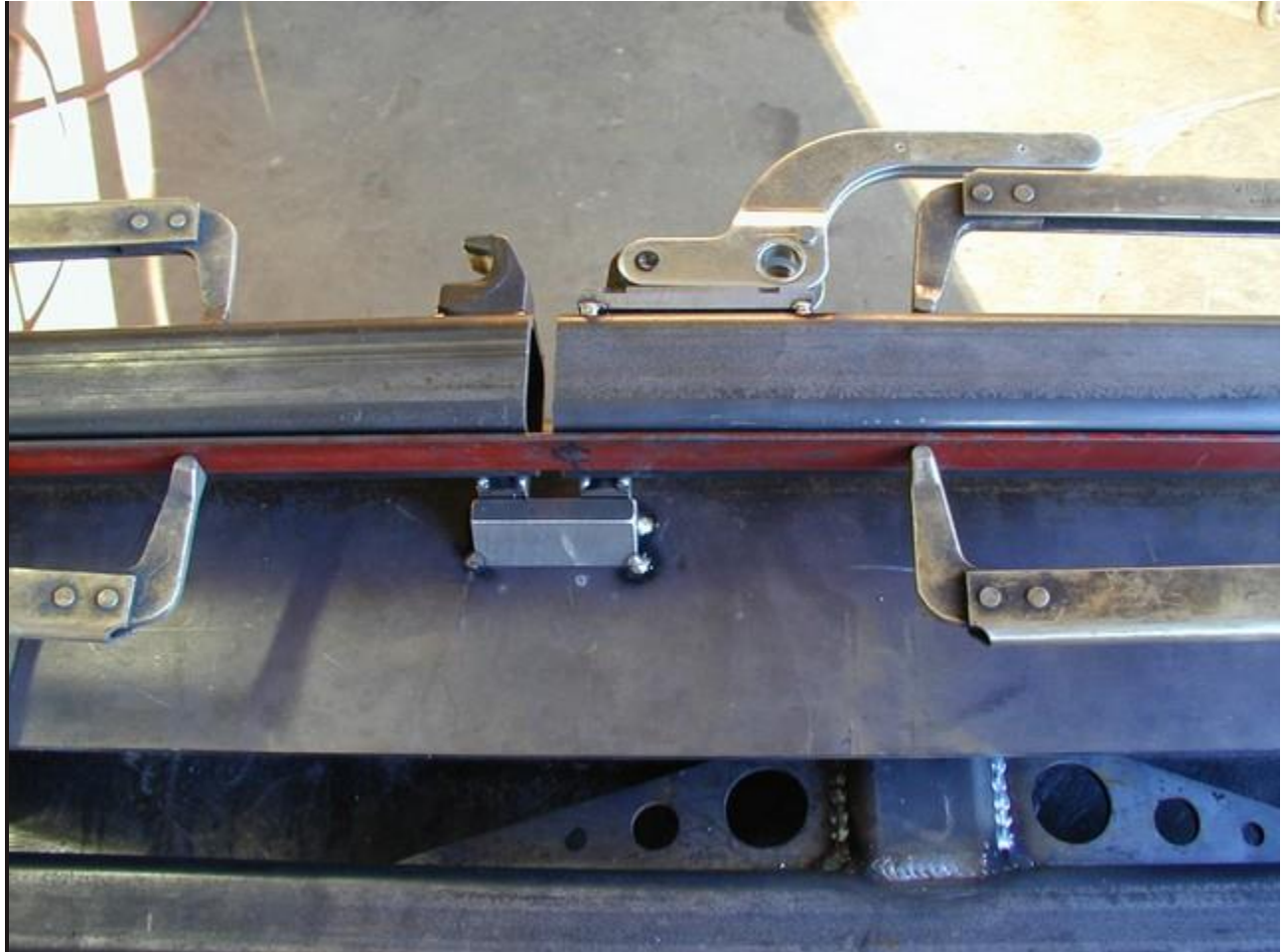




## Setting up the stoppers

Closed position stops-

Clamp a straight edge to the two arms to ensure they are inline with each other. Place the center stop between the two arms and tack to the shell. Place the arm stops onto the underside of each arm. Make sure the arm stops are contacting the center stop and the arms are still inline. See pic 9 & 10

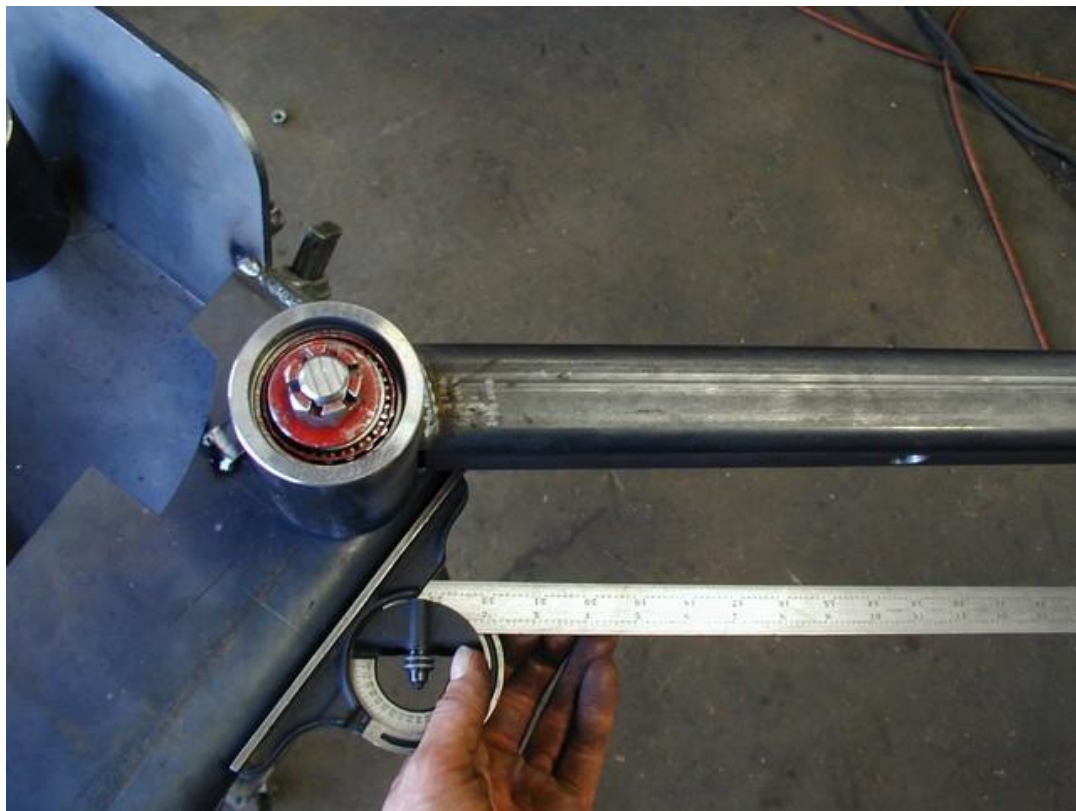




#### Opened position stops-

To set the opening stops you will need an angle finder. The tire holder swing arm angle is 95 degrees.

The ladder swing arm angle is 125 degrees. If you are never going to use a ladder you can set the other swing arm to 95 as well. The ladder needs to open further to clear the rear hatch when opening. The tire holder, gas cans, cooler racks etc. only need 95. See Pic 11 & 12





When setting the stops under the spindle shell be sure to position it 90 degrees to the shell. See Pic 13



#### Latch and latch plate installation

Disassemble the latch and remove the red handle. Avoid welding spatter getting into the inner workings of the latch. The latch will be installed on the longer (tire holder) swing arm. The latch comes with a 4 hole mounting pattern. Cut these off and weld the latch to the arm itself. See Pic 14 (You may also build a 4 hole mounting plate and weld that to the bumper instead)





Center the latch near the end of the arm and tack. Center the latch plate to the short arm and tack. See Pic 15



Double check the latch u-bolt fits before finish welding.

If the swing arms are positioned properly and the stops are in the right place finish weld the stoppers and the latch.

Cap the ends of the arms with the square end caps. See Pic 16



### Swing arm sleeves

Swing arm sleeves are usually pre-drilled in the correct location. If you have a single swing arm you may have to drill your own holes for the sleeves depending on the desired location of your accessory carriers. Slide the sleeves into the holes. Tap them in with a hammer if necessary. Weld around the sleeves and grind smooth. See Pic 17

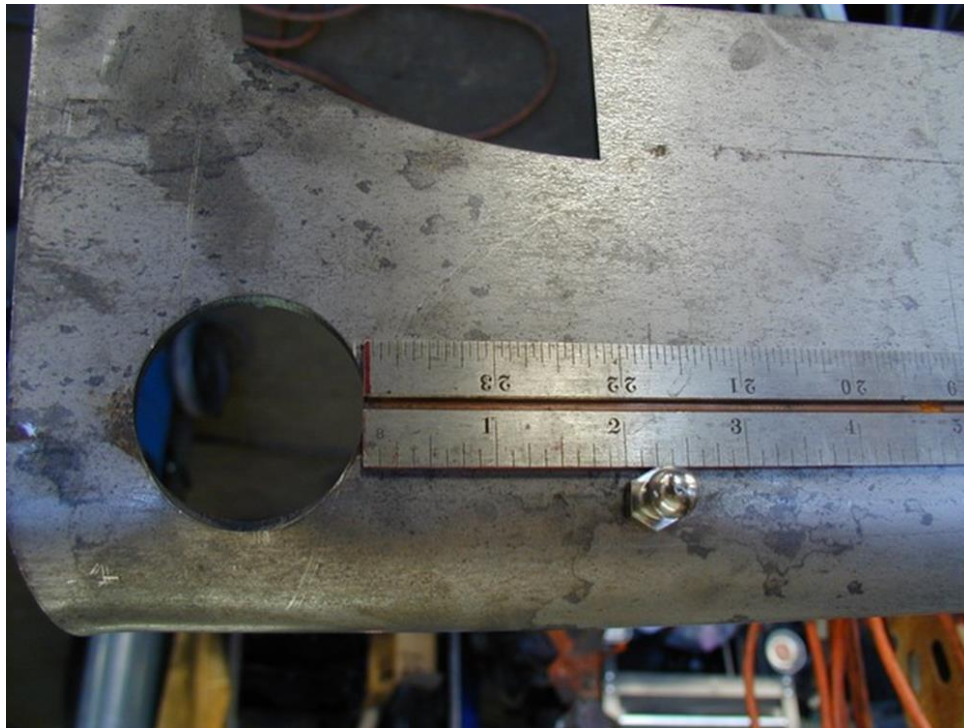


### Ball studs and gas springs

Gas springs can be used with either a 95 or 125 degree opening. The hard stopper under the spindle will determine how far each swing arm can open.

The ball studs for both arms are in the same location on the bumper shell, 2.25" from edge of the spindle to the center of the ball stud. Positioning the ball stud toward the rounded edge of the bumper will give the gas spring a cam action so the arm stays closed until you give it a tug. See pic 18





The ball studs for the swing arms will also be in the same position for each arm - 12" from the edge of the spindle shell. The stopper will determine how far the arm opens. Tire 95 degrees, 2nd attachment 125 degrees.

See Pic18.2 for the positioning of the ball studs on the swing arm. 12" from edge of shell. (2nd swing arm is shown in pic)





Pay close attention to the placement of the ball studs on the swing arms in Pic 18.3 to get the cam locking action. Place the ball studs closer to the trailing edge of the arm, not in the middle. Tire carriers, can carriers, cooler racks and ladders will all use a 15" gas spring. We used to have one 12" and one 15" spring but now we use the same length for both arms. See pic below.

AGAIN- We now use the longer 15" shock for both swing arms.

Drill and tap the holes for the ball studs using a 5/16-18 tap. You can weld the ball studs in but it may cause problems later if you have to replace them.



#### Accessory holders - Tire holder assembly

Start by tacking the clamp bracket to the upright making sure to check for square. Tack the two base gussets to the clamp bracket and upright. Place the gussets so that they cross the plane of the upright and the clamp bracket. See pic 19



The top parts of the tire carrier should be clamped in place and double checked before welding. Place the top cap on top of the upright then the 2" square tube. Using a thin spacer (optional) between the square tube and top plate when mocking up the top portion of the tire holder will give some clearance for the clamping bolts after powder coat thickness is taken into account. Insert the two ½" bolts through the holes of the grabber plates, separate and place on top of the square tube mocking up the top of the holder with all parts in position. Clamp in place and tack. See Pic 20





Tack the tire clover and antenna mount (optional) to the square tube. Press wheel studs into the clover and tack weld them in. Check the fit of all of the parts then finish weld. See pic 21





### Ladder Assembly

The ladder assembly is best built on the vehicle to ensure the ladder is properly spaced from the rear hatch.

Place the clamp bracket onto the swing arm and install the two bolts. Tack the two 1.75" base tubes onto the clamp bracket at the outer edges of the clamp following the angle of the rear hatch. When in place, the top of the tubes should measure 14" apart outside. See Pic 22



For ladder #2 tack the first (square sleeved) rung between the two upright tubes. Since the angle of the hatch determines the angle of the upright tubes you may have to adjust the notch to fit the first rung so that it is parallel to the ground. See Pic 23



Tack the top main hoop of the ladder to the uprights making sure to get the hoop the right distance away from the hatch. This distance will vary depending on what you want. Closer is good for clearance. Further is better for foot room when climbing up.

Tack the second rung into place adjusting the notch to suit your needs. See Pic 24







## Adding the Hi-Lift

Using a lug nut, bolt the Hi-Lift bracket to the Jack just above the lifting part of the jack when the jack is in the fully lowered position. See Pic 25



Place the jack next to the ladder and tack the standoff in position. This step will take two people. Stand back and look at the angle of the jack to make sure it is where you want it. The point of the lifting part of the jack will nest nicely into the detent of the back hatch where the license plate goes if positioned properly. See Pic 26





We now supply a small gusset for the HiLift bracket tube to ladder upright. Weld in place and your HiLift bracket is secure.

### **Gas Can Holder**

Tack the clamp bracket to the upright making sure to check for square. Tack the two base gussets to the clamp bracket and upright. Place the gussets so that they cross the plane of the upright and the clamp bracket. See pic 19



Tack the bottom tube to the base angle. See Pic 27





Tack the flat base to the bottom tube. See Pic 28





Tack the tube spreaders to the top and bottom hoops. See Pic 29, 29.1







Tack the tacked hoop assembly to the upright assembly and test fit to vehicle.

If everything fits, finish weld then add the support gussets and license plate bracket as shown. See Pic 30.1



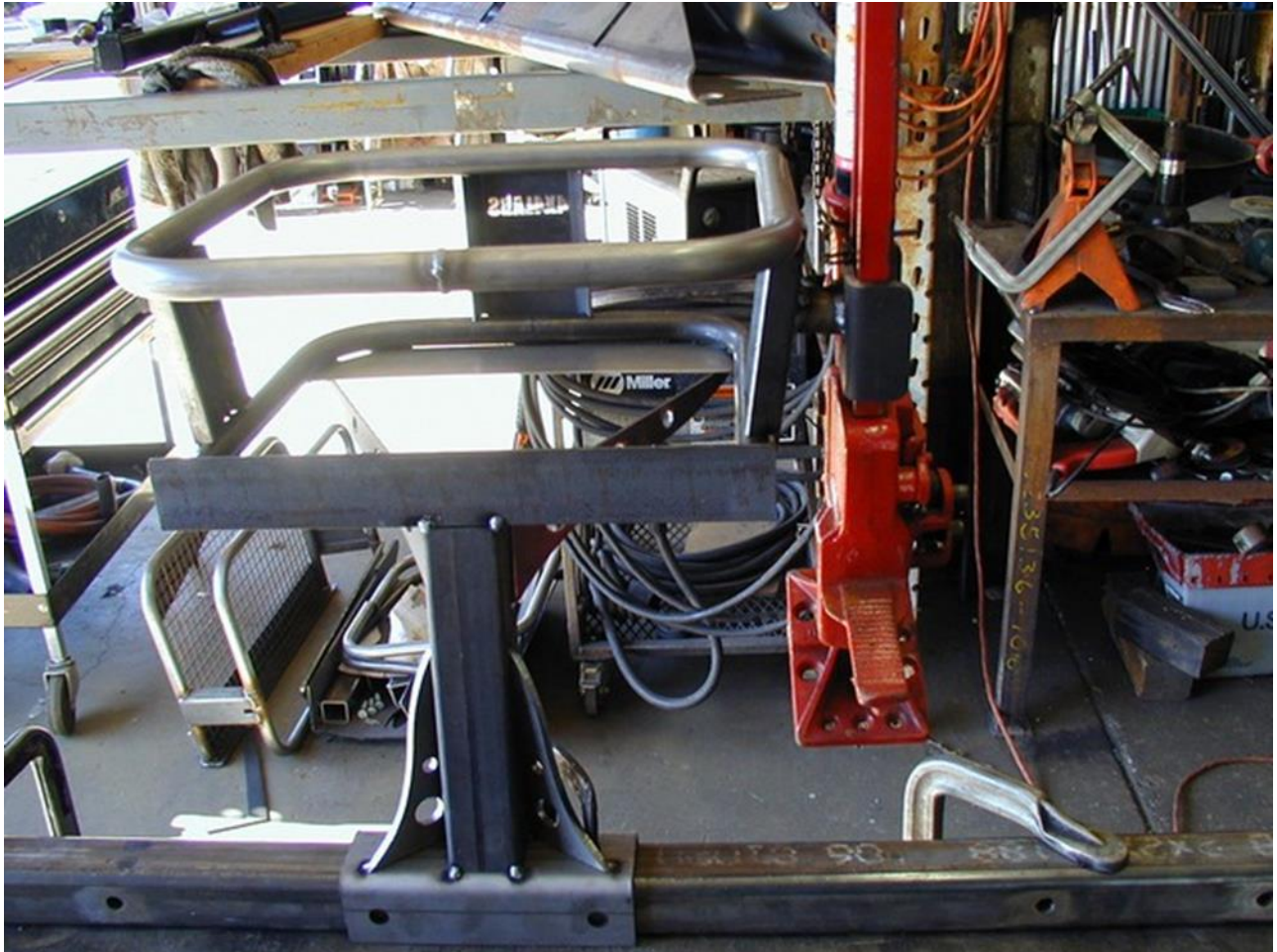
Adding a Hi-Lift bracket (I like this on the tire mount to provide strength in triangulation)

Bolt the Hi-Lift bracket to the Jack just above the lifting part of the jack when the jack is in the fully lowered position. See Pic 31, 31.1, 31.2



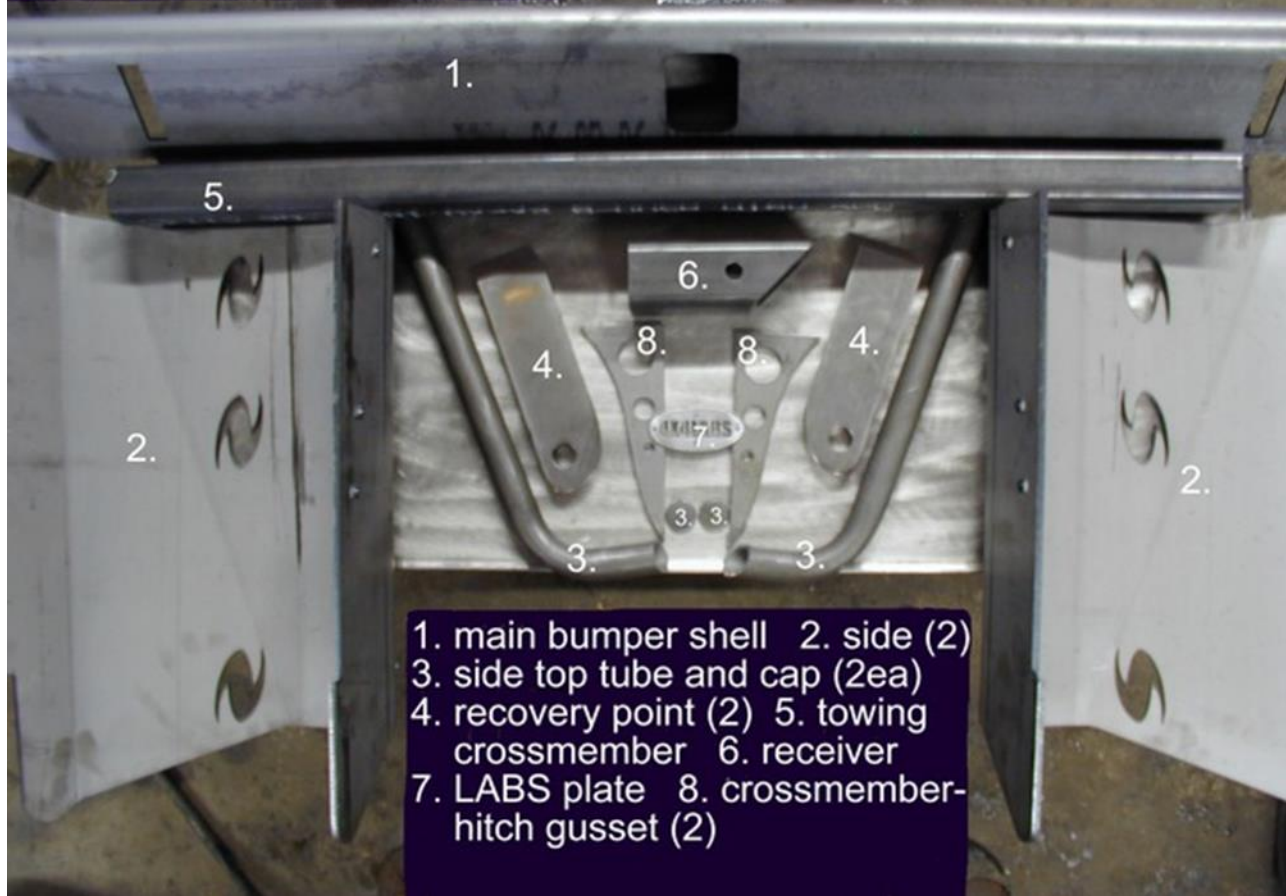






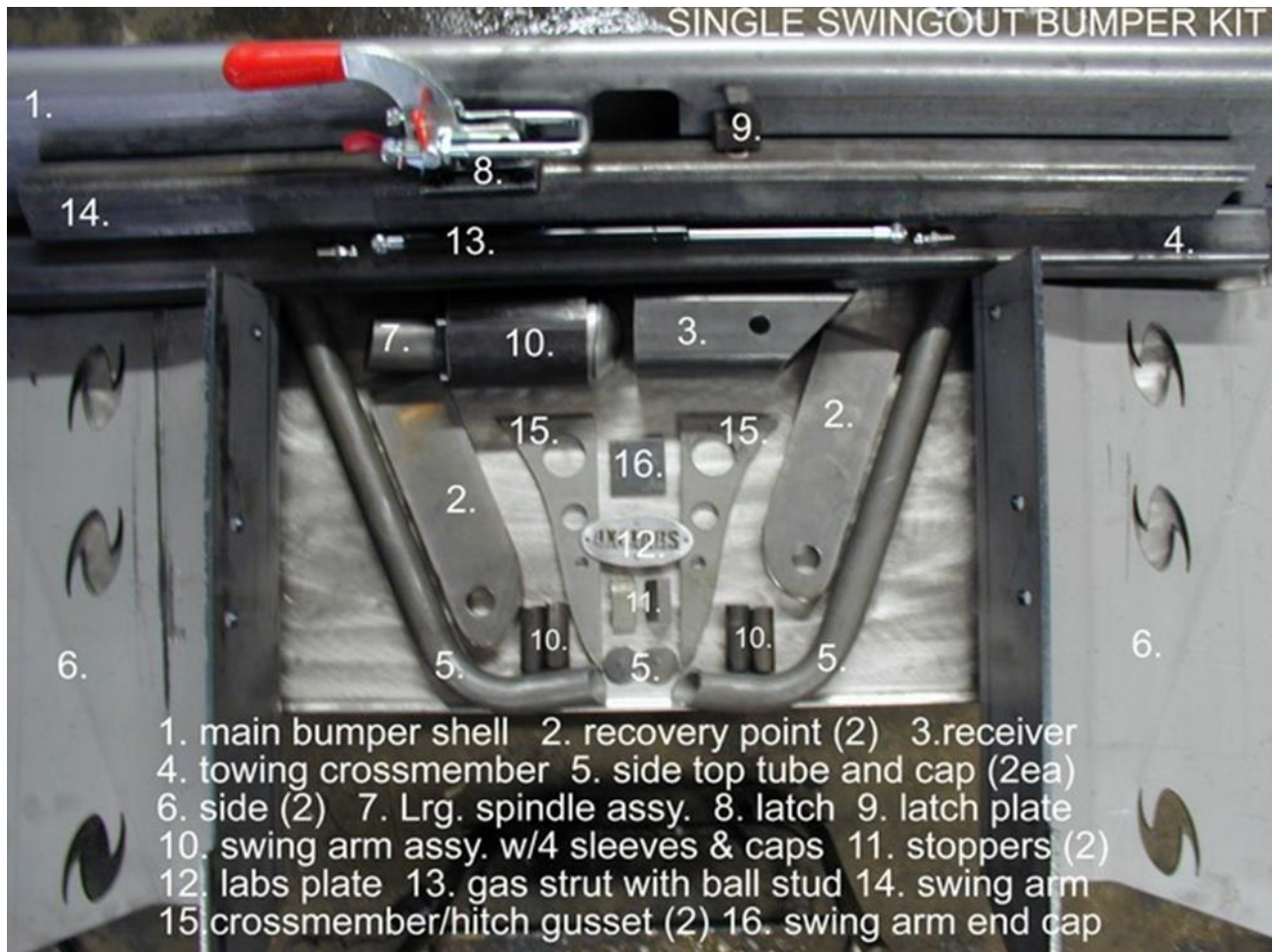
Place the jack next to the side tube spreader and tack the standoff in position. This step will take two people. Stand back and look at the angle of the jack to make sure it is where you want it. The point of the lifting part of the jack will nest nicely into the detent of the back hatch where the license plate goes if positioned properly.

## BASIC BUMPER KIT



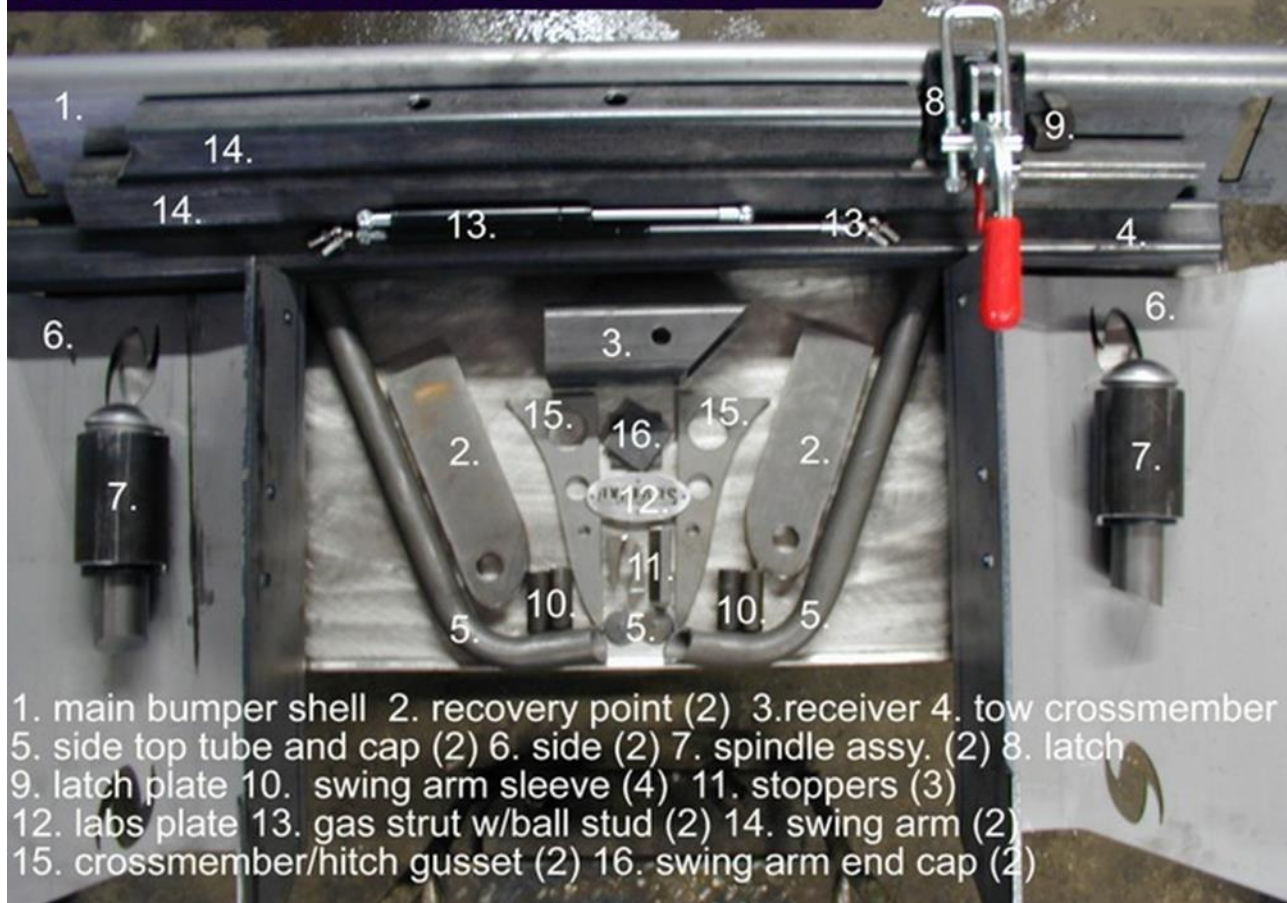
Single swing kit





Double swing kit

## DOUBLE SWING OUT BUMPER



Tire carrier kit



Single can carrier

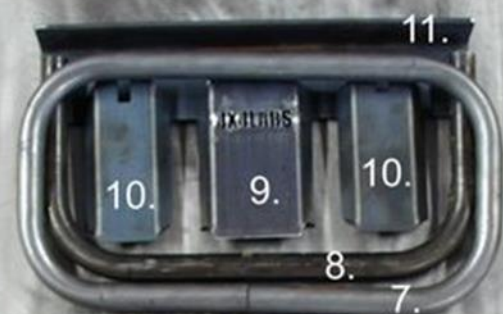


1. clamp bracket  
and hardware

2. upright

3. upright gusset (2)

4. highlift mount  
and standoff



6.

5.

4.

3.

2.

3.

1.

5. flat base

6. license plate  
bracket

7. top tube

8. bottom tube

9. center  
spreader

10. side  
spreader (2)

11. angle base

SINGLE GAS CAN KIT