

Rear Shoulder Belts How-To

Contributed By: Bill Kelsey

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The object: to install rear shoulder belts in an FSJ without extensive (ie, expensive and perhaps ugly) modification of the body.

As Eric Faust reported, "I found this info on my Pop. Mech. CD- ROM. in the TSB's. Hope it helps. The part number for the rear seat belt kit is PN 4636478. Each kit contains the parts, templates and instructions required to install one right side and one left side rear seat shoulder belt."

This kit is still available through Jeep and Chrysler dealers; the price varies. I know dealers have charged from \$36 to \$60 for it within the last month. The information available to the dealer includes nothing about which models or model years the kit will fit, other than the name.

The kit has the following information:

"Jeep Grand Wagoneer Rear Seat Shoulder Harness Retrofit Kit"

Accessory Kit Part Number 4636478

Bill of Materials:

seat belt assembly, rear inboard	(2) 55026737
seat belt assembly, rear outboard	(2) 4476255
cover, swivel plate	(2) 4476258
spacer, rubber	(2) 35024876
bolt, hex shoulder	(2) 6033648
holder, adjusting tongue	(2) 55026740
screw, Phillips head 8-18x1/2"	(6) 154113
template, anchor bolt location (lh&rh)	(1) 82201147, p.5
template, adjusting tongue location (lh&rh)	(1) 82201147, p.5
installation instructions	(1) 82201147

Tools Required:

Phillips screwdriver [for the Phillips screws]
drill motor [to drill holes for the Phillips screws]
1/8" drill bit [to drill holes for the Phillips screws]
13/16 socket [for the hex shoulder bolt]
torque wrench [for the socket and the Torx bit]
T-50 Torx bit [to remove/replace the rear lap belt floor bolts]

There is no information with the package indicating which model years this kit will fit.

The seat belts, covers, and adjusting tongue holder are black (there is no color choice for this kit). The seat belts are shoulder belts only -- these are non-retractable belts that work separately from and along with the existing lap belts. They are 78" long (including mounting hardware and tongue/buckle; 68" for the shoulder belt and tongue, and 11" for the receiver and buckle; 1" is lost when the pieces are buckled together) with a "slide-button buckle" for each belt. The attaching plates at the end of the seat belts are essentially flat. (Most, perhaps all, FSJs have pushbutton buckles; slide-button buckles have large red release buttons pushed sideways along the buckle rather than down through the buckle. Slide-button buckles are commonly used on newer vehicles.)

The hex shoulder bolt is a 3/16 fine thread bolt about 2" long, of which about 1 3/6" is threaded, and the rest a larger (ie, shouldered) smooth bolt.

The rubber spacer appears to be something like heater hose, about 7/8" long, snugly fitting the bolt.

The adjusting tongue holder is screwed (with the Phillips screws) to a trim panel next to the seat and holds the shoulder belt buckle when it is not in use, preventing it from swinging around the cabin.

The anchor bolt locating template is oriented using the screws attaching the trim around the rear quarter windows. This particular window and its trim exist on Wagoneers but do not exist on 2-door Cherokees.

There are no anchoring parts for the seat belt -- only a bolt and a template for locating an anchor above the rear quarter window; the anchor is pre-installed at the factory. These anchors were pre-installed beginning either in 1978 or 1979. I have checked several '79 Wagoneers and Cherokees, and all have had the anchors. I have checked one '77 Wagoneer and it had no anchors. I have been unable to check a '78 FSJ.

Solution: For FSJs with the mounting anchor in place, buy and install the kit; it includes everything you need.

For Wagoneers and 4-door Cherokees, the most difficult part will probably be getting the old lap belt bolts out of the floor; nothing else needs to be removed. Total installation time should not take over 60 minutes, and probably less, presuming no problem with the lap belt bolts.

For 2-door Cherokees, the anchor has to be located without the template; information on how to do this is below.

For FSJs without the anchor preinstalled, the kit can still be used. See below on how to anchor the shoulder bolt.

See the end of this for seat belt options.

Those of you with spare tires mounted inside (using the Jeep spare mount, anyway) apparently already have the left side anchor located. As Dick Ballard noted in his recent description of the Jeep spare mount: "It is a simple inverted A-frame with the flat top of the "A" bolted to the top of the left wheel well (2 bolts + 2 push nuts - assume "push nut" is Molly type device for sheet metal), one leg bolted to rear window/tailgate frame structure about half way up (1 bolt + 1 push nut), and other leg bolted to top of left side window frame structure (J4005507 bolt - looks like shoulder belt torx bolt - into existing weld nut - were th planning for rear shoulder belts?)" The same anchor (but perhaps not the same bolt) will be used for the spare mount and the shoulder belt attaching plate. Probably, the bolt for the shoulder belt will handle both, but part of the rubber spacer will have to be removed.

Issues to be considered in using this kit:

the shoulder belt system is clearly "add-on" due to the color of the belts and buckles (black) and the use of slide-button buckles
the system is a "static" (ie, non-retracting) system
the shoulder belt is not integrated with the lap belt

ALTERNATIVES

Put together your own shoulder belt system. The hex bolt and the adjusting tongue holder are separately available from Jeep (no other parts, possibly excepting the Phillips screws, are available under the parts numbers provided with the kit). A 3/16 fine thread bolt (grade 8+ -- there is no point in installing a safety belt whose attaching bolt shears off in an accident) can be used in place of the shoulder bolt, but will require a washer (grade 8+) to ensure the head does not pull through the shoulder belt attaching plate. It is probably much better to simply get the appropriate hex shoulder bolt.) Seatbelts can be obtained from JC Whitney or other parts suppliers in a variety of colors, with OEM-look pushbutton buckles (or slide-button buckles, or even metal quick-release buckles), for about \$15 each. The total cost should be within the price range of the Jeep kit.

Belts typically come in about 60", 74", and 90" lengths. Any of these will do, although the 74" is the closest match to the length belt in the Jeep kit. A 60" belt will fit most adult males, but the buckle tongue will be at or near the end of the belt, leaving little room for adjustment. See the end of this for other seat belt options.

For Wagoneers and 4-door Cherokees, the anchor point can be located by finding the front trim screw on upper edge of the rear quarter window, moving straight back (towards (but not all the way to) the center of the next trim screw, and parallel to the top edge of the window moulding) 6 3/4" (171-172mm) from the center of the screw, and then up the headliner 2" (50-51mm). This should be approximate center of the anchor point. (It will also be the center of the roof brace to which the cargo light is attached (the anchors are welded into the ends of this brace), so you can double check by removing the cargo light and seeing if where you think the anchor is lines up with the center of the brace.) Punch a small hole through the headliner, and if you don't hit metal you have either found the anchor point or are several inches too far forward or back. Check by moving your punch or a slender probe around to see if you hit the threaded walls of the anchor. If not, you are either in the wrong place, or have not gone in far enough (the headliner was close to the brace on the FSJs I checked, but I don't know if this is true for all models and years). Enlarge the hole, insert the bolt to chase the threads, remove the bolt, insert the bolt through the attaching plate on the shoulder belt, place the rubber spacer (ie, heater hose) over the bolt, and install the bolt in the anchor again. The order should be anchor, headliner, rubber spacer, attaching plate, bolt head. Tighten to 27 ft/lbs.

To install the buckle-end, remove the bolt holding the lap belt buckles to the floor, place the shoulder belt buckle's attaching plate **BELOW** the lap belt attaching plates, and reinstall the bolt. Tighten to 27 ft/lbs. The three belts at each bolt should look be in a T shape, with the shoulder belt as the foot and the two lap belts as the arms.

On Wagoneers and 4-door Cherokees, Jeep liked mounting the adjusting tongue holder at the front upper corner of the trim panel below the rear quarter window, with the holder's top front mounting screw about 2" (50mm) back from the front edge, and about 3/8" (9mm) below the top edge, of the trim panel. I suggest you mount it wherever you find most convenient, especially on Cherokees (remembering that it is nice if the passengers can reach it!). Jeep has the two upper screws for the holder going into the body behind the trim panel. I suspect the panel is strong enough for the holder (although you may want to use speed nuts behind the panel to keep the screws from working loose).

The tongue holder is a useful item -- it acts as a holster, preventing the metal end of the shoulder belt from swinging freely when not in use, and keeps it handy to passengers.

LOCATING THE ANCHOR ON 2-DOOR CHEROKEES

(This is based on measurements taken from my 1979 Cherokee "S", with the rear headliner removed. Removal of the headliner is not required. Because of differences in trim over the model years, your Cherokee may be different than mine, so I have included several different measurements.)

Note that there are two sets of "rails" on each side -- an upper rail into which the headliner is mounted (called the "mounting rail" below), and another rail which seems to have no function in the Cherokee other than having a piece of headliner-colored windlace on it (called the "trim rail" below). The trim rail appears to be where the top of the trim panels around the rear quarter windows were attached on the Wagoneer and 4-door Cherokees.

The anchor is located 20.5" from the back end of the headliner mounting rail, and 1" up from the TOP of the mounting rail (2" up from the BOTTOM of the lower trim rails). The back end of the mounting rail is immediately forward of the rear headliner trim piece that runs across the back of the Cherokee to hold the rear edge of the headliner. Extending back along the mounting rail, the anchor point should also be about 21.25" from the front edge of the weatherseal for the tailgate window. Establish that you have found the anchor point as above on the Wagoneer and 4-door Cherokee, and proceed as described there.

ANCHORING THE SHOULDER BELT BOLT ON FSJs WITHOUT A PREINSTALLED ANCHOR (the anchors were preinstalled beginning in either 1978 or 1979):

(This is based on plans I made before discovering, when I removed the rear headliner, that I had an anchor already installed. Some of it is based on what I saw when checking a '77 Wagoneer in a salvage yard. Thus, you will have to determine the best way to actually fix the anchor in your FSJ.)

Remove the rear headliner. In my Cherokee, this merely required removing the rear trim piece, disconnecting the cargo light, and CAREFULLY sliding the headliner out the tailgate. While the headliner is out, you can check for roof rust, repaint/rust convert any rust found.

Remember that rust does not mean leaks -- moisture inside the body will tend to condense on the inside of the roof, and can cause rust. Of course, you will also see all those screws (and well nuts) from the roof top carrier sticking down and may find some are leaking. Repair your leaks (you really don't want to take the headliner down again, do you? Don't answer until you put it back up!) You may also find that the foam strips that run along the roof braces have come loose (if not completely disintegrated). You can easily replace these with 3/4"x5/1 insulating sponge tape (or a similar product) used for house weather stripping. In fact, that's exactly what the strips in my Cherokee appeared to be.

The anchor point for the shoulder belts is a hole at the bottom of the rear roof brace (the same brace to which the cargo light was mounted). There will be two bolts, one on either side of the hole. You may have to adjust the brace a little by loosening these bolts if the center hole in the brace does not line up fully with the hole in the sidewall behind the brace. The anchor will go behind this hole, and the shoulder belt bolt will pass through the hole.

The top of the sidewall is open near the roof. You will need to get a strap of metal that will fit into this opening. It should be long enough to distribute the stress from the shoulder belt (in case of accident) along the top of the sidewall; the longer the better. It should be strong enough to bear the stress from the shoulder belt without bending too much (again, to equally distribute the stress along the sidewall). Once you have this, mark where the bolt will go, and have the metal strap drilled and a nut to hold the bolt welded behind it. If possible, use a bolt and nut equivalent to that Jeep provided for the shoulder belt. As noted above, you do not want the bolt shearing off, or the nut stripping out, in an accident.

Fit the strap (with nut) into the top of the sidewall, making sure the bolt will fit through the hole in the roof brace into the welded nut, and fasten the strap to the sidewall. This could be by welding (the best method, but make sure it won't damage the sidewall, roof, or interior) or some other method. I was considering using JB Weld, smaller screws through the sidewall into the strap, and then filling in the top of the sidewall around the strap with foam insulation, thinking that the strap would not have time to move much in a sudden impact. However, I was also planning to check with an auto welding shop to see how difficult it would be to weld the strap in.

Measure where the anchor hole is, reinstall the headliner (try using thin aluminum, such as used in soda cans, along the front edge of the headliner to help it slip into the headliner trim between the front and rear headliner), and install the shoulder belts as above.

OTHER SEAT BELT OPTIONS

Using existing FSJ Jeep belts:

My first thought was to use the middle lap belt from the rear seat (and bench front seat) for the shoulder belts. This way I could ensure that they matched my existing belts. However, this will not work; these belts are too short. The long section is 43.5" long (including hardware), and the short section (which bolts to the floor) is 12" long (including hardware), for a total length of 54" inches (1.5" is lost when the tongue is inserted in the buckle). This may reach from the shoulder belt anchor, around the seat back, to the floor anchor -- but is useful only for holding up the seatback. There is not enough room for any but a small child to fit.

A few inches can be gained by using a buckle end for a front seat belt rather than a back seat belt -- this is 17" long (including hardware), for an overall length of 59" when attached to a middle lap belt. The additional five inches allows an adult to be (very) secured with the belt -- if he isn't too large, doesn't mind holding his breath, and has no desire to move once the belt is on.

Too, such belts will usually come from a salvageyard. Those I've checked tend to be damaged (ie, torn or mildewed) and should not be used even if they fit.

Retracting seatbelt systems:

The shoulder belts described above are all static -- that is, they do not retract. It is possible to install a retracting shoulder belt system. However, the retracting belts from the front of an FSJ are too short to work -- they are designed for a shoulder belt anchor just above the wearer's shoulder, not one significantly higher up and farther back. Aftermarket retracting seat/shoulder belt systems in standard colors are available from JC Whitney and other parts suppliers. They tend to cost about \$100 - \$110 per belt (so \$220 total), although some are available for about \$70 apiece. In general, they are one belt systems (unlike the FSJ front systems, which uses two belts) with a single large (about 4"x4"x3") retractor at the rear. The belt runs from the retractor, through a D-ring (at the FSJ shoulder anchor), through the tongue, and to the outboard front lap belt anchor. A short inboard belt with the lap belt buckle completes the system.

To use one of these for the rear seat of an FSJ will require mounting the retractor behind the seat (through the floor or wheelwell, with plates on the other side of the floor/wheelwell) and mounting an anchor through the wheelwell near (or where) the current lapbelt retractor is located. The short inboard belt would replace the existing lap belt buckle.

I do not know whether the existing lap belt retractor could be replaced with an aftermarket system -- it appears to be integrated into the locking mechanism for the rear seatback. It may simply have to be bypassed.

Three such retractor systems can be found in the JC Whitney catalogue (one is the van section), but installing them would be considerably more expensive than installing shoulder belts. It appears any of the three would work.

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