

## Mercedes R129 Front Locking Cylinders

Level of difficulty: Fairly easy – very rewarding!

Tools needed:

- Phillips screwdriver
- T30 Torx screwdriver (or T30 socket with ratchet)
- Flat screwdriver or needle nose pliers or small hooked tool for removal of hydraulic line clip
- Rag or paper towels
- (recommended: magnetic parts tray to hold screws and clips)



*For inspection only:*

- requires Phillips screwdriver as a tool, and a few minutes to remove the top panel above the windshield

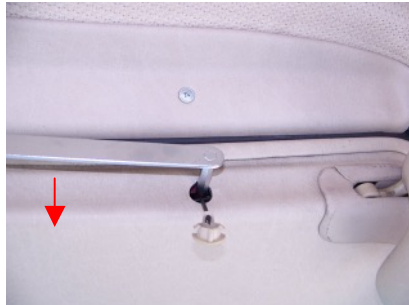
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Mercedes R129 Front Lock Cylinder Removal Guide, page 1 of 6

1. Open the soft top. If you plan to remove main lift or bow extension cylinders as well, also raise the roll bar at this point.

2.



(If your soft top should not open or unlock automatically, you can unlock it with the MB supplied tool with the 6-mm Allen wrench at one end; the access is through the plugged holes in front of the visors...)

3. Remove the upper windshield header panel. The panel is fastened with four screws: one Phillips screw at each lock cover (the covers slide out towards the screw holes, i.e., the right one slides to the right and the left one slides to the left), and one Phillips screw each hiding under the molded rubber at the outer edges (you may have to find the outer screws under some caulk...). The panel may stick a little from grime or caulk – it lifts out...

Note: the panel actually slides in and out horizontally in the front via metal tabs and it lifts up in the rear. When re-installing, you may have to massage the rubber seals in the front into place. In most cases, the panel is removed and re-installed quite easily - be patient



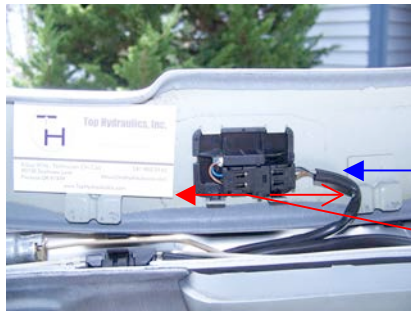
(Remove four screws)

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Mercedes R129 Front Lock Cylinder Removal Guide, page 2 of 6

4. For model years '95 and up: Unless you are only holding up the panel to inspect the cylinders, unplug the sensor that is built into the middle of the windshield header panel. This is important, as the sensor easily slips out of its housing when the panel is hanging by these wires. (See photo next page)  
Note: the sensor is a magnetic Reed switch with sensitive solder joints - avoid pulling on the short wires going from the connector to the tiny sensor inside the panel. In case you need to test this sensor: it creates a 'closed circuit' when a magnet is nearby.



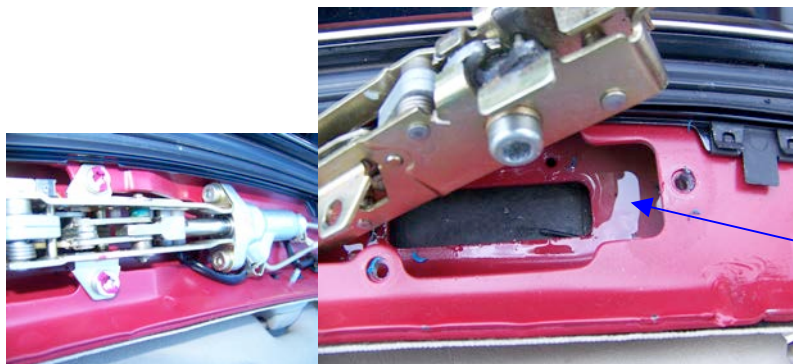
Models '95 and up: unplug sensor wire

5. Inspection for leaks: if the sheet metal around the two locking cylinders is at all oily, then your locking cylinders are very likely leaking from their piston seals. If you don't find any oil at first, cycle the roof a few times and check again!

*Once the leak is substantial enough, the oil will work its way through the lower part of the windshield header to the inside of your car, eventually dripping on the seats and other places. The seal material used in the OEM cylinders is usually rated for a shelf lifetime of 10 years (replacement cylinders at your dealer may have been on the shelf for awhile already...), and has been designed into the system at the latest in the 1980s. Top Hydraulics, Inc. uses enhanced, more modern seals that provide for extended use, while making an excellent seal.*

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.



(this cylinder looked okay at first glance, until we discovered that the red windshield header surface was wet, and there was some liquid trapped under the wire. Then we cycled the top a few times and removed the whole lock to find the puddle of oil shown in the second picture...)

Note: if you have decided to have your front lock cylinders upgraded by Top Hydraulics, consider the up-front shipping option. For a slightly higher price plus a refundable deposit, Top Hydraulics will send you a set of cylinders, mounted in replacement locks if you wish, before you take out your old cylinders and send them in. That way, you can get everything done in one procedure...

6. Unhook hydraulic lines by sliding back the retaining clips with a screwdriver, needle nose pliers, or a hooked tool.



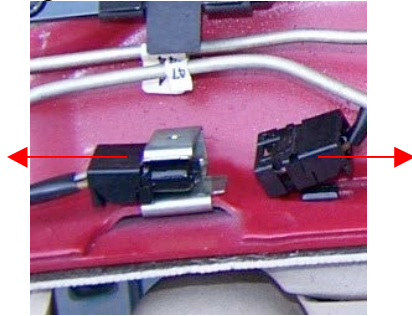
Do not pull back the lines at this point.

---

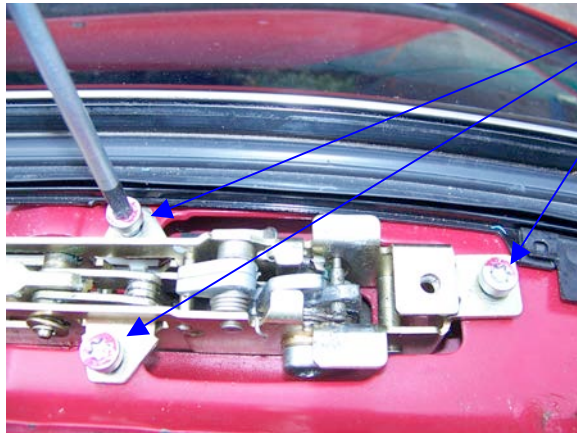
Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Mercedes R129 Front Lock Cylinder Removal Guide, page 4 of 6

7. Unplug the electric line going to the lock assembly – the connectors just pull apart...



8. Remove the lock assembly:
  - Use a T30 Torx screwdriver or socket to remove the three vertical bolts.



- Lift up the lock assembly, place a rag or towel under it, and carefully twist it off the hydraulic lines.



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

- Remove the hydraulic fluid from the lock cylinders: Wrap the two hydraulic input ends in a rag and cycle the cylinder a few times by manipulating the linkage (use a screwdriver to push down the latch as if the soft top were coming into the lock, and unlatch by manipulating the linkage in the reverse direction). If you don't cover the two hydraulic holes in the cylinder, fluid will squirt all over!

**Important:** Top Hydraulics would be happy to accept the locking cylinders mounted to the lock, at no extra charge! The reason is, the piston can be hard to remove from the lock on account of threadlock used. There is a significant chance of first-timers scratching up the piston when trying to remove the cylinder from the lock without first softening the threadlock sufficiently.

If you would like to latch your roof while the cylinders are out for repair, or if you are concerned about shipping costs from overseas, here is how to remove the cylinders from the locks:

- Unbolt the cylinder from the lock with a 4-mm Allen wrench, a T27 or a T25 Torx wrench.
- Soften the threadlock. You can use, in order of effectiveness: heatgun, acetone (nail polish remover), or WD-40 over night.
- Hold the part into which the cylinder is screwed firmly in a 10-mm open wrench, and carefully use a narrow 7-mm open wrench to unscrew the cylinder from the lock.
- *Be very careful not to scratch the piston surface (do not use pliers or vise grip on the piston!!!), as scratched pistons make the cylinders irreparable. (And if you do scratch it, let us know, and we will likely have a replacement for you...)*

**Replace in reverse order**, and don't forget to use threadlock where it was originally used – a single drop goes a long way! Remember all electrical connections and the clips on the hydraulic lines... Models '95 and younger: make sure that the sensor in the middle of the windshield header is still in its place, and that it has been re-connected.

Remember to wrap the assemblies carefully when shipping to us, so that the pistons do not get scratched during transport. Fill all voids in your parcel, and tape it up well.

For repair and/or seal replacement, ship cylinders to:

Top Hydraulics, Inc.  
3235 Pacific View Drive  
Florence, OR 97439  
USA

Top Hydraulics' default shipping method is USPS Priority Mail, but we would be happy to use a carrier of your choice.

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Mercedes R129 Front Lock Cylinder Removal Guide, page 6 of 6

## Soft Top Rear Locking Cylinders

Level of difficulty: Fairly easy – very rewarding!

Tools needed:

- M10 socket and ratchet
- Flat screwdriver or needle nose pliers or small hooked tool for removal of hydraulic line clip
- Rag or paper towels
- (recommended: magnetic parts tray to hold screws and clips, and the MB-supplied soft top tool with a 10-mm box wrench at one end)



*For inspection only:*

- No tools required, and only a few minutes to open the tonneau cover, lift the soft top rear, and look at the cylinders...

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Mercedes R129 Soft Top Rear Lock Cylinder Removal Guide, page 1 of 9

1. Open the tonneau cover.  
(If your tonneau cover should not open or unlock automatically, you can unlock it with the MB supplied tool with the 5-mm Allen wrench at one end. The tonneau cover unlocking bolt is hiding between the roll bar and the rear seat side panel...)



2. Raise the soft top, and keep the rear of the soft top raised.
3. Inspection for leaks:



(Passenger side rear lock, next to tonneau lift cylinder...)

(Passenger side rear lock, next to tonneau lift cylinder...)

The locking cylinders are mounted upright, and they have a groove below the point from which they would be leaking. If you don't find any oil at first, cycle the roof a few times and check again!

---

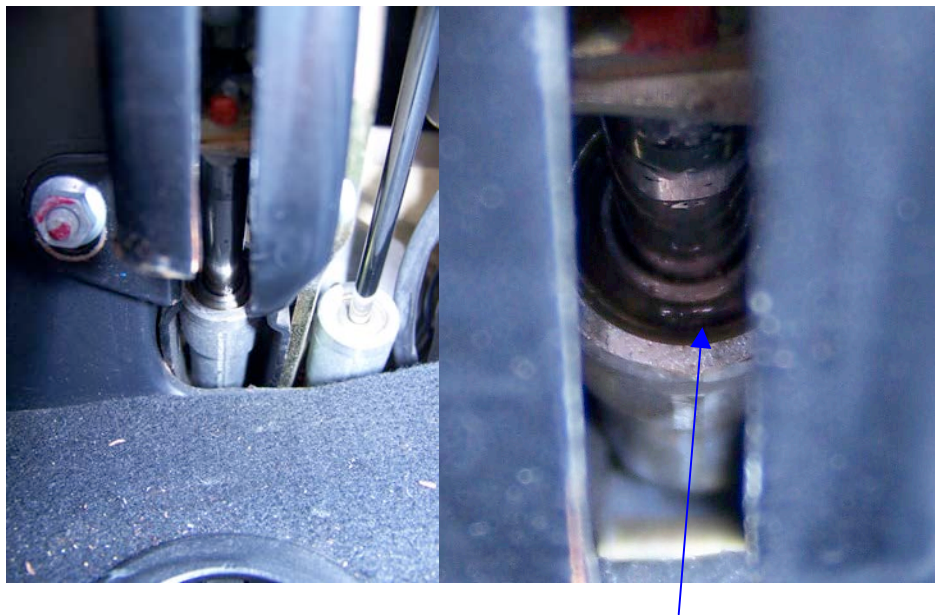
Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.



*Once the leak is substantial enough, the oil will work its way down the front of the trunk, eventually dripping behind your rear tires. Your hydraulic system may eventually not work properly when the hydraulic fluid level gets too low, and the cylinders cannot develop enough pressure. Your hydraulic pump may suffer damage when working with low fluid levels.*

*The seal material used in the OEM cylinders is usually rated for a shelf lifetime of 10 years (replacement cylinders at your dealer may have been on the shelf for awhile already...), and has been designed into the system at the latest in the 1980s. Top Hydraulics, Inc. uses enhanced, more modern seals that provide for extended use, while making an excellent seal.*

The pictures below show the passenger side lock cylinder leaking at little – see the oil film in the groove, visible in the zoom... Once either the rear lock cylinder or the tonneau lift cylinder leak more substantially, the oil will naturally drain down the front of your trunk and end up behind your tire. Thus, if you already have oil spots behind your rear tire, this could be from the rear locking cylinder, as well as the tonneau lift cylinder...



(Some oil in the lock cylinder's groove)

4. Start the rear lock removal with an empty trunk. Remove the windscreen cover, if equipped. Removal of the CD player can be avoided, but is optional.

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.



5. Remove fuse panel cover on the trunk's front wall: open it, and carefully unclip it.



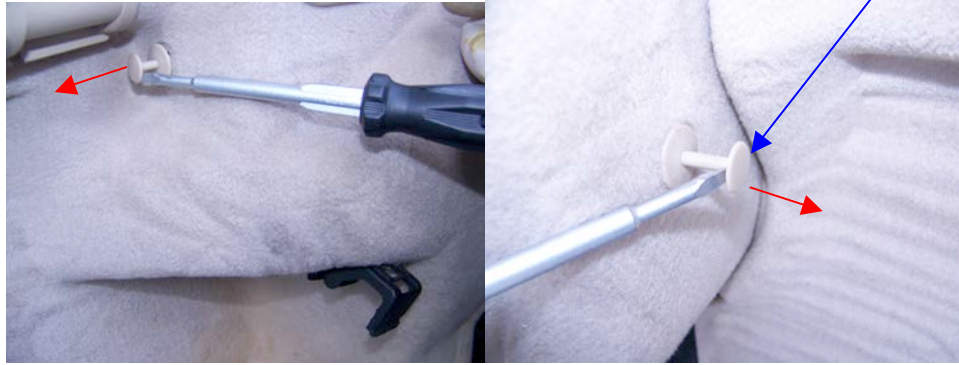
6. Remove the floor mat and the battery cover/passenger side trim panel by unscrewing the clip on the top (if the clip still exists in your car...).



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

7. To remove the carpeted panels in the front and on the driver side of the trunk, remove all panel clips holding them down. The clips are secured with pins that need to be pushed out with a flat screwdriver first.



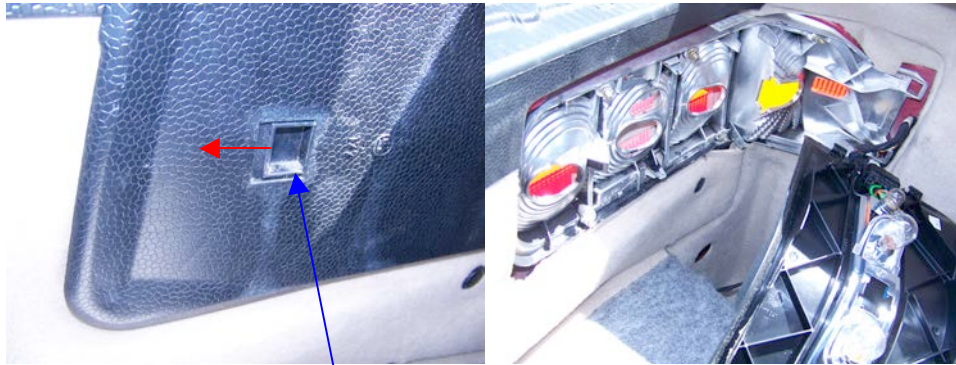
8. Removal of the side panel on the driver side can be cumbersome if there is a CD changer installed. You can work on the lock and/or tonneau lift cylinder removal by only bending the panel back to make enough room. Even the front panel does not have to be removed completely; it has to be pulled back on the passenger side, though, as shown in the following picture...



9. (If you want to 'play it safe', then remove the CD changer, remove the left tail light assembly, and pull out the left carpeted trunk panel)

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.



(Pull the spring-loaded latch of the tail light assembly, swing the assembly open, and remove it.)

10. Remove the c-clip on top of the tonneau lift cylinder, slide the cylinder off its pivot pin, and push the piston all the way down (to avoid it getting scratched). This way, you create access to remove the 10-mm nuts that hold the lock in place.



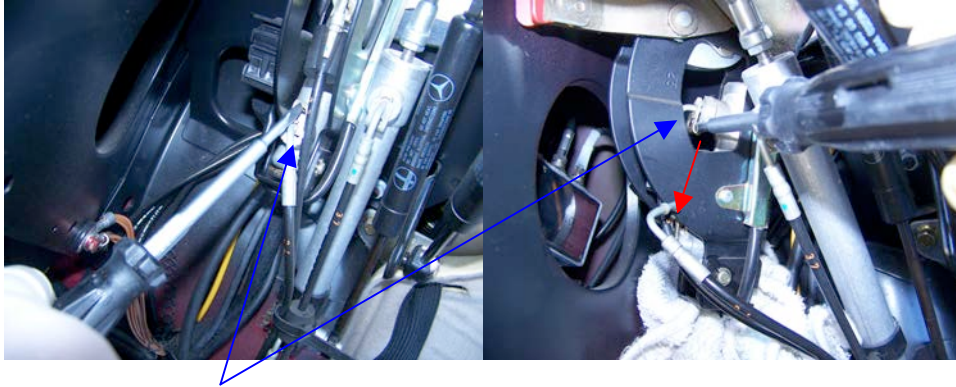
(Remove the c-clip)

(With the tonneau lift cylinder pushed in, remove three 10-mm nuts)

11. Remove the hydraulic line clips and place a rag under the lock assembly. Make sure not to loose the clips; MB does not sell them separately! Carefully twist the hydraulic lines out of the cylinder, and wrap them in the rag.

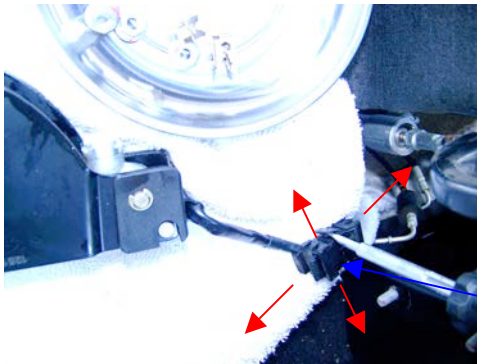
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
 Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.



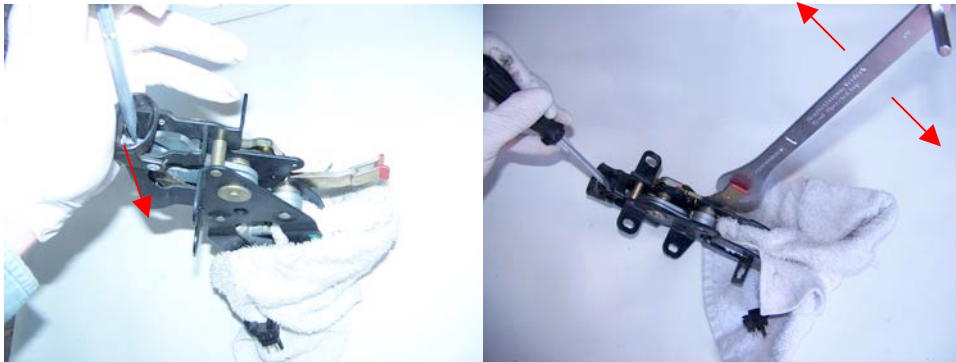
(Remove hydraulic line clips)

12. Pull the lock assembly out towards the rear. Unplug the microswitch. Wrap the hydraulic line receptacles of the cylinder in a rag.



(Unclip and unplug the microswitch)

13. Remove the remaining oil out of the cylinder by cycling it several times: push a screwdriver into the latch as if the rear soft top were coming down into it, and cycle the mechanism back and forth all the way several times with the MB-supplied soft top tool (thin 10-mm wrench). You will have to unlock the linkage after each cycle by pushing the screwdriver into the latch. Make sure to keep the cylinder wrapped in a rag, or oil will squirt all over the place!



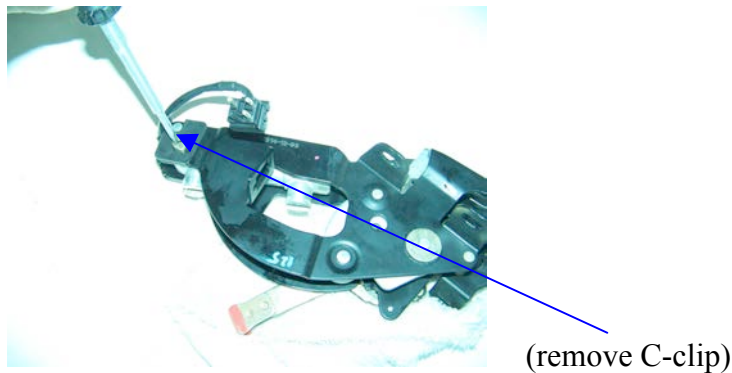
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

**Important:** Top Hydraulics would be happy to accept the locking cylinders mounted to the locks, at no extra charge! The reason is, the pistons can be hard to remove from the locks, on account of threadlock used. There is a significant chance of first-timers scratching up the piston when trying to remove the cylinder from the lock without first softening the threadlock sufficiently.

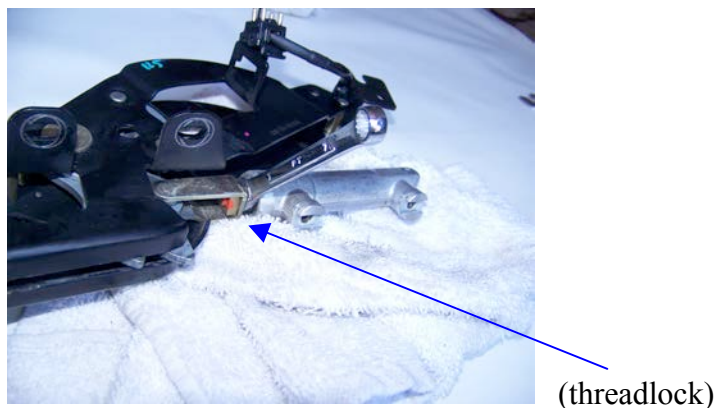
If you would like to latch your rear soft top while the cylinders are out for repair, or if you are concerned about shipping costs from overseas, here is how to remove the cylinders from the locks:

- Remove the C-clip on the cylinder pivoting bolt with a small, flat screwdriver. Remove the pivoting bolt.



- Soften the threadlock.

You can use, in order of effectiveness: heatgun (be careful not to overdo it), acetone (nail polish remover), or WD-40 (over-night application).



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

- Hold the part into which the cylinder is screwed firmly in a vise, pliers, or an appropriate wrench, and carefully use a narrow 7-mm box wrench to unscrew the cylinder from the lock.
- *Be very careful not to scratch the piston surface (do not use pliers or vise grip on the piston!!!), as scratched pistons make the cylinders irreparable. (And if you do scratch it, let us know, and we will likely have a replacement for you...)*

**Replace in reverse order**, and don't forget to use threadlock where it was originally used – a single drop goes a long way! Remember all electrical connections and the clips on the hydraulic lines... The air will eventually be vented from the system, after you have cycled it a number of times. Align the lock assembly with the marks that the 10-mm nuts made originally, and no further alignment should be needed.

Remember to wrap the assemblies carefully when shipping to us, so that the pistons do not get scratched during transport.

For repair and/or seal replacement, ship cylinders to:

Top Hydraulics, Inc.  
3235 Pacific View Drive  
Florence, OR 97439  
USA

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

## Tonneau Cover Lift Cylinders

Level of difficulty: Fairly easy – very rewarding!

Tools needed:

- Flat screwdriver
- Rags or paper towels
- (recommended: magnetic parts tray to hold clips)



*For inspection only:*

- No tools required, and only a few minutes to open the tonneau cover, lift the soft top rear, and look at the cylinders...

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Mercedes R129 Tonneau Cover Lock Cylinder Removal Guide, page 1 of 7



1. Open the tonneau cover.  
(If your tonneau cover should not open or unlock automatically, you can unlock it with the MB supplied tool with the 5-mm Allen wrench at one end. The tonneau cover unlocking bolt is hiding between the roll bar and the rear seat side panel...)



2. Raise the soft top, and keep the rear of the soft top raised.
3. Inspection for leaks:



(Passenger side rear lock, next to tonneau cover lift cylinder...)

(Passenger side rear lock, next to tonneau cover lift cylinder...)

The tonneau cover lift cylinders are mounted upright, and they have a groove below the point from which they would be leaking. If you don't find any oil at first, cycle the roof a few times and check again!

---

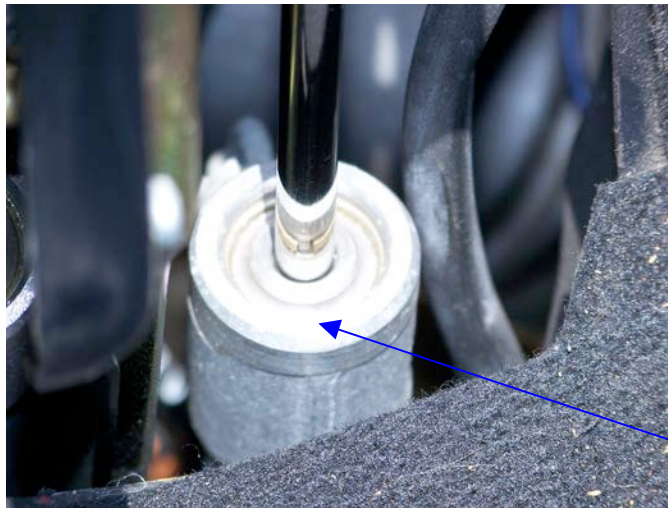
Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

*Once the leak is substantial enough, the oil will work its way down the front of the trunk, eventually dripping behind your rear tires. Your hydraulic system may eventually not work properly when the hydraulic fluid level gets too low, and the cylinders cannot develop enough pressure. Your hydraulic pump may suffer damage when working with low fluid levels.*

*The seal material used in the OEM cylinders is usually rated for a shelf lifetime of 10 years (replacement cylinders at your dealer may have been on the shelf for awhile already...), and has been designed into the system at the latest in the 1980s. Top Hydraulics, Inc. uses enhanced, more modern seals that provide for extended use, while making an excellent seal.*

The picture below shows the top of a tonneau cover lift cylinder that is not leaking: the grooved surface is clean and oil free...

Once either the rear lock cylinder or the tonneau lift cylinder leak substantially, the oil will naturally drain down the front of your trunk and end up behind your tire. Thus, if you already have oil spots behind your rear tire, this could be from the rear locking cylinder, as well as the tonneau lift cylinder...



(No oil in top groove)

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

4. Start the tonneau cover lift cylinder removal with an empty trunk. Remove the windscreen cover, if equipped. Removal of the CD player can be avoided, but is optional.



5. Remove fuse panel cover on the trunk's front wall: open it, and carefully unclip it.



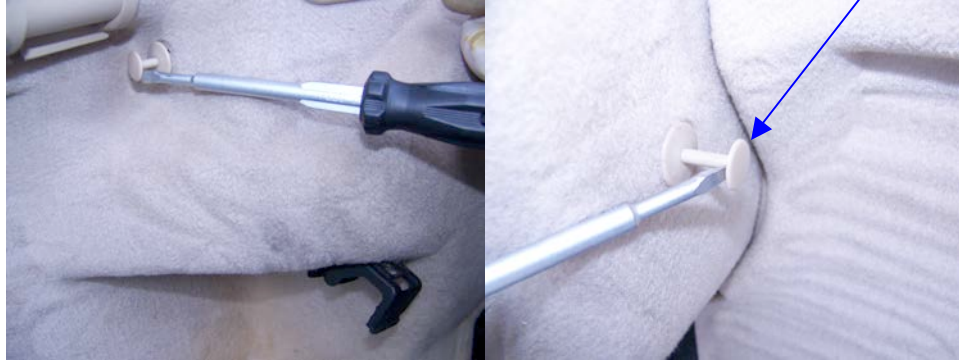
6. Remove the floor mat and the battery cover/passenger side trim panel by unscrewing the clip on the top (if the clip still exists in your car...).



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

7. To remove the carpeted panels in the front and on the driver side of the trunk, remove all panel clips holding them down. The clips are secured with pins that need to be pushed out with a flat screwdriver first.



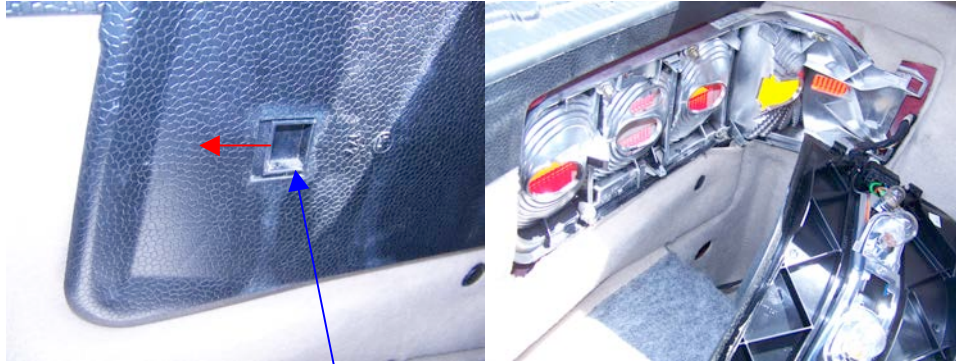
8. Removal of the side panel on the driver side can be cumbersome if there is a CD changer installed. You can work on the lock and/or tonneau lift cylinder removal by only bending the panel back to make enough room. Even the front panel does not have to be removed completely; it has to be pulled back on the passenger side, though, as shown in the picture below...



9. (If you want to 'play it safe', then remove the CD changer, remove the left tail light assembly, and pull out the left carpeted trunk panel)

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.



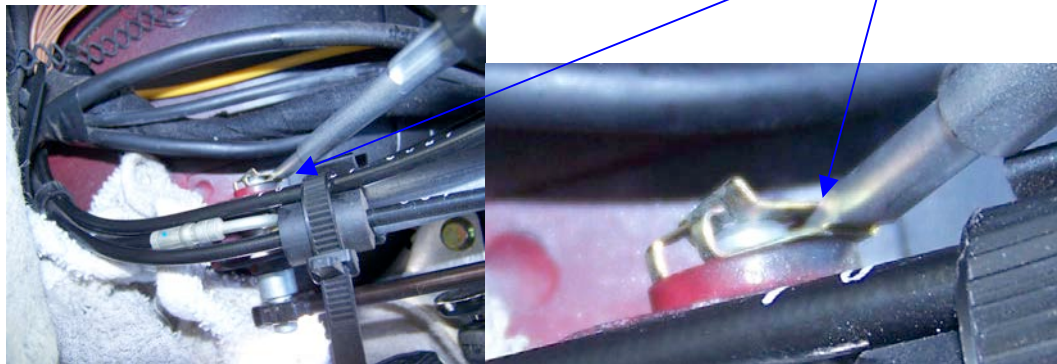
(Pull the spring-loaded latch of the tail light assembly, swing the assembly open, and remove it.)

10. Remove the c-clip on top of the tonneau lift cylinder, slide the cylinder off its pivot pin, and push the piston all the way down (to avoid it getting scratched).



(Remove the c-clip)

11. Remove retaining clip on lower cylinder pivot bolt by pushing the center spring up and sliding the clip over the pin.



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

12. Remove the hydraulic line clips and place a rag under the cylinder. Make sure not to loose the clips; MB does not sell them separately! Carefully twist the hydraulic lines out of the cylinder, and wrap them in the rag.
13. Wrap the cylinder in a rag and remove from trunk. Carefully remove remaining oil from the cylinder by repeatedly extending and retracting the piston. Make sure to either have the hydraulic line receptacles covered with a rag, or to squirt the oil into an oil collection container. Watch out, the oil sprays pretty far and wide!

**Replace in reverse order.** Remember all electrical connections and the clips on the hydraulic lines... The air will eventually be vented from the system, after you have cycled it a number of times.

Remember to wrap the cylinders carefully when shipping to us, so that the pistons do not get scratched during transport.

For repair and/or seal replacement, ship cylinders to:

Top Hydraulics, Inc.  
3235 Pacific View Drive  
Florence, OR 97439  
USA

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Mercedes R129 Tonneau Cover Lock Cylinder Removal Guide, page 7 of 7

## R129 Tonneau Cover Lock Cylinders

Level of difficulty: Quite easy – very rewarding!

Tools needed:

- M10 socket and ratchet
- Flat screwdriver or needle nose pliers or small hooked tool for removal of hydraulic line clip
- Rags or paper towels
- (Recommended: magnetic parts tray to hold screws and clips, and the MB-supplied soft top tool with a 10-mm box wrench at one end)



*For inspection only:*

- No tools required, and only a few minutes to open the tonneau cover and look at the cylinders...

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

1. Open the tonneau cover.  
(If your tonneau cover should not open or unlock automatically, you can unlock it with the MB supplied tool with the 5-mm Allen wrench at one end. The tonneau cover unlocking bolt is hiding between the roll bar and the rear seat side panel...)



2. Inspection for leaks:  
The locking cylinders are mounted upright, and they have a groove below the point from which they would be leaking. If you do not find any oil at first, cycle the roof a few times and check again!

Once the leak is substantial enough, the oil will work its way down the soft top storage well, eventually dripping down in front of your rear tires. Your hydraulic system may eventually not work properly when the hydraulic fluid level gets too low, and your hydraulic pump may suffer damage.

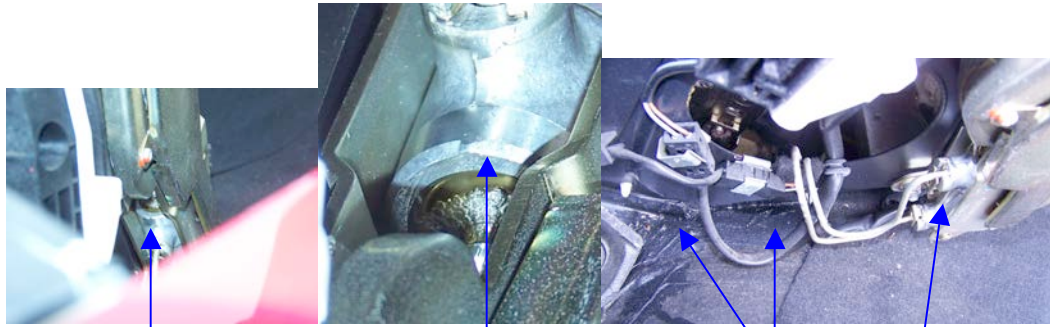
The seal material used in the OEM cylinders is rated for a shelf lifetime of some 10 years (replacement cylinders at your dealer may have been on the shelf for awhile already...), and has been designed into the system at the latest in the 1980s. Top Hydraulics, Inc. uses enhanced, more modern seals that provide for extended use, while making an excellent seal.

(The pictures below show a driver side cylinder leaking substantially – see the bubbly oil at the junction of piston and cylinder body... The oil is bubbly on account of the system running low on hydraulic fluid. Any oil in this area means that your cylinder is leaking! Also, see the oil that has already dripped down into the soft top storage well bottom. It will naturally drain down in front of your rear tire, taking the same path a leak from the main lift cylinder would take. Thus, if you already have oil spots in front of your rear tire, this could be from the tonneau locking cylinder, as well as the main lift cylinder.)

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.





(LH lock cylinder, leaking) (zooming in) (soft top well, oily, with lock cylinder)

3. Place rag under lock assembly and unplug microswitch.



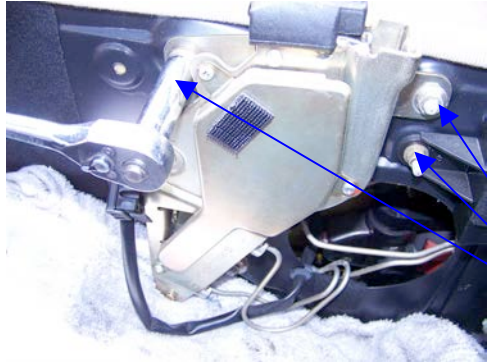
4. Remove hydraulic line clips. Push down upper one, pull up lower one. Watch out not to loose the clips; MB does not sell them separately!



---

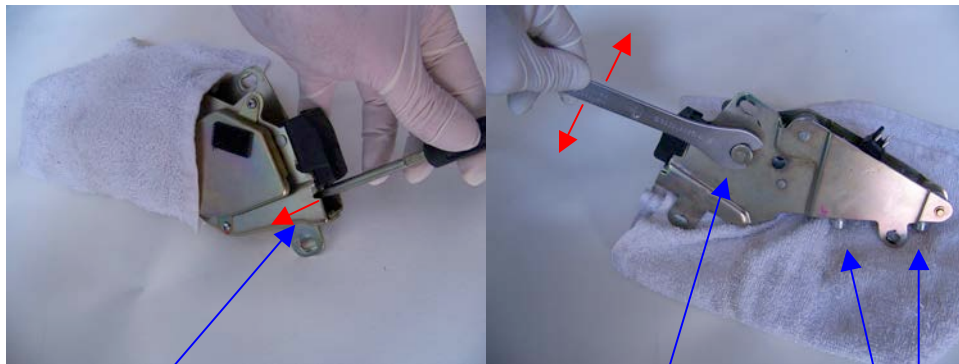
Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

- Remove the three nuts that hold the lock assembly, and remove lock assembly by carefully twisting it off the hydraulic lines. Wrap assembly in rag to avoid oil spills (in particular on yourself...).



(Remove three 10-mm nuts)

- Push oil out of locking cylinder:  
 With the lock assembly wrapped in a rag (make sure to cover the two hydraulic line receptacles), push down the latch with a screwdriver, as if the tonneau cover was coming in to latch. Move the mechanism back and forth all the way several times – ideally by using the MB-supplied soft top tool (flat wrench with the Allen wrench on the other end). If you don't cover the cylinder, oil is almost sure to squirt all over you...



(use screwdriver to release linkage)

(Use soft top tool or pliers to move linkage, and drain the cylinder)

(Watch out for oil squirting out here!)

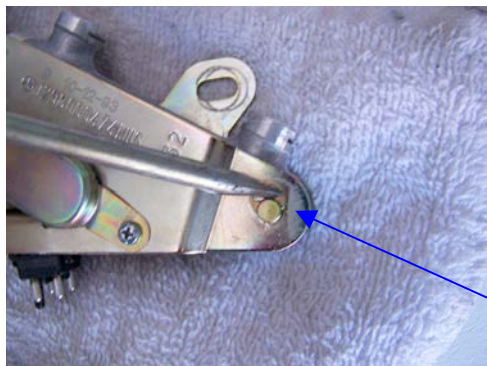
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
 Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

**Important:** Top Hydraulics would be happy to accept the locking cylinders mounted to the locks, at no extra charge! The reason is, the pistons can be hard to remove from the locks, on account of the threadlock used. There is a significant chance of first-timers scratching up the piston when trying to remove the cylinder from the lock without first softening the threadlock sufficiently.

If you would like to latch your tonneau cover while the cylinders are out for repair, or if you are concerned about shipping costs from overseas, here is how to remove the cylinders from the locks:

- Remove the c-clip on the cylinder pivoting bolt with a small, flat screwdriver. Remove the pivoting bolt.



(Remove the c-clip)

- Soften the threadlock. You can use, in order of effectiveness: heatgun (be careful not to overdo it), acetone (nail polish remover), or WD-40 (over-night application).



(threadlock)

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

- Hold the part into which the cylinder is screwed firmly in a vise, pliers, or an appropriate wrench, and carefully use a narrow 5-mm wrench to unscrew the cylinder from the lock. **Be very careful not to scratch the piston surface (do not use pliers or vise grip on the piston!!!), as scratched pistons make the cylinders irreparable. (And if you do scratch it, let us know, and we will likely have a replacement for you...)**

**Replace in reverse order**, and don't forget to use threadlock where it was originally applied – a single drop goes a long way! Remember all electrical connections and the clips on the hydraulic lines... The air will eventually be vented from the system, after you have cycled it a number of times.

Remember to wrap the assemblies carefully when shipping to us, so that the pistons do not get scratched during transport.

For repair and/or seal replacement, ship cylinders to:

Top Hydraulics, Inc.  
3235 Pacific View Drive  
Florence, OR 97439  
USA

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

## Bow Extension Cylinders

Level of difficulty: Fairly easy to intermediate – very rewarding! Requires some patience.

Tools needed:

- 5-mm Allen wrench or socket (only for '90-'95 models)
- Needle nose pliers (for '96-'02 models)
- Flat screwdriver
- Phillips screwdriver
- Rag or paper towels
- Wire or match, cut to 1-1/4" length
- (recommended: magnetic parts tray to hold screws and clips, and magnetic retrieval tool for dropped parts)
- (luxury: E-clip removal tool)



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)

[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)

(+001) 541 902 3214

*For inspection only:*

- No tools required, and only a few minutes to open the tonneau cover and look at the cylinders...

1. Open the tonneau cover.  
(If your tonneau cover should not open or unlock automatically, you can unlock it with the MB supplied tool with the 6-mm Allen wrench at one end. The tonneau cover unlocking bolt is hiding between the roll bar and the rear seat side panel...)



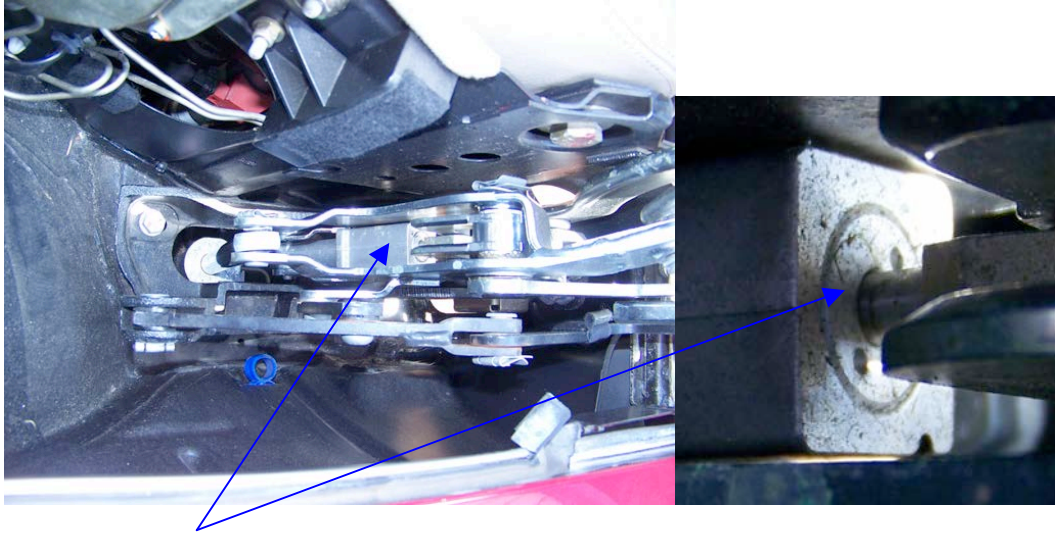
2. Raise the soft top, and keep the rear of the soft top raised. Do not latch the front of the soft top – keep a soft spacer between it and the windshield header.

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

### 3. Inspection for leaks:



The bow extension cylinders are located inside the soft top frame, several inches above the main lift cylinders.

The position of these cylinders changes as the top moves. That makes it possible not to see oil on top of the cylinder, even when the cylinder is leaking. The cylinder shown has, if any, only a minor leak: there are no signs of running or accumulated oil, and the only sign of minor leakage is how the dust is sticking flatly to the surface and looking somewhat darker than other dust in the area. This particular cylinder may be a candidate for 'rebuilding while the other ones are getting done, anyway'. Remember, you have the tools ready, and you will have to remove the same trim panels to remove these cylinders as for the removal of the main lift cylinders, anyway. Also, having these cylinders rebuilt together with other ones will not significantly extend the period of time that your car is out of commission.

When these cylinders leak, the oil will drain in front of your rear tires.

*Your hydraulic system may eventually not work properly when the hydraulic fluid level gets too low, and the cylinders cannot develop enough pressure. Your hydraulic pump may suffer damage.*

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

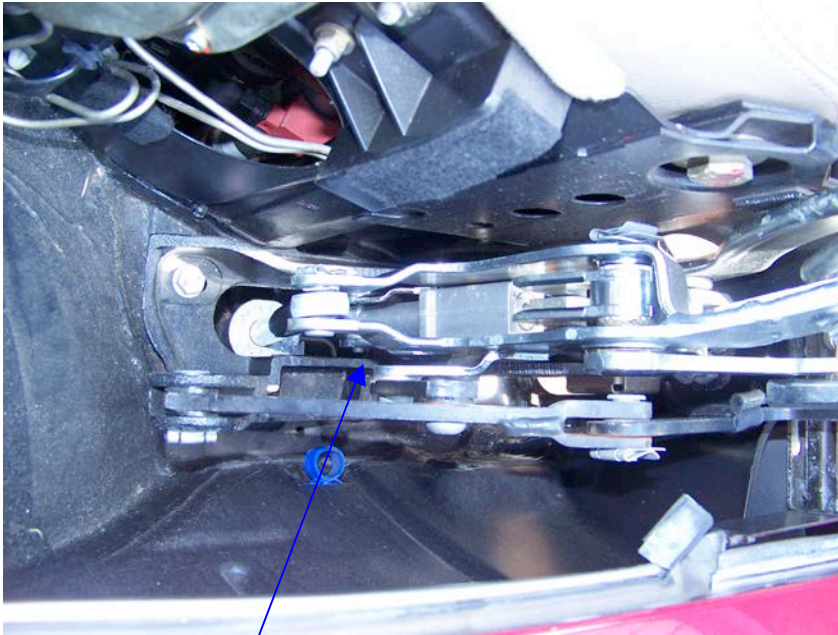
[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

*The seal material used in the OEM cylinders is usually rated for a shelf lifetime of 10 years (replacement cylinders at your dealer may have been on the shelf for awhile already...), and has been designed into the system at the latest in the 1980s. Top Hydraulics, Inc. uses enhanced, more modern seals that provide for extended use, while making an excellent seal.*

4. To remove the bow extension cylinder, you will need to remove the spring loaded, metal trim panel on top ("top case plate"), the welting inside the door jamb, and the trim panels around the rear compartment area. You do not have to remove the carpeted trim panels all the way if you are working on the bow extension cylinders only. We will show both options below.

For '90-'95 models, the front pin holding the bow extension is a bolt with a 5-mm Allen head. For '96-'02 models, it is a pin with E-clips (aka C-clips) on both ends.

On '96-'02 models, remove the inner E-clip while the rear of the soft top and the tonneau cover are up at the same time. At this point, the "front" pin of the bow extension cylinder appears to be in the bottom position – see next photo. It is easy to drop the E-clip during this procedure; that is where an E-clip removal tool comes in handy. Second best is a magnetic retrieval tool...



(Remove outer E-clip on '96-'02 models)

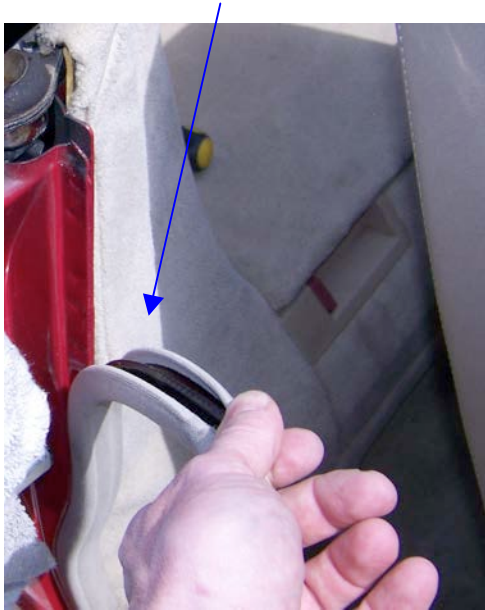
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214



5. Remove the welting inside the door jamb. (This may be glued in newer models)



Release the rubber molding from the top case plate with a flat screwdriver. (This may not be necessary on newer models)



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

Remove three Phillips screws to lift out the spring loaded top case plate assembly – use a stubby screwdriver, or a ratchet. There is one screw towards the inside, and two screws towards the outside (quarter panel). Theoretically, the outer screws only need to be loosened to lift out the plate assembly. The rubber drain hose pulls out easily.



Remove the Phillips screw holding the rear compartment trim panel.



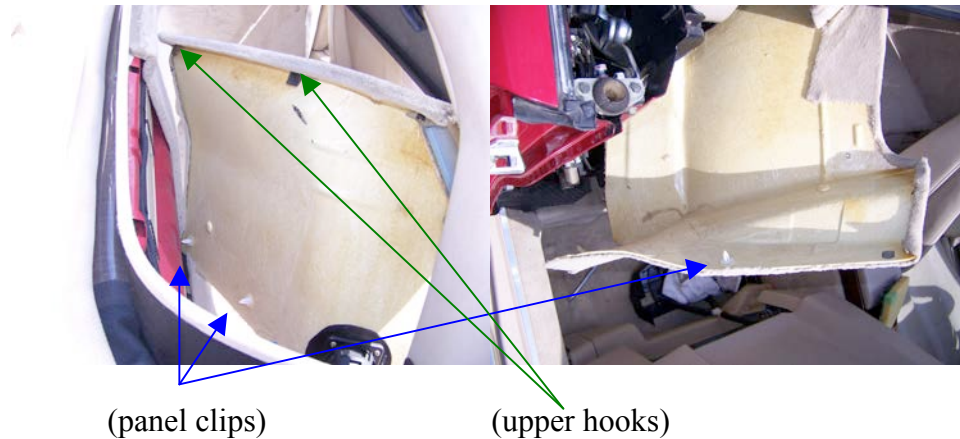
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

Remove the rear compartment side trim panel – take a look at the photo below first, showing how the panel is fastened. Full removal of the panel is not required if you are only removing the bow extension cylinder, albeit advisable. We are showing it here, anyway. Farther below, we'll show you how far the panel has to be pushed back in order to access the Allen screw hiding behind the panel.

Start pulling from the upper outer corner, locate all the fasteners and pull in their position, then lift up the panel out of the hook in the rear top. It is best to have the roll bar in the raised position for this; removal of the windscreen is optional.



Unplug the rear speaker, if equipped.

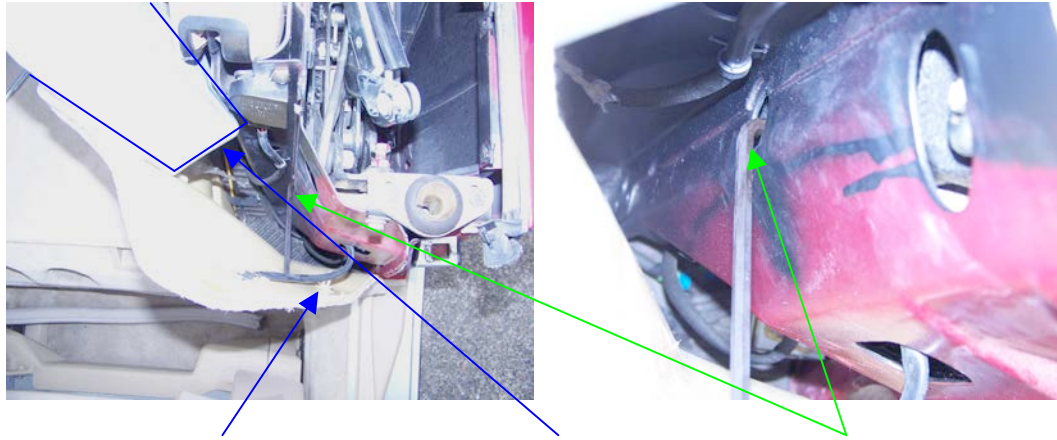


---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

Let the soft top drop into its storage well, but keep the tonneau cover open. Locate the access hole for the front bow extension cylinder bolt or pin on the inside of the door jamb. On '90-'95 models, remove with a 5-mm Allen wrench or socket – start on the passenger side! **On '96-'02 models, push the pin out with a small screwdriver (you have previously removed the E-clip).** For re-installation on '96-'02 models, push the pin back in from the inside with needle nose pliers.



Driver side door jamb shown, with oil bottle as a spacer, and Allen wrench inserted



(Front pin/bolt with Allen head for '90-'95 models)

---

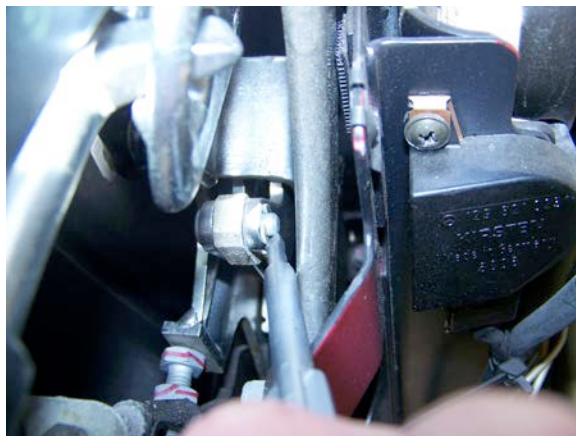
Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

To remove the rear pivot pin of the bow extension cylinder, prepare the soft top position as follows: While raising the soft top to about its highest position, rest the rear just above the tonneau cover hinges, and buffer with a rag so that the rear does not get damaged.



Remove the c-clip as shown below, and pull out the pivot pin. Be careful not to loose the c-clip, or the pin. Hold on to the soft top.

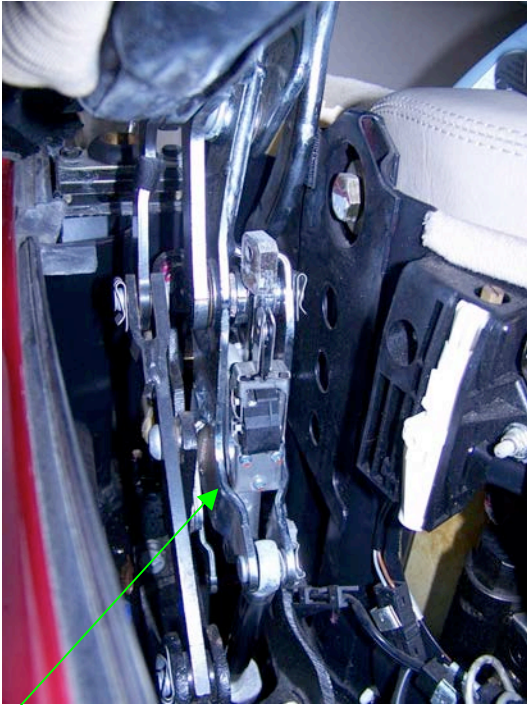


Move the soft top forward; try not to latch it. The driver side cylinder must be removed with the top in this position, otherwise the micro switch on that cylinder cannot clear the soft top frame and will be damaged.

---

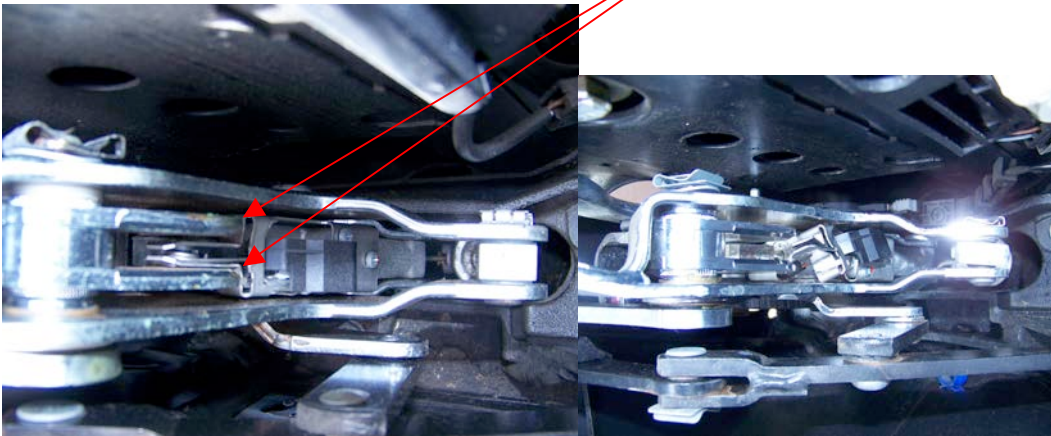
Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214



(You can “cheat” a little and lift the rear of the soft top a few inches, as done in this photo. The arrow shows where the micro switch needs to clear the soft top frame...)

If you want to remove the cylinder from the outside, as shown above, be careful not to lift the rear of the soft top too high, or the frame will crush the switch as seen in the photo below:



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

It is safer to remove the cylinder from the inside, with the top closed, but you can do it from outside once you understand how the switch could get crushed...

Remember to push in the cylinder rod as soon as possible, so that it will not get scratched.

Pull out the cylinder and remove the hydraulic line clips with a flat screwdriver, or an angled tool. Make sure you can identify the respective positions of the hydraulic lines once they have been removed! The lines have numbers stamped on them, which correspond to markings on the cylinders. However, in some cases the numbers might be hard to read. Wrap the cylinder in a rag, and carefully twist it off the hydraulic lines. Wrap the hydraulic lines in a rag, as well.

Empty the cylinder of hydraulic oil by cycling it with the oil discharging into the rag. Be careful, the oil could squirt all over you if you don't cover the exit holes!

**Replace in reverse order, and use the 'match trick' as shown on the following pages.** Remember all electrical connections and the clips on the hydraulic lines... Also, remember that the rounded part of the clips points towards the outside of the car, and that the thicker side of the block attached to the left side bow extension cylinder is oriented towards the switch (see notes below).

After re-installation, the air will eventually be vented from the system, after you have cycled it a number of times.

Remember to wrap the assemblies carefully when shipping to us, so that the pistons do not get scratched during transport.

For repair and/or seal replacement, ship cylinders to:

Top Hydraulics, Inc.  
3235 Pacific View Drive  
Florence, OR 97439  
USA

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

The “Match Trick” for re-installation:

A common difficulty is that the micro switch assembly could get crushed by the soft top frame, when moving the top around to install the two pins anchoring the cylinder. To avoid this, we recommend the following procedure for re-installation. Before we get into the detail of this procedure, please remember that the thicker part of the rectangular block attached to the cylinder must be oriented towards the switch assembly, so that it will engage the switch’s lever when the cylinder is retracted.



As the cylinder rod retracts, the top piece moves a lever that releases the micro switch.

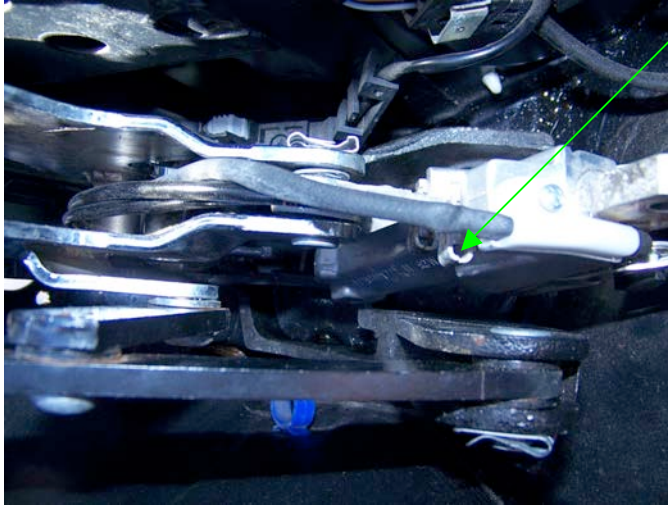
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214



- 1) With the rear of the soft top raised, install lines and micro switch as shown. Make sure that the lines are in the original order, and that the clips are fastened with the rounded side pointing towards the outside of the car.



- 2) With the rear of the soft top raised only a few inches, slide the cylinder back into its original position. The cylinder needs to be almost upright now. Watch out not to crush the switch by excessive movement of the soft top – see removal instructions above.
- 3) Cut a match or a piece of wire to about 1-1/4" length (30-35mm), which is about the length of the anchoring pin.



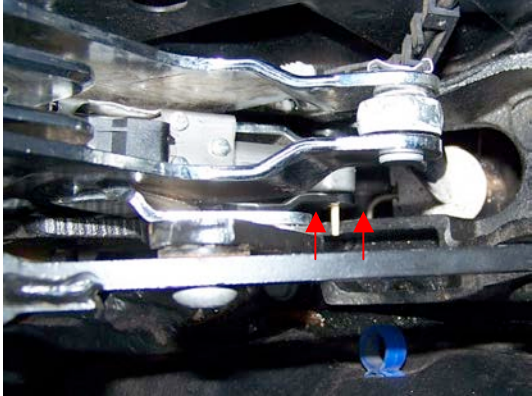
(30-35mm long piece of wood or wire or plastic tubing)

---

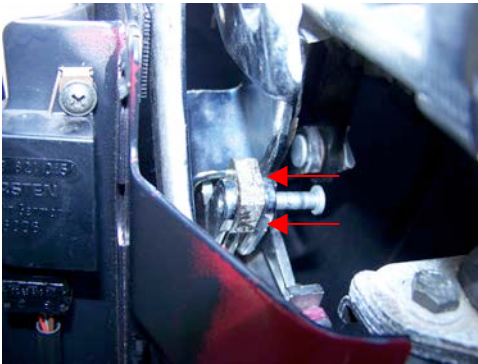
Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

- 4) Line up the bow extension cylinder's bottom hole with the matching hole in the frame, and insert the piece of wood or wire all the way.



- 5) Lower the rear of the soft top, pull out the cylinder rod to match up with the frame, and re-install the upper anchoring pin with spring and e-clip.



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

- 6) Lower the soft top into the storage well, and remove the piece of match or wire through the hole in the door jamb.



- 7) Re-install the lower anchoring pin.

Test the micro-switch: when the top is up, you should hear the switch clicking as you move the rear of the top almost all the way up. Electrically, the switch is now closed.

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

[www.tophydraulicsinc.com](http://www.tophydraulicsinc.com)  
[info@tophydraulicsinc.com](mailto:info@tophydraulicsinc.com)  
(+001) 541 902 3214

## Main Lift Cylinders

Level of difficulty: Not very hard, only a number of steps involved – requires some patience, but is very rewarding!

Tools needed:

- Stubby Phillips screwdriver, or ratchet with Phillips bit
- Ratchet with 10-mm and 14-mm socket
- Electrical or packaging tape
- Flat screwdriver or needle nose pliers or small hooked tool for removal of hydraulic line clips
- Rag or paper towels
- (recommended: magnetic parts tray to hold screws and clips)



*For inspection only:*

- No tools required, and only a few minutes to open the tonneau cover and look at the cylinders...

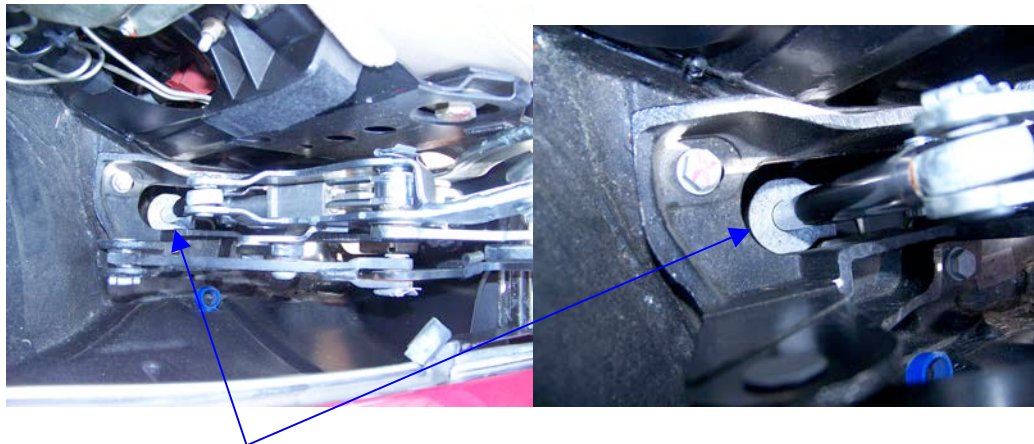
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

1. Open the tonneau cover, raise the soft top, and keep the rear of the soft top raised. (If your tonneau cover should not open or unlock automatically, you can unlock it with the MB supplied tool with the 5-mm Allen wrench at one end. The tonneau cover unlocking bolt is hiding between the roll bar and the rear seat side panel...)



2. Inspection for leaks:



The main lift cylinders are located at the bottom of the soft top storage well. They are mounted upright, and would be leaking where the piston comes out of the cylinder. If you are not sure whether the top surface of the cylinder body is oily, wipe it off, cycle the roof a few times, and re-inspect. When these cylinders leak heavily, the oil will drain in front of your rear tires. Starting in the mid 90's, these cylinders were not made with a flat top, but have a groove on the top (easy to spot the leaking oil in it!).

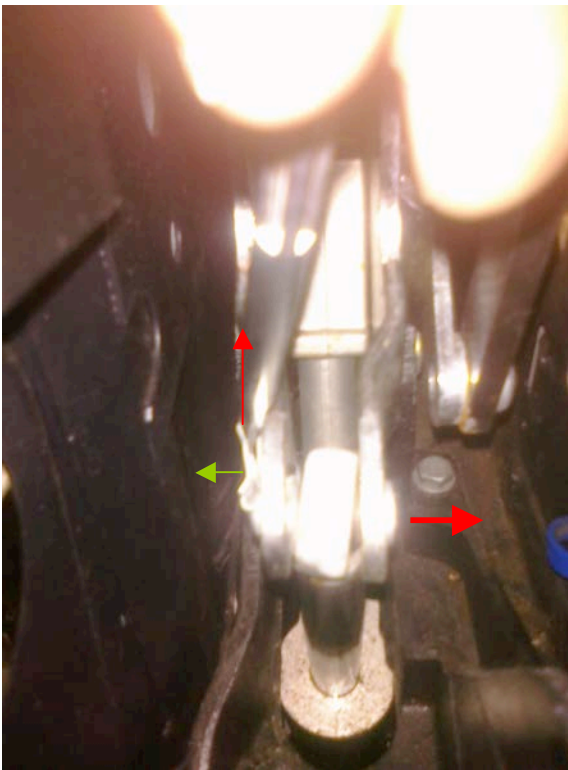
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

*Your hydraulic system may eventually not work properly when the hydraulic fluid level gets too low, and the cylinders cannot develop enough pressure. Your hydraulic pump may suffer damage.*

The seal material used in the OEM cylinders is usually rated for a shelf lifetime of 10 years (replacement cylinders at your dealer may have been on the shelf for awhile already...), and has been designed into the system at the latest in the 1980s. Top Hydraulics, Inc. uses enhanced, more modern seals that provide for extended use, while making an excellent seal.

3. To remove the main lift cylinders, you will need to remove the spring loaded, metal trim panel on top ("top case plate"), the welting inside the door jamb, and the trim panels around the rear compartment area. But first, remove the clip and upper mounting pin of the main cylinders and push the cylinders in all the way. Remember to move the soft top by hand from now on, until the cylinders are re-installed and re-connected.

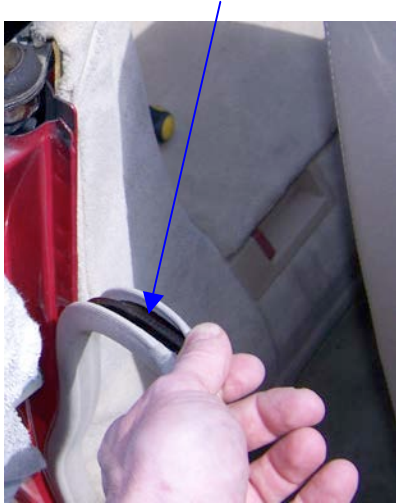


---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

To remove the upper clip and mounting pin, push the clip open as shown (green arrow), and slide it off the pin. Pull out the pin, and push in the cylinder rod to the bottom so that it won't get scratched.

4. Remove the welting inside the door jamb. (May be glued in newer models.)



Release the rubber molding from the top case plate with a flat screwdriver. (May not be necessary in newer models.)



---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Remove three Phillips screws to lift out the spring loaded top case plate assembly – use a stubby screwdriver, or a ratchet. There is one screw towards the inside, and two screws towards the outside (quarter panel). Theoretically, the outer screws only need to be loosened to lift out the plate assembly. The rubber drain hose pulls out easily.



Remove the Phillips screw holding the rear compartment trim panel.

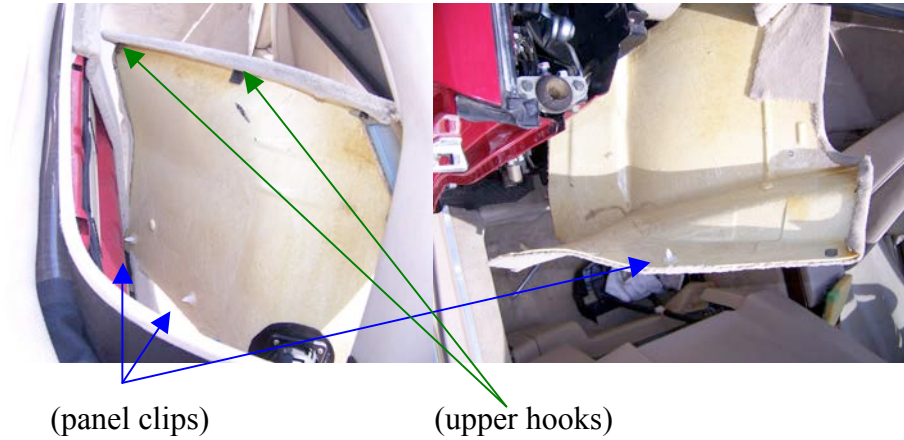


Remove the rear compartment side trim panel – take a look at the photo below first, showing how the panel is fastened. Start pulling from the upper outer corner, locate all the fasteners and pull near their position, then lift up the panel out of the hook in the rear top. It is best to have the roll bar in the raised position for this; removal of the windscreen is optional.

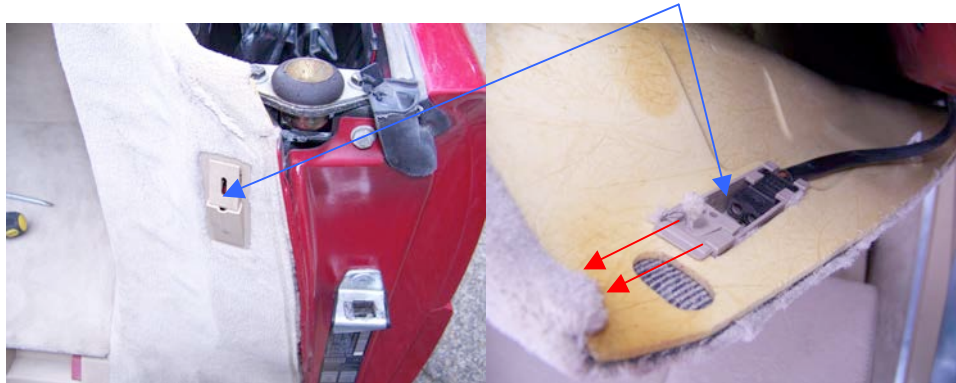
---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

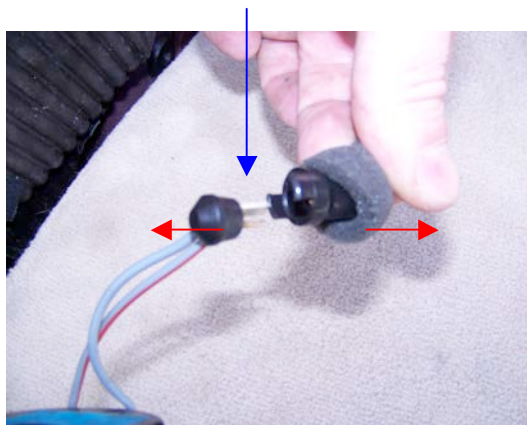




On the driver side, the connector for the hardtop defroster needs to be slid out of the carpeted panel, once the panel has been loosened from the compartment wall. It slides upward from the inside.



Unplug the rear speaker, if equipped.

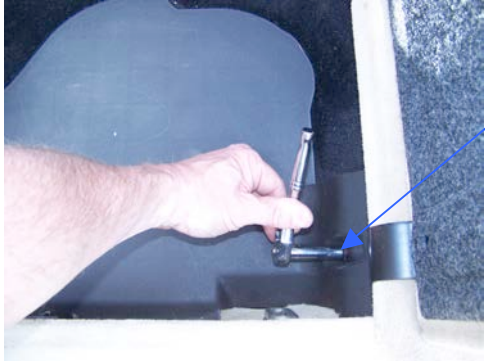


---

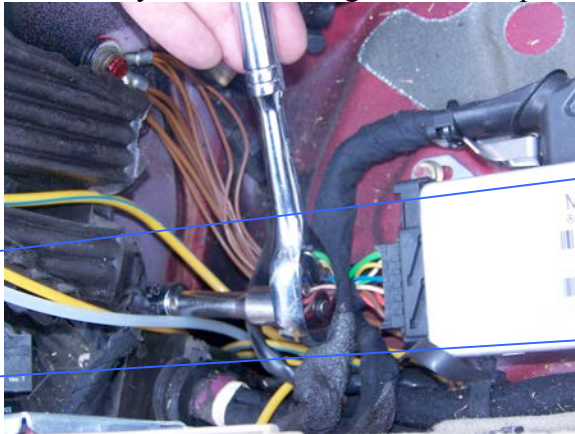
Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Remove the Bose system in the driver side rear compartment, if equipped. It is fastened with three bolts that can be reached with a long extension on a ratchet, and it is glued down with putty. The putty's bond can be quite strong – best pull from the rear of the assembly, where you have the most leverage. Apply even, ever increasing force, until the putty type glue on the bottom releases.

Remove the passenger side compartment floor panel with a 10-mm wrench or socket.



Find the 14-mm hex head for the main cylinder's bottom bolt. It is below (not behind) a bunch of wires and foam rubber. Start on the passenger side and try to gain the same perspective as shown in the photo below – roughly follow the front edge of the controller module all the way to the outer edge of the compartment.

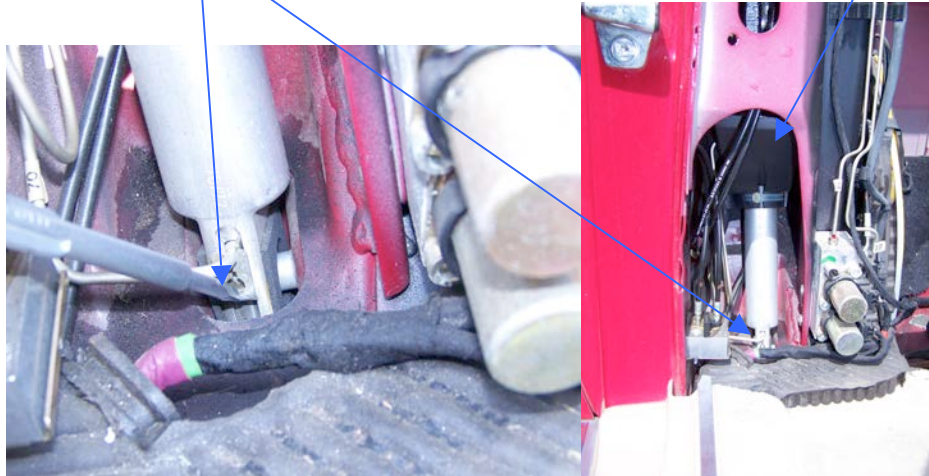


To be on the safe side, you can tape the 14-mm hex bolt to your socket once it has been almost unscrewed, and tape the socket to the ratchet's extension. This would be a safeguard against the bolt accidentally falling into the rocker panel, where it is very difficult to retrieve. Sometimes, these bolts require a good amount of torque to be removed. Use a ½" ratchet if you have one...

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

Push down the lower clip for the hydraulic line, then pull down the rubber boot and push up the upper clip



Put a rag under the lower hydraulic line, pull out the hydraulic lines and pull out the cylinder. The cylinder has a rubber boot attached to it. It is tied on with a tie wrap. Either cut the tie wrap, or gently slide the cylinder out of the boot with the tie wrap in place. If you want to take out the boot with the cylinder, pull the drain hose upward out of the chassis and maneuver the hydraulic line through the cutout in the boot first. Wrap the cylinder in a rag.

Empty the cylinder of hydraulic oil by cycling it with the oil discharging into the rag or a waste oil container. Be careful, the oil could squirt all over you if you don't cover the exit holes!

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.

**Replace in reverse order.** Remember all electrical connections and the clips on the hydraulic lines... The air will eventually be vented from the system, after you have cycled it a number of times.

On the old style cylinders (through '94/'95), the lower receiver ball for the mounting bolt sometimes moves around fairly easily. It may require some patience and simultaneous rattling of cylinder and mounting bolt against each other to push the bolt into place.

Remember to wrap the assemblies carefully when shipping to us, so that the pistons do not get scratched during transport.

For repair and/or seal replacement, ship cylinders to:

Top Hydraulics, Inc.  
3235 Pacific View Drive  
Florence, OR 97439  
USA

---

Use as a guideline only – apply common sense, be careful, and wear protective gear!  
Top Hydraulics, Inc. is not responsible or liable for personal injury or material damage.