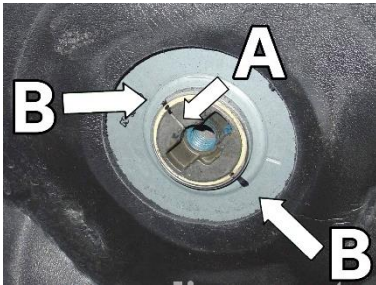


Installation Guide

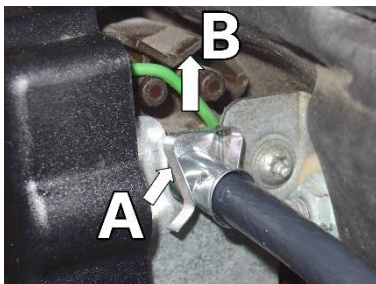
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Convertible Top Gear 98756117903-PRM, 98756118003-PRM

Porsche Boxster convertible top assemblies utilize two motors, transmissions, cables, linkages, relays and micro switches. Worn or broken worm drive gears are a common failure, which should be upgraded with **Premium** brass gears for proper convertible top operation and maximum lifespan.



STEP 1 - Open top and put into service position. You may need to help the top open by pressing the button and pushing the top back gently with your hand. Remove both linkages and the 19mm bolt, which holds the boomerang shaped armature to the left and right-side transmissions. Operate the convertible top button in the closed direction until motor stops. Mark position of indentation (arrow A) to the case (B arrows). Do same for the open direction. This will help properly orient micro switch cams during reassembly.



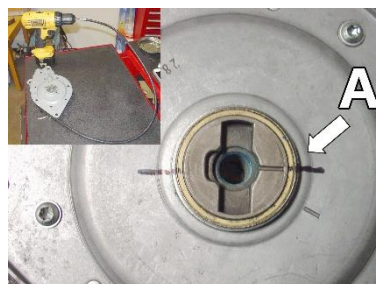
STEP 2

Release the cables from the motors by sliding the metal retaining clip (arrow A) up off of the cable (arrow B).



STEP 3

Remove the transmissions from the car by removing the three 13mm nuts (A arrows) and unplugging the micro switch electrical connector from the left transmission (arrow B).

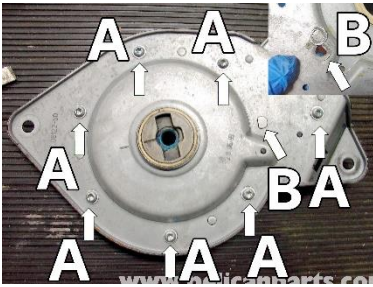


STEP 4

With the transmission removed from the car, use a drill connected to the cable (inset picture) to turn the transmission to the closed mark (arrow A). This will make marking the planetary gears easier.

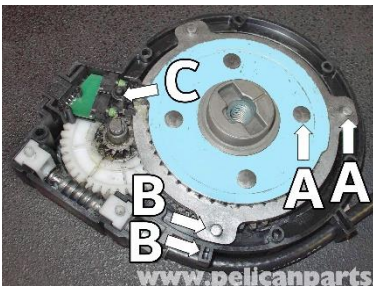


Installation by a professional technician is recommended. Refer to the factory repair manual for vehicle-specific service procedures for this part. Tighten all hardware to factory torque specifications and observe all repair manual cautions and warnings. Use safety stands whenever beneath a vehicle and always wear protective eyewear.



STEP 5

Remove the seven Torx T25 screws (A arrows) that hold the cover to the transmission case, and remove the cover. When you have the cover removed, make sure to set the thrust washer aside, which will likely stick to the cover (B arrows).



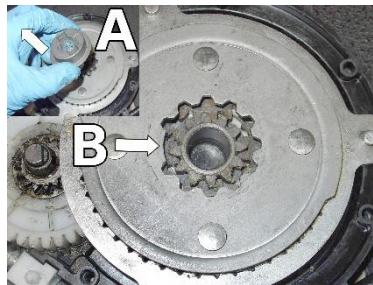
STEP 6

Mark the two studs (A arrows) with a marker or scribe. This will help make sure that the micro switch cam (arrow C) goes back in its proper position on reassembly. Also photograph or note the position of the ring gear in the housing (B arrows). This will help align the ring gear studs with the holes on the cover when putting the cover back on.



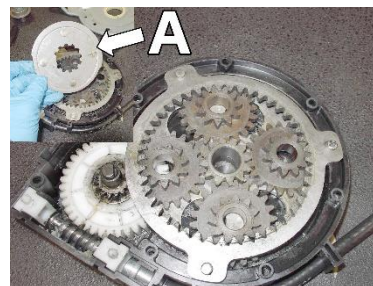
STEP 7

Remove the micro switch. Make sure to carefully clean the grease from the sensor arm (arrow A). Early Boxsters may not use a micro switch, and the right-side transmission does not have a micro switch. If your transmission does not have a micro switch, skip this step.



STEP 8

Remove the center gear (inset picture, arrow A), and photograph or note the position of the indexing tab (arrow B), which indexes the center gear to the micro switch cam.



STEP 9

Remove the micro switch cam (inset picture, arrow A). Now we can see the planetary gear set used to achieve the torque necessary to open the top.



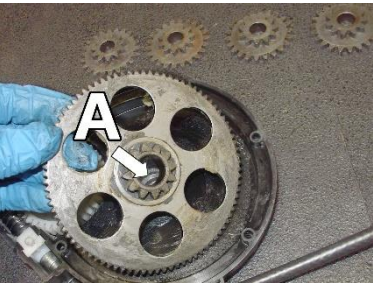
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STEP 10 Remove the ring gear.



STEP 11 Remove the four planetary gears (A arrows). These are identical so there's no need to mark them, but do remember that they are installed with the small gear side facing up.



STEP 12

Remove the sun gear plate. Make sure not to lose the thrust washer (A arrow) beneath, which could stick to the back of the sun gear plate or stay in the housing.



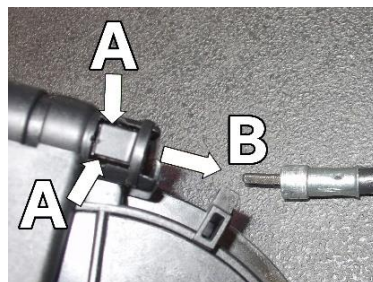
STEP 13

Now we clearly see the culprit of all our convertible top woes...the broken gear! Remove the cracked plastic gear from the housing, and photograph or note the angle of the teeth to ensure the teeth on the new gear are angled in the same direction. (The teeth on left and right-side gears are angled in opposite directions.)



STEP 14

Remove the axle for the broken gear. Make sure to remove the thrust washer (see arrow) along with the axle.

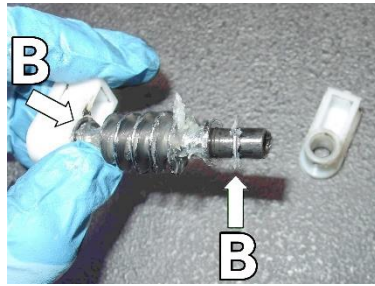
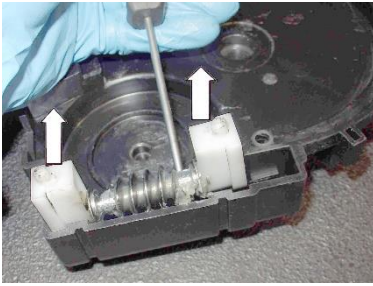


STEP 15

Insert a small flat blade screwdriver (A arrows) to release the cable housing, and gently pry upward while pulling the cable (arrow B) out of the transmission housing. If your current cables are worn or damaged, replace with Convertible Top Cable **986 561 717 03** (1997 to early 2007) or **987 561 107 00** (late 2007 to 2012).



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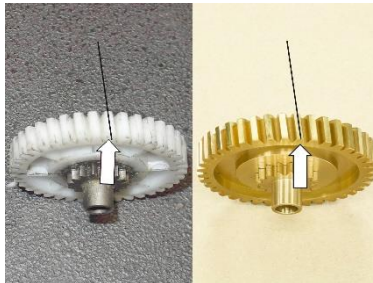


STEP 16

Lift worm gear and bushings out of housing.

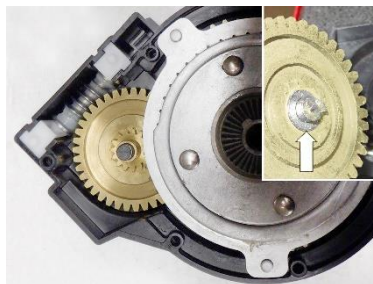
STEP 17

Separate worm gear & thrust washers (B arrows) from bushings. Remove old grease using a clean cloth and plastic-safe cleaner.



STEP 18

The gears are specific to the left and right transmissions, and are not interchangeable. When installed, the teeth (white arrows) of each new gear must be angled the same direction as the original gear, otherwise it will not mesh with the worm gear correctly.



STEP 19

Assembly is the reverse of disassembly. Liberally slather each gear with a quality plastic-safe grease. This photo shows the worm gear and worm wheel gear installed. Do not forget the thrust washers on the back side (see arrow, inset photo).



STEP 20

A good rule of thumb is grease anywhere that there is metal-to-metal contact. This picture shows the sun gear greased between the thrust washer and the gear plate (see arrow). After the transmissions are reassembled, put them in the car and operate them all the way open and all the way closed a few times. Make sure that the transmissions operate smoothly.



STEP 21

Connect the armature, then perform the synchronization process.

Tip: When putting the boomerang shaped armature back on the transmissions, make sure that the mark on the armature (arrow A) lines up with the indentation on the transmission shaft (arrow B, inset).



Installation by a professional technician is recommended. Refer to the factory repair manual for vehicle-specific service procedures for this part. Tighten all hardware to factory torque specifications and observe all repair manual cautions and warnings. Use safety stands whenever beneath a vehicle and always wear protective eyewear.