

General

This section covers repairs to the seat belts.

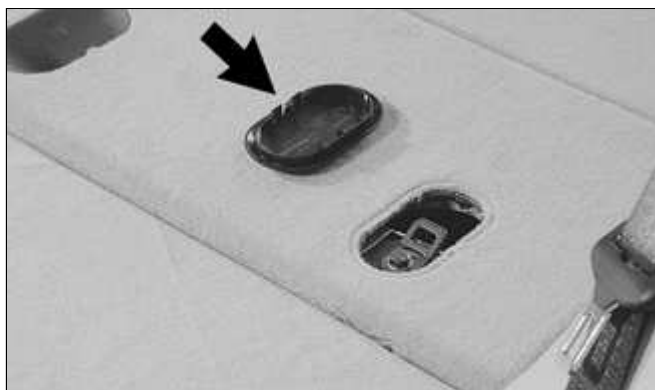
Multiple Restraint System (MRS II) electronics integrate seat belt operations and airbag deployment. Airbag repair information is covered in ⇒ [721 Airbag System \(SRS\)](#).

All E46 models are equipped with 3-point shoulder belts at four seating positions.

- ◆ Sport Wagon models are equipped with an additional 3-point shoulder belt in the center of the rear seat.
- ◆ Sedan and Coupe models are equipped with a lap belt in the center rear seat position.
- ◆ Convertible models are equipped with seat-integrated seat belt system (SGS) in the front seats.

Child safety anchors

Sport Wagon models are equipped with three child safety harness anchors behind the rear seat in the cargo compartment floor.



- ✦ Remove plastic cover (**arrow**) to access safety anchor eye.



Troubleshooting

The seat belt reel should lock when driving quickly through curves, during severe braking or in case of a collision. The automatic reel does not require any servicing and should never be opened.

In case of an accident, follow the seat belt troubleshooting procedures presented in ⇒ [Table a. Troubleshooting the automatic seat belt system.](#)

Note:

The rear bench seat belt strap may not retract fully due to increased friction between strap and seat cover. A small remaining loop in belt strap when fully retracted is acceptable.

WARNING!

- ♦ ***For maximum protection from injury, seat belts should be replaced as a set (including all hardware), if they are subject to occupant loading in a collision.***
- ♦ ***Seat belts should not be modified or repaired. The seat belt mounting points should not be changed or modified.***
- ♦ ***Do not bleach or dye seat belt webbing. Webbing that is severely faded or re-dyed will not meet the strength requirements of a collision and must be replaced. Clean belts***

with a luke-warm soap solution only.

- ♦ **Seat belts should be periodically inspected for webbing defects such as cuts or pulled threads.**
- ♦ **Immediately after replacing a damaged or worn seat belt, destroy the old belt to prevent it from being used again.**

Table a. Troubleshooting the automatic seat belt system

Problem	Probable cause	Repairs
Damage to seat belt:	Accident in which bumper impact absorbers were permanently deformed	Replace complete automatic seat belt. Also check and replace, if necessary: ♦ Seat belt mounting on car body ♦ Seat belt mounting on seat runner
Belt creased, unraveled, pinched, cut or melted	Seat belts aged or worn	Replace complete automatic seat belt.
Belt buckle or belt lock plastic casing worn, damaged or missing		
Seat belt buckle is not ejected with spring pressure when red button on seat belt lock is pressed	Seat belt lock mechanism worn or damaged	Replace seat belt lock.
Seat belt automatic reel does not lock when pulled out suddenly.	Automatic reel defective	Replace reel assembly.
Seat belt automatic reel jams when pulled out.	Automatic reel loose	Tighten reel mounting bolt.
	Return spring broken inside reel	Replace reel assembly.

Problem	Probable cause	Repairs
Seat belt does not retract automatically. (See note.)	Automatic reel loose	Tighten reel mounting bolt.
	Return spring broken inside reel	Replace reel assembly.
Automatic belt squeaks when belt fastened or unfastened.	Excessive friction in belt guides	Replace reel assembly.
	Automatic reel loose	Tighten reel mounting bolt.
	Return spring broken inside reel	Replace reel assembly.
Seat belt pyrotechnic tensioner triggered	Accident triggered pyrotechnic deployment	Replace complete automatic seat belt. Also check retaining bracket of belt tensioner for twist.
Convertible models only:		
Front seat back requires excessive force to lock or unlock	Accident damage to seat via seat belt	Replace front seat.
Seat back lock warning lamp on when seat back is locked; or warning lamp lights up when seat back is shaken	Seat back lock microswitch defective	Replace microswitch
	Microswitch electrical harness connectors loose or defective	Repair electrical leads.
	Seat back lock is damaged	If fault persists, replace front seat.
Contact surface of inertia reel warped	Accident damage	Replace front seat.
Seat back warped or deformed	Accident damage	
Head restraint carrier not parallel	Accident damage	
Seat movement sticky or sluggish at some point in its range; unusual noises	Accident damage (side)	
Front seat shows evidence of contact with body structural part (e.g., door)	Accident damage (side)	
Front seat shows evidence of contact with external objects	Accident damage (rollover)	

Front Seat Belt Assembly

Front seat belt tensioner, removing and installing

The front seat belt locks are equipped with pyrotechnic (explosive charge) automatic tensioners. These tensioners are designed to automatically retract and tension the seat belt by 55 mm (approximately 2 inches) in the event of an accident.

WARNING!

- ♦ *Pyrotechnic seat belt tensioners are powerful devices and should be handled with extreme care. Incorrect handling can trigger the tensioner and cause injury.*
- ♦ *BMW recommends that all repair or replacement work on pyrotechnic devices must be carried out by a qualified BMW technician.*
- ♦ *Be sure to disconnect the battery and wait 5 seconds before attempting to work on pyrotechnic devices.*
- ♦ *Pyrotechnic devices cannot be repaired. Always replace them.*
- ♦ *Never treat pyrotechnic components with cleaning agents or grease.*

- ♦ **Do not expose pyrotechnic components to temperatures above 75°C (167°F).**
 - ♦ **Pyrotechnic components can only be tested electrically when installed, using BMW service tester DIS, MoDiC or equivalent scan tool.**
 - ♦ **Do not fire a pyrotechnic gas generator prior to disposal. It must be fired by a special disposal company or shipped back to BMW in the packaging of the new components.**
 - ♦ **During body straightening and welding with an electric arc welder, always disconnect the battery and the connection to the pyrotechnic gas generators.**
- Detach battery negative (-) cable in luggage compartment.

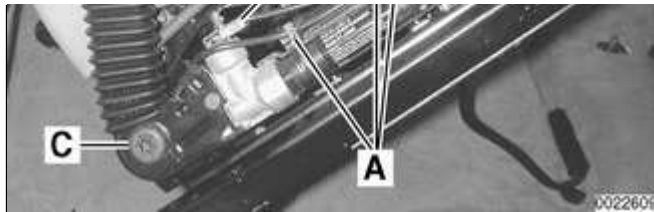
CAUTION!

Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.

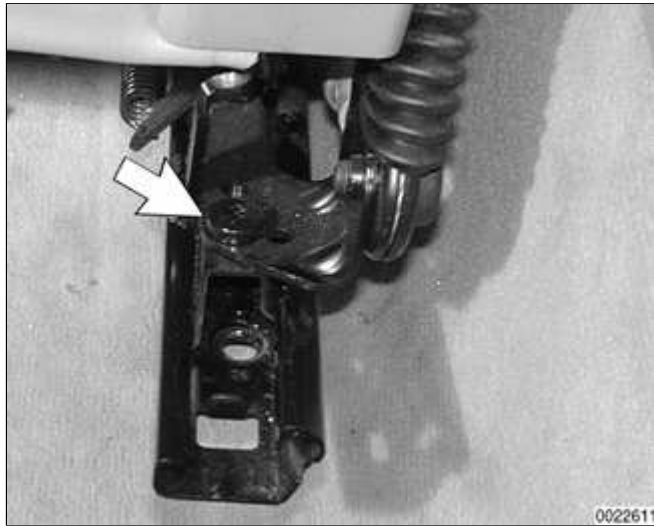
- Remove front seat as described in ⇒ [520 Seats](#).



- ⚡ Remove pyrotechnic belt tensioner:
 - ♦ Detach tensioner harness connector from seat rail by cutting wire tie (A).



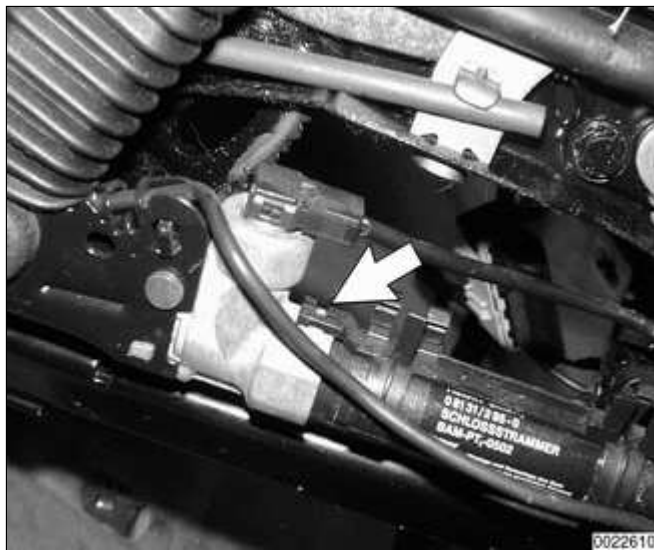
- ◆ Detach harness connection (B).
- ◆ Remove tensioner mounting bolt (C).



- ⚡ Check tensioner mounting bracket (arrow) for damage or bending. Replace if necessary.

CAUTION!

A bent tensioner mounting bracket may make it impossible to adjust seat height.



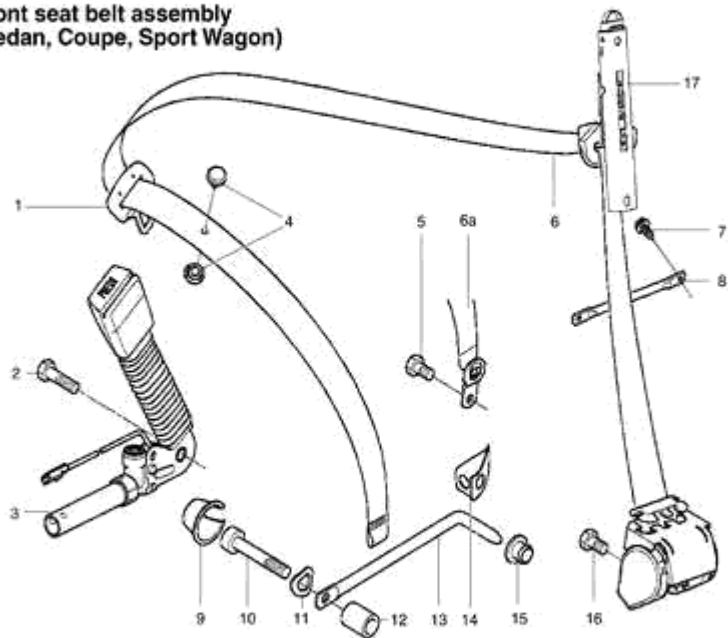
- ⚡ When reinstalling:
 - ◆ Replace wire ties to relieve tension on the pyrotechnic belt tensioner harness connector.
 - ◆ Make sure tensioner harness connector mounting bracket (arrow) is installed correctly.

Tightening torques

Front seat to floor (M10 fastener)	45 Nm (33 ft-lb)
Seat belt to seat	48 Nm (35 ft-lb)
Tensioner mounting bracket to seat rail	24 Nm (18 ft-lb)
Tensioner to mounting bracket	48 Nm (35 ft-lb)

Front seat belt

Front seat belt assembly
(Sedan, Coupe, Sport Wagon)



**assembly (Sedan,
Coupe, Sport Wagon)**

- 1 - Seat belt buckle**
- 2 - Tensioner mounting bolt**

◆ tighten to 48 Nm (35 ft-lb)

- 3 - Seat belt lock with pyrotechnic tensioner**

- 4 - Seat belt stop button**

- 5 - Seat belt anchor bolt**

◆ tighten to 48 Nm (35 ft-lb)

- 6 - Seat belt reel assembly**

- 6a - Seat belt anchor end (Sedan/Sport Wagon models)**

- 7 - Bolt M8**

- 8 - B-pillar cross-brace**

- 9 - Plastic cap**

- 10 - Bolt M10**

◆ tighten to 31 Nm (23 ft-lb)

- 11 - Spring washer**

- 12 - Spacer
- 13 - Seat belt anchor bar (Coupe only)
- 14 - Cap
- 15 - Grommet
- 16 - Seat belt reel mounting bolt M10
- ◆ tighten to 31 Nm (23 ft-lb)
- 17 - Seat belt height adjuster

Front seat belt reel, removing and installing (Sedan, Coupe or Sport Wagon models)

- Detach battery negative (-) cable in luggage compartment.

CAUTION!

Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.

- Remove front seat as described in ⇒ [520 Seats](#).
- Coupe models: Working just inside door sill.
- ◆ Pry off plastic protective cap over end of seat belt anchor bar.

- ◆ Remove anchor bar bolt and slip off end of seat belt from bar.

Note:

Replace anchor bar if it is bent.

- ⚡ Prying gently upward, remove plastic door sill protector strip.



- ⚡ Sedan or Sport Wagon models: Remove lower B-pillar (door pillar) plastic trim.

- ◆ Pry gently along bottom of trim to disengage clips from pillar.

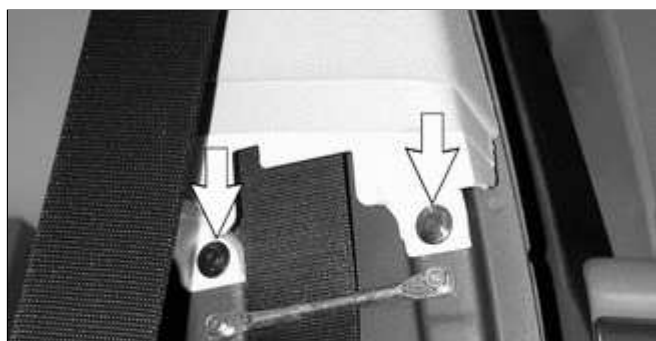
- ◆ Slide trim down and out.

- Coupe models: Remove rear side panel as described in ⇒ [411 Doors](#).

Note:

Partially peel rubber door seal(s) away from B-pillar.

- ⚡ Remove upper B-pillar (door pillar) plastic trim expansion rivets (**arrows**).





- ⏪ Pull B-pillar upper trim down to remove.



- ⏪ Remove automatic reel from B-pillar:
- ◆ Remove upper seat belt anchor bolt (A).
 - ◆ Remove cross-brace mounting bolts (B).
 - ◆ Remove sound insulation at base of B-pillar. Then remove automatic seat belt reel mounting bolt (C).
 - ◆ Lift out reel.
 - If it is necessary to remove sliding seat belt height adjuster, unscrew mounting bolts from B-pillar.
 - Installation is reverse of removal.
 - ◆ Install automatic reel housing to

B-pillar by sliding tab into locating slot.

Tightening torques	
Front seat to floor (M10 fastener)	45 Nm (33 ft-lb)
Seat belt anchor bar to door sill	31 Nm (23 ft-lb)
Seat belt to seat	48 Nm (35 ft-lb)
Seat belt to B-pillar sliding anchor	31 Nm (23 ft-lb)
Seat belt reel to B-pillar bottom	31 Nm (23 ft-lb)
Sliding seat height adjuster to B-pillar	24 Nm (18 ft-lb)

Seat-integrated seat belt system (SGS) (Convertible models)



The front seats of E46 Convertible models are designed with integrated seat belts. In this way, the forces acting on a front seat occupant during a collision are channeled to the reinforced floor.

All belt fastening points move with the seat as it is adjusted. This ensures the best possible body strapping regardless of seat position or occupant size. With the shorter free belt length, the occupant is held more reliably with vehicle deceleration.

The fixed anchor point and the seat belt lock/tensioner are mounted on the seat frame. The upper seat belt guide is attached to the headrest. In this way the belt is optimally positioned regardless of headrest position.

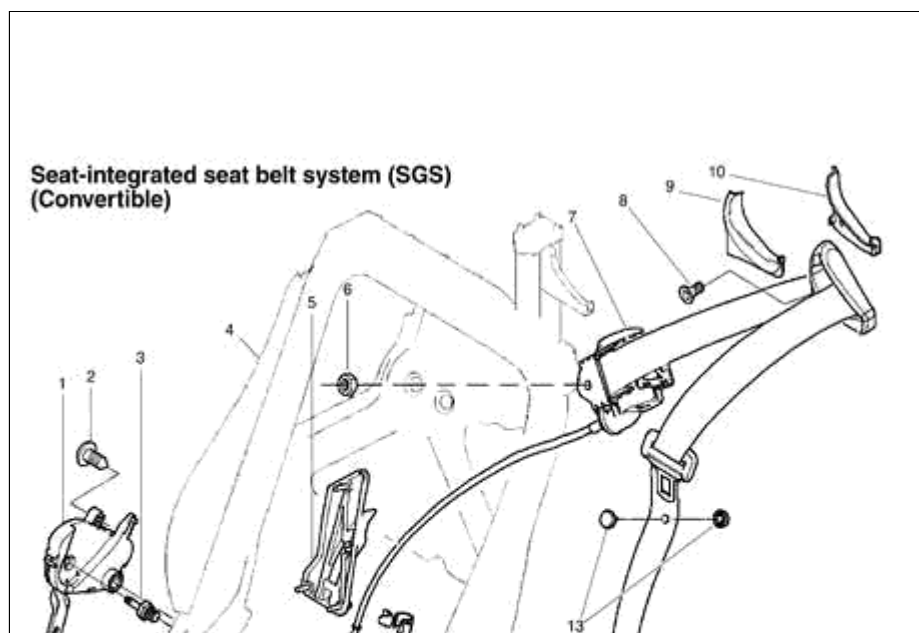
The inertia reel is attached to the inside of the seat backrest. The mechanism is

connected to the backrest hinge through a lever and a cable drive (coupler mechanism). As the angle of the backrest is adjusted, the cable drive will change the angle of the inertia lock. In this way the reel is in the proper position for locking at any seat back angle.

The seat belt lock and tensioner on the SGS system is a pyrotechnic device similar to that on other E46 models. When working on SGS belts, be sure to read the warnings and cautions in the procedure for front seat belt tensioner removal and installation, earlier in this group.

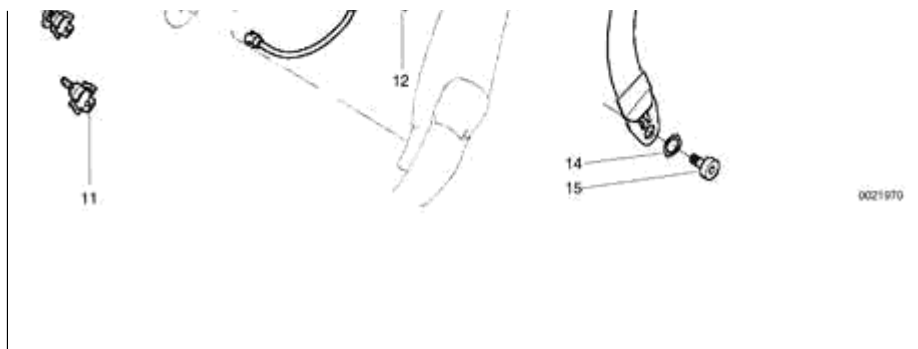
Note:

- ◆ *SGS seat belt removal can only be carried out with the seat out of the car. See ⇒ [520 Seats](#).*
- ◆ *Once the seat has been removed, the seat backrest must be partially disassembled. The accompanying illustration provides information on SGS component locations and fastener torques.*



Seat-integrated seat belt system (SGS) (Convertible)

- 1 - Coupler mechanism**
- 2 - Self-tapping screw M4.2**
- ◆ **tighten to 2.5 Nm (22 in-lb)**
- 3 - Threaded pin**



4 - Front seat backrest

5 - Support

6 - SGS belt reel mounting nut M10

◆ tighten to 39 Nm (29 ft-lb)

7 - SGS inertia reel assembly

8 - Torx bolt M6

◆ tighten to 4.5 Nm (40 in-lb)

9 - Seat belt guide cover, front

10 - Seat belt guide cover, rear

11 - Connector

12 - Clip

13 - Seat belt button

14 - Bushing

15 - Bolt M10 (self-locking, always replace)

◆ tighten to 45 Nm (33 ft-lb)

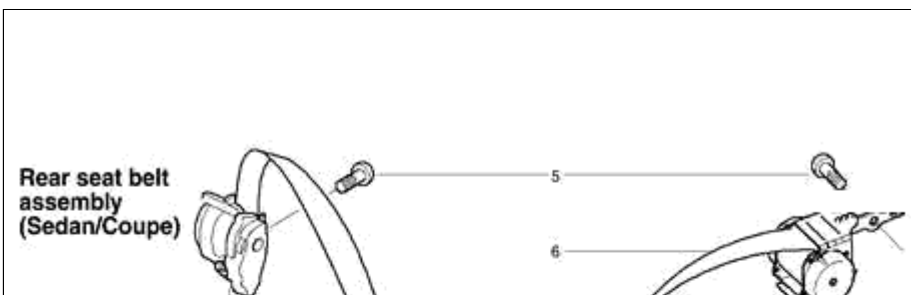
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Rear Seat Belt Assembly

Rear seat belts (Sedan or Coupe models)

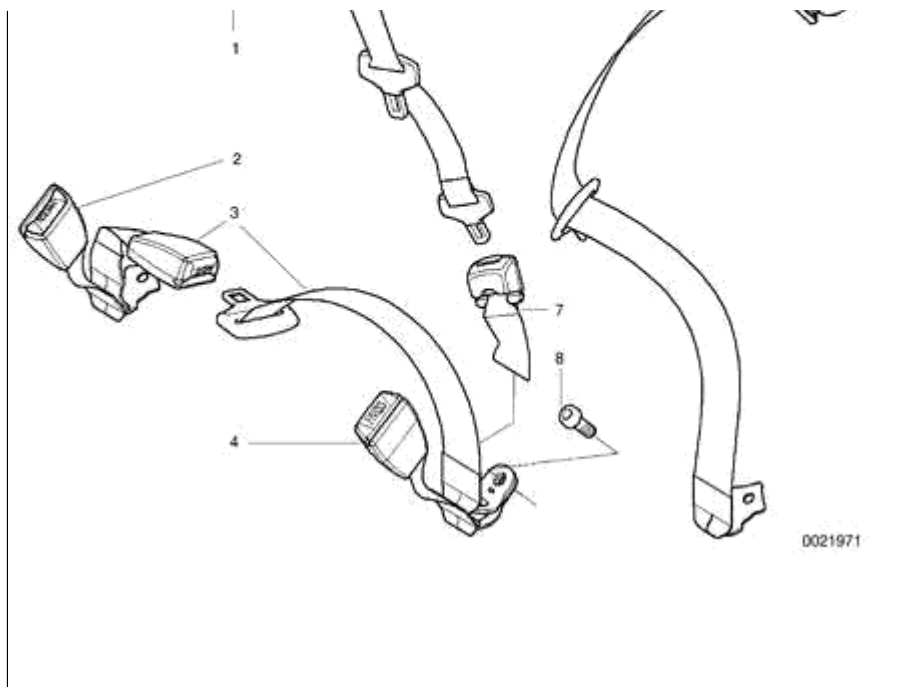
- Remove rear parcel shelf to access shoulder belt assembly mounting bolts.
- Remove rear seat cushion to access rear seat belt lock mounting bolts. See ⇒ [520 Seats](#).
- The accompanying illustration provides information on rear seat belt component locations and fastener torques.
- When installing seat belt lock straps:
 - ◆ Install right lock strap (which is shorter) underneath middle lock strap.
 - ◆ Install left lock strap underneath middle lap belt strap.
 - ◆ Metal strap ends must rest against stop on floor underneath seat.

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Rear seat belt assembly (Sedan/Coupe)

- 1 - Center shoulder belt reel assembly (if



- equipped)
- 2 - Right shoulder belt lock
- 3 - Lap-belt assembly
- 4 - Left shoulder belt lock
- 5 - Bolt M10
- ◆ tighten to 31 Nm (23 ft-lb)
- 6 - Left shoulder belt reel assembly
- 7 - Center shoulder belt lock (if equipped)
- 8 - Bolt M12
- ◆ tighten to 31 Nm (23 ft-lb)

Rear seat belts (Sport Wagon models)

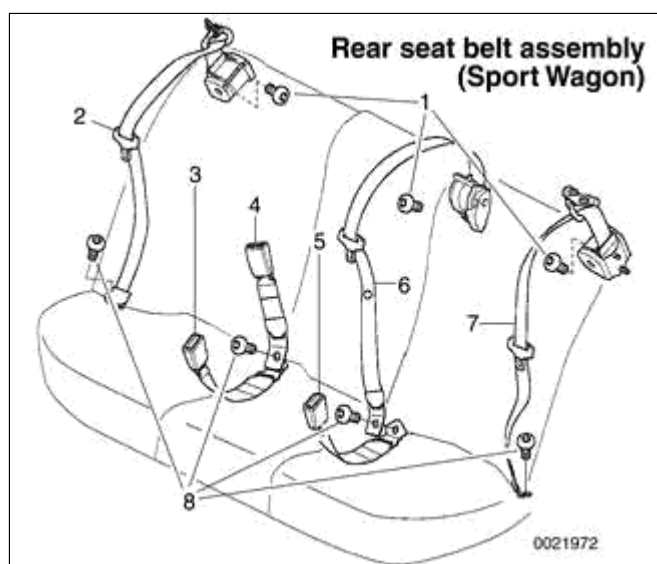
- Center shoulder belt:
- ◆ Remove shoulder belt guide trim at top of seat backrest. Feed belt out through slot in trim.
- ◆ Working in cargo compartment, partially remove backrest cover to access shoulder belt reel.

- ◆ Remove shoulder belt reel mounting bolt inside backrest.

Note:

Remove bowden cable from backrest brackets and unhook from backrest release latch. Center seat belt reel can be then be removed.

- Outboard shoulder belt:
- ◆ Remove roof-pillar (C-pillar) trim.
- ◆ Remove center shoulder belt.
- Lift up rear seat cushion(s) to access rear seat belt lock mounting bolt(s).



◀ The accompanying illustration provides information on rear seat belt component locations and fastener torques.

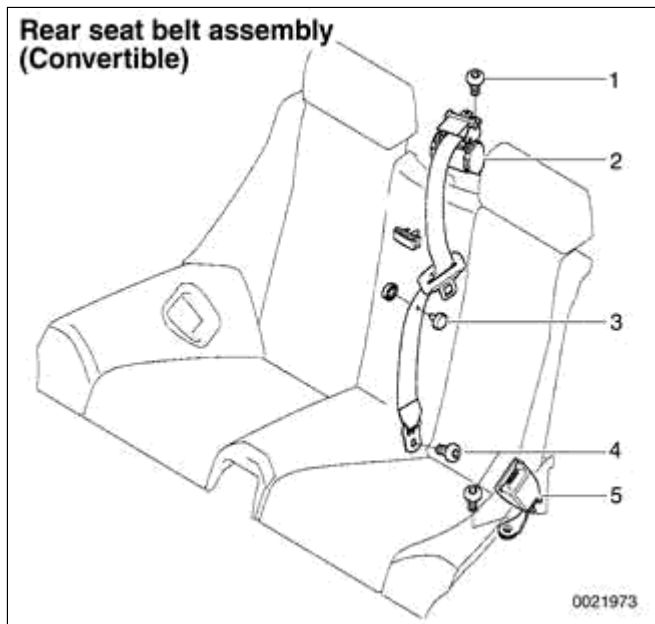
- 1 - Bolt M10 -tighten to 31 Nm (23 ft-lb)
- 2 - Right shoulder belt reel assembly.
- 3 - Center belt lock
- 4 - Right belt lock
- 5 - Left belt lock
- 6 - Center shoulder belt reel assembly
- 7 - Left shoulder belt reel assembly
- 8 - Bolt M12 -tighten to 31 Nm (23 ft-lb)
- When installing seat belt lock straps:
- ◆ Install right belt lock strap (which is shorter) underneath center belt lock

strap.

- ◆ Install left belt lock strap underneath center lap belt strap.
- ◆ Metal strap ends must rest against stop on floor underneath seat.

Rear seat belts (Convertible models)

- Access shoulder belt or seat belt lock mounting bolts:
 - ◆ Remove center armrest.
 - ◆ Push shoulder belts toward sides and feed out of top guides.
 - ◆ Lift seat cushion up and forward to remove.
 - ◆ Remove lower backrest securing screws located below backrest. Lift backrest straight up and unhook from tabs in back.
 - ◆ Remove rear head restraints by pulling straight up.
 - ◆ Remove cover of rollover protection bars for right and left side.
 - ◆ Open convertible top compartment cover.
- Shoulder belt reels are bolted to convertible top storage compartment.



◀ The accompanying illustration provides information on rear seat belt component locations and fastener torques.

- 1 - Bolt M10 -tighten to 31 Nm (23 ft-lb)
- 2 - Left shoulder belt reel assembly.
- 3 - Seat belt stop button
- 4 - Left belt lock
- 5 - Bolt M12 -tighten to 31 Nm (23 ft-lb)