

720 Seat Belts

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TABLE

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GENERAL

This section covers mechanical repairs to seat belts and seat belt tensioner components. Airbag system electronics integrate seat belt operations and airbag deployment. Airbag system information is covered in **721 Airbag System (SRS)**.

One of two systems are installed in the E60 / E61 cars covered by this manual, depending on model year.

Passive restraint system application	
Year	Restraint system
2004 - 2005	Advanced Safety Electronics (ASE)
2006 - 2010	Advanced Crash and Safety Management (ACSM)

See also:

- **513 Interior Trim**
- **520 Seats**

Troubleshooting

Check that seat belt reel locks when driving quickly through curves and during severe braking. The automatic reel does not require any servicing. Replace if it is found faulty.

In case of an accident, follow the seat belt troubleshooting procedures presented in **Table a**.

720-2 Seat Belts

Troubleshooting

Table a. Seat belt troubleshooting

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 and seat belt mounting on seat runner.
Belt creased, unraveled, pinched, cut or melted. Belt buckle or belt lock plastic casing worn, damaged or missing.	Seat belts aged or worn.	Replace complete automatic seat belt.
Seat belt buckle not ejected with spring pressure when red button on seat belt lock pressed.	Seat belt lock mechanism worn or damaged.	Replace seat belt buckle.
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. Return spring broken inside reel.	Tighten reel mounting bolt. Replace reel assembly.
Seat belt does not retract automatically (see note below).	Automatic reel loose. Return spring broken inside reel.	Tighten reel mounting bolt. Replace reel assembly.
Automatic belt squeaks when fastened or unfastened.	Excessive friction in belt guides. Automatic reel loose. Return spring broken inside reel.	Replace reel assembly. Tighten reel mounting bolt. 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.

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.

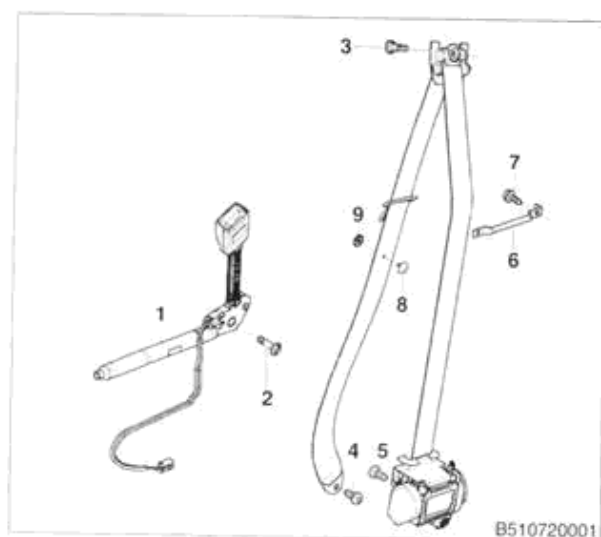
Warnings

WARNING —

- For maximum protection from injury, replace seat belts and hardware if subjected to occupant loading in a collision.
- Do not modify or repair seat belts or seat belt mounting points.
- Do not bleach or dye seat belt webbing. Webbing that is severely faded or redyed does not meet the strength requirements of a collision. Replace it.
- Clean belts with a luke-warm soap solution only.
- Periodically inspect seat belts 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.
- Pyrotechnic seat belt tensioners are powerful devices. Handle with extreme care. Incorrect handling can trigger the tensioner.
- BMW recommends that repair or replacement work on pyrotechnic devices be carried out by a qualified BMW technician.
- Be sure to disconnect the battery and wait 1 minute before attempting to work on pyrotechnic devices.
- Pyrotechnic devices cannot be repaired. Always replace them.
- Do not treat pyrotechnic components with cleaning agents or grease.
- Do not expose pyrotechnic components to temperatures above 75°C (167°F).
- 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 component.
- During body straightening and welding with an electric arc welder, disconnect the battery and the connection to the pyrotechnic gas generators.

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Front seat belt components



FRONT SEAT BELTS

Front seat belt components

1. Seat belt buckle assembly with pyrotechnic (explosive) tensioner
2. Self-locking fastener, replace with new
Tighten to 36 Nm (27 ft-lb)
3. B-pillar fastener
Tighten to 36 Nm (27 ft-lb)
4. M10 x 30 mm seat belt anchor self-locking fastener, replace with new
Tighten to 36 Nm (27 ft-lb)
5. M10 x 26 mm seat belt reel self-locking fastener, replace with new
Tighten to 36 Nm (27 ft-lb)
6. Belt guide
7. ST5.5 x 13 mm sheet metal screw
Tighten to 3.5 Nm (31 in-lb)
8. Plastic button
9. Plastic button

Front seat belt buckle and tensioner, removing and installing

The front seat belt buckle is equipped with pyrotechnic (explosive charge) automatic tensioner designed to automatically retract and tension the seat belt by 55 mm (approximately 2 inches) in case of an accident.

WARNING—

- The side impact airbag and pyrotechnic seat belt tensioner attached to the front seat are powerful and potentially dangerous devices. Handle with extreme care. Incorrect handling can trigger off the airbag or tensioner and cause injury.

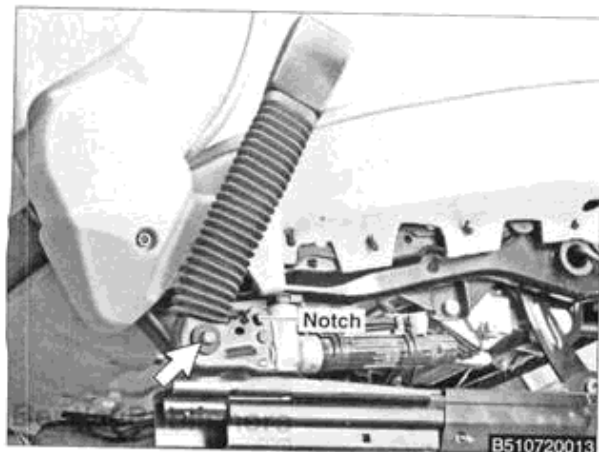
- Disconnect battery negative (–) cable in trunk.

CAUTION—

- Prior to disconnecting the battery, read the battery disconnection cautions given in 001 Warnings and Cautions.

- Remove front seat. See 520 Seats.

- Working at lower side of seat, remove belt buckle mounting fastener (arrow) and discard.



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Front seat belt reel, removing and installing

- When installing:
 - Secure base of belt buckle to seat using aligning notch.
 - Use new self-locking belt buckle fastener.

Tightening torque

Belt buckle to base of seat (self-locking fastener, replace with new)	36 Nm (27 ft-lb)
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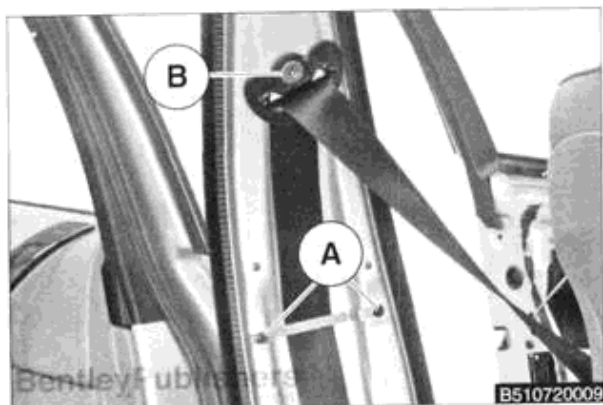
- Replace wire ties and reconnect harness connectors before reinstalling seat.

Tightening torque

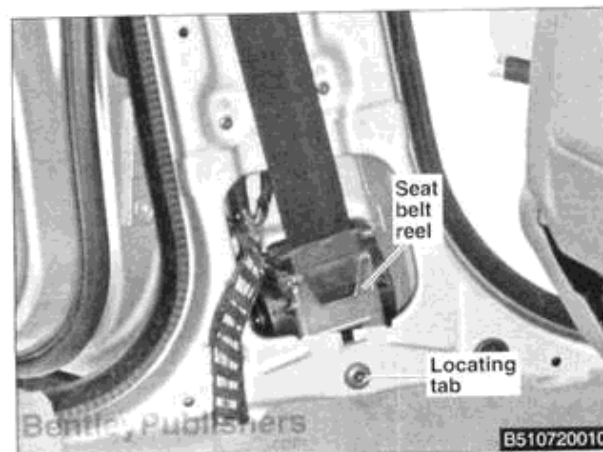
Front seat to floor (replace fasteners)	44 Nm (32 ft-lb)
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Front seat belt reel, removing and installing

- Remove B-pillar trim. See **513 Interior Trim**.
- Working at upper B-pillar:
 - Remove belt guide mounting fasteners (A). Remove guide.
 - Remove upper seat belt fastener (B).
- Set upper part of seat belt aside temporarily.



- Working at lower B-pillar, remove automatic seat belt reel mounting fastener (arrow) and lift out reel with seat belt.



- When installing:
 - Make sure reel locating tab fits B-pillar slot.
 - Replace self-locking fasteners with new.
 - Position trim retaining clips back into trim panels before installing.
 - Replace damaged trim retaining clips or trim panels.

Tightening torques

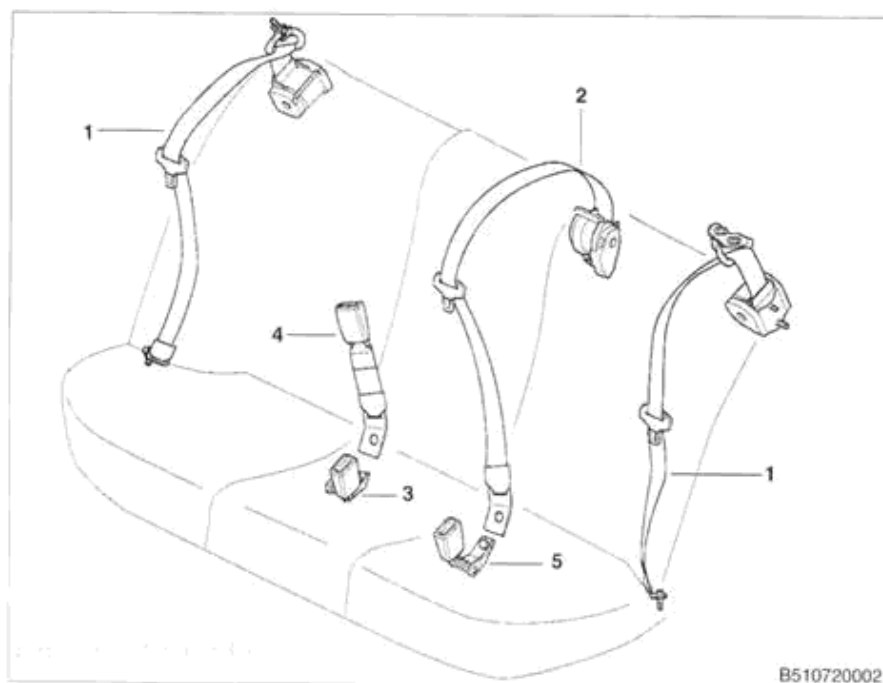
Seat belt anchor to seat (M10 x 15 mm self-locking fastener, replace with new)	44 Nm (32 ft-lb)
Seat belt guide to B-pillar (ST5.5 x 13 mm sheet metal screw)	3.5 Nm (31 in-lb)
Seat belt reel to lower B-pillar (M10 x 22 mm self-locking fastener, replace with new)	36 Nm (27 ft-lb)
Seat belt to upper B-pillar	36 Nm (27 ft-lb)

720-6 Seat Belts

Rear seat belt assembly (Sedan)

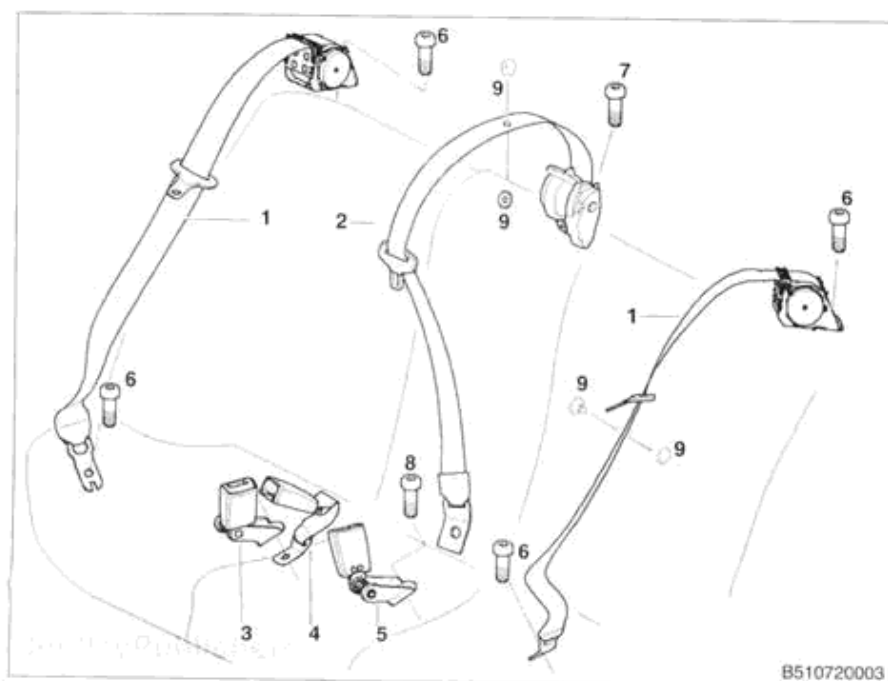
REAR SEAT BELTS

Rear seat belt assembly (Sedan)



1. Rear seat belt, outboard
2. Rear seat belt, center
3. Center rear seat belt buckle
4. Right seat belt buckle
5. Left seat belt buckle

Rear seat belt assembly (Sports Wagon)

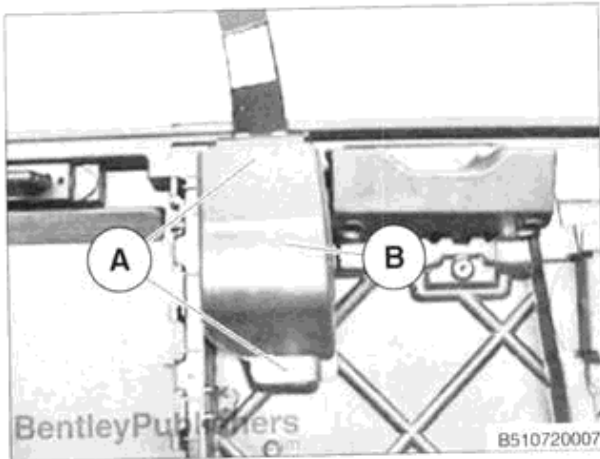
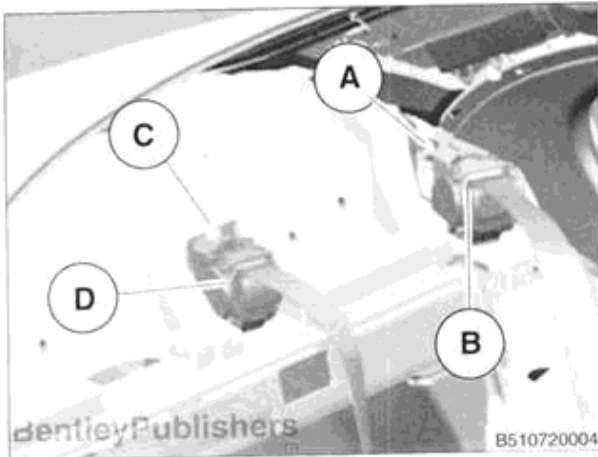


1. Rear seat belt, outboard
2. Rear seat belt, center
3. Right rear seat belt buckle
4. Center rear seat belt buckle
5. Left seat belt buckle
6. M10 x 26 mm self-locking fastener, replace with new
7. M10 x 16 mm self-locking fastener, replace with new
8. Self-locking fastener
9. Plastic button

Rear seat belt, removing and installing

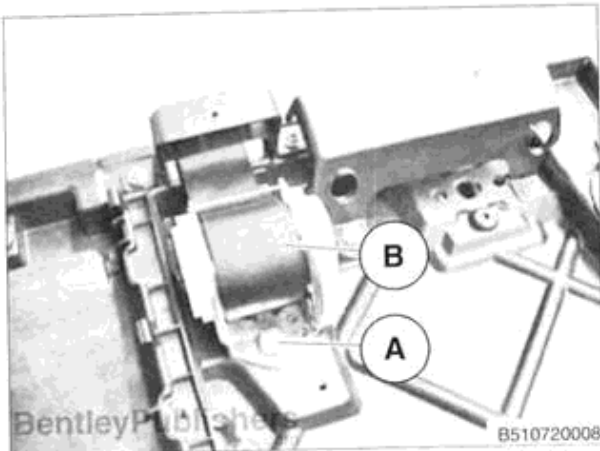
In Sports Wagon model with split rear seat backrest, the center seat belt is integrated with the left backrest.

- Sedan: Remove rear parcel shelf
- Sports Wagon:
 - Remove C-pillar and D-pillar trim. See **513 Interior Trim**.
 - Remove other trim panels as necessary.
- Remove rear seat. See **520 Seats**.
- Remove outboard seat belt reel mounting fastener (A) and seat belt reel (B).
- Sedan: Remove center seat belt reel fastener (C) and seat belt reel (D).



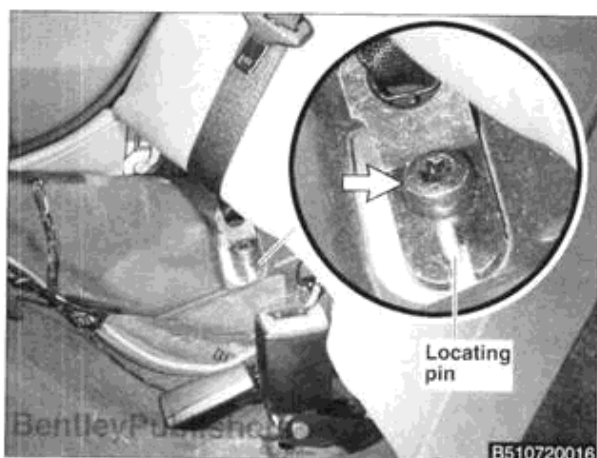
- Sports Wagon: Remove fasteners (A) and center seat belt reel cover (B).

- Sports Wagon: Remove center seat belt reel mounting fastener (A) and seat belt reel (B).



720-8 Seat Belts

Rear seat belt buckles and tensioners, removing and installing



- Remove seat belt anchor fastener (**arrow**) at base of backrest and lift out seat belt.

- Installation is reverse of removal.
 - Place seat belt anchor correctly on locating pin.
 - Make sure tab on seat belt reel engages body slot.
 - Use new self-locking fasteners.

Tightening torques

Seat belt anchor to body (self-locking fastener, replace with new)	36 Nm (27 ft-lb)
Seat belt reel to body (self-locking fastener, replace with new)	36 Nm (27 ft-lb)

Rear seat belt buckles and tensioners, removing and installing

In vehicles equipped with optional rear side airbags, rear outboard seat belt buckles are equipped with pyrotechnic (explosive charge) automatic tensioners designed to automatically retract and tension the seat belts by 55 mm (approximately 2 inches) in case of an accident.

WARNING—

- Pyrotechnic seat belt tensioners are powerful and potentially dangerous devices. Handle with extreme care. Incorrect handling can trigger off the tensioner and cause injury.

- Disconnect battery negative (–) cable in trunk.

CAUTION—

- Prior to disconnecting the battery, read the battery disconnection cautions given in 001 Warnings and Cautions.

- Remove rear seat. See 520 Seats.

- Working at seat belt buckles:
 - Detach electrical connectors.
 - Loosen and remove mounting fasteners (**inset**). Lift out buckles and store in a safe place.

- When installing:
 - Make sure tab on seat belt buckle engages body slot.
 - Use new self-locking fasteners.

Tightening torques

Seat belt buckle to body (Self-locking fastener, replace with new)	36 Nm (27 ft-lb)
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