

Technical Service Bulletin

Mazda North American Operations
Irvine, CA 92618-2922



Subject: STRUT / SHOCK ABSORBER REPLACEMENT GUIDELINES	Bulletin No.: 02-002/20
	Last Issued: 01/09/2020

BULLETIN NOTES

This bulletin supersedes the previously issued bulletin(s) listed below. The changes are noted in Red text.

Previous TSBs:	Date(s) Issued:	Previous TSBs:	Date(s) Issued:
02-001/19	01/02/2019	02-005/09	06/05/2009
02-006/18	03/26/2018	02-004/08	05/18/2008
02-004/16	02/15/2016	02-001/04	01/14/2004
02-004/11	07/11/2011		

APPLICABLE MODEL(S)/VINS

1999-2009 B-Series	1999-2002 626	2004-2020 Mazda3	2007-2012 CX-7	2016-2020 CX-3
1999-2003 Protege	2000-2006 MPV	2006-2015 Mazda5	2007-2020 CX-9	
1999-2005 Miata	2001-2011 Tribute	2003-2020 Mazda6	2006-2019 MX-5	
1999-2002 Millenia	2011-2014 Mazda2	2013-2020 CX-5	2004-2011 RX-8	

DESCRIPTION

Some customers may complain of signs of oil on the struts or shock absorbers. In most cases the oil that is present is normal, and a result of the oil that remains on the shaft during the normal sweeping process of the shaft seal.

Follow the inspection guidelines below to determine if the condition is a result of the normal sweeping process or a failure of the shaft seal.

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REPAIR PROCEDURE

Inspect the strut/shock absorber by using the following guidelines to determine if strut/shock absorber replacement is necessary or not.

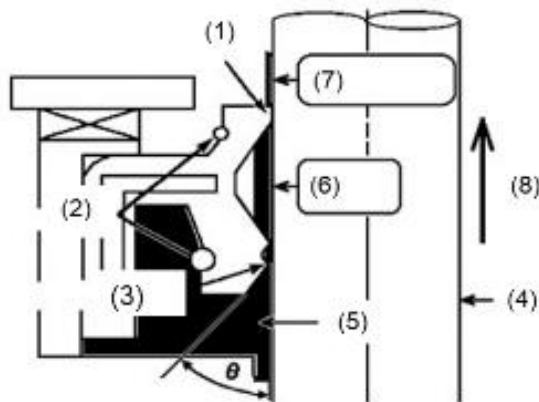
- If it is determined to be oil seepage, the strut/shock absorber does **NOT** need to be replaced.
- If it is determined to be oil leakage, the strut/shock absorber **DOES** need to be replaced.

NOTE: Warranty claims submitted for oil seepage strut/shock absorbers will be denied or subject to debit.

OIL SEEPAGE:

Oil seepage is caused by the following factors, **but DOES NOT require component replacement:**

- A small amount of oil seeps outside through the dust lip during normal operation.
- The oil film thickness is uneven due to production variations of the rods and seals.



- (1) Dust Lip
- (2) Garter Spring
- (3) Main Lip
- (4) Rod
- (5) Oil
- (6) Oil Film
- (7) Oil Seepage
- (8) Rebound direction

When a shock absorber gets compressed and then rebounds, most of the oil on the rod (4) is wiped off by the main lip (3) and some oil (6) remains inside the space between the main lip and the dust lip (1). When a shock absorber rebounds (8), most of the remaining oil on the rod is wiped off by the dust lip and a very small amount of oil goes outside as seepage (7). This thin oil layer can be wrongly taken as oil leakage, however, seepage of up to 1/3 of the extent of the oil seal zone (as shown in the table below) doesn't affect the normal functioning of the mechanism.

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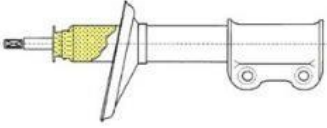
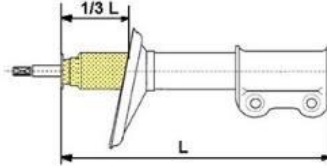
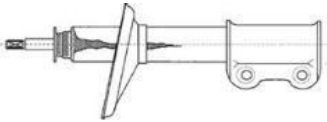
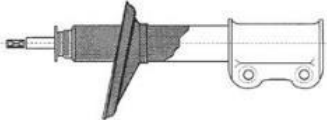
OIL LEAKAGE:

Oil leakage is caused by the following factors and **DOES** require component replacement:

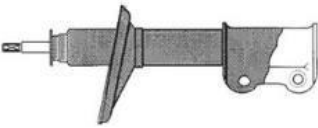
- Rod damage (dent, etching, rust, or foreign substance)
- Lip damage
- Seal deterioration (an abrasion or hardening)

HOW TO DETERMINE OIL SEEPAGE vs OIL LEAKAGE:

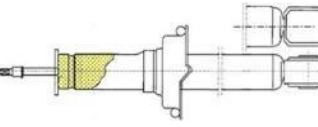
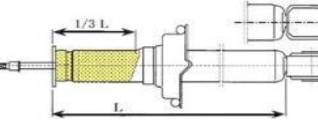
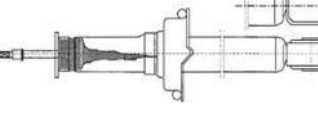
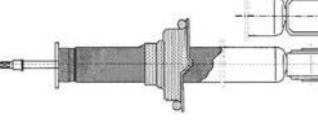
TYPE: STRUT

Appearance	Description	Replacement Required
	<p>Oil Seepage (Normal): A thin layer of oil film seeps out from below the bump stop and runs down the sides, but does not reach the spring seat. The surface appears dirty due to oil and dust, but it is not wet with oil dripping / running down the sides and the damping function is still performing correctly.</p> <p>Dealer Action: Clean and dry the unit as much as possible.</p>	NO
	<p>Oil Seepage (Normal): A thin layer of oil film seeps out from below the bump stop and runs down the sides, but does not run past the spring seat. The surface appears dirty due to oil and dust, but it is not wet with oil dripping / running down the sides and the damping function is still performing correctly.</p> <p>Dealer Action: Clean and dry the unit as much as possible.</p>	
	<p>Oil Leakage (Mild): Oil leaks out from below the bump cap and runs down the sides past the spring seat. The surface appears wet with oil dripping / running down the sides.</p> <p>NOTE: Oil leakage will worsen over time.</p>	YES
	<p>Oil Leakage (Moderate): Oil leaks out from below the bump cap and runs down the sides well past the spring seat. The surface appears wet with oil dripping / running down the sides.</p> <p>NOTE: Oil leakage will worsen over time.</p>	

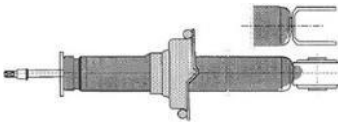
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	<p>Oil Leakage (Severe): Oil leaks out from below the bump cap and runs down the sides past the spring seat, nearly the full length of the strut. The surface appears wet with oil dripping / running down the sides.</p> <p>NOTE: Oil leakage will worsen over time.</p>	
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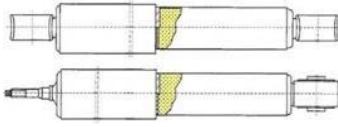
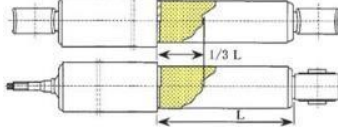
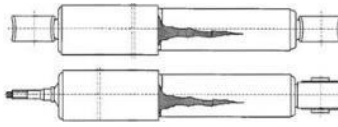
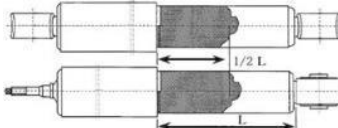
TYPE: SHOCK ABSORBER WITH SPRING SEAT

Appearance	Description	Replacement Required
	<p>Oil Seepage (Normal): A thin layer of oil film seeps out from below the bump stop and runs down the sides, but does not reach the spring seat. The surface appears dirty due to oil and dust, but it is not wet with oil dripping / running down the sides and the damping function is still performing correctly.</p> <p>Dealer Action: Clean and dry the unit as much as possible.</p>	NO
	<p>Oil Seepage (Normal): A thin layer of oil film seeps out from below the bump stop and runs down the sides, but does not run past the spring seat. The surface appears dirty due to oil and dust, but it is not wet with oil dripping / running down the sides and the damping function is still performing correctly.</p> <p>Dealer Action: Clean and dry the unit as much as possible.</p>	
	<p>Oil Leakage (Mild): Oil leaks out from below the bump cap and runs down the sides to the spring seat. The surface appears wet with oil dripping / running down the sides.</p> <p>NOTE: Oil leakage will worsen over time.</p>	YES
	<p>Oil Leakage (Moderate): Oil leaks out from below the bump cap and runs down the sides past the spring seat. The surface appears wet with oil dripping / running down the sides.</p> <p>NOTE: Oil leakage will worsen over time.</p>	

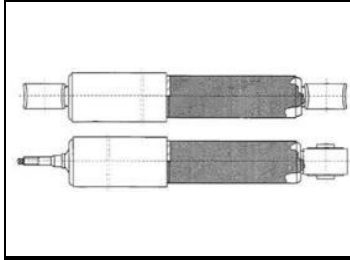
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	<p>Oil Leakage (Severe): Oil leaks out from below the bump cap and runs down the sides well past the spring seat, nearly the full length of the shock absorber. The surface appears wet with oil dripping / running down the sides.</p> <p>NOTE: Oil leakage will worsen over time.</p>	
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TYPE: SHOCK ABSORBER

Appearance	Description	Replacement Required
	<p>Oil Seepage (Normal): A thin layer of oil film seeps out from below the dust cover and runs down the sides of the shock absorber. The surface appears dirty due to oil and dust, but it is not wet with oil dripping / running down the sides and the damping function is still performing correctly.</p> <p>Dealer Action: Clean and dry the unit as much as possible.</p>	NO
	<p>Oil Seepage (Normal): A thin layer of oil film seeps out from below the dust cover and runs approx. 1/3 way down the sides of the shock absorber. The surface appears dirty due to oil and dust, but it is not wet with oil dripping / running down the sides and the damping function is still performing correctly.</p> <p>Dealer Action: Clean and dry the unit as much as possible.</p>	
	<p>Oil Leakage (Mild): Oil leaks out from below the dust cover and runs down the sides of the shock absorber. The surface appears wet with oil dripping / running down the sides.</p> <p>NOTE: Oil leakage will worsen over time.</p>	YES
	<p>Oil Leakage (Moderate): Oil seeps out from below the dust cover and runs approx. 1/2 way down the sides of the shock absorber. The surface appears wet with oil dripping / running down the sides.</p> <p>NOTE: Oil leakage will worsen over time.</p>	

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Oil Leakage (Severe):

Oil leaks out from below the dust cover and runs down the sides of the shock absorber, nearly the full length of the unit. The surface appears wet with oil dripping / running down the sides.

NOTE: Oil leakage will worsen over time.

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