

# Technical Service Bulletin

Mazda North American Operations  
Irvine, CA 92618-2922

**Subject:**

**STRUT / SHOCK ABSORBER REPLACEMENT GUIDELINES**

**Bulletin No.: 02-003/23**

**Last Issued : 10/17/2023**

**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:
02-004/22	05/24/22 and 11/18/22	02-004/11	07/11/11
02-002/20	01/09/20	02-005/09	06/05/09
02-001/19	01/02/19	02-004/08	05/18/08
02-006/18	03/26/18	02-001/04	01/14/04
02-004/16	02/15/16		

**APPLICABLE MODEL(S)/VINS**

2013-2024 CX-5

2007-2023 CX-9

**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.

Page 1 of 5

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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.

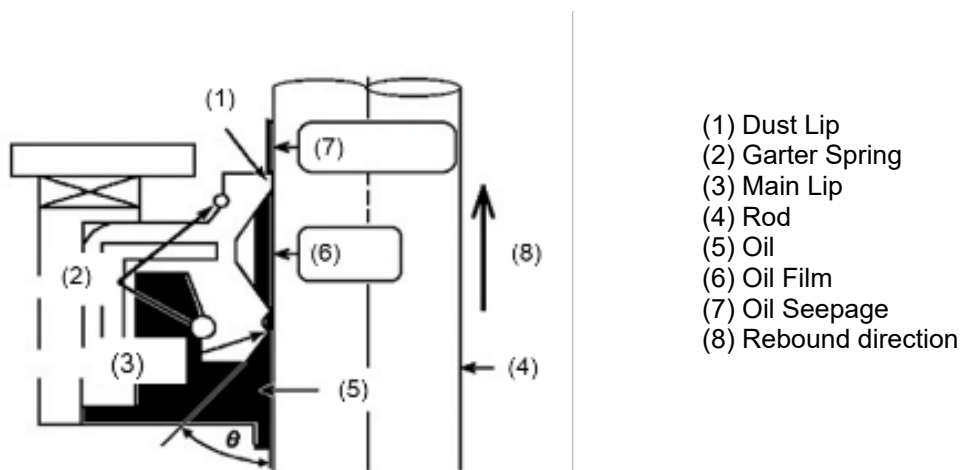
- If it is determined to be oil seepage, the strut/shock absorber does **NOT** need to be replaced.
- If it is determined to be oil leakage, the strut/shock absorber **DOES** need to be replaced.

**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.



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.

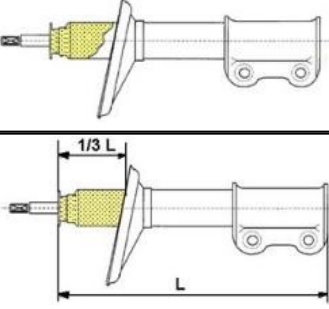
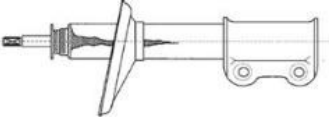
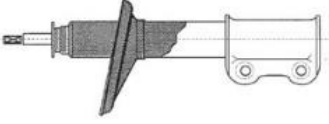
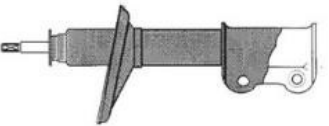
### OIL LEAKAGE:

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)

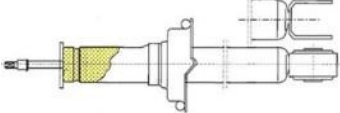
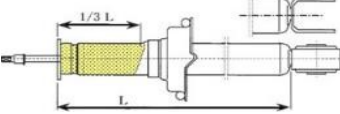
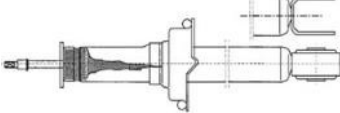
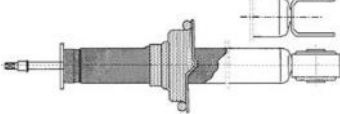
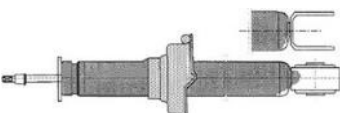
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**HOW TO DETERMINE OIL SEEPAGE vs OIL LEAKAGE:****TYPE: STRUT**

Appearance	Description	Replacement Required
	<b>Oil Seepage (Normal):</b> 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.	<b>NO</b> These situation will not worsen since it is just an alternation between damping and drying. Clean and dry the unit as much as possible.
	<b>Oil Leakage (Mild):</b> 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.	
	<b>Oil Leakage (Moderate):</b> 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.	<b>YES</b> The oil leak will worsen over time.
	<b>Oil Leakage (Severe):</b> 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.	

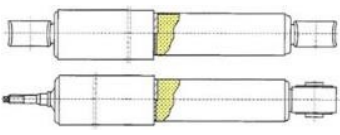
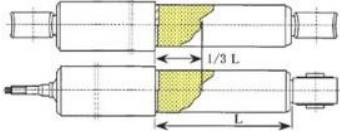
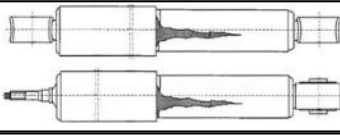
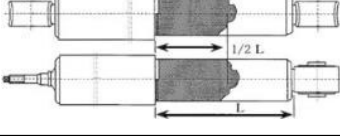
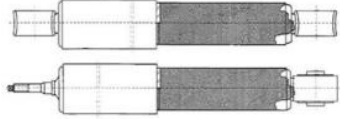
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**TYPE: SHOCK ABSORBER WITH SPRING SEAT**

Appearance	Description	Replacement Required
	<b>Oil Seepage (Normal):</b> 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.	<b>NO</b> <b>These situation will not worsen since it is just an alternation between damping and drying. Clean and dry the unit as much as possible.</b>
	<b>Oil Seepage (Normal):</b> 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.	
	<b>Oil Leakage (Mild):</b> 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.	<b>YES</b> <b>The oil leak will worsen over time.</b>
	<b>Oil Leakage (Moderate):</b> 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.	
	<b>Oil Leakage (Severe):</b> 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.	

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## TYPE: SHOCK ABSORBER

Appearance	Description	Replacement Required
	<b>Oil Seepage (Normal):</b> 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.	<b>NO</b> These situation will not worsen since it is just an alternation between damping and drying. Clean and dry the unit as much as possible.
	<b>Oil Seepage (Normal):</b> 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.	
	<b>Oil Leakage (Mild):</b> 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.	<b>YES</b> The oil leak will worsen over time.
	<b>Oil Leakage (Moderate):</b> 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.	
	<b>Oil Leakage (Severe):</b> 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.	

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