

# Chassis Lean

M-721-005

(September 2008)

## Valid for

CXU

## Case description

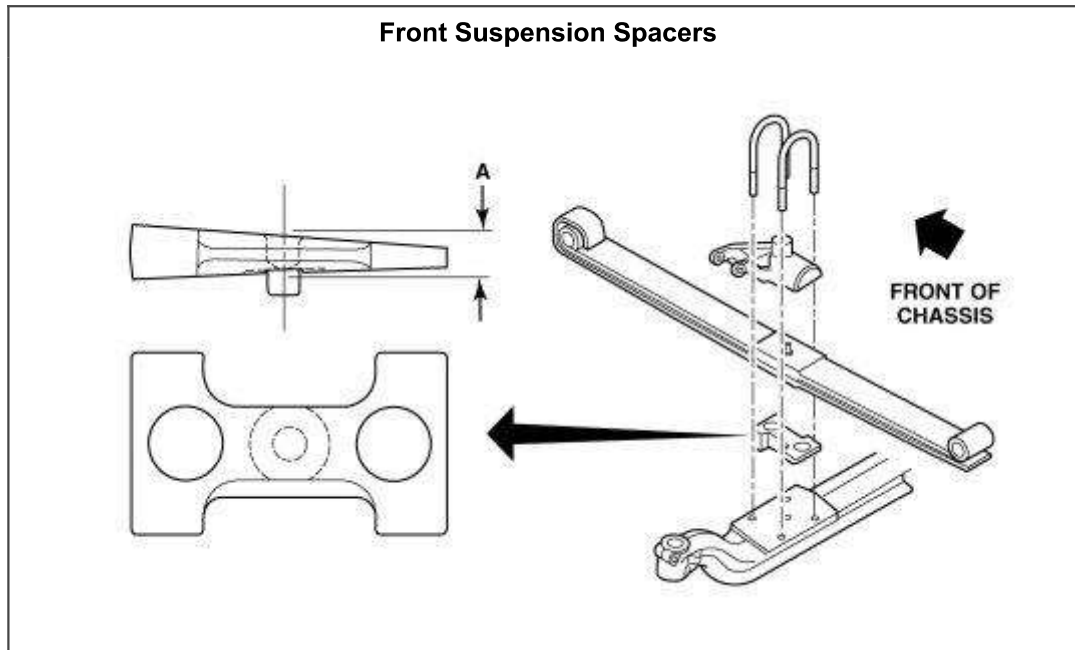
On CXU, CXP and CXN model chassis used in certain applications, the front of the chassis may lean to one side. If a leaning chassis complaint is encountered, the condition can be corrected by replacing or changing the existing front suspension spacers with spacers of a different thickness. CXU, CXP and CXN model chassis utilize the following two different front suspension spacer arrangements:

- **Common Front Suspension Spacers** — used on chassis equipped with rear air suspension
- **Raised Front Suspension Spacers** — used on chassis equipped with rear spring or walking beam suspension

*Note: Does not apply to Mack Trucks Australia.*

## Parts

Part numbers and location (left- or right-hand chassis side) for the factory-installed front suspension spacers are as follows:



Common Front Suspension Spacers			
Part number	"A Dimension"	Description	Uses Spring Clip part number

24QK47M	1.1" (28 mm)	Left-side front suspension spacer — factory standard	7QK2179M
24QK46M	0.78" (20 mm)	Right-side front suspension spacer — factory standard	7QK2179M
<b>Raised Front Suspension Spacers</b>			
24QK43M	2.51" (64 mm)	Left-side front suspension spacer — factory standard	7QK2182M
24QK42M	2.20" (56 mm)	Right-side front suspension spacer — factory standard	7QK2182M

To provide more latitude when a leaning chassis condition is encountered, additional front suspension spacers have been made available through the MACK Parts System. Part numbers and the "A" dimension for these service replacement spacers are as follows:

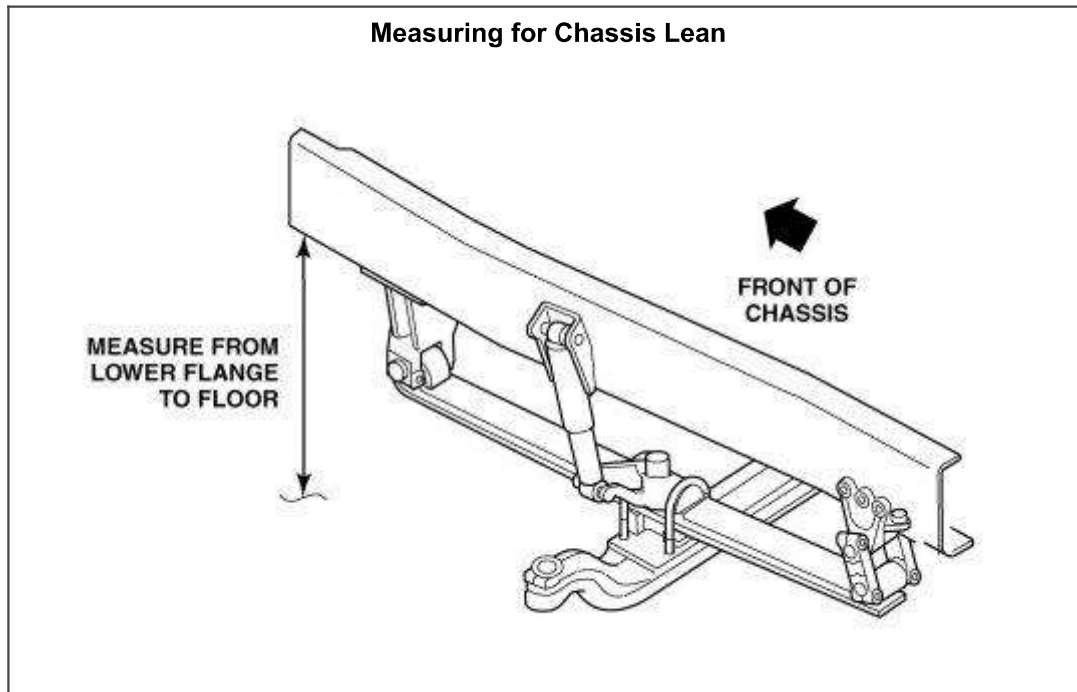
<b>Common Front Suspension Spacers</b>			
<b>Part number</b>	<b>"A Dimension"</b>	<b>Description</b>	<b>Uses Spring Clip part number</b>
24QK48M	1.41" (36 mm)	Front suspension spacer — service replacement part	7QK2179M
24QK49M	1.73" (44 mm)	Front suspension spacer — service replacement part	7QK2182M
<b>Raised Front Suspension Spacers</b>			
24QK411M	1.97" (50 mm)	Front suspension spacer — service replacement part	7QK2182M

A leaning chassis can be corrected by either replacing the existing spacers with spacers of a different thickness, or swapping the existing spacers from side-to-side as required to bring the chassis into specifications. Verify and correct the chassis lean condition as follows:

*Note: Before taking measurements to verify the leaning condition, make sure that all customer-specified equipment and accessories are present on the chassis.*

*Before proceeding, check for obvious causes of chassis lean, such as mismatched tires, etc.*

1. Reference the chassis build records and determine which spacer arrangement (common or raised) was utilized.
2. Park the vehicle on a hard level surface.
3. If equipped with rear air suspension, measure and adjust the rear suspension ride height as required.
4. If equipped with rear air suspension, measure and adjust the rear suspension ride height as required.



The difference between the two measurements should be less than 6.35 mm (1/4"). If the difference is greater than 1/4" (6.35 mm), correct the chassis lean by either replacing the existing spacers with spacers of a different thickness or by swapping the spacers from side-to-side, whichever method would bring the vehicle back within specifications. (Refer to the Frame, Axle and Suspension Service, and Total Vehicle Alignment manual, 14–103, for information on front suspension spacers.)

*Note: When correcting a chassis lean condition, always make initial changes to the right-hand side of the chassis first. If changing the right-hand spacer does not bring the chassis within specifications (less than 6.35 mm [1/4"]), the spacers on the left-hand side of the vehicle can be changed.*



**Caution**

Changing the left-hand spacers can affect steering geometry. DO NOT change left-side spacer height more than 12.7 mm (1/2").

5. The spring clips (U-bolts) and nuts (part number 181AM5006) must be changed when the front suspension spacers are changed. The following chart provides the correct spring clip part number for the installed spacers.

For Suspension Spacer part number	Use Spring Clip part number	Nut part number
-----------------------------------	-----------------------------	-----------------

24QK47M (Common front suspension spacer)	7QK2179M	181AM5006
24QK46M (Common front suspension spacer)	7QK2179M	181AM5006
24QK49M (Common front suspension spacer)	7QK2182M	181AM5006
24QK48M (Common front suspension spacer)	7QK2179M	181AM5006
24QK43M (Raised front suspension spacer)	7QK2182M	181AM5006
24QK42M (Raised front suspension spacer)	7QK2182M	181AM5006
24QK411M (Raised front suspension spacer)	7QK2182M	181AM5006



## Caution

Any repair operation involving the removal and reinstallation of the spring clips requires that the spring clips be retorqued after a minimum of one day or a maximum of one week or 5 000 km/ 3,000 miles of service (refer to the Maintenance and Lubrication Manual, TS494.)

*Note: Correcting chassis lean, which is due to customer-installed equipment is a non-warrantable repair.*

## Issued by

Technical Service