

# CHASSIS ENGINEERING GUIDELINES

(ISSUE B, AUGUST 2019)

## DESIGN GUIDELINES FOR:

**FUSO SHOGUN 6x4 TRACTOR**

**FUSO HD 6x4 TRACTOR**

## MODELS:

FV74HJR

FV54SJR

## APPLICATIONS - TRACTOR

These recommendations have been prepared for design engineers and body builders as a guide to assist when selecting and specifying chassis modification and/or body fitment.

These guidelines should be read in conjunction with the Mitsubishi Fuso Truck & Bus Body Equipment Mounting Directives available on the FUSO Body Builder Portal. Use these guidelines to determine any reinforcement details required for each application.

### CHASSIS FRAME MATERIAL

Hot Rolled Steel, 540 MPa tensile, 380 MPa yield.

### LOAD CONSIDERATIONS

#### TRACTOR

**POINT LOAD** Consider as a concentrated load applied through the fifth wheel position ahead of rear axis.

**SIDE LIFTER** Side lifter operation is a heavy duty application and may require additional frame engineering.

### MAXIMUM DESIGN STRESS

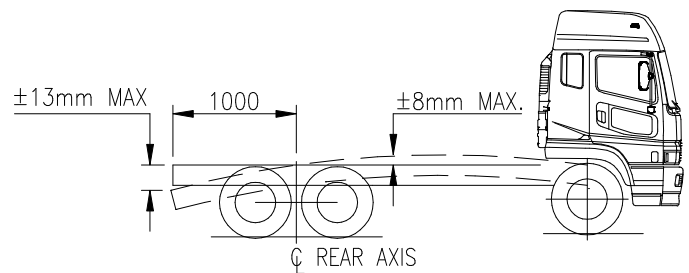
Recommended maximum design stress = 35%\* of chassis yield stress (133 MPa) for sections of frame that are unmodified or do not contain stress raisers. Appropriate allowance should be made for details in the frame that have been modified or contain stress raisers. Refer to the body builders manual for stress levels using static load applications.

For heavy duty, more arduous applications (eg, sidelifter) the stress levels should be reduced a further 33% to enhance frame durability.

Recommended heavy duty design stress = 2/3. Recommended max design stress = 90 MPa.

### MAXIMUM CHASSIS DEFLECTION

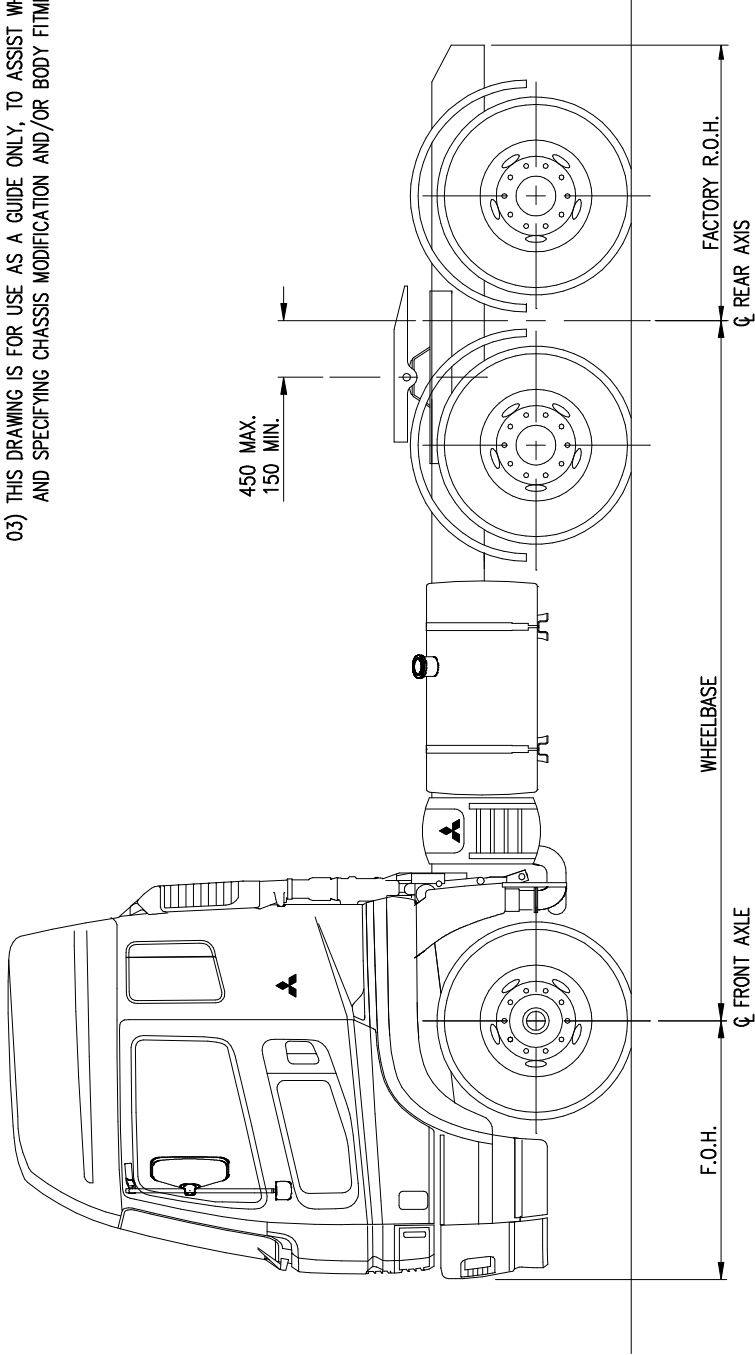
- CASE 1** Between front and rear axis.  
Maximum permissible deflection:  $\pm 8\text{mm}$ .
- CASE 2** Rear overhang.  
Maximum permissible deflection: 13mm at 1000mm or greater, rear of rear axis.



This specification sheet applies to vehicles supplied by Fuso NZ for the New Zealand market. REF: J24267 / J-HDEUROSUB.DWG  
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**NOTES:**

- 01) THE FITTING OF A FIFTH WHEEL AND ANY WORK ON THE CHASSIS FRAME MUST BE CARRIED OUT IN ACCORDANCE WITH THE FUSO GUIDELINES FOR THIS MODEL AND GOOD INDUSTRY PRACTICE.
- 02) FOR FIFTH WHEEL APPLICATIONS, A SUBFRAME, ATTACHMENT ANGLES, OR CHASSIS REINFORCEMENT IS REQUIRED, AND THIS REQUIREMENT SHOULD BE DETERMINED BY ENGINEERING CALCULATION AND ASSESSMENT USING NZS5450 AND THE FUSO GUIDELINES.
- 03) THIS DRAWING IS FOR USE AS A GUIDE ONLY, TO ASSIST WHEN SELECTING AND SPECIFYING CHASSIS MODIFICATION AND/OR BODY FITMENT.



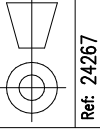
MODEL	WHEELBASE	F.O.H.	FACTORY R.O.H.
FV74HJR	3860mm	1370mm	1460mm
FV74HJR	3910mm	1370mm	1460mm

B	20/8/2019	REISSUE WITH EURO 6 MODEL CODE AND WHEELBASE	K.H.
A	1/8/2018	FIRST ISSUE	K.H.
ISSUE DATE	CHANGES MADE	BY	



**FUSO NEW ZEALAND LTD**  
 8 Landing Drive, Auckland Airport, 2002  
 PO Box 107 166, Auckland Airport, 2150

FV54SJR/FV74HJR 6 X 4 TRACTOR  
**SAMPLE TRACTOR UNIT LAYOUT**



Ref: 24267  
 Drawn: R.F.  
 Date: 20/8/19  
 Issue: B  
 Scale: 1:30  
 Chkd:  
 Date:

Sheet: 01  
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