

CHASSIS ENGINEERING GUIDELINES

(ISSUE A, AUGUST 2018)

**DESIGN GUIDELINES FOR:
FUSO ENDURO FA 4x2**

**MODELS:
FAV1PH**

APPLICATIONS - FLAT DECK, CURTAINSIDER, TIPPER

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.

CHASSIS FRAME MATERIAL

Hot Rolled Steel, 500 MPa tensile, 460 MPa yield. Refer to chassis section modulus drawing for each model.

MAXIMUM DESIGN STRESS

Recommended maximum design stress = 35% of chassis yield stress (161 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.

LOAD CONSIDERATIONS

TIPPER

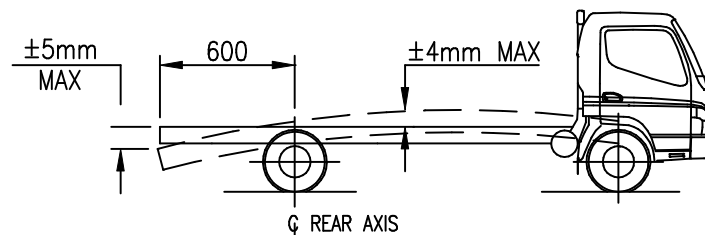
AT LIFT OFF	Point when body raised just clear of the chassis thus imposing two point loads on the chassis rails at hinge and hoist mount.
AT MAX TIP	Point when the body is raised to tip angle of 48°, (tail door closed) so loads act at the hoist mounting and hinge pivot points.
LOAD CENTRE	Determined as water level load 300mm above chassis.
SPREADING	Spreading work imposes higher frame loads and may require chassis reinforcement.

FLAT DECK

U.D.L	Consider as a uniformly distributed load over whole or part of deck length.
CURTAINSIDER	Consider as a uniformly distributed load over whole or part of deck length in conjunction with point loads imposed by body and taillifts.

MAXIMUM CHASSIS DEFLECTION

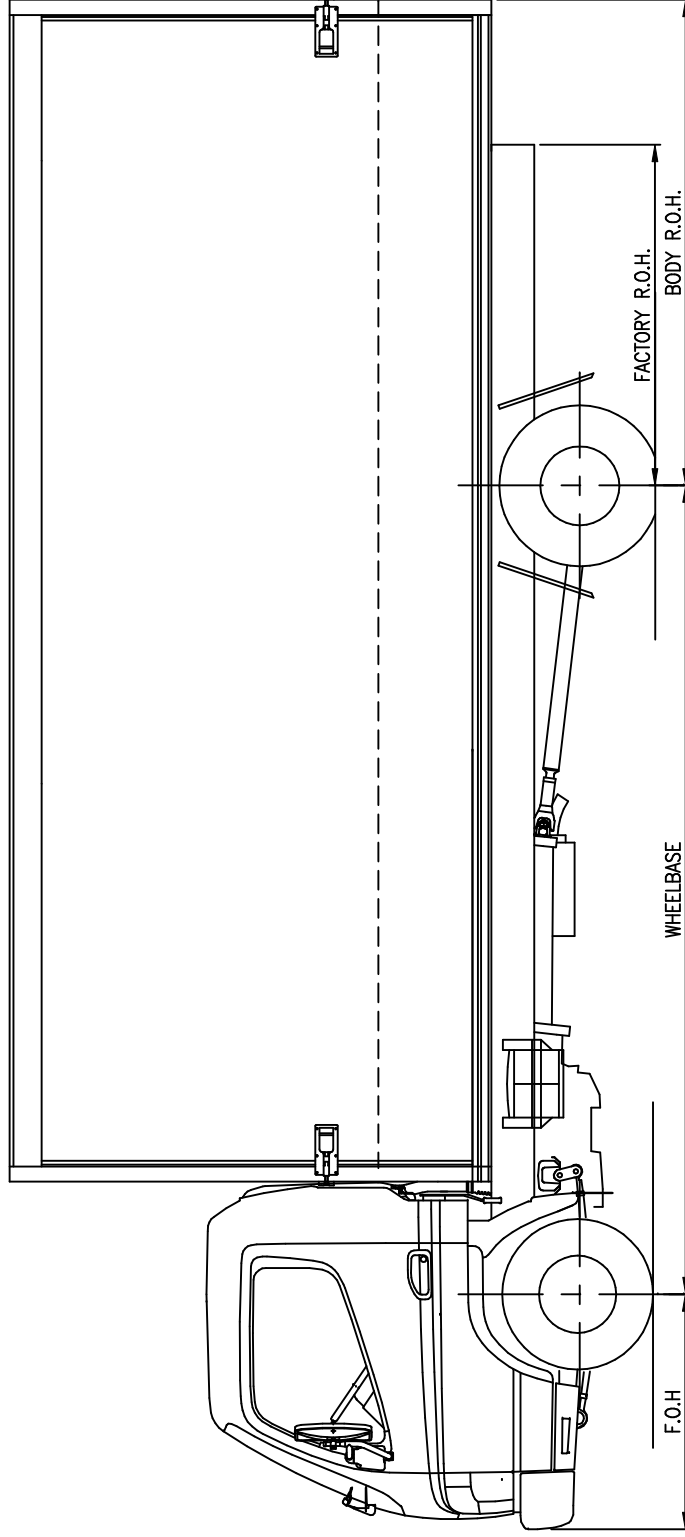
CASE 1	Between front and rear axis. Maximum permissible deflection: $\pm 4\text{mm}$.
CASE 2	Rear overhang. Maximum permissible deflection: 5mm at 600mm or greater, rear of rear axis.



This specification sheet applies to vehicles supplied by Fuso NZ for the New Zealand market. REF: J22974 / FA-ENDUROSUA.DWG
Copyright © Fuso NZ (2018)

NOTES:

- 01) THIS CHASSIS (WITHOUT A SUBFRAME) IS SUITABLE FOR FITTING A CURTAINSIDER BODY AND LOADS UP TO THE MANUFACTURERS GVM PROVIDING THE BODY/CHASSIS R.O.H. DOES NOT EXCEED THE MAXIMUM LEGAL LIMIT.
- 02) THE FITTING OF A BODY AND ANY WORK ON THE CHASSIS FRAME MUST BE CARRIED OUT IN ACCORDANCE WITH THE FUSO GUIDELINES FOR THIS MODEL AND GOOD INDUSTRY PRACTICE.
- 03) THIS DRAWING IS FOR USE AS A GUIDE ONLY, TO ASSIST WHEN SELECTING AND SPECIFYING CHASSIS MODIFICATION AND/OR BODY FITMENT.
- 04) REGARDLESS OF THE BODY/CHASSIS REAR OVER HANG, FITMENT OF A TAILLIFT MAY REQUIRE A SUBFRAME OR ADDITIONAL CHASSIS REINFORCEMENT, AND THIS REQUIREMENT SHOULD BE DETERMINED BY ENGINEERING CALCULATION AND ASSESSMENT USING THE FUSO GUIDELINES.



MODEL	WHEELBASE	F.O.H.	FACTORY R.O.H.	BODY R.O.H.
FAV1PH	4250mm	1275mm	1940mm	-

A	17/8/2018	FIRST ISSUE	K.H.
		CHANGES MADE	BY



FUSO NEW ZEALAND LTD
 8 Landing Drive, Auckland Airport, 2022
 PO Box 107 166, Auckland Airport, 2150

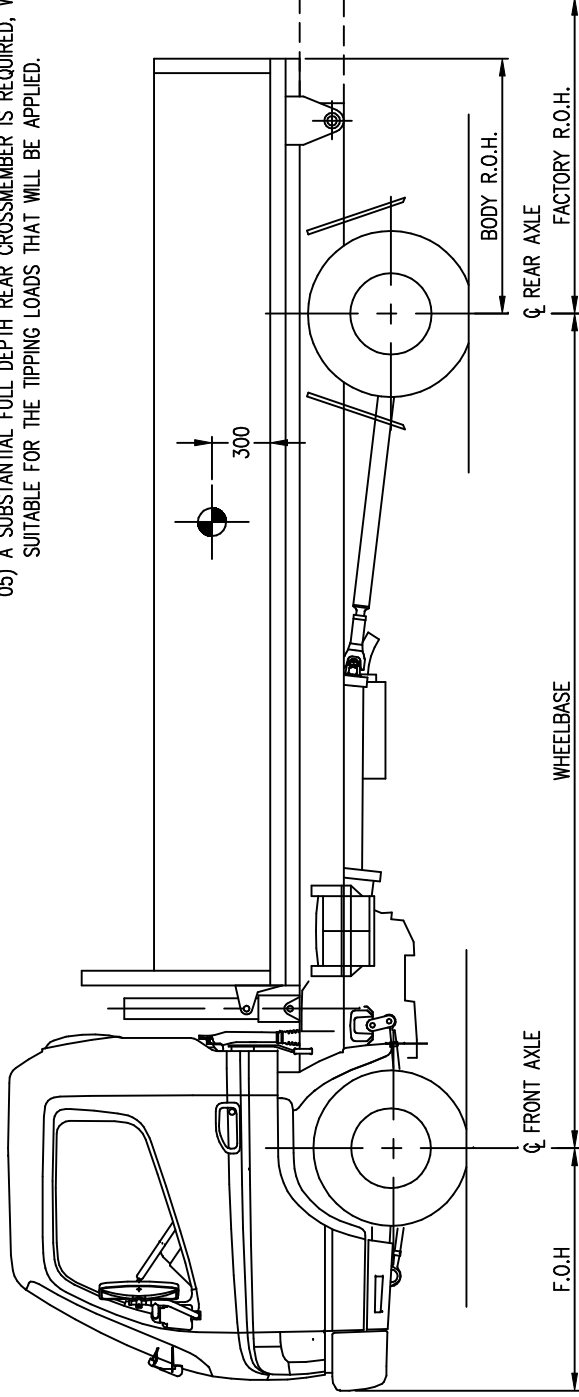


Ref: 22974	Drawn: K.H.	Issue: A	Sheet: 01
Date: 17/8/2018	Scale: 1:30	Chkd:	560823A1

FUSO ENDURO FAV1PH 4 x 2
SAMPLE CURTAINSIDER/FLAT DECK LAYOUT

NOTES:

- 01) THIS CHASSIS (WITHOUT A SUBFRAME) IS SUITABLE FOR FITTING AN F.O.B. (OR B.F.O.B.) HOIST AND BODY, AND LOADS UP TO THE MANUFACTURERS G.V.M. PROVIDING THE BODY OR HINGE PIVOT DO NOT EXCEED THE RELEVANT BODY R.O.H. STATED.
- 02) THE FITTING OF A BODY AND ANY WORK ON THE CHASSIS FRAME MUST BE CARRIED OUT IN ACCORDANCE WITH THE FUSO GUIDELINES FOR THIS MODEL AND GOOD INDUSTRY PRACTICE.
- 03) IF THE REAR OVERHANG OR THE HINGE PIVOT EXCEEDS THOSE STATED BELOW, A SUBFRAME OR CHASSIS REINFORCEMENT IS RECOMMENDED, AND THIS REQUIREMENT SHOULD BE DETERMINED BY ENGINEERING CALCULATION AND ASSESSMENT USING THE FUSO GUIDELINES.
- 04) THIS DRAWING IS FOR USE AS A GUIDE ONLY, TO ASSIST WHEN SELECTING AND SPECIFYING CHASSIS MODIFICATION AND/OR BODY FITMENT.
- 05) A SUBSTANTIAL FULL DEPTH REAR CROSSMEMBER IS REQUIRED, WHICH IS SUITABLE FOR THE TIPPING LOADS THAT WILL BE APPLIED.



MODEL	WHEELBASE	F.O.H.	FACTORY R.O.H.	BODY R.O.H.
FAV1PH	4250mm	1275mm	1940mm	2000mm

ISSUE DATE	17/8/2018	FIRST ISSUE	K.H.
CHANGES MADE			BY



FUSO NEW ZEALAND LTD
 8 Landing Drive, Auckland Airport, 2022
 PO Box 107 166, Auckland Airport, 2150

FUSO ENDURO FAV1PH 4x2
SAMPLE F.O.B. TIPPING LAYOUT

	Ref: 22974	Drawn: K.H. Issue: A Date: 17/8/2018 Scale: 1:30	3 - 560823	Sheet: 02
				560823A2