

Chapter 6

INSTRUCTIONS FOR BUILDING UP OF REAR BODY

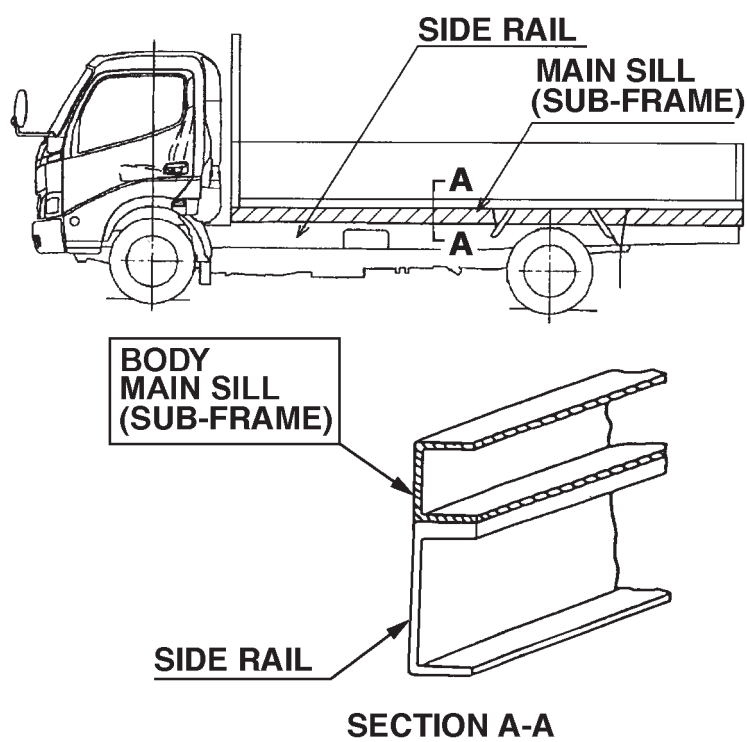
1. MAIN SILL (SUB-FRAME)
2. REAR AXLE
3. REAR BODY LENGTH AND MAIN SILL (SUB-FRAME) DIMENSIONS
4. U-BOLTS
5. MOUNTING SUB-FRAME WITH U-BOLT
6. MOUNTING OF REAR FENDER AND MUDGUARD

1. MAIN SILL (SUB-FRAME)

When mounting a body or equipment, always fit a main sill (sub-frame) on the top surface of the side rail of the chassis frame.

When mounting the main sill on top of the side rail, make sure that you position it so as to disperse the stress placed on the side rail by loading.

Also be sure to secure all mechanisms of the body equipment unit to the main sill, except for the combination parts between the main sill and the side rail.

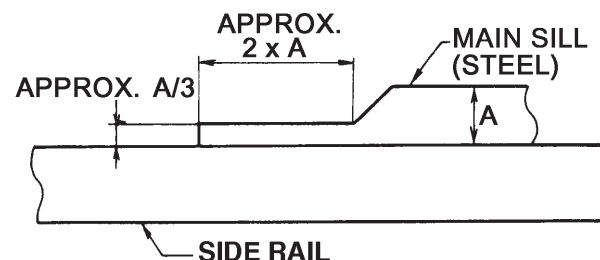
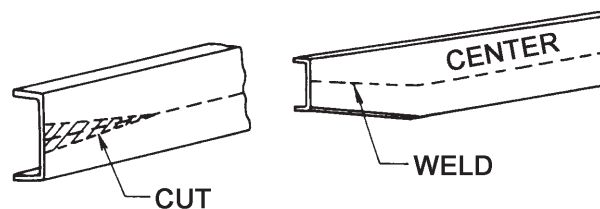
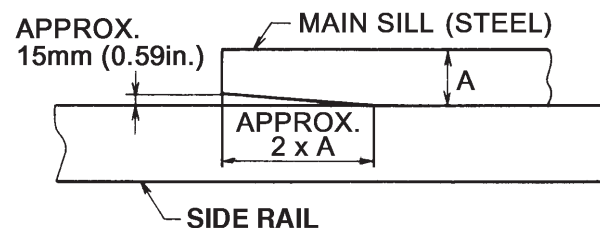
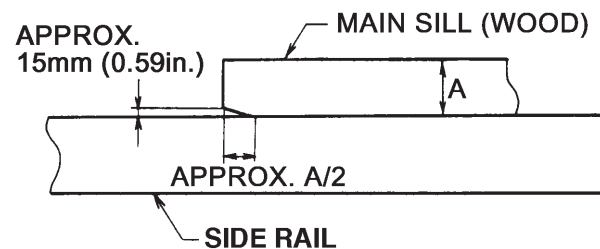


Shape of front end

The front end of the main sill, which comes into contact with the side rail, should be shaped as illustrated below in order to disperse the concentrated load.

The following illustrations show the shapes of the main sill (or sub-frame) in the case of ordinary cargo body, van body and the like. In case of other special types of trucks, appropriate considerations should be given in reference to these illustrations.

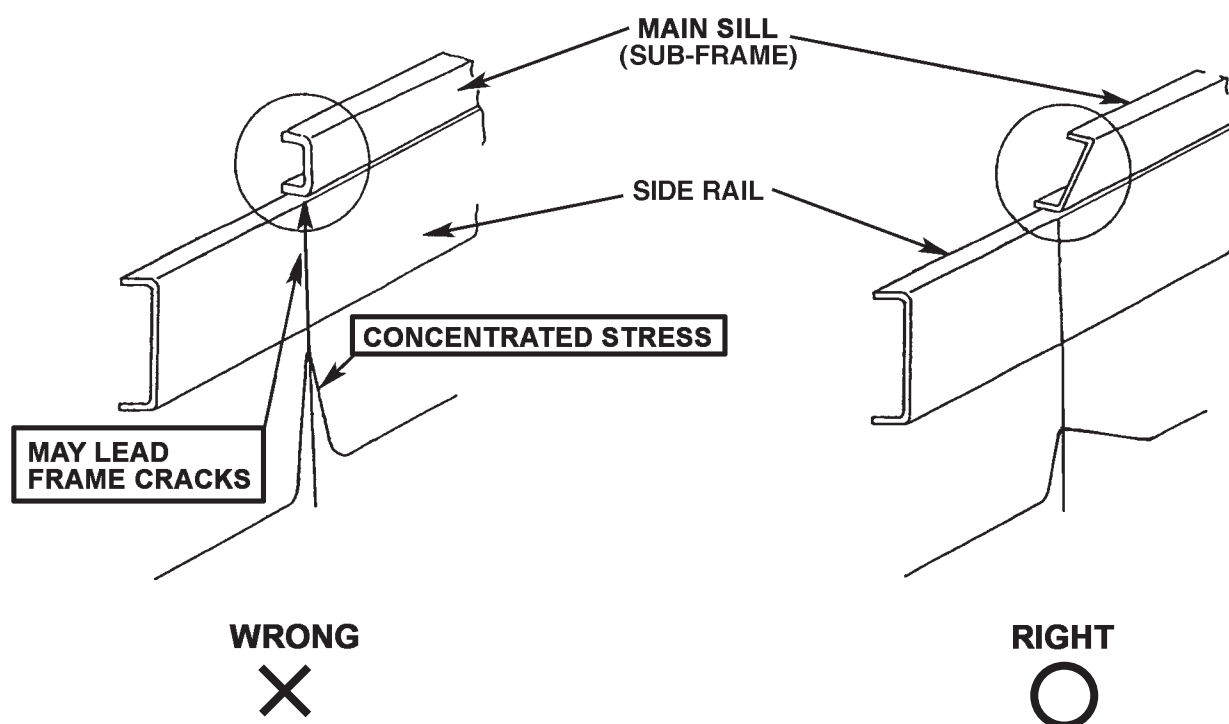
When fixing the main sill to the side rail, no welding and no bolting is recommended even though the sill is made of steel.



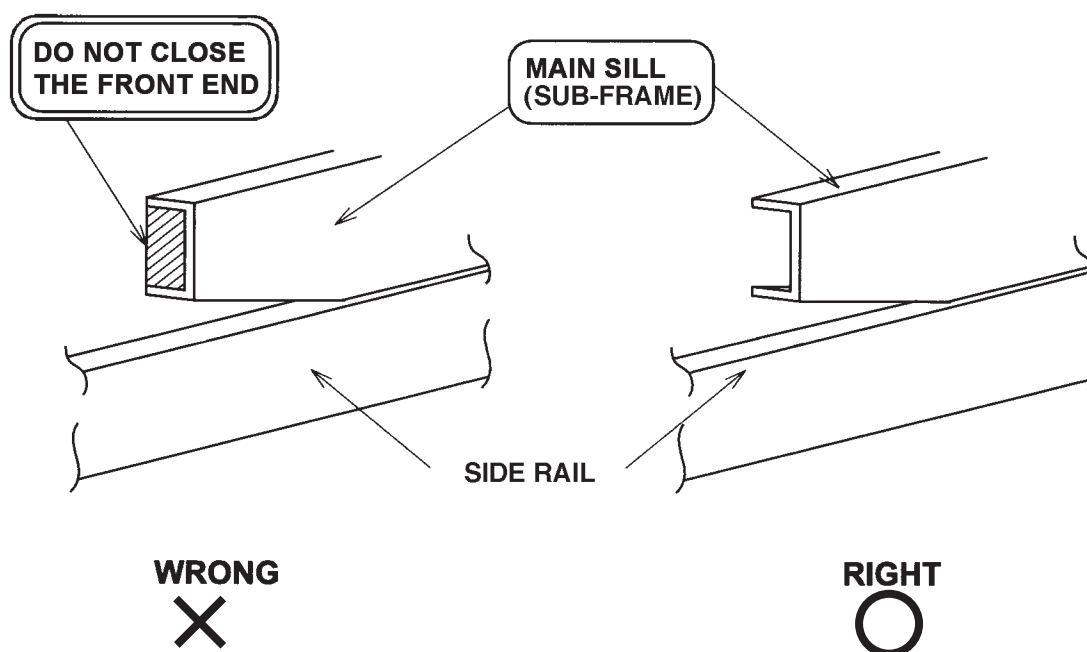
Relation of concentrated stress to forward end shape of main sill.

Preventing concentrated stress around the forward end of the main sill (sub-frame).

If the section modulus at the forward end of the main sill (sub-frame) changes suddenly, this will place concentrated stress on the side rail and may lead to cracks in the side rail. When mounting a body, make sure that the section modulus at the forward end of the main sill (sub-frame) does not change suddenly.

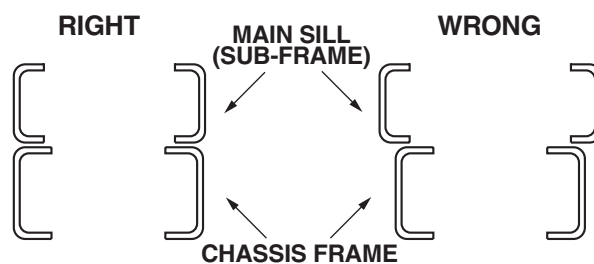


The front end of the main sill (sub-frame), which used pressed or shaped steel material, must not be closed as shown in the figure below to avoid stress concentration.



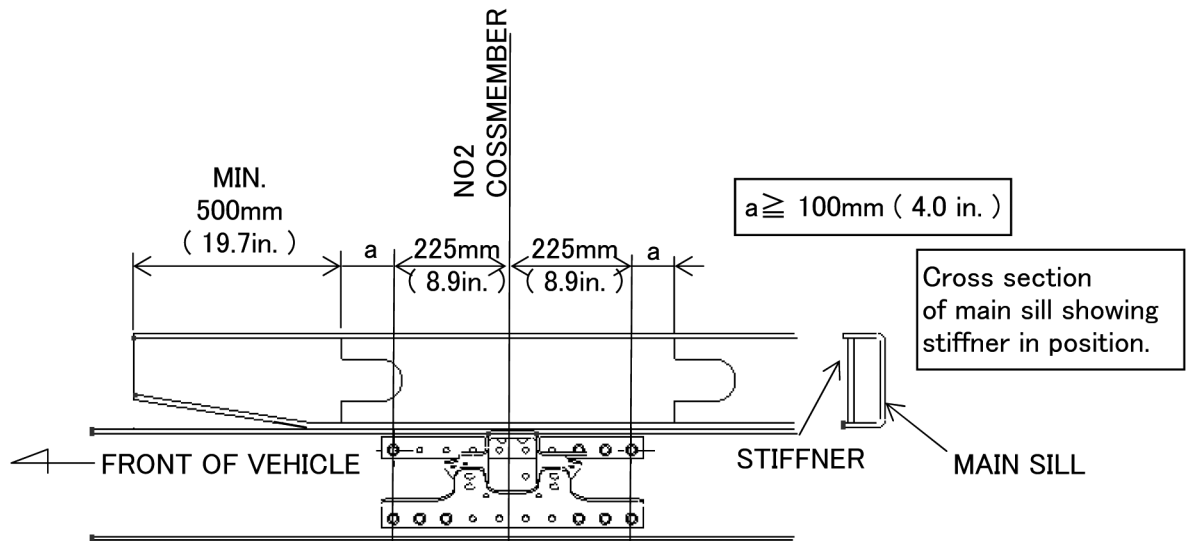
Assembly width of main sill

Assembly width of main sill (sub-frame) of the mounted body or equipment should be same with the chassis frame as following figure.



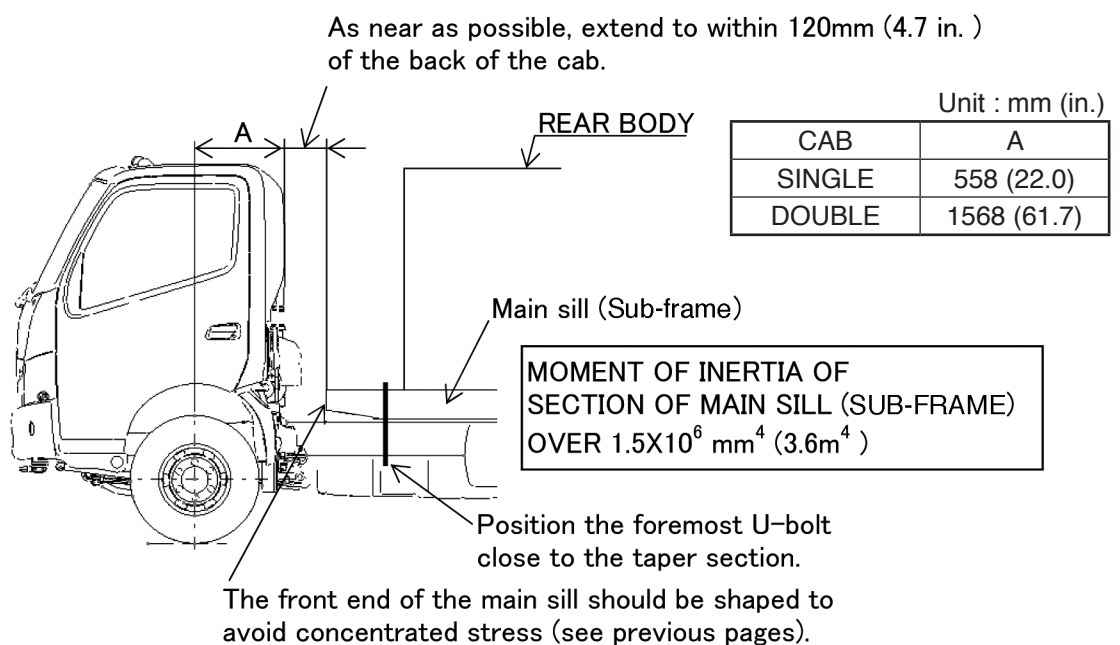
Reinforcement of main sill

When reinforcing the main sill by steel plate, its end must be more than 100 mm (4.0 in.) apart from the bolt of crossmember and fitted with main sill.



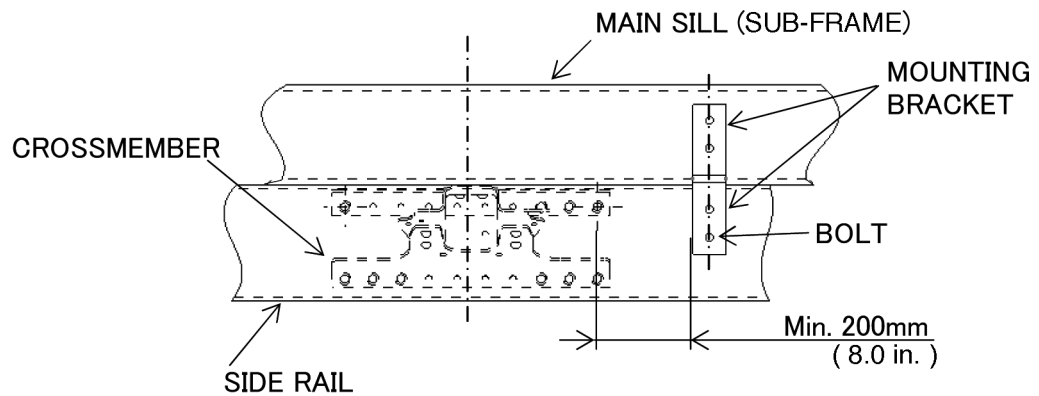
When the superstructure has a high rigidity as in the case van body (particularly refrigerator van body), care must be taken in choosing the vehicle type and in designing the superstructure so that the main sill may be as close to the rear of cab as possible. The superstructure and the main sills should be linked as close as possible by use of stays if there is an excessive gap between the superstructure and the rear of cab.

Pay due attention to the following points in the relations between the rear of cab and the main sill when abnormal vibration will happen on vehicle.

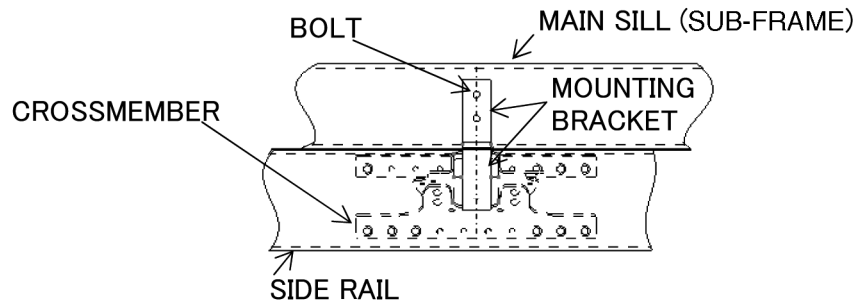


When body mounting brackets are used instead of U-bolts to mount the body, following points must be observed.

- Body mounting bracket shall be 200 mm (8.0 in.) or more apart from the bolt of crossmember.



- If the mounting brackets must be mounted within 200 mm (8.0 in.) of the bolt of No.2 crossmember, they should be positioned at the central nearby existing hole of crossmember.



- Body mounting brackets must be fitted to the side rail with bolts.
You should use existing holes for brackets.
When drilling holes for brackets, do not damage brake pipes and harness wires.

Avoiding Sudden Change of Rigidity around No.2 Crossmember

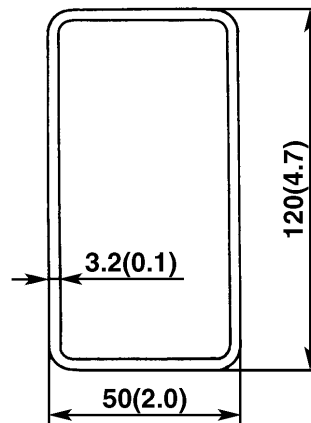
- The parts around No.2 crossmember is easy to occur stress concentration due to constantly receiving the high bending and torsional force under operation of the vehicle.
- Be sure to avoid such structure around No.2 crossmember of the main sill (sub-frame) and body or equipment as sudden change of section modulus or rigidity.

2. REAR AXLE

As the brake hose is fitted over the rear axle, sufficient clearance between the hose and the fittings of rear body is required so that the hose does not contact with the fittings when the axle contacts with the frame.

3. REAR BODY LENGTH AND MAIN SILL (SUB-FRAME) DIMENSIONS

In the case of a vehicle with a long rear body, the sectional dimensions of the rear body main sill should be at least as indicated below.



Unit: mm (in.)

If wooden main sills are used for a long cargo body, the chassis frame and rear body may deflect unusually resulting the side gate of the rear body cannot be opened freely. Therefore, steel sills should be used for the long wheelbase vehicles.

In the case of heavy-load or concentrated load vehicles with the long wheelbase, consider the use of the standard pressure-rolled structural steel material SS400 (Min. 120 mm (4.7 in.) high by 50 mm (2.0 in.) wide by 3.2 mm (0.1 in.) thick) or the like.

When lip shape steel (C-shape) is used for the main or cross sill, provide a drain hole at a place where it will not affect its strength, for accumulation of water inside the steel shape will cause rusting.

4. U-BOLTS

The main sill and the U-bolts fastening, it must be given sufficient clearance to prevent them from contacting brake pipes, hoses, fuel tube, cables and harness wires.

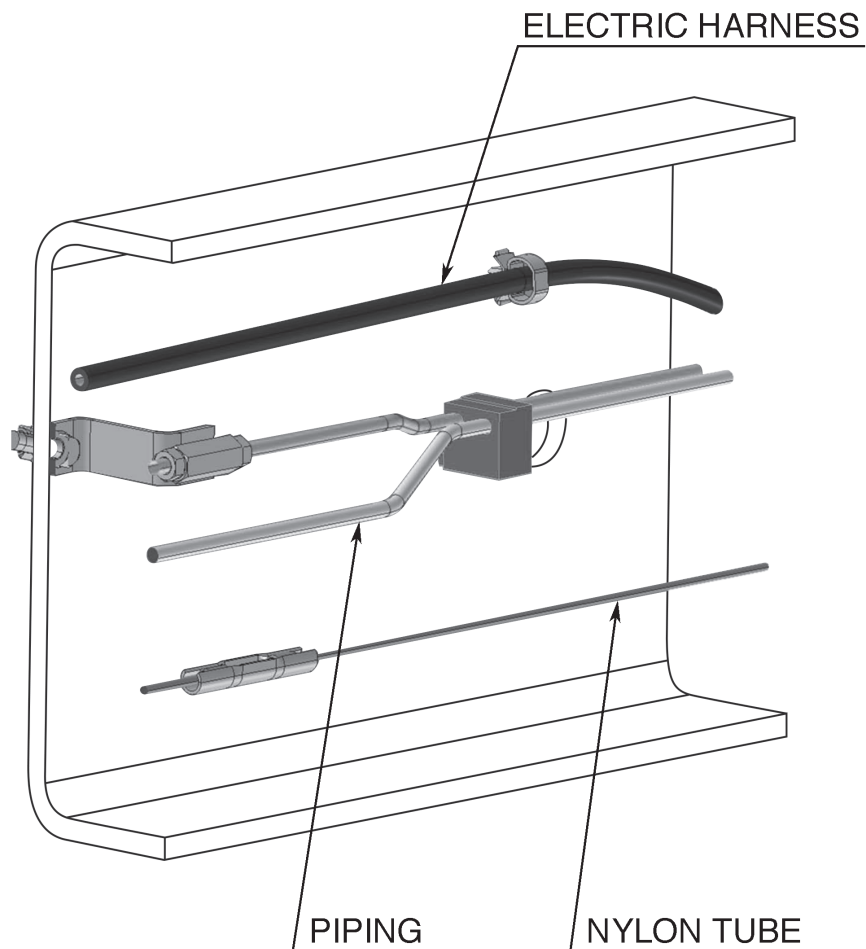
When it is difficult to ensure the required clearance between them and the chassis parts, use flat U-bolts as a remedy.

Use an appropriate prop to support the side rail to which the U-bolt is hooked so that the lower flange may not be deformed.

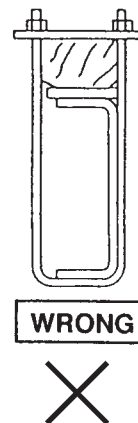
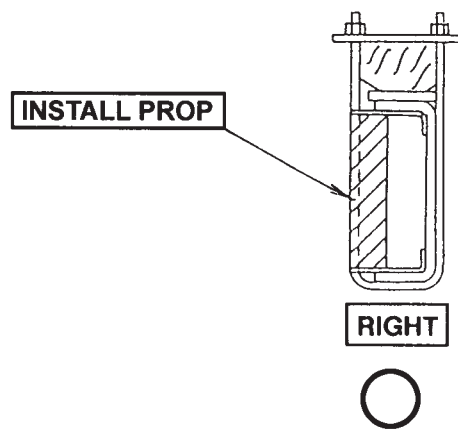
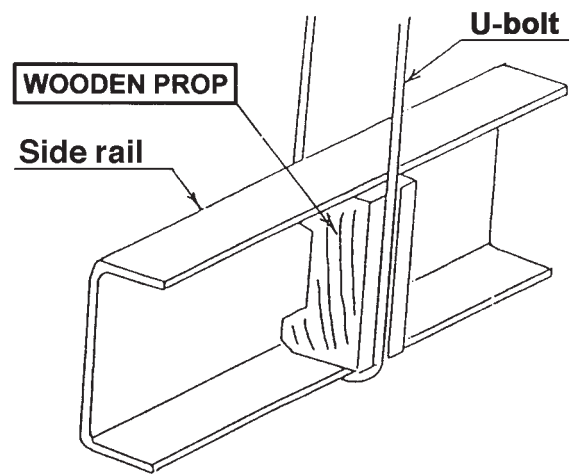
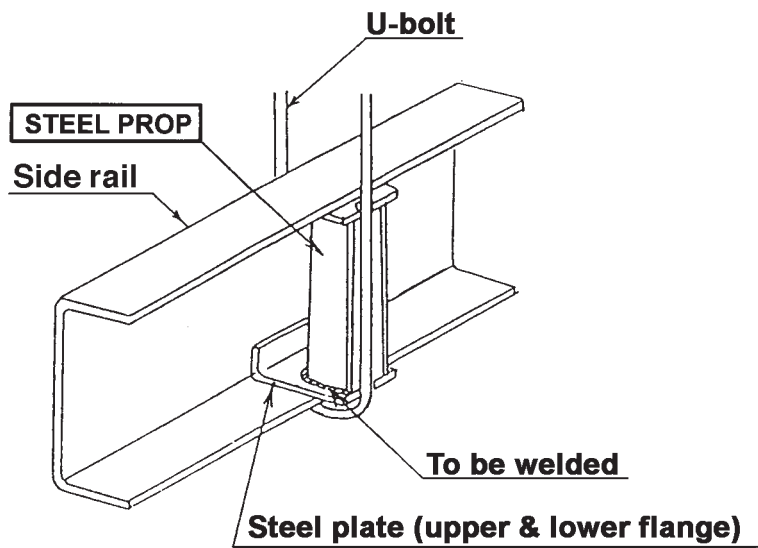
Pay due attention to the clearance between the prop and the brake pipes, hoses, fuel tube, cables and harness wires etc.

In an area close to the muffler, use a steel prop to prevent burning.

[INSIDE OF FRAME SIDE RAIL]



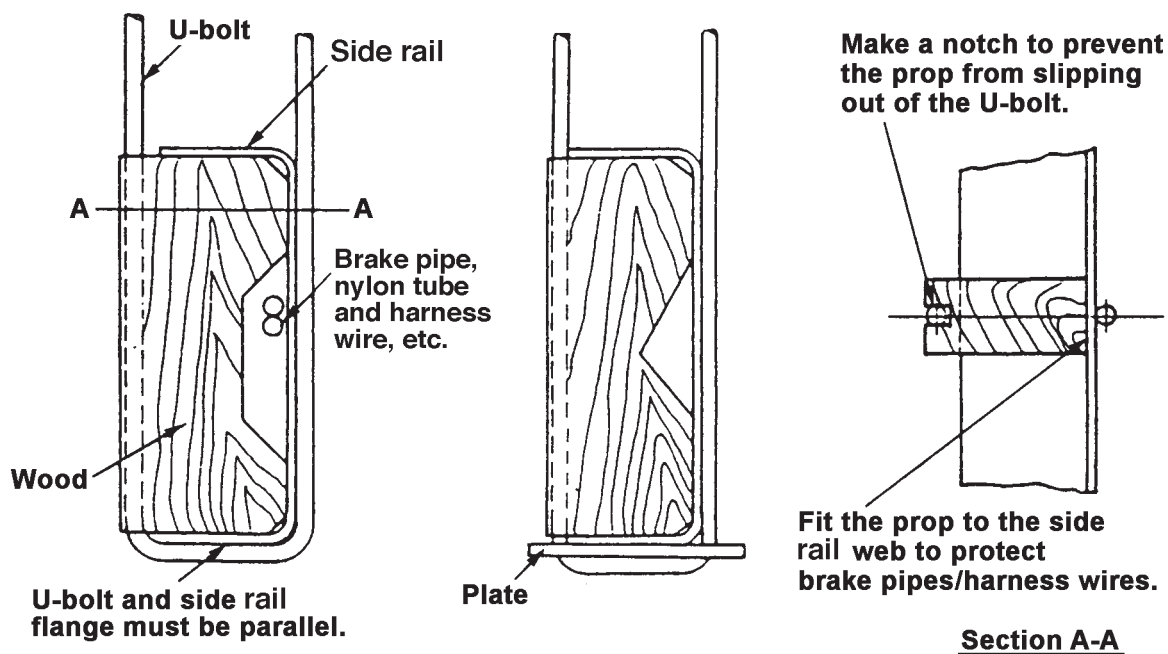
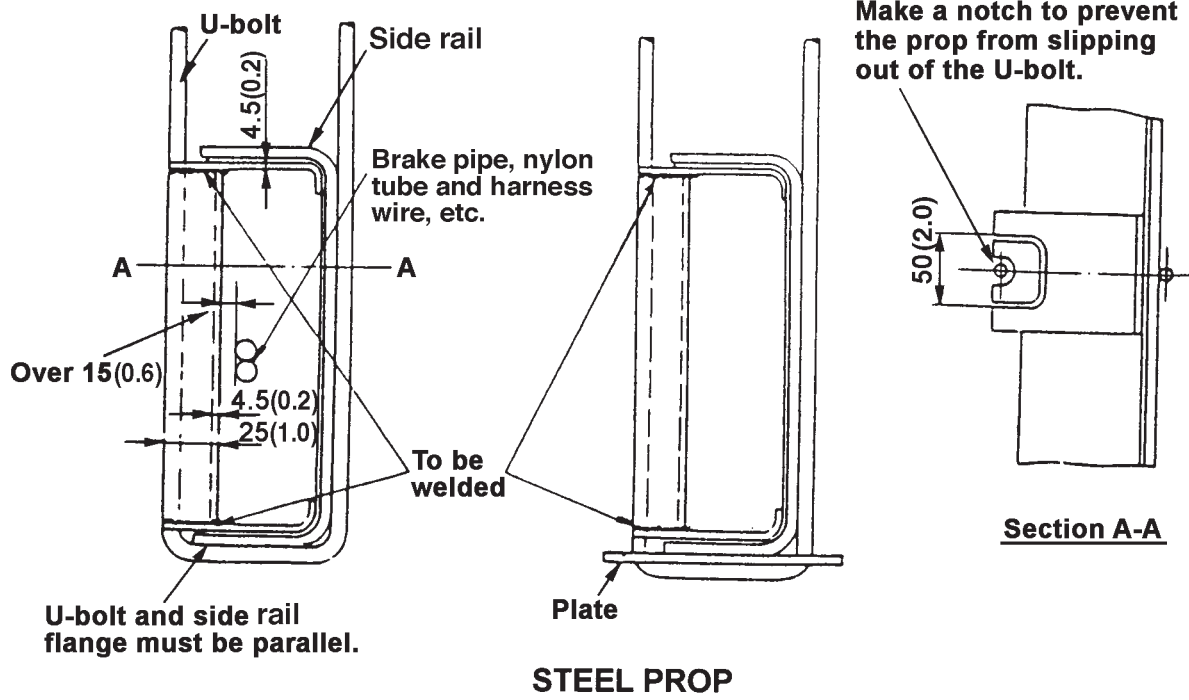
[EXAMPLE STRUCTURE OF PROPS]



[DETAIL OF INSTALLATION METHOD OF THE U-BOLT]

Pay special attention to the plumbing inside the frame rail. As for the rear of the cab and around the rear axles, reference should be made to the instructions for their mounting. Ensure a clearance of 50 mm (2.0 in.) or more between the U-bolts and rubber hose.

Unit: mm (in.)

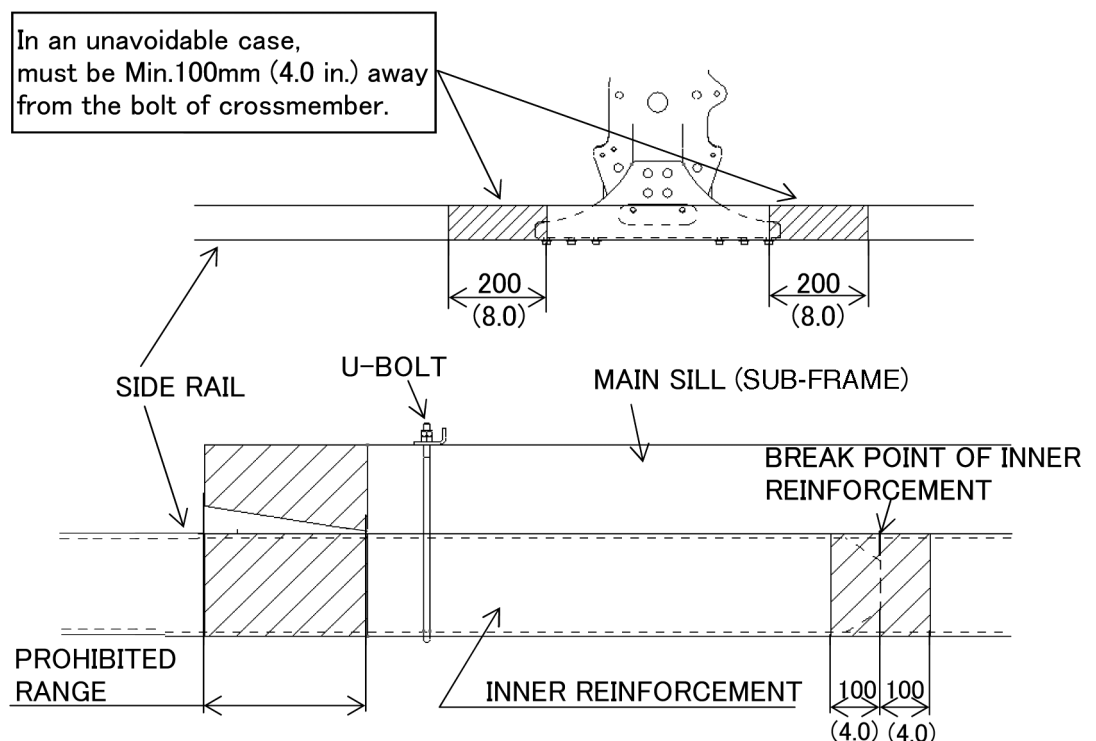


It is desirable to install the U-bolts at the U-bolt mounting positions (standard positions) shown on the below. Installing U-bolts at other positions will impair the frame strength. As a rule, do not install U-bolts at the positions listed below. If it is unavoidable to install U-bolts at prohibited positions, carefully verify the frame strength.

- Point where there is a difference in level on the chassis frame (frame kick point).
→ The U-bolt mounting position must be 50 mm (2.0 in.) or more away from the frame kick point.
- Existing hole in the flange of the side rail
→ The U-bolt mounting position must be 40 mm (1.6 in.) or more away from the existing hole.
- Break point of the side rail inner or outer reinforcement (the section modulus change greatly)
→ The U-bolt mounting position must be 100 mm (4.0 in.) or more away from the break point of the inner or outer reinforcement.
- Near the crossmember
→ As a rule, the U-bolt mounting position must be 200 mm (8.0 in.) or more away from the bolt of crossmember. If impossible, the U-bolt must be at least 100 mm (4.0 in.) away from the bolt of crossmember.
- Stress release point at front end of main sill (sub-frame).
- The details where U-bolt should be installed, see the next page.

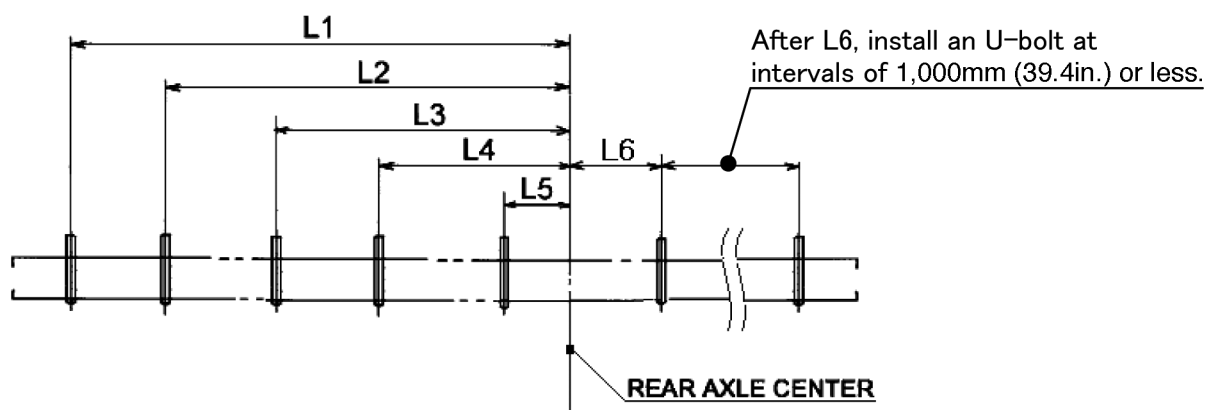
[U-BOLT SHOULD NOT BE INSTALLED AT FOLLOWING RANGE]

Unit : mm (in.)



5. MOUNTING SUB-FRAME WITH U-BOLT

The setting positions of U-bolts should be observed according to the figure shown below.



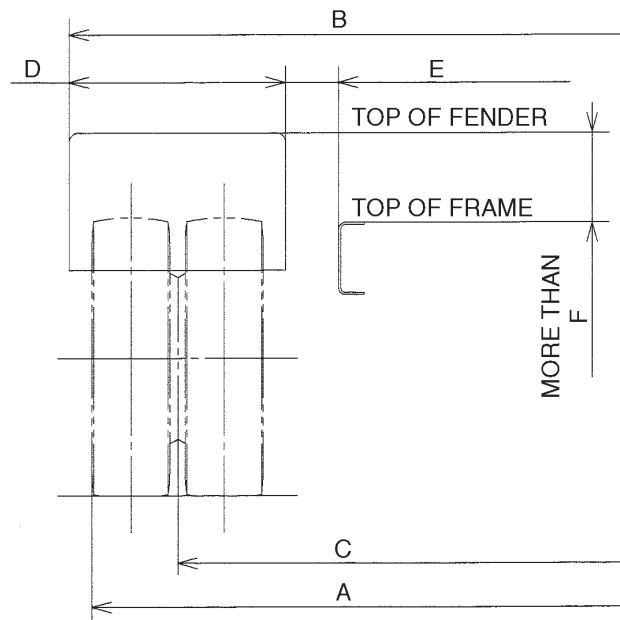
Model		WHEELBASE mm (in.)	CAB	SIDE RAIL	DIMENSION mm (in.)					
					L1	L2	L3	L4	L5	L6
XJC XFC	700	2900 (114)	SINGLE	RH	1925 (75.8)			830 (32.7)	230 (9.1)	1275 (50.2)
				LH				870 (34.3)		
	710	3500 (138)	SINGLE	RH	2525 (99.4)	1415 (55.7)			230 (9.1)	1275 (50.2)
				LH						
	720	3800 (150)	SINGLE	RH	2825 (111.2)	1715 (67.5)		825 (32.5)	230 (9.1)	1275 (50.2)
				LH						
			DOUBLE	RH		1715 (67.5)		875 (34.4)	230 (9.1)	1275 (50.2)
				LH						
	730	4100 (161)	SINGLE	RH	3125 (123.0)	2015 (79.3)		1125 (44.3)	230 (9.1)	1275 (50.2)
				LH						
	740	4400 (173)	SINGLE	RH	3425 (134.8)	2315 (91.1)	1375 (54.1)		230 (9.1)	1275 (50.2)
				LH						
			DOUBLE	RH		2315 (91.1)	1375 (54.1)		230 (9.1)	1275 (50.2)
				LH						

NOTE : When you do not extend rear overhang, the dimensions of L6 recommend 1025mm (40.4in).

6. MOUNTING OF REAR FENDER AND MUDGUARD

Recommendable Mounting Position of Rear Fender

When mounting of rear fenders, determine dimensions of fenders so as not to interfere tires making reference to the following figures.



- See the next page table for dimension.

Unit : mm (in.)

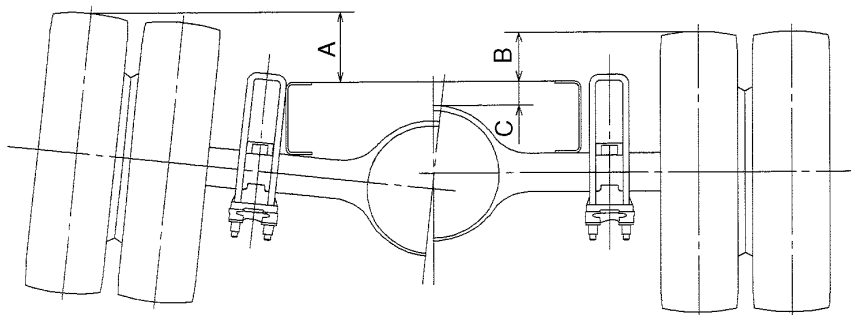
MODEL	TIRE SIZE	A	B	C	D	E	F
XJC700L-WKTQMA3	215/75R17.5	2127 (83.7)	2147 (84.5)	1660 (65.4)	496 (19.5)	159 (6.3)	161(6.3)
XJC710L-WKTQMA3							163 (6.4)
XJC720L-WKTQMA3							162 (6.4)
XJC740L-WKTQMA3							163(6.4)
XJC720L-ZKTQMA3							159(6.3)
XJC740L-ZKTQMA3							189 (7.4)
XJC700L-UKTTMA3	225/70R19.5	2135 (84.1)	2155 (84.8)	1665 (65.6)	502 (19.8)	157 (6.2)	189 (7.4)
XJC710L-UKTTMA3							187(7.4)
XJC720L-UKTTMA3							188(7.4)
XJC730L-UKTTMA3							187(7.4)
XJC740L-UKTTMA3						156(6.1)	187(7.4)
XJC720L-VKTTMA3						157(6.2)	188(7.4)
XJC740L-VKTTMA3						156(6.1)	187(7.4)
XFC710L-UKTTMA3						157 (6.2)	189 (7.4)
XFC720L-UKTTMA3							
XFC730L-UKTTMA3						156(6.1)	187(7.4)
XFC740L-UKTTMA3						157(6.2)	188(7.4)
XFC720L-VKTTMA3						156(6.1)	187(7.4)
XFC740L-VKTTMA3							
XJC700L-XKTQMA3	215/75R17.5	2127 (83.7)	2147 (84.5)	1660 (65.4)	496 (19.5)	159 (6.3)	161(6.3)
XJC710L-XKTQMA3							163 (6.4)
XJC720L-XKTQMA3							159(6.3)
XJC700L-MKTTMA3	225/70R19.5	2135 (84.1)	2155 (84.8)	1665 (65.6)	502 (19.8)	157 (6.2)	189 (7.4)
XJC710L-MKTTMA3							187(7.4)
XJC720L-MKTTMA3							188(7.4)
XJC730L-MKTTMA3							187(7.4)
XJC740L-MKTTMA3						156(6.1)	187(7.4)

Deflection of Rear Tires

Measurements for the maximum deflection for one side tire and for simultaneous left and right deflection are shown blow.

When you mount the body, allow a clearance at least 30 mm (1.2 in.) so as not to obstruct tire deflection.

DEFLECTION OF REAR TIRES



A : MAXIMUM DEFLECTION FOR
ONE SIDE WHEELS

B,C : MAXIMUM SIMULTANEOUS DEFLECTION
RIGHT AND LEFT WHEELS

- See the next page table for dimension.

Unit : mm (in.)

MODEL	TIRE SIZE	A	B	C
XJC700L-WKTQMA3	215/75R17.5	111(4.4)	76 (3.0)	134 (5.3)
XJC710L-WKTQMA3		113 (4.4)		
XJC720L-WKTQMA3		112 (4.4)		
XJC740L-WKTQMA3				
XJC720L-ZKTQMA3				
XJC740L-ZKTQMA3				
XJC700L-UKTTMA3	225/70R19.5	109(4.3)	77(3.0)	144(5.7)
XJC710L-UKTTMA3		139 (5.5)	101(4.0)	120(4.7)
XJC720L-UKTTMA3				
XJC730L-UKTTMA3		137(5.4)	100(3.9)	121(4.8)
XJC740L-UKTTMA3				
XJC720L-VKTTMA3		138(5.4)	101(4.0)	120(4.7)
XJC740L-VKTTMA3		137(5.4)	100(3.9)	121(4.8)
XFC710L-UKTTMA3		139 (5.5)	101(4.0)	120 (4.7)
XFC720L-UKTTMA3				
XFC730L-UKTTMA3		137(5.4)	100(3.9)	121(4.8)
XFC740L-UKTTMA3				
XFC720L-VKTTMA3		138(5.4)	101(4.0)	120(4.7)
XFC740L-VKTTMA3		137(5.4)	100(3.9)	121(4.8)
XJC700L-XKTQMA3		215/75R17.5	111(4.4)	76 (3.0)
XJC710L-XKTQMA3	113 (4.4)			
XJC720L-XKTQMA3				
XJC700L-MKTTMA3	225/70R19.5	109(4.3)	77(3.0)	144(5.7)
XJC710L-MKTTMA3		139 (5.5)	101(4.0)	120(4.7)
XJC720L-MKTTMA3				
XJC730L-MKTTMA3		137(5.4)	100(3.9)	121(4.8)
XJC740L-MKTTMA3				

[NOTE] When tire chain to be equipped, dimensions A and B are to be added 63.5mm (2.5 in.).

Installing Mudguard for Rear Wheel

The installation of the mudguard for the rear wheel can vary by each State's law. Since contents of the obligation differ by each State, observe each State's law.