

Diagrams for amendments to ECE/TRANS/WP.29/GRSG/2011/19 -
Regulation No. 58 (Rear underrun protection)

Diagram 1: Cases where the change in the RUPD height from 100 mm to 150 mm will be difficult (Vehicles with retractable tailgate lift)

Due to the size of Japanese registration plates, the RUPD cannot be extended upwards, and if it is extended downwards, it will result in an undesirable departure angle which causes the RUPD to come in contact with the road surface. Even in the case of vehicles with a short ROH, the RUPD will come in contact with the road surface when the vehicle enters parking lots. (Contact with the road surface occurs when the departure angle is 10° or below.)

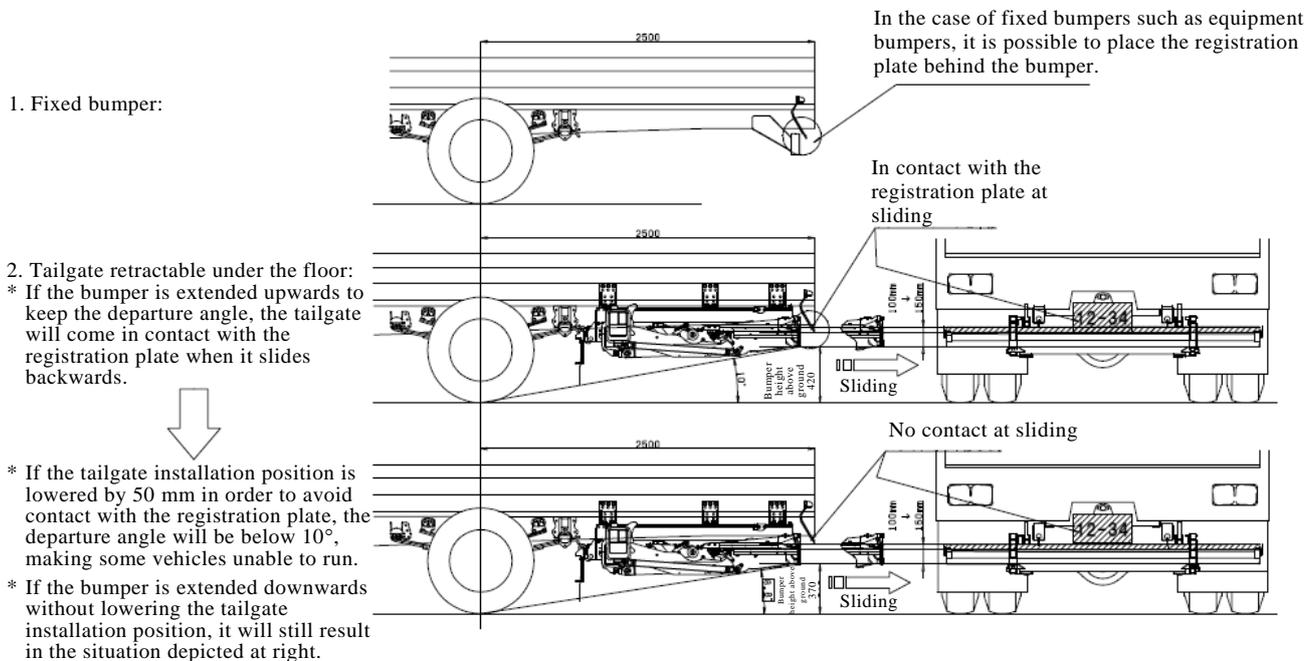


Diagram 2: Cases where the departure angle of 10° or above is necessary

From the standpoint of practicability on the market, the departure angle of 10° is specified. If it is 8°, the RUPD will come in contact with the road surface while the vehicle is running, making it unable to keep running. For medium-sized vehicles, some manufacturers in Japan have established voluntary regulations regarding the departure angle as these vehicles often enter parking lots and/or narrow streets. (The cases where they came in contact with the road surface at a departure angle of 9° or below have been reported.)

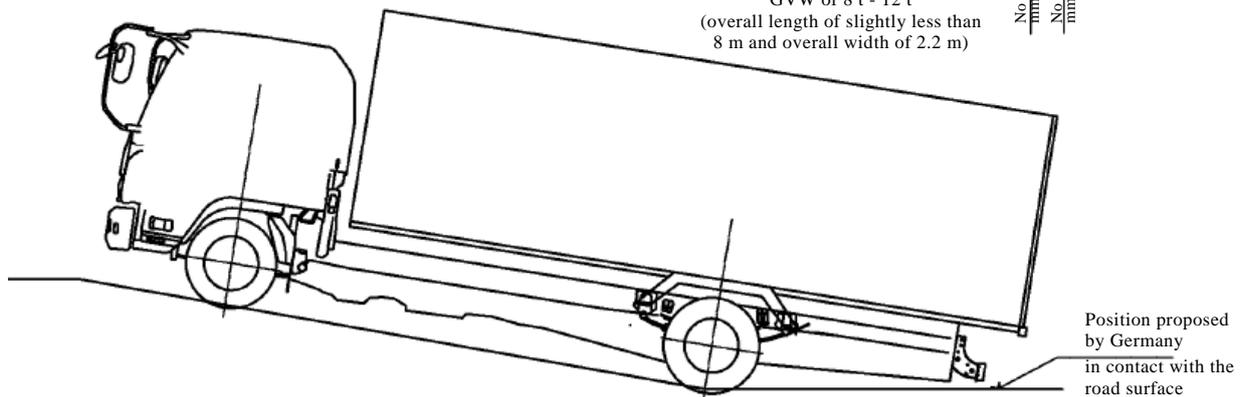
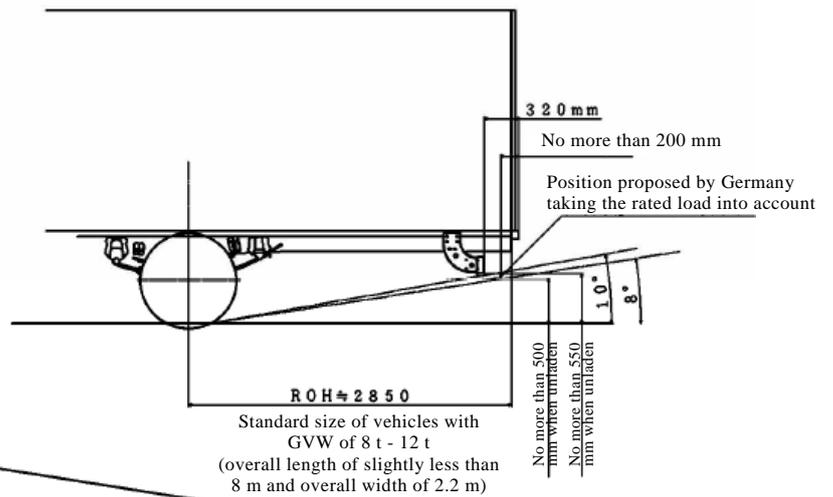
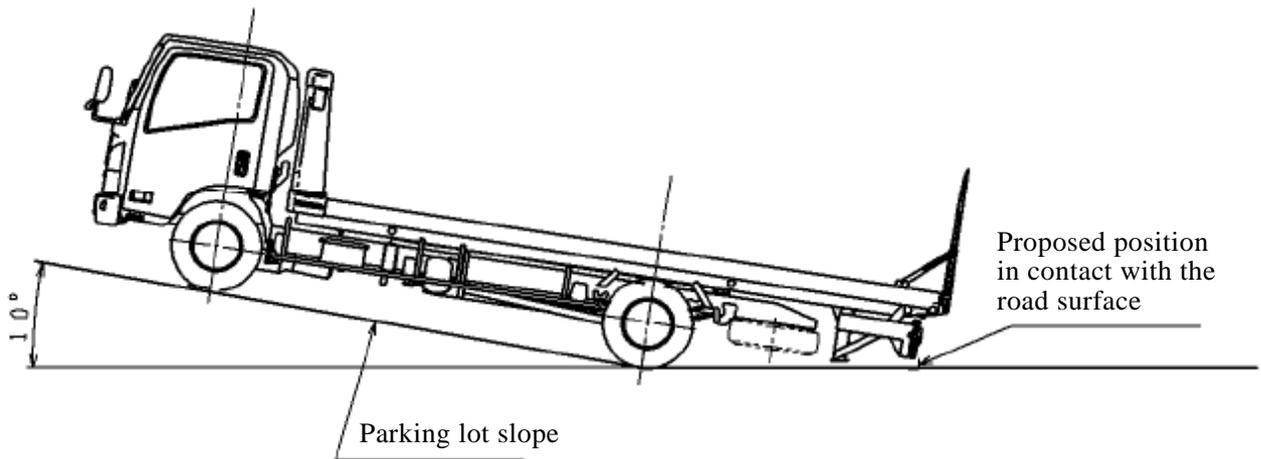


Diagram 3: Cases where the departure angle of 10° or above is necessary (Car carrier vehicles)

The RUPD will come in contact with the road surface while the vehicle is running, making it unable to keep running. (The device will come in contact with the road surface when the vehicle enters parking spaces in urban areas, etc.)

Parking lot uphill slope



Specifications applicable on the flat ground

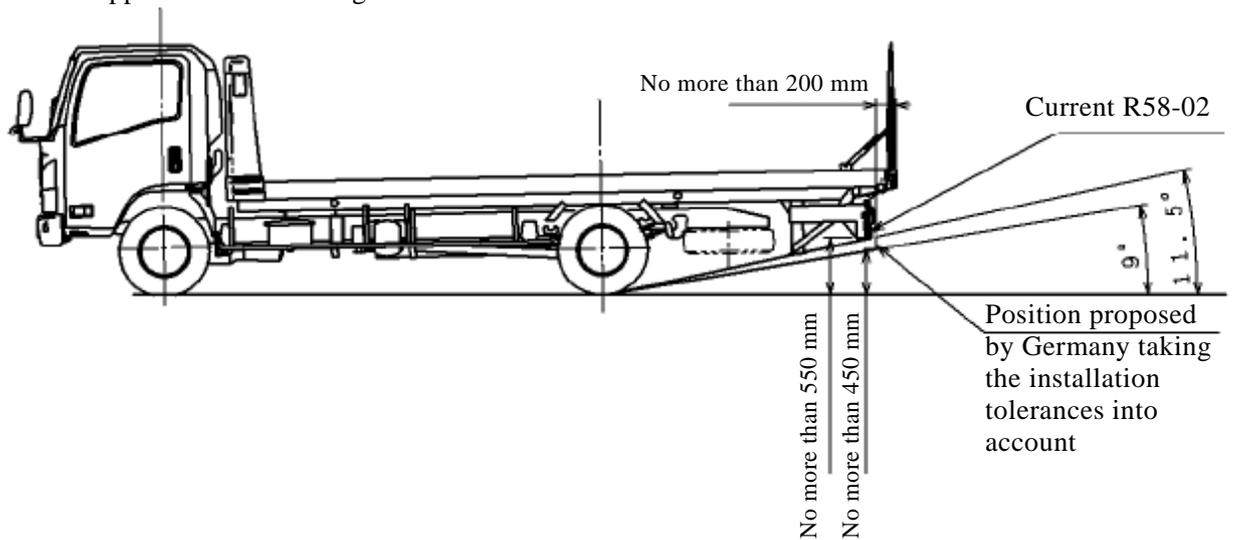


Diagram 4: Cases where the RUPD installation position of 200 mm will cause technical problems in constructing the vehicle structure (Vehicles with platform tailgate lift)

If the horizontal distance between the vehicle's rearmost part and the RUPD installation position is set at 200 mm or less:

The registration plate will be located behind the RUPD, which leads to non-compliance with the registration plate visibility requirement. The proposed amendment to paragraph 25.2 says "For vehicles fitted with a platform lift at the rear the distance may not exceed 300 mm." However, the current distance 330 mm does exceed 300 mm, and the reality is that the registration plate is placed in such a limited space. For this reason, the distance of 350 mm is necessary for vehicles with tailgate lift.)

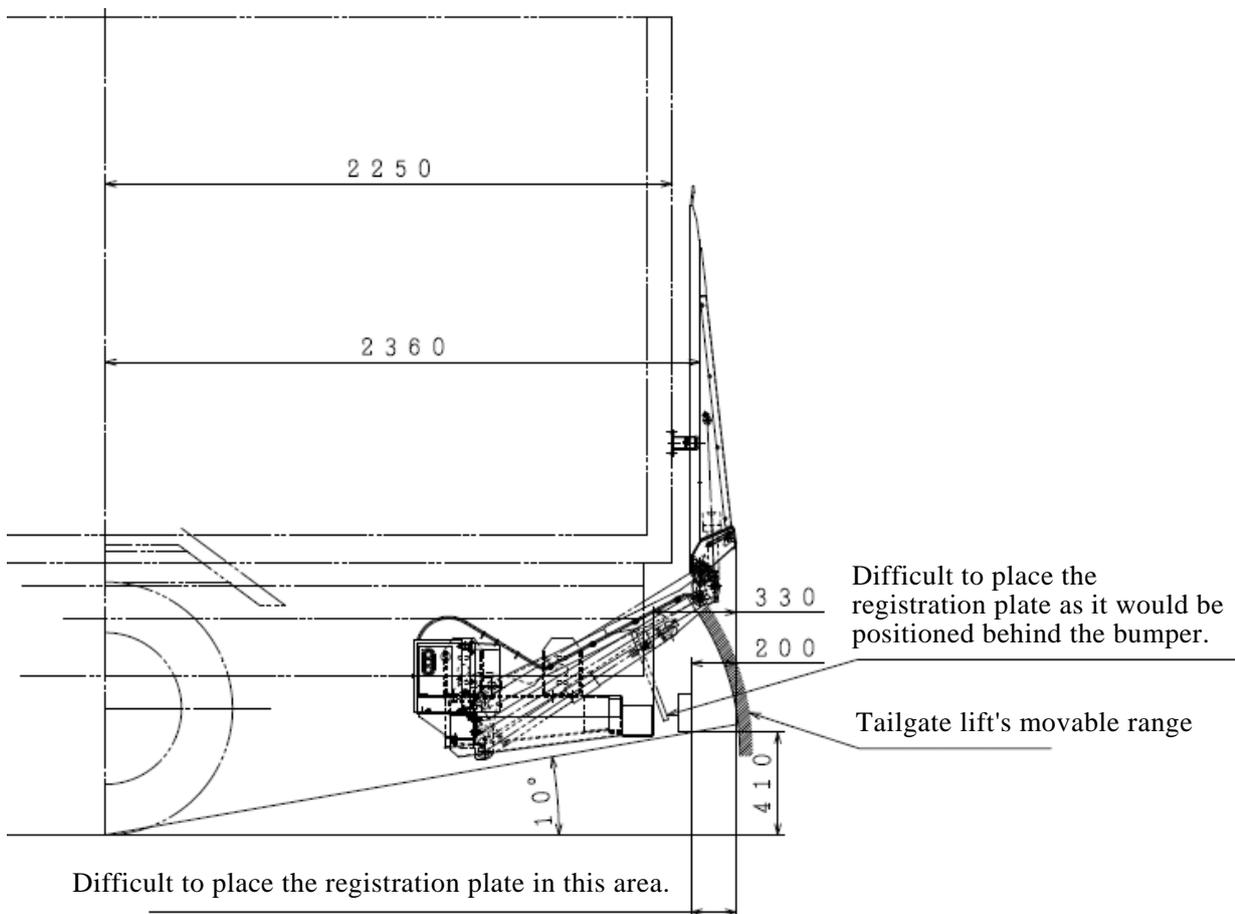


Diagram 5: Cases where the RUPD installation position of 200 mm will cause technical problems in constructing the vehicle structure (Dump trucks)

1. The bed will come in contact with the RUPD when it rises for dumping, which makes the structure impossible. (Figure 1)

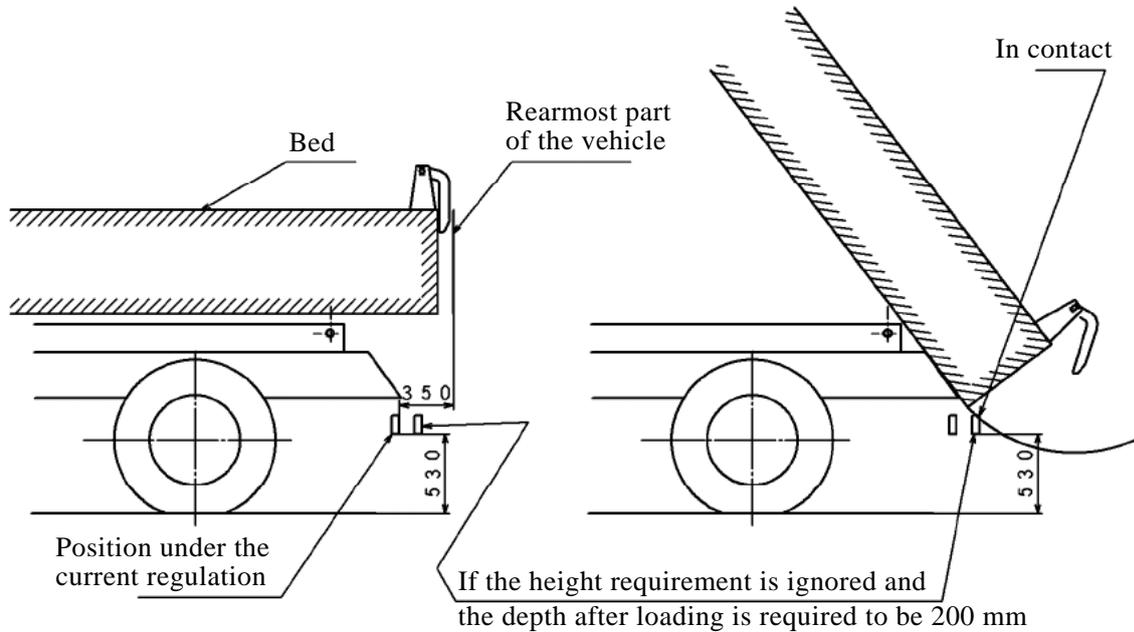


Figure 1 Contact Caused by Dumping

2. If the bumper is lowered, the dumped deposits will push the RUPD and cause danger. It will also enter the deposits of dirt and cannot escape easily. (Figure 2)

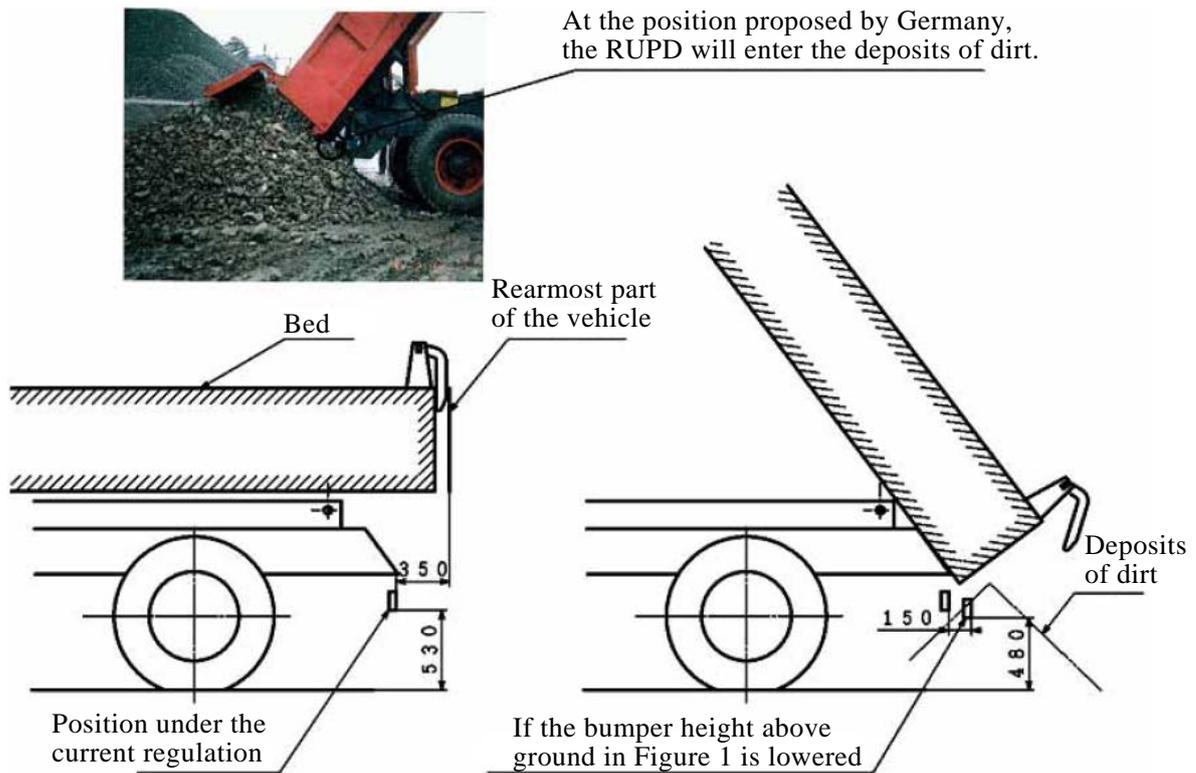


Figure 2 RUPD Entering the Deposits of Dirt at Dumping

* Even in the current R58-02, the following problems have been pointed out:

- (1) The load gets stuck between the bed's rearmost part and the RUPD, which may prevent the bed from rising for dumping.
- (2) The stuck load damages the bumper.
- (3) The RUPD enters the dumped deposits.

Hence, the strengthening of the regulation is undesirable from the standpoint of structure of dump trucks.

3. The possibility of the dumped deposits damaging the RUPD will increase, which will raise the frequency of the vehicles running with the damaged RUPD, compromising safety. (Figure 2)

4. With the distance from the RUPD being shorter, the distance from the dump hinge will also be made shorter. This will lead to malfunctioning of the stopper function in the event of over-dumping, causing damages to the chassis and risk of turnover. (Figure 3)

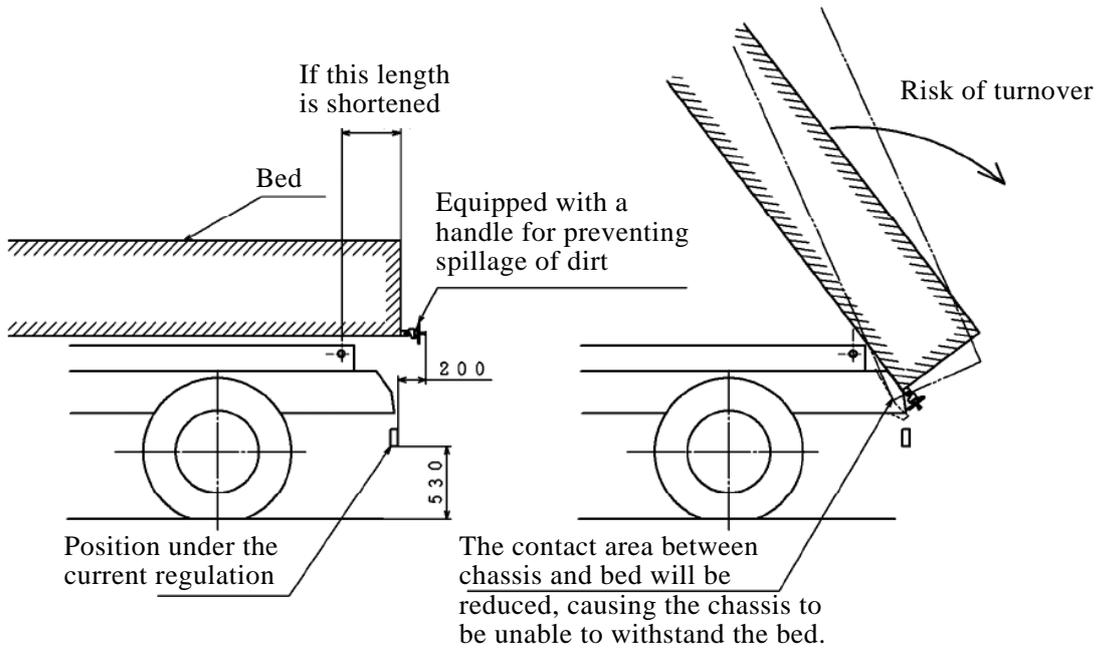


Figure 3 If the Dump Bed Length Is Shortened

5. On unpaved roads (construction sites), the RUPD will come in contact with uphill slopes to work sites, ruts, etc., making it difficult for the vehicle to keep running. (Figure 4)

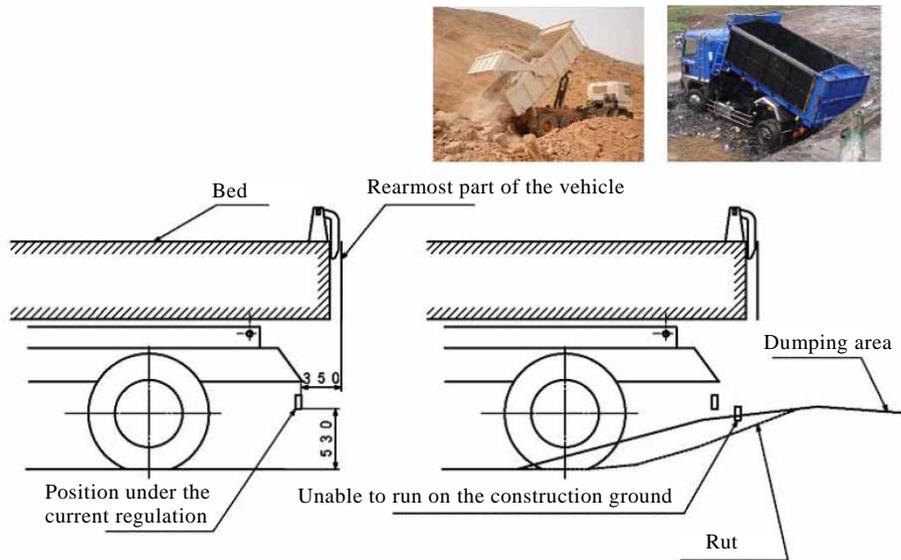


Figure 4 Unable to Run on Unpaved Roads in Construction Sites, Dump Yards, etc.

6. In the case of dump trucks for industrial waste that perform pit dumping, the RUPD will come in contact with the fence for the prevention of falling, causing difficulties in dumping work. It will also cause danger if the fence on the pit side is lowered. (Figure 5)

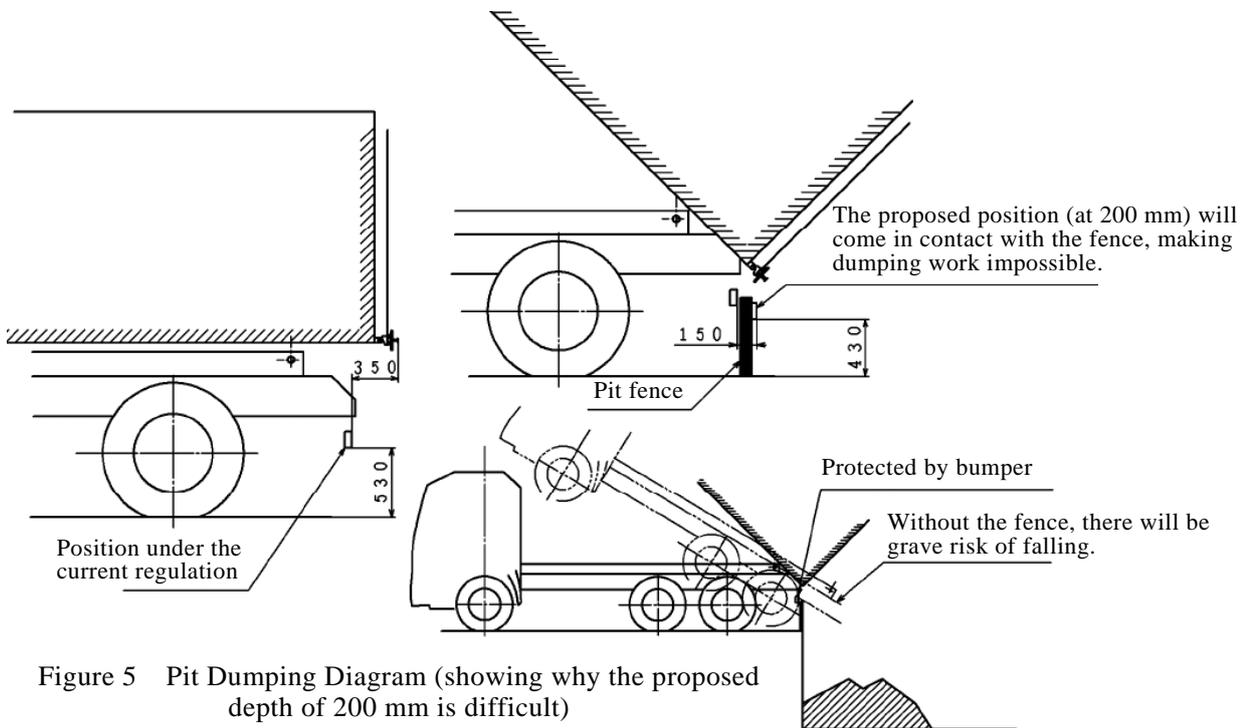


Figure 5 Pit Dumping Diagram (showing why the proposed depth of 200 mm is difficult)

Diagram 6: Cases where the RUPD underside height of 500 mm will cause difficulties in usage (Concrete mixers)

In Japan, some of these vehicles are stored on hills, where the maximum gradient can be around 15°. The RUPD will come in contact with the road surface while the vehicle is running, making it unable to keep running to enter the site.

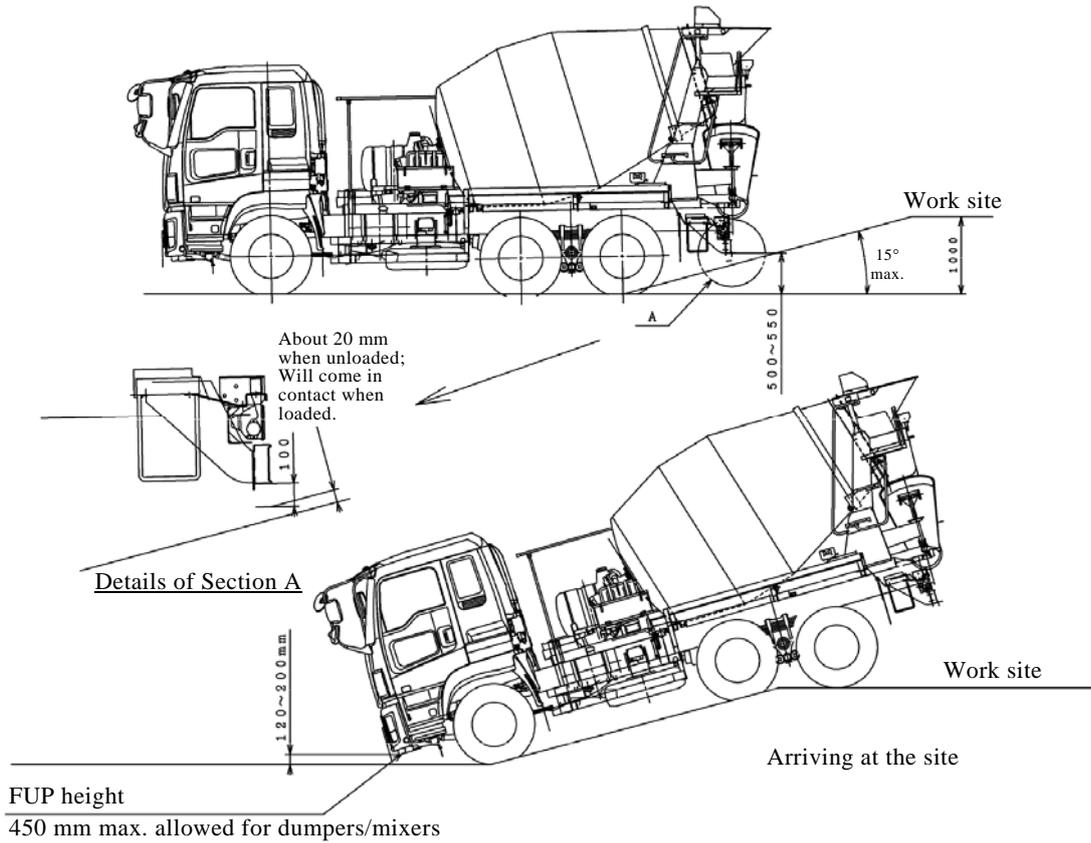
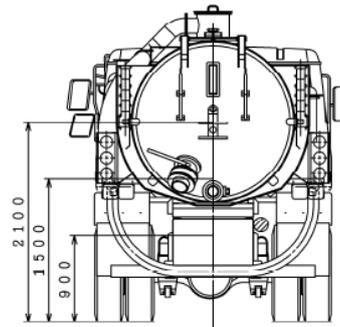
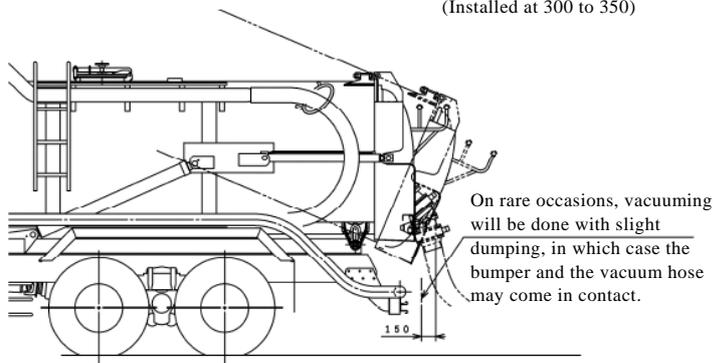
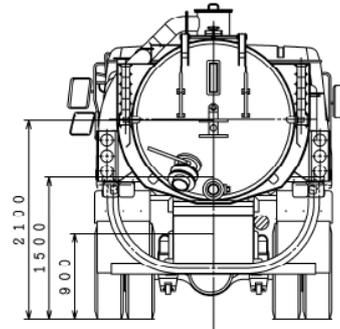
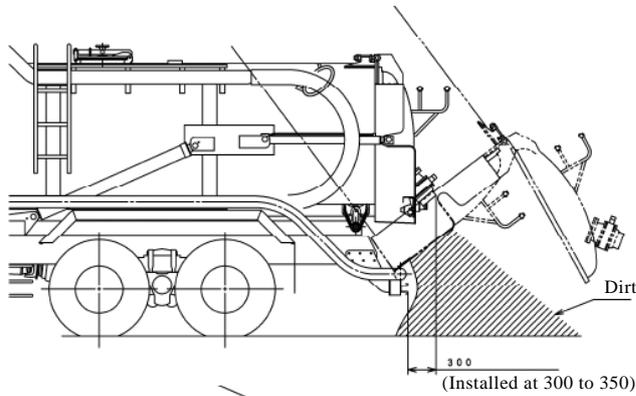


Diagram 7: Cases where the RUPD installation position of 200 mm (from the rearmost part of the vehicle) will cause difficulties in usage

Vacuum Trucks: When the truck dumps the load, it will come in contact with the RUPD, making the dumping work difficult. With the RUPD being located too close to the vacuum hose, handling of the hose will be difficult when the truck vacuums the load.



Concrete mixers: When the concrete is discharged, the RUPD location will be farther away than the current position, which will cause danger in the discharge work.

