



Changing Frontal Impact Occupant Protection Systems

LTNZ have advised LVVTA that where a vehicle is fitted at time of manufacture with a frontal impact protection system [FIPS], that system must be maintained within safe tolerance, as required by the General Safety Requirements of *Land Transport Rule 32006: Vehicle Standards (Frontal Impact)*.

This means that any element of the FIPS [refer chart 1 below] that no longer functions as originally intended by the manufacturer must be repaired to restore that function.

In the case of a LVV that is extensively modified in a way that results in the risk of a FIPS element no longer acting positively to protect the occupants, alternative protection measures are to be installed to assure an acceptable level of occupant safety.

Chart 1: A frontal impact occupant protection system consists of a series of individual design elements that have been proven by the vehicle manufacturer to integrate dynamically during a frontal crash, thus reducing the risk of serious harm to occupants .

Typical elements of a frontal impact occupant protection system	1. Structural crush zones in front of the occupants with engine mounting systems designed to minimise power unit penetration into the cabin
	2. Steering wheels, steering column, fascia panels and controls that may be subjected to occupant impact
	3. Air bags in front of an occupant, including the electronic systems controlling deployment.
	4. Seat structures and anchorages, including head restraints
	5. Seat belt systems, including integrated pre-tensioners, force limiters and anchorages
	6. Foot-pedal assemblies designed to minimise lower limb injury.

Any one of these elements changing in specification will invalidate the manufacturer's crash data and may result in a reduction in the level of crash protection available for occupants.

By its nature the air bag, after seat belts, is a particularly vital component in occupant protection. Following legal advice, LTNZ have informed LVVTA that the deactivation or removal of air bags originally installed by the vehicle manufacturer will not be allowed, unless there are compelling technical reasons for this that are accepted by LVV Certification or are covered by a Motor Sport Authority Card. **The LVV system cannot be used as a means of avoiding the cost of restoring air bags and related components to vehicles that were originally manufactured with them.**

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There are two sets of circumstances when FIPS elements may be deactivated, authorised either by the issue of a Motor Sport Authority Card system or by LVV Certification of the vehicle affected:

1. **Where any of the modifications nominated in Chart 2, items 1, 2, & 3 below, negate the overall performance of the original FIPS system.** In these cases the redesign of the vehicle must substitute an effective occupant protection system for the original. The specifications for this system will be controlled either by the relevant LVV Standards or by the appropriate Motor Sport Authority Card.
2. **Where special conditions of use may increase the risk of injury to occupants by a FIPS element:** Where deactivation is required under the conditions specified in Chart 2, item 4 below, in order to minimise the risk to occupants under special circumstances of use, these conditions will require approval by LTNZ before LVV certification can be initiated. For example, this deactivation may be instigated intermittently through an approved manual switching system or automatically initiated by low range engagement on a Class MC vehicle.

<p>Chart 2: Elements of frontal impact occupant protection systems listed in Chart 1 may be modified or suppressed on a Low Volume Vehicle by <u>other</u> modifications that may affect the compliance of the FIPS to standards met by that vehicle when it was originally manufactured. All modifications of this type must comply with the LVVTA Standards and/or an LTNZ approved Motor Sport Authority Card system.</p>	
<p>Typical modifications allowing associated change to the frontal impact occupant protection system</p>	<p>1. Changes to structural crush zones in front of the occupants made necessary by major <u>mechanical</u> modifications affecting a VSR or Rule. For example, a new engine installation intruding into the original structure and a change in mass.</p>
	<p>2. Permanent suppression of frontal impact protection system elements, authorised by a MotorSport Authority Card.</p>
	<p>3. Changes in front seat position and mounting systems mandated by adaptations engineered for disabled persons.</p>
	<p>4. Conditions of use involving <u>temporary isolation</u> of air bags for special commercial or sporting purposes [Policy set by LTNZ. System technical requirements specified by LVVTA]</p>

3. As these procedures are now effective under the LTNZ ruling, Information Sheet 03-99 together with FS005 Request for Air Bag Removal and FS006 Survey Process Sheet are now withdrawn. Face documents marked accordingly are issued with this notice for inclusion in your LVVTA Vehicle Information Manual.

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