Technical bulletins (general)

1 Quick noise check procedure

Reference

- General vehicles, 11-1 Exhaust system
- Motorcycles, 11-1 Exhaust system

What is the purpose of the Noise Quick Check?

The purpose of this test procedure is to enable vehicle inspectors to carry out an exhaust noise check with an acceptable noise meter to ensure that vehicle exhaust systems that have been modified to be noisier than OE remain well below the maximum noise levels specified in law (ie be below the noise limits specified in the VIRM). Any vehicle that fails the Noise Quick Check needs to be made quieter and reinspected and/or referred to an LVV certifier for an Objective Noise Test (ONT).

This quick check test procedure is therefore a simplified version of the ONT to ensure results are comparable to the ONT.

What type of vehicle can be tested?

The quick check may be applied only to a vehicle of class LC, LD, LE, MA, MB, MC, MD1, MD2 or NA that is louder than when it was manufactured with its original exhaust system.

Test site specification

The test environment must be such that exhaust noise readings can be achieved as accurately as possible with as little interference from other noise sources as possible.

To achieve this, the test site must, within at least a 3m radius from the noise meter microphone:

1. be an open outdoor site (if this is not practicable, a canopied site may be used provided the canopy is at least 3m above the microphone)

2. be predominantly flat

3. be free from large sound-reflecting surfaces, including buildings, walls, billboards, vehicles, canopy/roof supports, trees or shrubs

4. have a solid surface, such as concrete or asphalt, that is free of any loose or sound-absorbing material.

It is important that a noisy background, eg due to road traffic or wind, is avoided. If in doubt, use the noise meter to measure the background noise either before or after the Noise Quick Check. The background noise must be at least 10dBA lower than the relevant exhaust noise limit specified in the VIRM. Sharp noise interference such as car doors slamming or loud footsteps must also be avoided to prevent false readings.

Which noise meters are acceptable for this test?

The noise meter must be of ‘Type 1’ or ‘Type 2’ (Class 1 or 2) standard to ensure accuracy. The noise meter specifications and a list of other equipment required for noise testing is available **here**.

The noise meter must be in good operating condition and be maintained within manufacturer’s specifications. Regular calibration is required. Make sure you know how to use it correctly by following the manufacturer’s instructions.

Note 1

The NZTA does not currently intend to make it mandatory for inspecting organisations to obtain a noise meter. However, if you are often presented with noisy vehicles, we strongly recommend that you have one available.

Vehicle preparation prior to testing

Before the noise test can be carried out, the vehicle must:

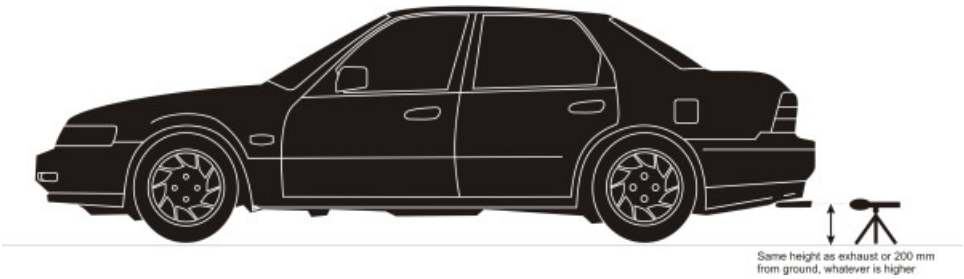
- have its engine at normal operating temperature
- be stationary with park the brake applied
- have the gear selector positioned in neutral (manual) or park (automatic)
- have the air-conditioning system turned off
- have the engine bonnet closed.

Setting up the microphone for testing

1. Ensure the microphone is fitted with the foam wind shield.

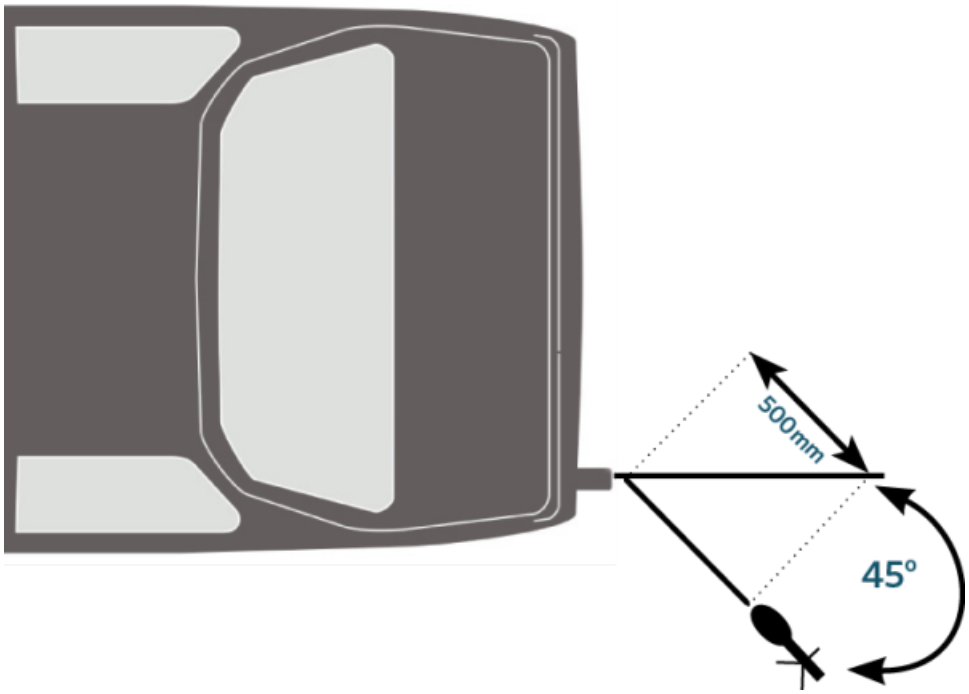
2. Height of microphone

    - Mount the noise meter to the tripod. Place it on the ground with the centre of the microphone at about the same height as the centre of the exhaust outlet, but no lower than 200mm from the ground. Make sure the microphone is level, regardless of the angle of the exhaust outlet.



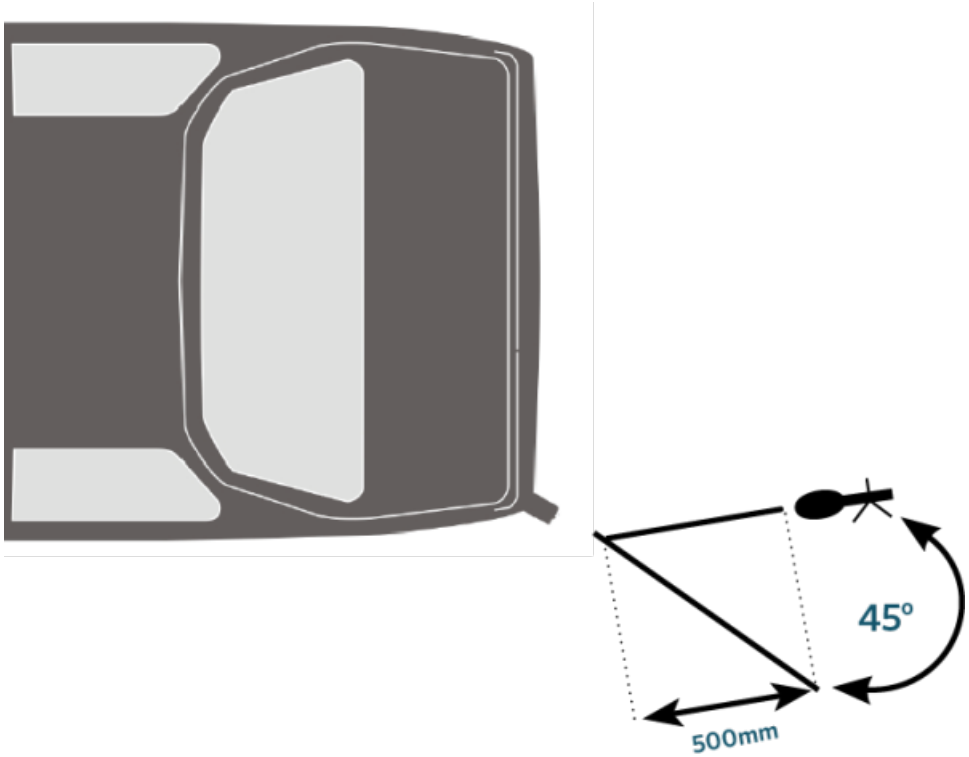
3. Distance of microphone from exhaust outlet

Distance of microphone from exhaust (outlet to the rear)



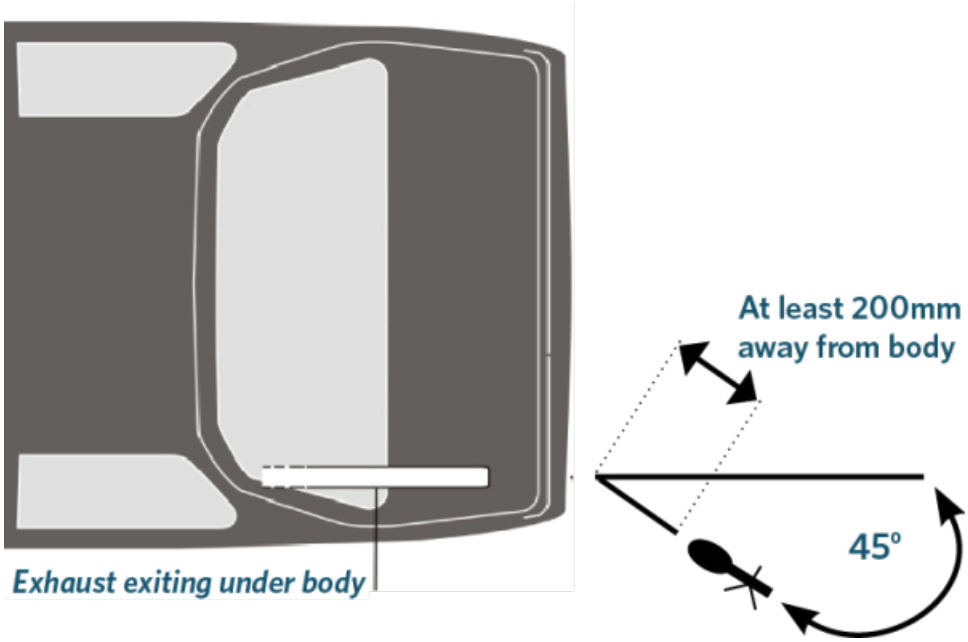
- Position the noise meter 500mm from the exhaust outlet at 45 degrees outboard to the longitudinal centreline of the exhaust outlet.

Distance of microphone from exhaust (outlet to the side)



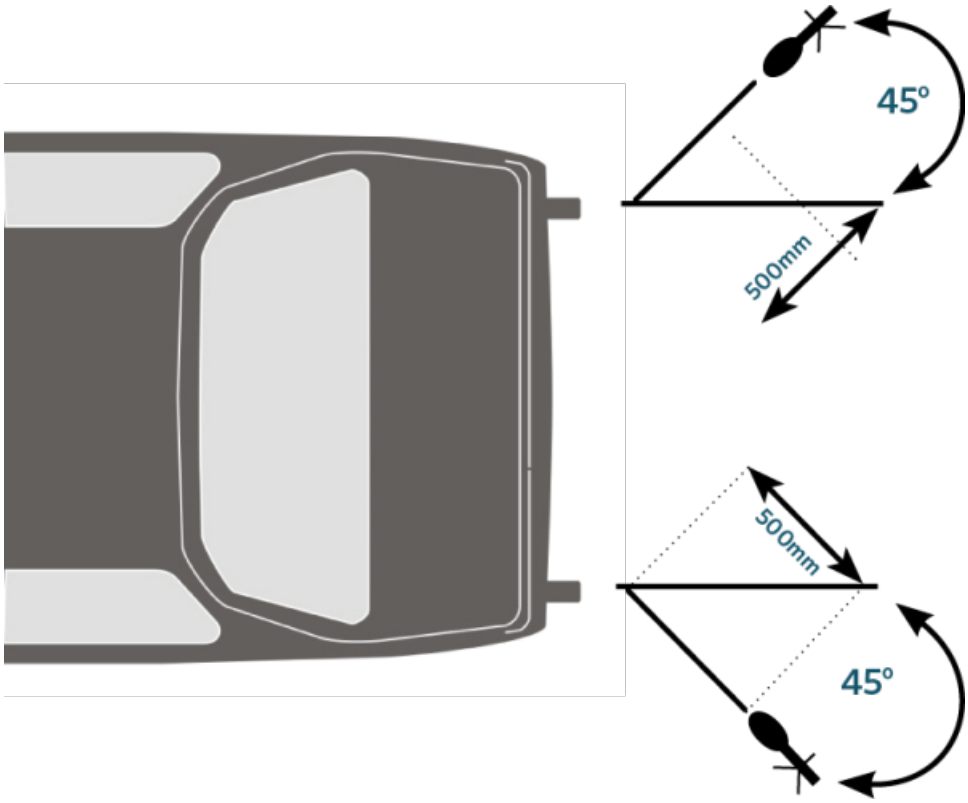
- If the exhaust outlet is at the side of the vehicle, position the noise meter 500mm/45 degrees where it is the furthest from the engine.

Distance of microphone from exhaust (outlet underneath vehicle)



- For exhaust outlets terminating underneath the vehicle body, fit as close as practicable, but no closer than 200mm to the vehicle body. The 45 degree angle may be reduced to ensure a clear path between the microphone and the exhaust outlet.

Distance of microphone from exhaust (two outlets)



- If the vehicle has two exhaust outlets less than 300mm apart, treat them as one outlet with the microphone positioned at the outside outlet. If the two exhaust outlets are more than 300mm apart, measure each one, with the higher of the two taken as the noise level for the vehicle.

Select the test engine speed

Select the appropriate test engine speed from the table on the next page. Use the vehicle's tachometer when doing the test (if no tachometer is fitted, use your judgement).

Motorcycle engines

Type of engine	Required test speed
2-stroke single cylinder	6000 rpm
2-stroke multi-cylinder	5000 rpm
4-stroke single cylinder	3000 rpm
4-stroke twin-cylinder with 2 valves per cylinder	2500 rpm
4-stroke twin-cylinder with 3 or more valves per cylinder	4000 rpm
4-stroke with 3 or more cylinders	4500 rpm

Engines other than motorcycle engines

Type of engine	Required test speed
Rotary engine	4500 rpm
Up to 5 cylinders	4000 rpm
Up to 5 cylinders with DOHC and variable valve timing	4800 rpm
6 cylinders	3200 rpm
8 cylinders	3000 rpm
More than 8 cylinders	4000 rpm
Diesel (any type)	2500 rpm

Testing the noise output

1. Make sure that you (the tester) and one assistant (if you require one) are the only persons in the test area.

2. Position and prepare the meter: switch on – warm-up – calibrate (Note)– set to A-weighting – set to fast response – select the correct noise level range (usually ‘High’) – press the Peak-hold or Max-hold button when ready to measure the noise output.

Note 2

To calibrate before testing the vehicle, insert the meter into the calibrator. If the reading on the noise meter differs from the calibrator there is no need to adjust the meter, but the difference needs to be taken into account when determining the final noise reading for the vehicle. For example, if the meter reads 2dBa higher than the calibrator, take off 2dBa from the noise test reading to get the final reading.

3. Measure the noise output by increasing the engine speed from idle to the required test speed, holding it there for at least one second, then taking the foot off the accelerator and letting the engine speed return to idle.

4. Make sure that no other noise sources have interfered with the test result, such as planes flying overhead, doors slamming (take care when getting in and out of the test vehicle), dogs barking and so on. Rattling number plates can also be a source of noise interference. If interference occurred, repeat the test (press the Max/hold button first).

5. The noise meter will show the maximum noise output. Record this reading on your checksheet.

6. Measure the background noise level (this can be done before or after the noise test). The microphone must be in the same position and the vehicle’s engine switched off. The background noise level must be at least 10dBA below the relevant exhaust noise limit as specified in the VIRM.

If you come across a vehicle you are not sure how to test, then refer it to an LVV certifier who is approved to carry out an Objective Noise Test.

Passing and failing the vehicle

PASS: The noise reading does not exceed the relevant maximum noise limit specified in the **VIRM: In-service certification, Section 11-1 Exhaust system**.

FAIL: The noise reading exceeds the relevant maximum noise limit in the VIRM. Give the operator the ‘Noisy Vehicles’ pamphlet.

2 Inspection for corrosion in Nissan Terrano and Mistral rear floorpan assemblies

Reference

General vehicles:

- **3-1 Structure**
- **7-1 Seats and seat anchorages**
- **7-5 Seatbelt and seatbelt anchorages**

Safety concern

There is concern about corrosion that can occur in Nissan Terrano or Nissan Mistral vehicles of the type whose rear floorpan assembly consists of a two-layer (double-skin) panel. If moisture gets trapped between the two layers of the floorpan, corrosion can occur around the seat or seatbelt anchorages, affecting their integrity. Corrosion can also occur where the under-floor reinforcing panel overlaps the top floor skin.

Clarification

The rear floorpan assembly consists of a two-layer (double-skin) panel. The lower layer is a reinforcing panel spot-welded to the upper layer floor section.

The Terrano has a rear seat with three seating positions. Situated in the rear floor, beneath the seat, are four seatbelt anchorages and two seat anchorages.

The Mistral has a stressed bench seat in the rear (the seatbelts are attached to the seat) with two seat anchorages in the floor and two seatbelt anchorages in the wheel well at the sides of the seat.

Inspection

The inspector must lift the rear seat to examine this area effectively. Any carpet and sound insulating material covering the panel that the seats are mounted on must be pulled back far enough to expose the rear seam of the panel (the area most commonly affected by corrosion). It is important to note that damage may be more extensive than can be detected during this inspection.

The vehicle must fail if any signs of corrosion are detected during the inspection, such as:

- bubbling of the paint or surface irregularities in the top floor skin or paint
- a patch repair that has rust around it
- separation of the reinforcement panel and the top skin
- discolouration or rust stains at the edges of the reinforcement panel
- rust holes, or
- the floorpan on a Nissan Terrano has been ‘patch’ repaired after 8 January 1997, or
- the floorpan on a Nissan Mistral has been ‘patch’ repaired after 10 November 2003.

A vehicle that has been ‘patch’ repaired before 8 January 1997 (Nissan Terrano) or 10 November 2003 (Nissan Mistral) may pass the inspection provided that:

- no signs of corrosion are apparent, and
- there is evidence that the repairs were carried out before the above dates, and
- the vehicle inspector considers, or there is evidence provided by a qualified panel beater, that the repair is effective and in sound condition.

Repair options

If any corrosion is detected and the vehicle failed, the floorpan must be replaced.

However, for the following models the Low Volume Vehicle Technical Association (LVVTA) has provided an alternative option to floorpan replacement.

Nissan Terrano Model D21

- installation of the LVVTA rear floor load-bar seatbelt anchorage reinforcement system together with a Low Volume Vehicle certification plate containing the following words in the Body/chassis field: LVVTA ‘Rear floor load-bar seatbelt anchorage reinforcement system’.

Nissan Mistral Model R20 5-door

- installation of the LVVTA rear floor load-bar seatbelt anchorage reinforcement system together with a Low Volume Vehicle certification plate containing the following words in the Body/chassis field: ‘LVVTA Rear floor load-bar

seatbelt anchorage reinforcement system'.

For information about these seatbelt anchorage modifications, and for a list of the LVV certifiers who can certify them, see **www.lvvta.org.nz**.

3 Detecting wear in spring-loaded ball joints

Reference

- **General vehicles**, **9-1 Steering and suspension systems**
- **Motorcycles**, **9-1 Steering and suspension systems**
- **General trailers**, **6-1 Steering and suspension systems**

Safety concern

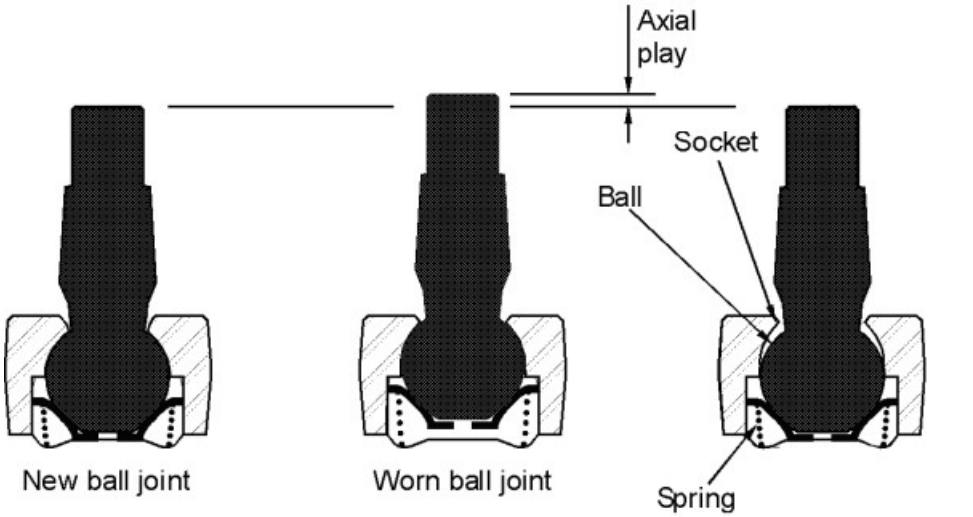
Wear in the ball joint increases axial play (along the axis of the joint). Spring-loaded ball joints are designed to be self-adjusting in order to compensate for the wear that occurs between the ball and the socket. As a result, the traditional method of rocking the steering to check for ball joint wear may not indicate how much axial play there is and therefore how worn the joint is. An excessively worn joint may be at risk of coming apart and causing steering failure.

Inspection

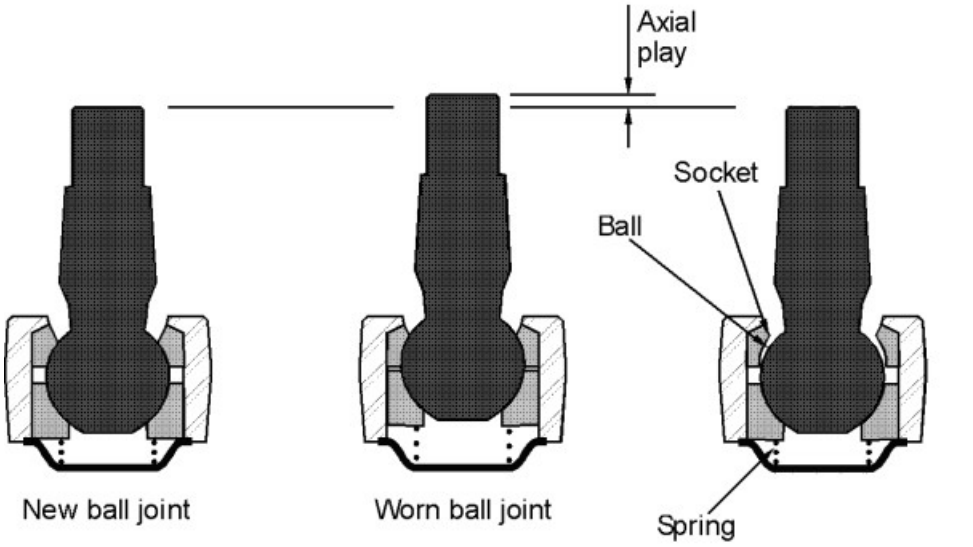
1. Know the correct test method for checking axial wear in ball joints. This is often specified by the vehicle manufacturer. Some manufacturers do not recommend axial testing at all and test instead for radial wear.

2. Know the manufacturer's maximum permitted wear tolerances. These may vary from as little as 2mm up to 6mm.

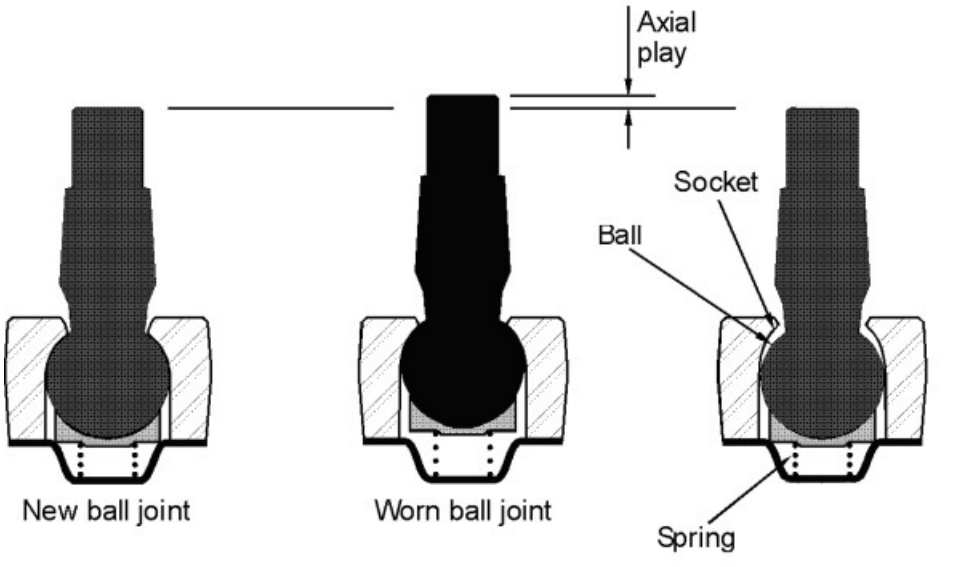
Figure 3-1-1 shows three examples of common types of spring-loaded ball joints and how to check them for axial wear. If you are not sure of the correct test method or the maximum permitted wear limits, you should seek the information in the vehicle manual or from an authorised dealer for that vehicle (there may be a charge for this). This will ensure that the vehicle is correctly passed or failed during a WoF or CoF inspection.



SPRING-LOADED BALL JOINT TYPE A



SPRING-LOADED BALL JOINT TYPE B



SPRING-LOADED BALL JOINT TYPE C
more often found on heavy vehicles

Figure 3-1-1. Examples of wear in spring-loaded ball joints

4 Jacking points for common suspension types

Reference

- **General vehicles**, 9-1 Steering and suspension systems
- **Motorcycles**, 9-1 Steering and suspension systems
- **General trailers**, 6-1 Steering and suspension systems.

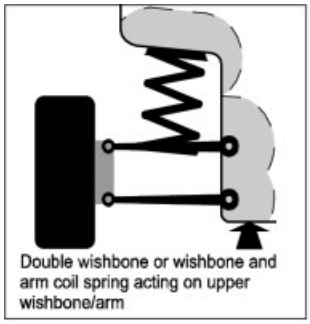
Safety concern

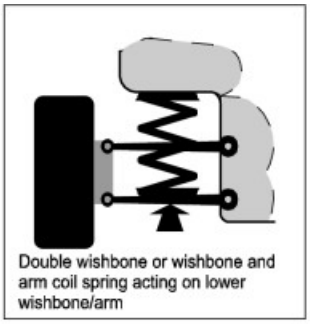
Excessive wear in suspension ball joints can seriously affect the safe handling of the vehicle – if left unchecked, subsequent failure could cause a crash. Modern suspension systems employ multiple control arms, ball joints and compliance bushings, so it's important to check them all carefully during an inspection.

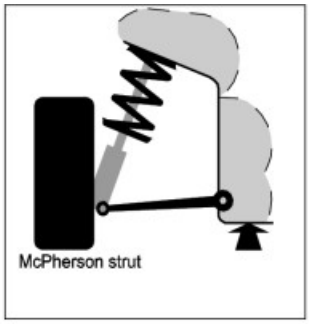
Inspection

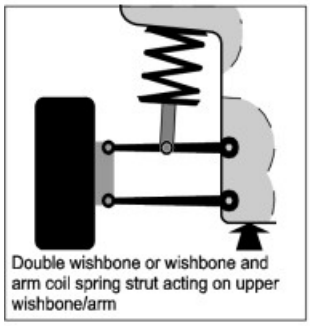
To help ensure ball joint wear is correctly detected, the images below show the jacking points for some common suspension types. They do not cover all suspension types or versions.

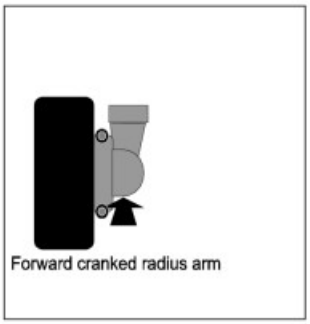
It's vital that the vehicle is jacked up correctly to avoid any damage. Depending on the type of suspension fitted to the vehicle, you may need to seek the manufacturer's guidance.

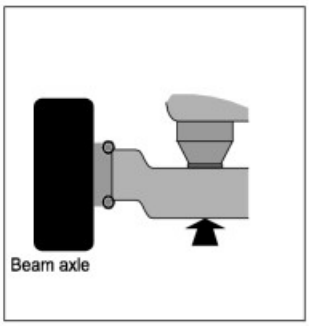


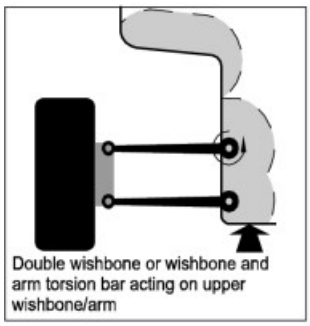


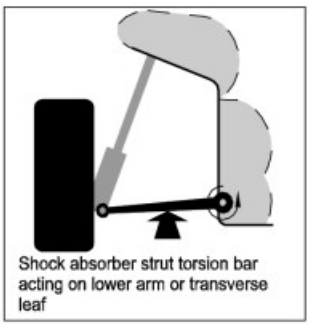


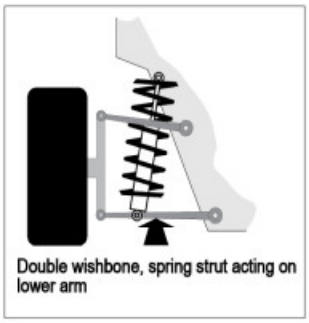


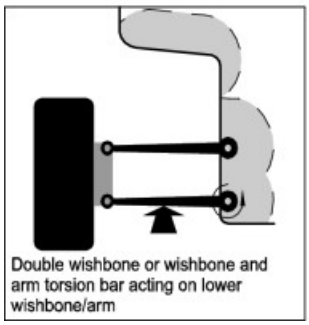












Page amended **1 October 2023** (see **amendment details**)

Page updated 7 November 2023 (see **update details**)

5 Webbing clamp seatbelts in class MA vehicles

Reference

- **General vehicles, 7-5 Seatbelts and seatbelt anchorages**.

Application

This bulletin applies to class MA vehicles fitted with a single- (R1) or dual- (R2) sensitive retractor seatbelt in a front outer seating position where that seatbelt has failed a WoF or CoF inspection.

This bulletin does not apply to vehicles:

- fitted with airbags as original equipment
- not listed in Table 5-1-1 (ie, where the fitting of webbing clamp seatbelts has not been approved by the vehicle manufacturer)
- that are required to comply with an approved frontal impact standard, ie vehicles with a GVM of 2500kg or less that were:

  - manufactured on or after 1 March 1999

  - first registered in New Zealand on or after 1 April 2002 that were less than 20 years old at the time of first registration in New Zealand

- with OE specification seatbelts that have features specifically designed to operate in conjunction with other parts of an integrated occupant protection system
- in which the fitting of a webbing clamp seatbelt would require modifications to the vehicle structure.

Safety concern

The seatbelts commonly referred to as ‘webbing clamp’ or ‘webbing grabber’ seatbelts have features that minimise uncontrolled webbing payout after the locking mechanism has been activated. This ensures that vehicle occupants are kept firmly in their seats in a crash. When installing a new seatbelt after the previous one has failed during a WoF or CoF inspection, a webbing clamp seatbelt is the safest option for many vehicles.

Inspection

A failed type R1 or R2 retractor seatbelt in a front outer seating position must be replaced with a webbing clamp seatbelt (see Figure 5-1-1) unless a webbing clamp seatbelt is not readily available (see Note 1), or the vehicle inspector has confirmation that the vehicle is one to which this bulletin does not apply.

Note 1

A seatbelt is considered not readily available where, eg, an automotive parts retailer normally able to supply webbing clamp seatbelts does not currently have the correct webbing clamp seatbelt in stock and cannot supply one within two working days by courier from the parts supplier. The vehicle operator must supply proof that the webbing clamp seatbelt was not readily available, eg an invoice from the seatbelt installer or retailer.

Vehicle inspectors must enter the inspection result as outlined in the flowchart in Figure 5-1-2.

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Date 16-10-01

WEBCLAMP SEATBELT

Figure 5-1-1. Example of a webbing clamp seatbelt label

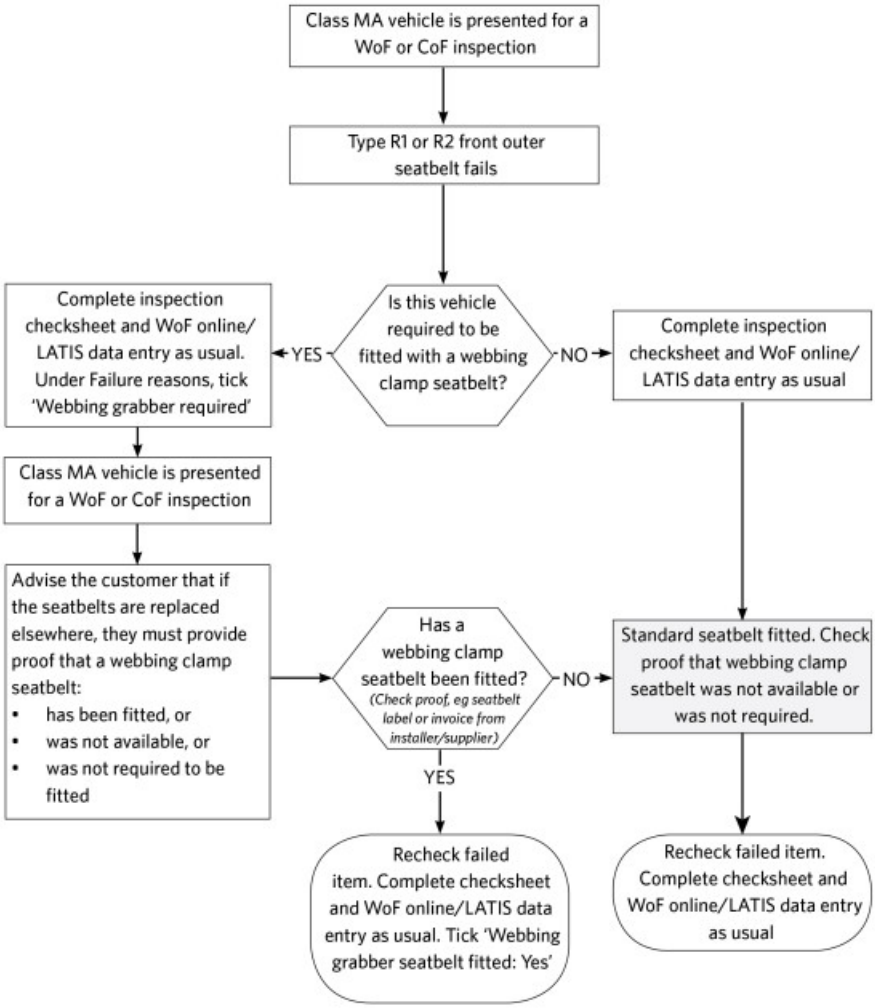

Figure 5-1-2. Webbing grabber seatbelt inspection process

Table 5-1-1. Vehicles generally approved for the fitment of webbing clamp seatbelts

Brand	Model	Variant	Model Code	Configuration	Year
Audi	100	2.2L Quattro		4 Door Sedan	1985–1989
Audi	100	Avant, Quattro		4 Door S/Wagon	1985–1991
Audi	100	CD Avant		4 Door S/Wagon	1985–1991
Audi	100	CD, CC, CS, E, EE	WAUZZ	4 Door Sedan	1983–1991
Audi	200	CD, CC, CS, E, EE	WAUZZ	4 Door Sedan	1983–1991
BMW	318		E30	4 Door Sedan	1983–1991
BMW	518		E34	4 Door Sedan	1988–1992
BMW	520		E34	4 Door S/Wagon	1992–1996
BMW	520		E34	4 Door Sedan	1988–1999
BMW	525		E34	4 Door S/Wagon	1992–1996
BMW	525		E34	4 Door Sedan	1988–1999
BMW	535		E34	4 Door Sedan	1988–1992
BMW	540		E34	4 Door S/Wagon	1992–1996
BMW	540		E34	4 Door Sedan	1993–1999
BMW	730		E32	4 Door Sedan	1985–1994

Brand	Model	Variant	Model Code	Configuration	Year
BMW	735		E32	4 Door Sedan	1985–1994
BMW	740		E32	4 Door Sedan	1985–1994
BMW	750		E32	4 Door Sedan	1988–1994
Daihatsu	Charade			2 Door Hatch	1983–1987
Daihatsu	Charade	CS	G11	4 Door Hatch	1983–1988
Daihatsu	Charade	CS, CX Turbo, TS	E-G112S	2 Door Hatch	1987–1993
Daihatsu	Charade	CS, CX Turbo, TS	E-G100	2 Door Hatch	1987–1993
Daihatsu	Charade	CS, CX Turbo, TS	E-G102	2 Door Hatch	1987–1993
Daihatsu	Charade	CX, TL, CS, Turbo	E-G100	4 Door Sedan	1983–1987
Daihatsu	Charade	LS, LX, EX	E-G200	4 Door Hatch	1993–1998
Daihatsu	Charade	LS, LX, EX	E-G203	4 Door Hatch	1993–1998
Daihatsu	Charade	LS, LX, EX	E-G213	4 Door Hatch	1993–1998
Daihatsu	Charade	SEI	E-G203S	4 Door Sedan	1995–1997
Daihatsu	Charade	SEI	E-G200S	4 Door Sedan	1995–1997

Brand	Model	Variant	Model Code	Configuration	Year
Daihatsu	Charade	TS (white only)		2 Door Hatch	1991–1991
Daihatsu	Mira	850 4WD	L201	2 Door Sedan	1990–1993
Daihatsu	Mira	LS, LX	L201	4 Door Sedan	1990–1998
Daihatsu	Mira	LS, LX	L500	4 Door Sedan	1990–1998
Daihatsu	Mira	LS	L8ORS	4 Door Hatch	1986–1990
Fiat	Punto	55 SX	ZFA176	4 Door Liftback	1994–1995
Fiat	Punto	55, GT	ZFA176	2 Door Hatch	1994–1995
Ford	Autozam			4 Door Sedan	1991–1997
Ford	Autozam	AZ-3		2 Door Coupe	1991–1997
Ford	Capri	XRS, Barchetta		2 Door Convert	1990–1994
Ford	Clef			4 Door Sedan	1991–1997
Ford	Fairlane		EA	4 Door Sedan	1988–1993
Ford	Falcon	S	EF	4 Door S/Wagon	1989–1993
Ford	Falcon	S	EB	4 Door Sedan	1989–1993
Ford	Falcon	S	EB	4 Door S/Wagon	1989–1993
Ford	Falcon	S	ED	4 Door S/Wagon	1989–1993
Ford	Falcon	S	ED	4 Door Sedan	1989–1993
Ford	Falcon	S	EF	4 Door Sedan	1989–1993

Brand	Model	Variant	Model Code	Configuration	Year
Ford	Falcon		EA	4 Door S/Wagon	1988–1990
Ford	Falcon		XG	4 Door S/Wagon	1985–1993
Ford	Falcon		XG	4 Door Sedan	1985–1993
Ford	Falcon		EA	4 Door Sedan	1988–1990
Ford	Festiva	S, Trio, GLXi	E-D23	2 Door Hatch	1993–2001
Ford	Festiva	S, Trio, GLXi	E-D25PF	2 Door Hatch	1993–2001
Ford	Festiva	Trio, GLXi	DAFP3	2 Door Hatch	1995–1998
Ford	Festiva	Trio, GLXi	DAFP3	4 Door Hatch	1995–1998
Ford	Festiva		E-DA3PF	4 Door Hatch	1985–1993
Ford	Festiva		E-DA3PF	2 Door Hatch	1985–1993
Ford	Laser	1.3C	LO3	2 Door Hatch	1987–1990
Ford	Laser	1.5 Sport		2 Door Hatch	1983–1987
Ford	Laser	GL	L04	4 Door Liftback	1992–1994
Ford	Laser	L	L05	2 Door Hatch	1986
Ford	Laser	Sport		2 Door Hatch	1981–1984
Ford	Laser	TX3	KF	2 Door Hatch	1990–1994
Ford	Laser		BF5PF	4 Door S/Wagon	1990–1994

Brand	Model	Variant	Model Code	Configuration	Year
Ford	Laser		BG8PF	4 Door Sedan	1990–1995
Ford	Laser		KH	4 Door Sedan	1990–1995
Ford	Laser		BG6PF	4 Door Sedan	1992–1994
Ford	Laser		KF	4 Door Sedan	1990–1995
Ford	Laser		BG5PF	4 Door Sedan	1990–1993
Ford	Laser			2 Door Hatch	1987–1989
Ford	Ltd		XE	4 Door Sedan	1981–1988
Ford	Ltd		XF	4 Door Sedan	1981–1988
Ford	Ltd		EB	4 Door Sedan	1991–1993
Ford	Ltd		EA	4 Door Sedan	1988–1993
Ford	Mondeo		WFOX	4 Door Sedan	1993–1994
Ford	Mondeo		WFOX	4 Door S/Wagon	1993–1994
Ford	Sierra			4 Door Sedan	1985–1992
Ford	Sierra	Cosworth	S15/88B	4 Door Liftback	1988–1992
Ford	Sierra	GLX	S15/90BB	4 Door S/Wagon	1988–1992
Ford	Sierra	XR 4X4	S15/85BB	4 Door Liftback	1985–1992
Ford	Sierra			4 Door S/Wagon	1984–1988
Ford	Taurus			4 Door Sedan	1992–1994

Brand	Model	Variant	Model Code	Configuration	Year
Ford	Telstar	GL	E-GEFPF	4 Door S/Wagon	1993–1997
Ford	Telstar	GLi, GLEi, Ghia	C-HIAVE	4 Door Sedan	1992–1997

Brand	Model	Variant	Model Code	Configuration	Year
Ford	Telstar	V6 XRi	GEEPF, T77	# 6 Inspection requirements for temporary vehicle imports **Application** This bulletin specifies the in-service inspection requirements for vehicles that have been imported temporarily from overseas. A temporary import vehicle is brought into the country by a resident of another country, usually for a maximum period of 18 months, while the vehicle remains registered in its country of origin. The vehicle must be exported from New Zealand within that period. **Inspecting a temporary import vehicle for WoF or CoF** Before inspecting a temporary import vehicle for WoF or CoF, the vehicle inspector must check that the following requirements have been met: 1. The vehicle must have the overseas registration plates attached. 2. The registration plate number must be the same as on the licence label. Note Where the plate number has more than six digits, only the first six digits of the plate number are on the label. Where those digits already exist in the system, the six digits on the label will start with a 'V', followed by the first five digits of the plate number. 3. The label correctly describes the vehicle to which the plates are attached. 4. The licence label must be current or have expired no more than 12 months ago. 5. The label indicates that the vehicle has been 'first registered' in New Zealand less than 18 months ago. If the above requirements are not met, or the vehicle inspector finds that the vehicle is not on the system, a WoF or CoF must not be issued. Please refer the vehicle to the nearest TSD agent. **Vehicle inspection requirements** Temporary import vehicles do not require entry or specialist certification, but are required to comply with the basic safety requirements listed in the provisions of the Geneva Convention on Road Traffic. These provisions are outlined below. For WoF/CoF inspection purposes, they apply to all temporary import vehicles, including cars, trucks and trailers, but not including mopeds and other vehicles that don't require	