

Helping New Zealanders Build & Modify Safe Vehicles



CHANGES TO OBJECTIVE NOISE TESTING

► Introduction

Since the introduction of the LVVTA-managed Objective Noise Testing (ONT) system in 2006, vehicles which fail a quick noise check as part of a Warrant of Fitness (WoF), or that are ordered off the road with a green or pink sticker by the NZ Police, have been required to undergo an ONT performed by an LVV Certifier. The need for such a system arose out of political pressure early in the new millennium about 'antisocial boy racers' cruising the streets in noisy vehicles late at night. Land Transport NZ (as the New Zealand Transport Agency was called at the time) tasked LVVTA with developing, designing, and implementing a workable system on their behalf, to reliably and fairly test the noise output of a vehicle's exhaust, and certify that at the time of testing it was compliant with the decibel limits set out in *Land Transport Rule: Vehicle Equipment 2004*. The system needed to be impartial, and workable for every type of vehicle - noise is subjective, and the human ear is naturally more sensitive to some frequencies than others.

► Changes to the ONT System

The ONT involves a metered test of a vehicle's noise output at a specified engine RPM by an LVV Certifier. Until now, if a vehicle passed an ONT, the owner was issued with an ONT Certificate stating that at the time of testing, the vehicle complied with noise limits, and recording details of the vehicle's exhaust system. The vehicle's exhaust system was also fitted with an adhesive label with a unique number on it, which identified it as the system that was on the vehicle when it underwent the ONT. Even if a vehicle is presented to the LVV Certifier with an exhaust that is quieter than when it was ordered off the road, it must still undergo the ONT.

While robust and simple, the original system had its flaws. Like anything paper-based, it was susceptible to fraud. The label on the tailpipe was an indicator that the system had been tested, but there was no guarantee to the Authorised Vehicle Inspector (AVI) or NZ Police Officer inspecting the vehicle that the system hadn't been changed upstream of the part of the exhaust with the label on it. It also relied on the vehicle owner keeping the paper ONT Certificate in good condition so that it could be presented on demand.

As a result of changes to NZTA's funding model, from July 2025, LVVTA's responsibilities in relation to managing the ONT system have increased, creating an opportunity to bring the ONT system into line with the rest of the LVV certification system. While the two systems will remain separate, the benefits of the Electronic Data Plate (EDP) can be introduced to the ONT system.



A vehicle that passes an ONT will, from the 1st of October, be fitted with an EDP. This will be accompanied by a green label (above) unless it's also LVV certified and on an EDP, in which case it will have an orange label (below).



So, from 1 October 2025, vehicles which pass an ONT will not be issued with a Tailpipe Label and paper ONT Certificate, but will instead (if they don't already) have an EDP riveted to a structural area of the vehicle. When scanned, this will show the measurements of the exhaust, whether any silencers or noise-reducing plugs were fitted, and have photos of the exhaust system as it was when tested. This means there is no longer the need for the owner to look after a paper ONT Certificate, or make sure that the self-adhesive label stays adhered to the tailpipe. It also provides extra certainty for the AVI or Police Officer inspecting the vehicle as to whether the exhaust system is the same as when it was tested.



Note: If a vehicle is green-stickered again after undergoing an ONT it still requires another test to be carried out - the ONT has only ever been a statement that the exhaust system complied with allowable decibel limits at the time of testing, and the fact that the system is moving to the EDP does not change this.

The VIRM is being updated to reflect the move to EDPs, so from October there will be two methods of demonstrating to an AVI or Police Officer that a vehicle has passed an ONT - for vehicles that underwent an ONT prior to 1 October 2025 this is the ONT Certificate and Tailpipe Label, or for vehicles tested after this date, an EDP.

ONT Certificates that have been issued previously under the paper and label-based system remain valid, provided that no further modifications have occurred to the exhaust system, and the Tailpipe Label remains in place. These vehicles will not need to move to an EDP unless another ONT is carried out.

The changes to the NZTA funding model include that the cost of purchasing and maintaining the noise meter kits previously met by NZTA will now pass to LVVTA, and will need to be recuperated. Each ONT meter kit costs upwards of \$8000 to purchase, and these need to be professionally recalibrated every two years. This means the cost that LVVTA charges to LVV Certifiers for processing each ONT from 1 October 2025 has to increase.

LOW VOLUME VEHICLE TECHNICAL ASSOCIATION Inc

Objective Exhaust Noise Emission Test Certificate

Vehicle and owner details: (white copy for vehicle owner)

Owner: (Name)	JANE DOE	(Contact Ph #)	1051 746-8321
Vehicle: (Make)	HONDA	(Model)	CIVIC
(Year)	1992	(Colour)	BLACK
(VIN)	7A8H12345611AB999		
Engine: (Make)	HONDA	(Code if known)	RB-2
(Cylinder configuration & #)	1L4	(Camshaft & valve arrangement)	DOHC V-TECH

Exhaust system description & details:

(a) Exhaust manifold(s): (make/type) AFTER MARKET STEEL TUBE EXTRACTORS

(b) Front pipe(s): (OD/material/length) 3" O.D. x 5' L STEEL TUBE

(c) Muffler(s)/resonator(s) #1: (make/material/length/OD) 3" O.D. INLET OUTLET - 10" L GAL

(d) Intermediate pipe(s): (OD/material/length) 3" O.D. STEEL TUBE x 4' 6" L

(e) Muffler(s)/resonator(s) #2: (make/material/length/OD) 3" INLET 2" OUTLET 18" GAL STAINLESS

(f) Tail pipe(s): (OD/material/length) 5" O.D. x 12" L STAINLESS

(g) Other exhaust system details: (catalytic converter(s)/balance pipe(s)/other mufflers/other)

Low Volume Vehicle Certifier's declaration:

LVV Certifier: (Name) KENDALL BRADLEY (ID) KB (Contact Ph #) 101268-9550

☒ PASS: Approval label: (Number) (Location of label)

I, the above-named Low Volume Vehicle Certifier appointed by the Low Volume Vehicle Technical Association (Inc) for the purpose of Objective Exhaust Noise Emission Testing, declare that, I carried out an objective exhaust noise emission test on the above-described vehicle in accordance with the procedures specified by Low Volume Vehicle Standard 56-20, and confirm that at the time of testing the vehicle complied with all requirements of, and emitted exhaust noise emissions not exceeding that specified by, Low Volume Vehicle Standard 90-20. (Signed) (Date)

☒ FAIL: Recommendations to vehicle owner on bringing the exhaust system into compliance (expert advice is offered without any guarantee of a pass as a result of the advice given or implied): 99 dBA

Vehicle exhaust system schematic:

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BACK PRINT VIEW

VEHICLE DETAILS

Year	2014	VIN Number	7AT10N01X1
Make	LVV	Body Style	Trike 3-seater
Model	Custom	Number of seats	3

CERTIFICATION DETAILS

LVV plate number	1057
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DRIVETRAIN

Engine Make	ROVER
Capacity	3600cc
Engine Configuration	V8 OHV
Engine Number	
Gearbox	

ONT CERTIFICATION DETAILS

ONT Date	05 May 2025
Manifold	
Front Pipes	4170mm OD steel 980mm long
Muffler/Resonator	95mm OD AIM s/steel 380mm long
Intermediate Pipes	OE
2nd Muffler/Resonator	OE
Tail Pipe	60mm OD s/steel 160mm long
Other Exhaust System Details	collector, 100mm to 63.80mm 100mm long
Certifier	
Certifier ID	
Note	The exhaust system must be inspected against listed measurements and photos to ensure it has not been further modified

Left: the old paper-based ONT Certificate. Right: the new online Lookup page, which further down the webpage from the section shown will feature photos of the exhaust system as it was when tested.

► How the New Process Works

EDP Instead of Tailpipe Label

Rather than filling out an ONT Certificate for the owner and fitting a Tailpipe Label to the exhaust, a vehicle which has passed an ONT will be fitted with an EDP. Photos of the exhaust system as tested will then be uploaded to the LVVTA Lookup page.

This does mean that the ONT result is no longer instantaneous for the owner of the vehicle, however the photos and permanently attached EDP more than make up for this slight inconvenience. If the vehicle has an existing Tailpipe Label on the exhaust, this needs to be removed once the EDP is fitted.

Another significant change is that the Form-set an LVV Certifier will use to guide and record the test is changing from the current FS037 Form-set to a new Form-set, known as the FS111-1. This is fully explained further on.

Test Process

There are now three different types of noise meter in use - Brüel & Kjær, Quest, and Cirrus. No matter the type of meter used, the test process remains the same. For LVV Certifiers, the new process for carrying out an ONT is as follows.

- Have the vehicle owner/representative sign the Owner Declaration on the first page of the FS111-1.
- Carry out the ONT as normal.
- If the vehicle passes:
 - Complete the FS111-1, including exhaust component measurements;
 - If the vehicle does not already have an EDP, rivet one to an area of structure (like the passenger's side B-pillar, or near the VIN) as per normal EDP fitment procedure, using the green backing label. If the vehicle has an EDP and orange label (because it's previously undergone an LVV certification), **do not fit another EDP or label**. In future, if a vehicle has undergone an ONT and already has an EDP fitted, the details of any new ONT can be added to the existing EDP on the vehicle (see the flowchart further on in this Information Sheet for a guide to when an EDP is required to be fitted, and with which label);
 - Photograph the vehicle's exhaust, VIN (or chassis number where the vehicle does not have a VIN), EDP, and location of the EDP fitment;
 - Send the paperwork to LVVTA for processing.
- If the vehicle fails:
 - Instruct the vehicle owner to remedy the noise output of the vehicle's exhaust. The owner does not receive an F004 or a copy of the FS111-1. **Do not fit an EDP until the vehicle has passed the ONT.**

Photos Required

The following photos need to be provided by the LVV Certifier with their ONT paperwork:

- Exhaust system, including (where fitted) the following:
 - manifolds (and any turbochargers, if fitted);
 - front pipes;
 - mufflers and resonators;
 - intermediate pipes;
 - tailpipes;
 - catalytic convertors/diesel particulate filters;
 - baffles;
- the EDP fitted to the vehicle, including:
 - a close-up photo showing the EDP number;

- a context photo to show where the EDP is fitted; and
- the vehicle's VIN, or chassis number where a VIN is not present.

For vehicles undergoing an LVV certification as well as an ONT, a separate folder for the required ONT photos needs to be supplied - don't combine all of the photos in one Final Photos folder! Unlike an LVV certification, other photos (like those of the exterior or of other modifications) are not required for an ONT.

Uncertified or Non-compliant Modifications

Because of the risk of 'legitimising' non-compliant modifications, it's been clear from the introduction of EDPs that photos of an LVV certified vehicle can't show non-compliant modifications. However, for a vehicle that is only undergoing an ONT, this is less of an issue - an ONT is not an LVV certification, and with an ONT there are no photos published on the LVVTA Lookup page of anything other than the exhaust, EDP, and the vehicle's identifiers. This lessens the chance of the photos on the EDP being seen to legitimise other modifications to the vehicle, or give the impression that these are LVV certified. It's still advisable for the LVV Certifier to avoid capturing any other modifications in their photos if possible though, just to avoid any confusion.

However, if the vehicle is undergoing LVV certification in addition to the ONT, the photos need to be compliant - so they need to be taken at the final inspection, after any rectifications and the ONT have been completed.

The majority of vehicles that undergo an ONT will require a Warrant of Fitness (WoF) inspection to have a green or pink sticker removed. If there are modifications that require LVV certification, this also needs to happen before the sticker can be removed - the vehicle will not be able to pass a WoF inspection with uncertified above-threshold modifications.

Most additional modifications won't stop the LVV Certifier from carrying out the ONT. For example, if the LVV Certifier notices that the vehicle has had a set of height-adjustable coil-overs fitted, this will require LVV certification before the vehicle can achieve a WoF. They can still carry out the ONT before this happens, though. This also doesn't mean a full inspection of the vehicle is required as part of the ONT - this is only where modifications are obvious when carrying out the ONT, or are noted on the WoF fail sheet. If there are any changes to the vehicle as a result of an LVV certification, a new set of photos may be required.

The only exception to this is if the modifications affect the exhaust system (like an added turbocharger) and the owner wishes to remove them rather than have them LVV certified - these need to be remedied prior to the ONT being carried out, simply because there's no point in carrying out an ONT if the exhaust system will then be further changed.

The declaration that the vehicle owner signs on the FS111-1 has a statement outlining that the ONT and photos on the EDP don't constitute any kind of assessment or approval of any modifications to the vehicle, other than the exhaust.

ESMP Data

There is sometimes quite a difference between the 'fall-back' figures in *NZ Car Construction Manual Chapter 11 – Exhaust Noise & Gas Emissions* (the change from *LVV Standard 90-20(06) – Exhaust Noise Emissions* to *Chapter 11* is explained further on), and the actual 75% of 'Engine Speed Maximum Power' (ESMP) (engine speed at which the engine makes its maximum power) figures. It is still appropriate to apply the figures specified in *Chapter 11* when no ESMP data is available, however it is necessary for an LVV Certifier to apply the ESMP figures from the *ESMP Manual* supplied by LVVTA, wherever possible. The *ESMP Manual* does not apply if the engine has been modified, however if the only modification is the exhaust system itself, the *ESMP Manual* does apply.

There have been questions around where the figures in *Chapter 11 – Exhaust Noise & Gas Emissions* should be applied for vehicles that have variable valve lift (VTEC-equipped Hondas, for example). When choosing an appropriate test RPM, these should be treated the same as having variable valve timing. Most vehicles will have specific ESMP data that should be applied, so this is only an issue if there isn't ESMP data or the engine is modified.

EDP and Tailpipe Label Requirements

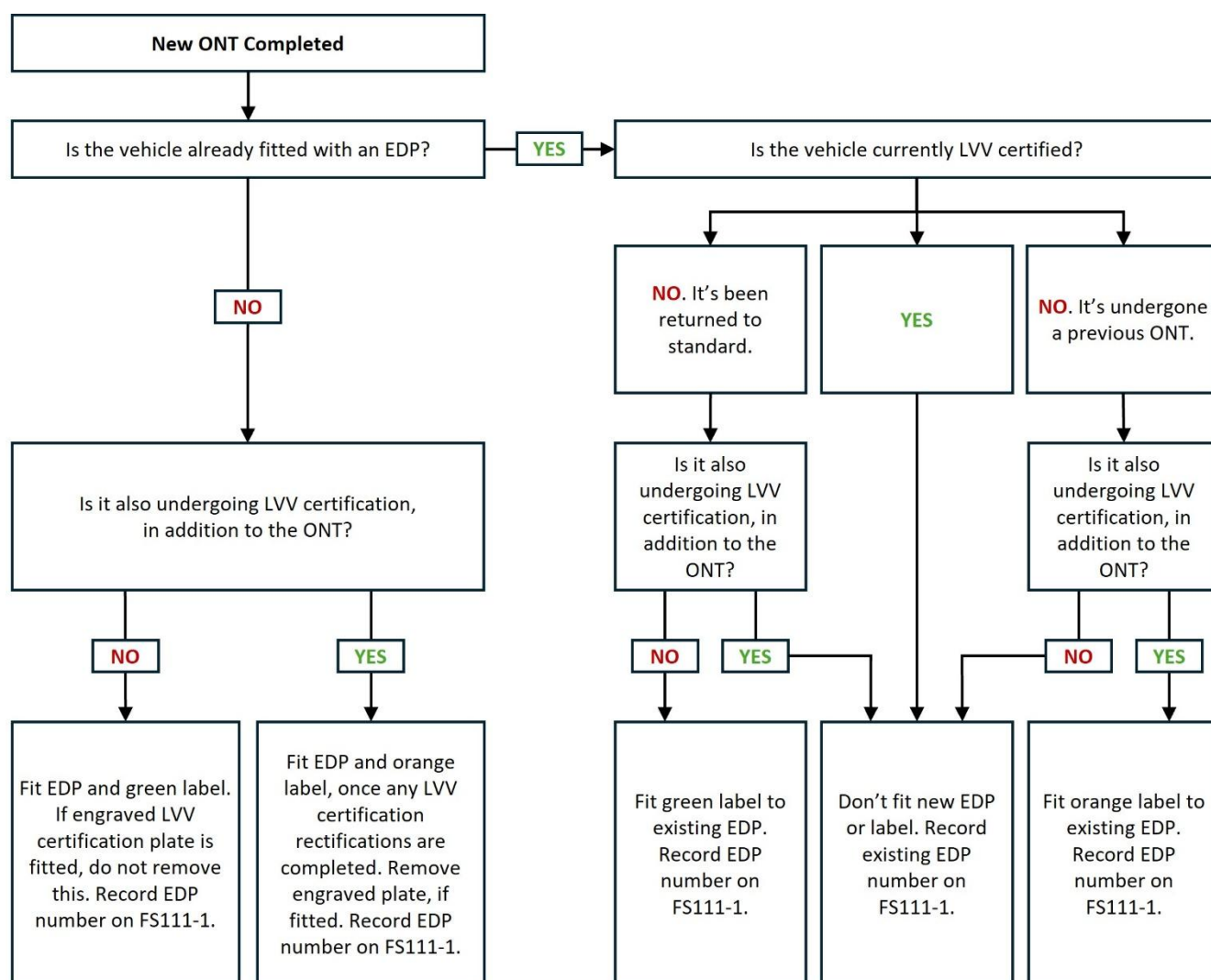
The EDP is the same as that used for LVV certification, but instead has a green backing label that says *exhaust noise only* on it. The flowchart below explains which EDP label should be used, and when fitting an EDP is not required.

Where a vehicle is not LVV certified, or has been LVV certified using an LVV Certification Plate, the green backing label must be used when fitting the EDP to the vehicle. This does create a situation where a vehicle may have an LVV Certification Plate and an EDP fitted, however the green label makes it clear that the EDP information covers only the ONT. The LVV Certification Plate must not be removed - the only situation where an LVV Certification Plate can be removed is where the vehicle has undergone a new LVV certification, or been returned to standard.

If a vehicle is already LVV certified and on an EDP, a new EDP or label does not need to be fitted - the ONT data and photos will be added to the existing certification information. The same logic applies to a scratch-built vehicle being LVV certified - one EDP is used to show all of the information. In this case, the LVV Certifier should use the orange backing label when fitting the EDP to the finished vehicle. This also applies to a vehicle that has passed an ONT and been fitted with an EDP, which then undergoes LVV certification - the existing EDP can be reused, but the green label must be overlaid with an orange label.

▶ ONT Label Flowchart

This flowchart illustrates the process for deciding whether an EDP and label are needed for a vehicle that has undergone an ONT, and which label must be fitted.



Note: if a vehicle with an EDP and green label is later LVV certified for modifications, the LVV Certifier must reuse the EDP on the vehicle and overlay the green label with the orange label.

► Documentation changes

Shift from LVV Standard to CCM Chapter

Coinciding with this change to the ONT system, is the introduction of the new *NZ Car Construction Manual Chapter 11 – Exhaust Noise & Gas Emissions*, and the revised *LVV Standard 90-20(06) – Exhaust Noise Emissions*. These two documents follow the ‘next-generation’ LVV Standard and CCM Chapter format where the legal framework is captured in the new abridged LVV Standard, and the technical content is moved to the CCM Chapter.

When the *NZ Car Construction Manual* was being designed, LVVTA was in the early days of understanding what its responsibilities were going to be in relation to noise emission testing and gas emission testing, so *Chapter 11* was set aside within the *NZ Car Construction Manual* to look after both areas for future development. Because of this, *Chapter 11* is broken into two parts: *Part 1* will cover Exhaust Noise Emissions, and *Part 2* will cover Exhaust Gas Emissions.

Changes to the Form-set

From 1 October, LVV Certifiers will use the new Form-set FS111-1 instead of the existing FS037. The content is largely the same; nothing has changed except for those improvements outlined in the section below, and some formatting changes in the hope of de-cluttering the Form-set and making it easier for LVV Certifiers to use.

To separate the two Form-sets that will be associated with *Chapter 11*, the Form-set for Exhaust Noise Emissions will be FS111-1, and the Form-set for Exhaust Gas Emissions (when it is reconfigured into the ‘next-generation’ format) will be FS111-2.

The FS111-1 is now the only paperwork needed as part of an ONT, and has been updated to reflect the move to EDPs, and to combine it with the information that used to be recorded on the ONT Certificate.

There is no longer an ONT Certificate supplied to the vehicle owner, nor a Tailpipe Label fitted to the tailpipe. The front page of the FS111-1 now contains the LVV Certifier declaration that was on the ONT Certificate, as well as the owner declaration. Because of the move to EDPs, there are a few basic details about the vehicle that now need to be recorded (like the body style) which are required for the EDP database. The back page of the FS111-1 now contains the area for measurements of which components are to be recorded.

There is no longer a need to draw a schematic - the photos provided now fulfil this role. If the LVV Certifier still wants to provide a schematic or drawings of specific exhaust system components, they are welcome to do so - but if these are to be included on the EDP this needs to be clearly indicated on the FS111-1.

In Summary

Use of the EDPs instead of labels and certificates will make the ONT system far more robust, reducing fraudulent activities, and will streamline the inspection and recording process for LVV Certifiers.



FOR FURTHER INFORMATION PLEASE CONTACT YOUR LVV CERTIFIER, OR LVVTA.