TECHNICAL BULLETIN
 # 07 - 2025 (November 2025)

Motorcycle Brake Lever Safety Risk
Best-practice Guidance to Prevent Front Brake Drag Risk

Supporting New Zealand's Repair Certification Industry

About RepairCert NZ Technical Bulletins

These Technical Bulletins have been developed to support Specialist Light Vehicle Repair Certifiers (Repair Certifiers) in ensuring autobody repairs are carried out safely and correctly. Repair Certifiers should, in the first instance, be guided by (if available) relevant Vehicle Manufacturer's Information and Repair Industry Information, and in the absence of such information, refer to the guidance provided within RepairCert NZ Technical Bulletins. These Technical Bulletins can be used by the wider autobody repair industry.

Purpose

This Technical Bulletin advises Motorcycle Repair Certifiers about the risk of an incorrectly adjusted (either at the span adjuster or the pivot) or poorly manufactured front brake lever (previously fitted or fitted during the repair process) causing front brake disc drag on a motorcycle, and provides an inspection process to ensure against it.

Applicable Requirements

This Technical Bulletin combines non-mandatory Best-practice Guidance, together with the relevant mandatory legislative requirements (referred to as 'applicable requirements') to support Motorcycle Repair Certifiers in relation to this subject.

The applicable requirements stem from *Land Transport Rule: Vehicle Repair 1998 (Repair Rule)*, which specifies that *'a repair to a vehicle, its structure, systems, components or equipment, must restore the damaged or worn vehicle, structure, system, component or equipment so that they are within safe tolerance of the state of the vehicle, structure, system, component or equipment when manufactured.'*

The *Light Vehicle Repair Vehicle Inspection Requirements Manual (Repair VIRM)* sets out the requirements that Repair Certifiers must meet to achieve the objectives of the *Repair Rule* (see the 'Repair VIRM Requirements' section at the back of this Technical Bulletin).

Background

An experienced Motorcycle Repair Certifier recently highlighted the risk of front brake drag being inadvertently caused by design and manufacturing faults with (in particular, aftermarket) front brake levers, or as a result of incorrect adjustment. While the problem is more commonly associated with aftermarket brake levers, it can also occur with original equipment (OE) components *(see Note 1)*.

These design, manufacturing, or adjustment faults can all lead to the master cylinder piston assembly not fully returning to the rest position, preventing the cylinder's compensating (relief) port from properly opening. This can lead to residual pressure build-up within the front brake circuit, potentially causing front brake drag, which can result in unexpected lock-up of the front wheel - especially in situations where the motorcycle is being ridden over slippery surfaces such as painted road markings, wet leaves, moss, or ice.

For some damaged motorcycles undergoing repair certification, it's possible that incorrect adjustment of the brake lever may have been the cause of the crash in the first place, so a Repair Certifier should always check for this issue, and if identified, ensure it is properly resolved using this Technical Bulletin for guidance.

Understanding the Issue

Aftermarket front brake levers are available in a wide variety of configurations (in addition to those that replicate the OE components - *see Image 1*), including span-adjustable, foldable, short, long, and adjustable lever length *(see Image 2)*.

Image 1: *Examples of aftermarket OE replica brake levers.*

Image 2: *Examples of adjustable aftermarket brake levers.*

It is critical to understand that there should be no pressure applied to the master cylinder by the brake lever when the brake lever is in the resting position (referred to as 'free-play') for the braking system to function correctly *(see Notes 1 and 2)*.

Note 1	While this Technical Bulletin commonly refers to aftermarket brake levers, the same issues have been found in some OE components, so whether a lever is an aftermarket or OE component, as part of the inspection process Repair Certifiers should always ensure that the adjustment between the front brake lever and the master cylinder is correct.
Note 2	The focus of this Technical Bulletin is on the front braking system where the problem most commonly occurs, however the same basic principles of checking for correct adjustment should also apply to the rear braking system.

On some brake levers, the shape and profile of the brake lever return stop *(marked as '1' in images 3 and 4)* can prevent the lever from fully returning to its released position against the lever base perch.

This can inadvertently cause the brake actuation lever *(marked as '2' in images 3 and 4)* to create a pre-load against the brake master cylinder pushrod, potentially blocking (or partially blocking) the compensating port inside the master cylinder *(see Image 5)*.

The compensating port in a motorcycle's front brake master cylinder allows brake fluid to return to the reservoir when the lever is released, meaning no pressure is being applied to the front brake.

Incorrect adjustment can prevent the master cylinder piston from fully returning to its resting position, resulting in the compensating port being covered (or partially covered) by the piston, with fluid pressure remaining in the front brake circuit.

As heat builds up, the brake fluid expands, increasing pressure and causing brake drag, with potential for the front brake to be applied unexpectedly *(see Image 5)*.

The incorrect adjustment of a brake lever (whether aftermarket or an original equipment component) can also cause a similar problem, which can result in the same drag, and unexpected application of the front brakes.

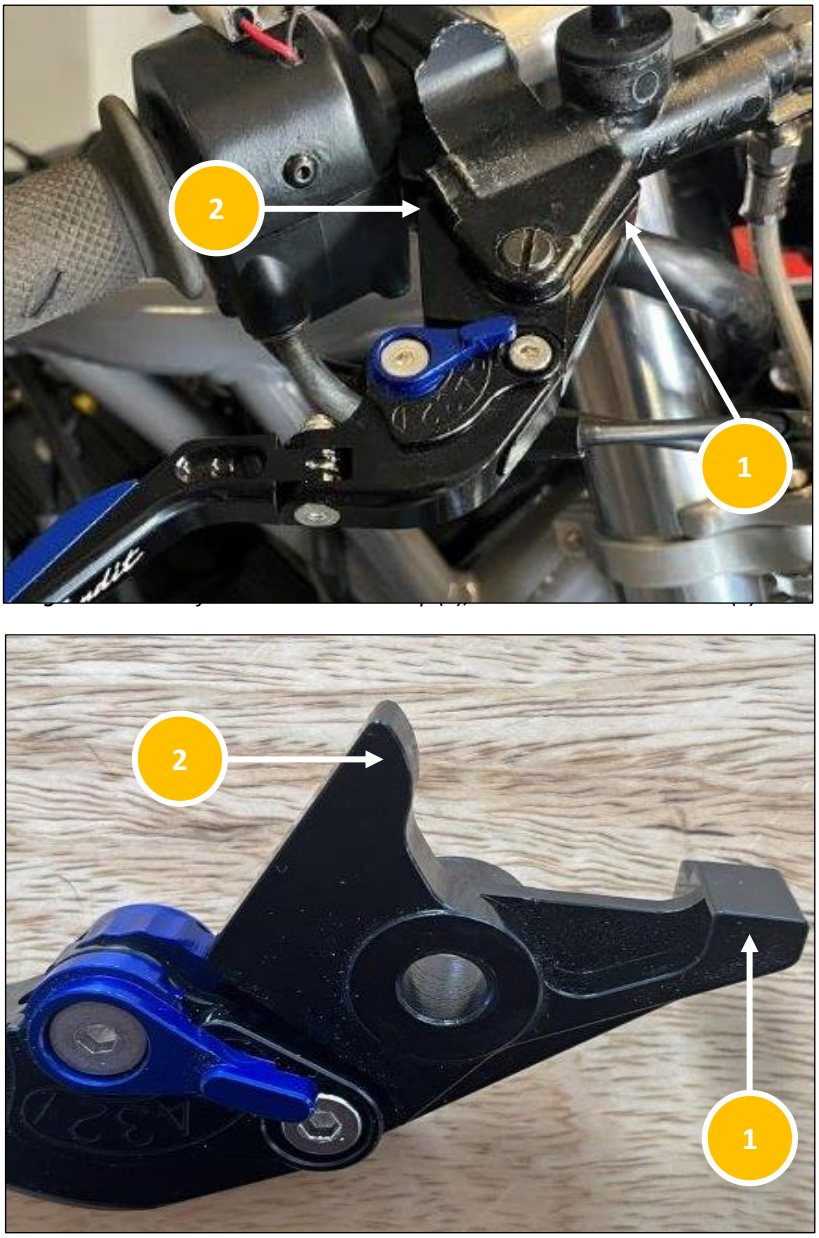

Image 4: *Close-up of brake lever return stop (1), and brake actuation lever (2).*

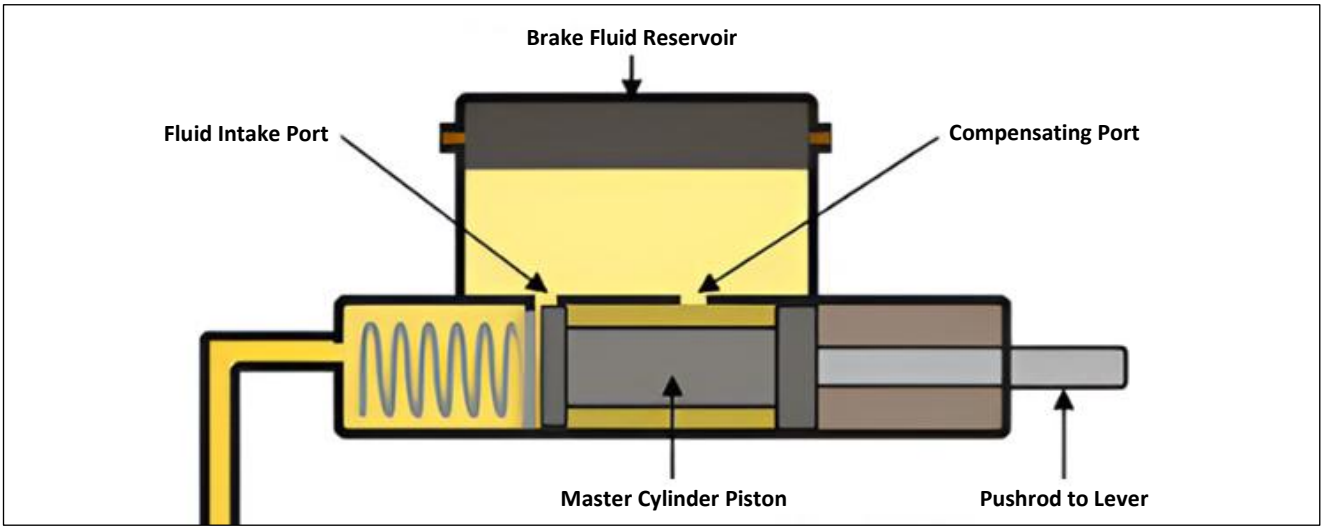

Image 5: *Front Brake Master Cylinder Components. A 'compensating port' is also known as a 'compensation port' or 'relief port'.*

Correct Inspection Process

Inspecting for Correct Brake Lever Release

There are a number of ways to ensure that the brake lever is functioning correctly:

- Remove the reservoir fluid cap, and with the brake lever applied, observe whether a small fluid pulse is visible in the fluid reservoir when the brake lever is subsequently released - this confirms that the compensating port is uncovered, and the piston is fully returning to its rest position *(see Image 6)*.
- At the brake caliper(s), apply direct even pressure to the brake pads to push them away from the rotor - the brake pistons (behind the pads) should retract easily *(see Image 7 and Notes 3 and 4)*. If the brake pads do not return smoothly under pressure, remove the brake lever and try pushing the pistons back again. If they move freely without the lever, this indicates that the brake lever may be poorly designed or defective.
- With the front of the motorcycle raised off the ground, check that the front wheel spins freely every time the front brake lever is applied and released.

A Repair Certifier should take into account that these tests do not simulate any heat build-up that may be generated by a blocked compensating port.

To verify that the braking system is functioning correctly (including when the braking system is hot), the ideal inspection process is to ensure that the system is correctly adjusted both before and after the road-test.

Image 6: *Checking for a small fluid pulse inside the fluid reservoir.*

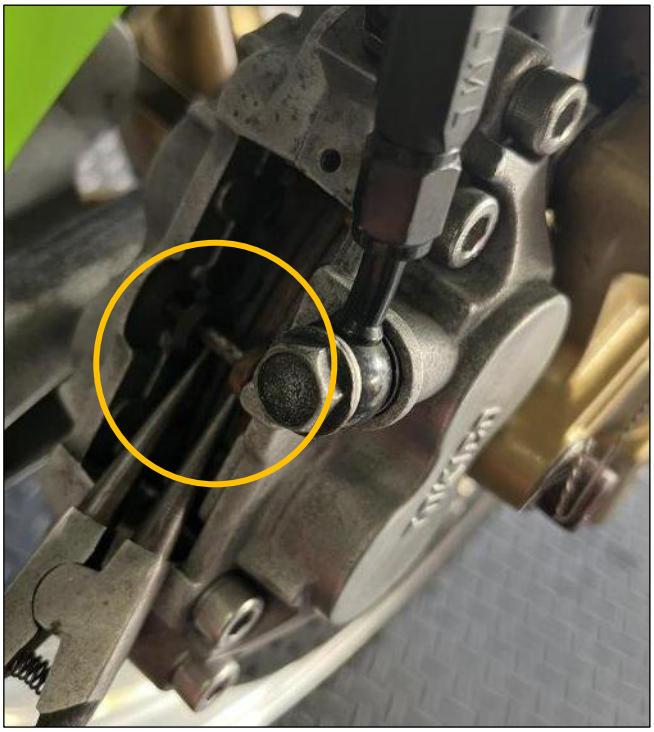

Image 7: *Applying direct pressure to the brake pads.*

Note 3	Accessing the brake pads will often first require the removal of the anti-rattle spring plate *(see Image 8)*.
Note 4	Some brake caliper designs require removal of the brake calipers from the motorcycle to allow access to the brake pads *(see Image 9)*.

After carrying out a thorough inspection using the evaluation process described above, a Repair Certifier should ensure that:

- there is no pre-load present between the front brake lever and master cylinder piston; and
- the master cylinder piston is fully returning to its rest position and allowing fluid to return through the compensating port; and
- no brake drag is apparent.

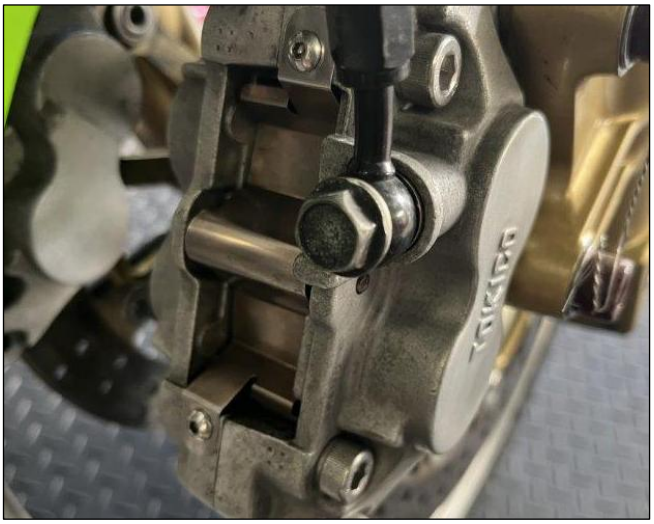

Image 8: *Anti-rattle spring plate that typically requires removal.*

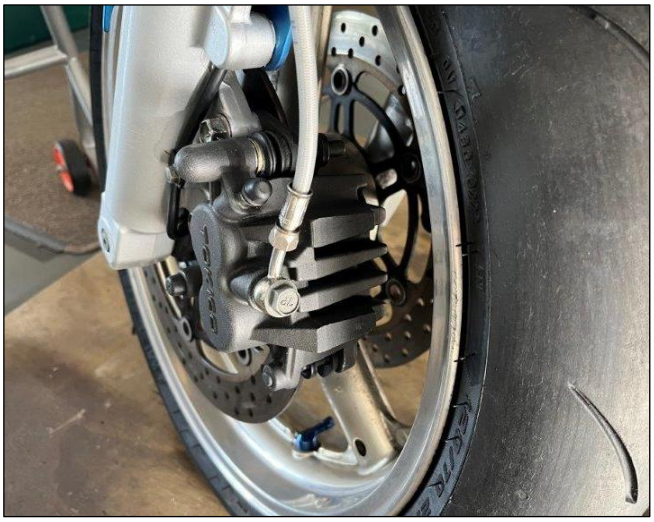

Image 9: *Some caliper designs require removal to access the pads.*

Other Front Brake Lever Inspections

A Repair Certifier should also inspect the lever-to-perch pivot to ensure that *(see Image 10)*:

- no binding or catching occurs on the pivot bolt/pin when the lever is pulled and released; and
- a threaded nut is securely tightened on the underside of the pivot bolt/pin; and
- the fasteners of all other adjustable pivot locations on adjustable lever sets (typically stainless machine screws with nylock nuts) are tight *(see Note 5 and Image 11)*.

Note 5	Pivot fasteners on adjustable lever sets are prone to working loose over time - the application of a thread locking compound is strongly recommended.

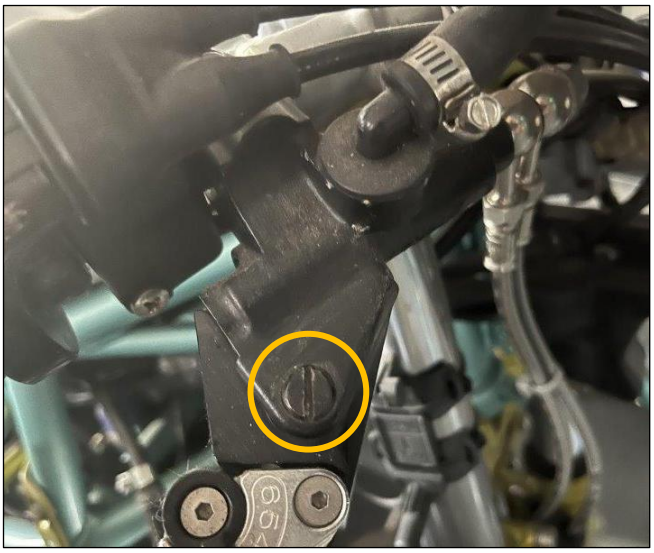

Image 10: *Lever-to-perch pivot bolt/pin.*

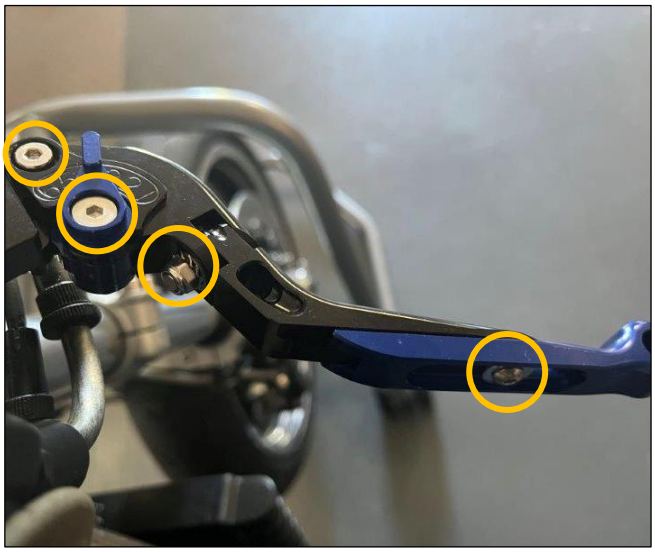

Image 11: *Typical adjustable pivot fastener locations.*

Repair VIRM Requirements

Mandatory Content

While the Best-practice Guidance contained in this Technical Bulletin (up to the Repair VIRM Requirements heading above) is provided as (non-mandatory) supporting information to help a Repair Certifier achieve the best possible outcomes, the following requirements are copied from the *Repair VIRM* (consolidated for clarification) and must in all cases be met.

Braking Systems

A Repair Certifier must ensure that:

- any replacement used parts are within the vehicle manufacturer's wear limits or specifications; and
- the rear brake pedal and front brake lever are secure; and
- brake pipes (including connections):
  - are secure; and
  - are not deformed from their original shape; and
  - do not have corrosion damage (no signs of pitting or a noticeable increase in the pipe's outside diameter); and
  - are routed correctly; and
  - are supported in all the original manufacturer's locations using supporting clamps and clips;

and

- brake calipers are secure; and
- ABS system components are not damaged, insecure, or missing; and
- brake discs or drums are not fractured or otherwise damaged; and
- the ABS or brake system warning lamp or self-check system, if fitted, does not indicate any defects in the ABS or brake system; and
- where any part of the ABS system has been repaired, replaced or damaged, a declaration stating that a full diagnostic check has been completed by the manufacturer, an approved representative, or a recognised technician, is provided; and
- no brake components show signs of heating or welding after original manufacture; and
- a motorcycle that is water damaged meets the requirements specified in *Table 9.1.1* (with associated information) of the *Repair VIRM*.

In Summary

By following the Best-practice Guidance and *Repair VIRM* requirements provided in this Technical Bulletin, a Repair Certifier's decisions will be compliant with the *Repair Rule*.

FOR FURTHER INFORMATION PLEASE CONTACT REPAIRCERT NZ.