

BASIC REQUIREMENTS FOR TRAILER BRAKES

0 - 2000 kg

There is no legal requirement for trailer brakes. If brakes are fitted they must be serviceable. The vehicle/trailer combination must be capable of stopping within 7 m from 30 km/h without damage to the structure of the tow vehicle or the trailer. The towing capacity of the vehicle being used to pull a trailer should be considered when decisions whether to fit brakes to a trailer are being made.

2000 - 2500 kg

Trailers must be fitted with a service brake on at least one axle. Indirect (override) or direct (cab-controlled) type brakes can be fitted. The tow coupling must have a rating at least commensurate with the laden trailer and have either; a) twin crossed safety chains, or b) an electric breakaway brake system. The vehicle/trailer combination must be capable of stopping within 7 m from 30 km/h.

2501 - 3500 kg

Trailers must be fitted with direct (cab-controlled) service brakes and an independent parking brake on at least one axle (capable of holding the vehicle at rest on a slope of 1 in 5). The vehicle/trailer combination must be capable of stopping within 7 m from 30 km/h. This will usually mean that 2 axles will need to be braked. **OR** an indirect brake system (Hygo MKII) that complies with ECER13 can be fitted. The tow coupling must have a rating at least commensurate with the laden trailer and have either; a) twin crossed safety chains, or b) an electric breakaway brake system.

3501 - 10000kg

These trailers are subject to heavy transport regulations and COF testing, and are called TC class trailers. Inertia based controllers are not allowed on these trailers, and direct service brakes must be fitted to each axle, with a handbrake on at least half the number of axles. A braking efficiency of 50% must be achieved, and the same stopping and handbrake performance as detailed for trailers over 2501kg above.

BRAKING SYSTEMS

Indirect Systems

Indirect service brakes are those that operate without input directly from the driver of the tow vehicle. They are usually inertia-activated systems and this is the most commonly used system under 2500 kg. Systems that comply with ECER13 up to 3500kg (Hygo MKII) are an indirect system also.

Direct Systems

Direct service brakes are those that operate as a direct result of braking input from the driver of the tow vehicle. They are load-adjustable and incorporate an emergency override function which operates the trailer brakes independently of the tow vehicle from the driver's seat.

BRAKE TYPES

Disc Brakes

Disc brakes are a rugged, low maintenance braking option and are suitable for all braking applications. They are the only brake that can safely be submerged in water. They are the most efficient trailer brakes, and when higher performance options such as Trailparts™ Patriot versions are specified, assist significantly in reducing stopping distances.

Drum Brakes - Hydraulic

Hydraulic drum brakes are an economical and effective braking option. They are not as efficient as disc type brakes, but suited for use on a wide range of domestic trailers, caravans and horse floats, with their smooth, damped braking action making them ideal for livestock and fragile loads.

Drum Brakes - Electric

Electric drum brakes are an effective and efficient braking option. They are able to be used in both direct and indirect brake systems and are easily mated to a breakaway brake system. Also incorporated is an independent, mechanical parking brake function, required on trailers over 2500kg.



VERRIDE SYSTEMS – INDIRECT

Override brakes are indirect systems, inertia-activated and operated by the weight of the towed trailer. A coil spring in the tow coupling is compressed, applying the brakes proportionate to the degree of spring compression. Available as mechanical disc, hydraulic disc and hydraulic drum type brakes.

Advantages

- Easily towable by multiple vehicles.
- Inexpensive and reliable.
- Low maintenance.

Disadvantages

- Braking not operable in reverse.
- Reversing not possible without first deactivating this system at the tow coupling or alternatively fitting an **Autoback** reversing solenoid – see page 7. **Note:** If the system complies to ECER13 auto-reversing is possible.

ELECTRIC SYSTEMS – INDIRECT

Used with electric drum brakes. A trailer-mounted brake controller is preset to match the load carried on the trailer. Braking is triggered by the vehicle's brake lights being activated, and delivered proportionate to the load setting registered on the controller.

Advantages

- Easily towable by multiple vehicles.
- Includes mechanical parking brake.

Disadvantages

- Braking not as progressive as direct electric brake systems.
- Higher maintenance drum brakes are used.

ELECTRIC SYSTEMS – DIRECT

Used with electric drum brakes, this is the most economical to fit of all the direct braking systems. They are regulated by in-cab brake controllers with an emergency brake override function and adjustable load settings to accurately match braking output with the weight of the load carried. This system is also easily mated to an emergency breakaway brake system required by law when exceeding 2500 kg MTM (Maximum Towed Mass). When the Trailparts Credo controller is specified, the controller is easily switched between multiple tow vehicles.

Advantages

- Accurate, proportional brake control.
- Includes inbuilt mechanical parking brake.
- Easily connected to breakaway system.

Disadvantages

- Higher maintenance drum brakes are used.

ELECTRIC/HYDRAULIC – DIRECT

This system combines the performance advantages of direct electric brake systems but allows the ruggedness & efficiency of hydraulic disc brakes, and in turn, a direct, high-performance brake system that can be submerged in water. Braking input from the tow vehicle is measured by a brake controller containing an accelerometer, with the resulting output transferred into proportional, smooth trailer braking. When the Trailparts Credo control system is specified, the in-cab portion is easily transferrable to other tow vehicles, giving the ultimate performance/flexibility combination available in NZ.

Advantages

- Allows use of hydraulic disc brakes over 2500kg
- Fast braking response time.
- Accurate, smooth, proportional control.
- Braking provided in reverse.
- Simple wiring requirements

Disadvantages

- Requires addition of mechanical parking brake over 2500kg.

VEHICLE TOWING LIMITATIONS

Most towbars fitted to vehicles are rated according to the vehicle manufacturer's recommendations for towing capability. Towing trailers in excess of the vehicle manufacturer's recommendations may void both the vehicle warranty and any insurance claim arising while towing that trailer. Trailequip Ltd strongly recommend that the vehicle manufacturer's rated towing capacity is at least commensurate with that of the laden trailer at all times.

