

# Get your lights right!

What you need to know about fitting and using additional vehicle lighting



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Every year problems with vehicle lighting contribute to around seven deaths and 88 injuries on our roads.

Inadequate lighting can make it difficult for a driver to see and for their vehicle to be seen at night. However, lights which are too bright, incorrectly fitted or poorly aligned can be just as dangerous.

There are now legal limits on how many extra lights can be fitted on a vehicle and where – as well as new restrictions on cosmetic lighting. The law says your lights must not dazzle, confuse or distract other road users and sets out how and when you can use some types of vehicle lights.

If you don't get your lights right, not only could your vehicle fail its warrant of fitness, but you could also be in for a hefty fine. Even worse, you could cause a crash.

So read the following information and make sure that your vehicle's lights are safe and legal!

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### Acknowledgement

All photographs courtesy of Hella New Zealand Ltd.

### Disclaimer

The following information is provided as a guide only. For more detailed information on vehicle lighting generally, please refer to Land Transport Rule: Vehicle Lighting 2004 and Land Transport (Road User) Rule 2004 at [www.landtransport.govt.nz/rules](http://www.landtransport.govt.nz/rules)

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## Modifying/improving performance

### Replacement lamps

There are many 'straight swap' lamps available for purchase from vehicle lighting retailers as well as online. Vehicle lighting retailers in New Zealand are required by law to sell lamps which meet approved standards and are fit for the purpose for which you're intending to use them – so they'll be able to advise you on choosing the right lamp for the job.

However, if you buy online, particularly from an overseas site, you need to ensure lighting equipment complies with the law and meets approved standards – otherwise you risk failing your next warrant of fitness inspection.



### Replacement bulbs

- If you want to improve the performance of your headlamps, you can replace the bulbs with high-efficiency bulbs. However, these replacement bulbs must be of a similar type and wattage as the original bulbs, eg don't replace a standard bulb with one of higher wattage.

- Make sure replacement bulbs are the correct colour, eg headlamp bulbs must be predominantly white or amber, although some white bulbs can look slightly blue. You should use commonsense to ensure you don't run into trouble later on.
- Vehicle lighting retailers in New Zealand are required by law to sell bulbs which are fit for the purpose for which you're intending to use them – so they'll be able to advise you on choosing the right bulb for the job.

### High intensity discharge (HID) conversion kits

HID conversion kits (an HID bulb with a high voltage power unit or 'ballast' which fits into the original headlamp unit in place of the original bulb with no change to the headlamp lens, reflector or housing) are illegal on any vehicle being used on New Zealand roads.

However, a complete halogen headlamp unit can be replaced with a complete HID headlamp unit provided that the replacement headlamp unit complies with approved standards. If in doubt, get advice from a vehicle lighting retailer you trust.

### Tinting

It is illegal to apply any kind of tint film, tint paint or opaque sticker to any lamp which has a function other than decoration (eg non-cosmetic).

## Cosmetic lighting

**If you want to use cosmetic lighting to make your vehicle stand out, take the time to get it right – and avoid hassles later on!**

### Fitting requirements

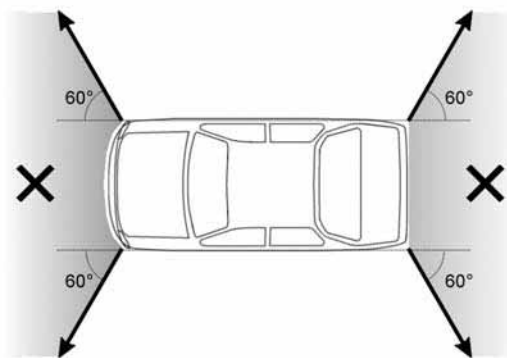
Cosmetic lamps are permitted provided they meet the following requirements:

- They must be angled downwards and fitted so that the light source isn't directly visible from the front or back of the vehicle (this will prevent the lights distracting, confusing or dazzling other road users). See diagram below.
- You must not be able to see any red light from directly in front of the vehicle.

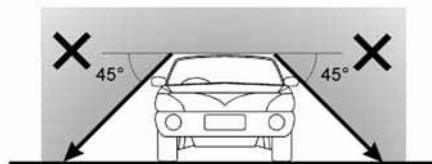
- They should only give off light that is spread out (diffuse) rather than light concentrated in a beam.
- They must not be positioned close to essential lights such as headlights or indicators.
- They must not flash, pulse, fade in and out or change colour.
- They must not revolve, rotate or move in any direction.

### On the road

It is against the law to use cosmetic lamps in a way that could dazzle, confuse or distract other road users.



You must not be able to see the light source (lamp) from anywhere in the shaded zone.



## Dipped beam headlamps

Dipped beam headlamps are used for lighting the way ahead of the vehicle at night. The beam pattern is controlled so that the driver can see the road ahead without causing glare to other road users. (Dipped beam and main beam headlamps are often combined into one lamp.)



### Fitting requirements

- All vehicles are fitted with one or two dipped beam headlamps as original equipment.
- You may not fit any additional dipped beam headlamps to a vehicle.
- Dipped beam headlamps must be white or amber in colour.

### On the road

Dipped beam headlamps should be used during the hours of darkness and whenever visibility is poor. Because they are dipped, they can be safely used in all conditions without dazzling other road users.

## Main beam headlamps



Main beam headlamps are used for lighting the way a long way ahead of the vehicle. Because they are not dipped, they will dazzle other road users if not used properly. (Dipped beam and main beam headlamps are often combined into one lamp.) Additional main beam headlamps are also known as 'driving lamps'.

### Fitting requirements (original equipment)

- Most motorcycles, cars and trucks are fitted with one or two main beam headlamps as original equipment.
- Main beam headlamps must be white or amber in colour.

### Fitting requirements (additional equipment)

- You may fit additional main beam headlamps (driving lamps) as long as you don't have more than the maximum allowed for that type of vehicle. All vehicles except motorcycles may have up to four main beam headlamps (motorcycles may have up to two). For example, if your car has two main beam headlamps you may add two more, but if it already has four main beam headlamps you may not fit any more.
- Main beam headlamps must be wired so that they automatically switch off when the headlamps are dipped.



### On the road

Only use main beam headlamps when you're driving on the open road and there are no other vehicles directly in front of you or coming towards you. You must switch to dipped beam as soon as you notice other vehicles ahead to avoid dazzling them.

## Front fog lamps

Front fog lamps illuminate the road ahead in foggy conditions, both at night and during the day. They give off a short, wide beam of light that is designed to shine through the fog, lighting up the area directly in front of the vehicle and helping the driver see the sides of the road better.



### Fitting requirements

- You may have up to two front fog lamps fitted to your vehicle. If your vehicle already has two front fog lamps fitted as original equipment, you cannot fit a second pair. Fog lamps should be wired so that they can be turned on or off independently of the headlamps.
- Front fog lamps must be white or amber in colour. When purchasing front fog lamps, it is your responsibility to ensure they meet approved standards and are designed for that specific purpose. If in doubt, consult a vehicle lighting retailer.

### On the road

Fog lamps should only be used when visibility is severely reduced, eg by snow or fog. It is against the law to use fog lamps in clear conditions (day or night) as they can dazzle other road users.

## Rear fog lamps

Some vehicles are fitted with rear fog lamps, which are very bright rear-facing red lights designed to make the back of the vehicle more visible in fog.

### Fitting requirements (rear)

- You may have up to two rear fog lamps fitted to your vehicle. If your vehicle already has two rear fog lamps fitted as original equipment, you cannot fit a second pair. Rear fog lamps should be wired so that they can be turned on or off independently of the tail lamps.
- Rear fog lamps must be red in colour. When purchasing rear fog lamps, it is your responsibility to ensure they meet approved standards and are designed for that specific purpose. If in doubt, consult a vehicle lighting retailer.

### On the road

Fog lamps should only be used when visibility is severely reduced, eg by snow or fog. It is against the law to use fog lamps in clear conditions (day or night) as they can dazzle other road users.

## Daytime running lamps

Daytime running lamps are optional lamps fitted to the front of a vehicle to make it easier to see in daylight. They have a low light output and are not bright enough to illuminate the road ahead of the vehicle.

### Fitting requirements

- You can fit up to two daytime running lamps to your vehicle. If your vehicle already has two daytime running lamps as original equipment, you can't fit a second pair.
- Daytime running lamps should be wired so that they automatically switch off when either the dipped or main beam headlamps are turned on.
- On some vehicles, the headlamps have a daytime running lamp function. When the vehicle's ignition is switched on, the headlamps automatically turn on in 'daytime' mode. When the headlamps are switched on to dipped beam or main beam, they function in normal 'night-time' mode.
- Daytime running lamps must be white or amber in colour. When purchasing daytime running lamps, it is your responsibility to ensure they meet approved standards and are designed for that specific purpose. If in doubt, consult a vehicle lighting retailer.



### On the road

Daytime running lamps are normally designed so that they turn on automatically with the engine ignition, and turn off when the dipped or main beam headlamps are switched on.

## Stop lamps

Stop lamps are red lamps on the rear of the vehicle that light up automatically when the vehicle brakes. Stop lamps are normally positioned in pairs towards the sides of the vehicle. Most vehicles also have 'high-mounted' stop lamps (HMSLs) which are normally fitted in the centre of the base or top of the rear window.



### Fitting requirements

- Light vehicles may have up to two pairs of stop lamps, and up to two HMSLs. Motorcycles can have up to two stop lamps.
- A stop lamp must normally not be mounted more than 1.5 metres above the ground. The only exceptions are:
  - if the vehicle's body shape makes it difficult to mount the lamp at or below this height, in which case the stop lamp may be fitted up to 2.1 metres from the ground
  - if extra stop lamps are fitted to a heavy vehicle, in which case only one pair may exceed the height restriction and these must be mounted as close to the top of the bodywork as possible.
- Stop lamps must be red in colour. When purchasing stop lamps, it is your responsibility to ensure they meet approved standards and are designed for that specific purpose. If in doubt, consult a vehicle lighting retailer.

## Direction indicators/ hazard warning lamps



**All vehicles must have direction indicators which signal your intention to turn. Most vehicles have hazard warning lamps which flash direction indicators in both directions at the same time.**

- When purchasing direction indicator lamps, it is your responsibility to ensure they meet approved standards and are designed for that specific purpose. If in doubt, consult a vehicle lighting retailer. You must make sure you use the correct type of direction indicator lamp (eg only use front direction indicator lamps for this purpose).

### On the road

Hazard lights should only be used to indicate a temporary hazard to traffic, eg your vehicle has broken down and you're awaiting assistance. Only goods vehicles are allowed to use their hazard lights when double-parked, and only for trade purposes.

### Fitting requirements

- Light vehicles may have up to two pairs of front direction indicator lamps, and up to two pairs of rear direction indicator lamps. Motorcycles can have one pair of front direction indicators and one pair of rear direction indicators only.
- A vehicle may have one or two side-facing direction indicator lamps on each side.
- A direction indicator must not be mounted more than 1.5 metres above the ground unless the vehicle's body shape makes it difficult to mount the indicator at or below this height, in which case it may be fitted up to 2.1 metres above the ground.

## Position lamps

**Position lamps are low wattage lamps on the front and rear of vehicles that show the outline of the vehicle. They are also known as 'park lights', 'side lights' and in the case of rear position lamps, 'tail lights'.**

### Fitting requirements

- Light vehicles may have one pair of front position lamps and up to two pairs of rear position lamps. Motorcycles may have one or two front position lamps and one or two rear position lamps.
- The law says a position lamp must not be mounted more than 1.5 metres above the ground unless the shape of the vehicle body makes it difficult to mount the lamp at or below this height, in which case it may be fitted up to 2.1 metres above the ground.
- Front position lamps must be white or amber in colour.
- Rear position lamps (tail lights) must be red in colour.
- When purchasing position lamps, it is your responsibility to ensure they meet approved standards and are designed for that specific purpose. If in doubt, consult a vehicle lighting retailer.



## Reversing lamps

Reversing lamps are white rear-facing lamps used to illuminate the area behind the vehicle when it is reversing.

### Fitting requirements

- A vehicle may have up to two reversing lamps, which must be wired so that they only operate when **either**:
  - reverse gear is engaged, **or**
  - the headlamps are turned off.
- When purchasing reversing lamps, it is your responsibility to ensure they meet approved standards and are designed for that specific purpose. If in doubt, consult a vehicle lighting retailer.

### On the road

Most reversing lamps operate automatically. However, where reverse lamps operate manually they must only be used when reversing.

## Maintaining your lights

- It's your responsibility to make sure your vehicle lights are kept clean and in good condition at all times.
- You should regularly check that your headlamps, indicators and stop lamps are functioning. If a lamp is made up of a cluster of small light sources (such as LEDs), at least 75 percent of these light sources must be working at all times.

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