

Frequently Asked Questions

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Which vehicles are supported?

New vehicles are regularly being added to the product range. If your vehicle is not supported, ensure you [subscribe](#) for email updates or like us on [Facebook](#) to get notified when new products are released.

Vehicle	Years	lockup-mate	auto-mate
Mitsubishi Challenger PB	2009-2012	✓	✓
Mitsubishi Challenger PC	2013-2015	✓	✓
Mitsubishi Pajero NS (DiD)	2007-2009	✓	
Mitsubishi Pajero NT, NW, NX (DiD)	2010+	✓	✓
Mitsubishi Triton MN (5 speed auto)	2009-2015	✓	✓
Mitsubishi Triton MN (4 speed) auto)	2009-2015	Coming soon	
Mitsubishi Triton MQ	2016-2018	✓	✓
Mitsubishi Triton MR	2019+	Coming soon	Coming soon

(as at Sep 2020)

Vehicle	Years	lockup-mate PLUS+
Toyota Prado 150 3.0L Diesel	2009-2014	✓
Toyota Prado 150 2.8L Diesel	2013-2015	✓
Toyota Landcruiser 200 4,5L Diesel	2007-2015	Coming
Toyota Landcruiser 200 4,5L Diesel	2016+	Coming
Ford Ranger PX2 3.2L Diesel		Coming
ISUZU D-Max/MUX		Coming

Where a feature is common to both **lockup-mate** and **lockup-mate PLUS+** it will be identified as **lockup-mate(+)**

Why would I need lockup kit?

Our lockup kits have been developed to protect your automatic transmission from damage caused by high temperatures when driving the vehicle under heavy load conditions. Conditions such as towing, climbing very steep hills when off-road, or sustained driving in softer sand can result in very high transmission temperatures that degrades the oil and ultimately leads to a transmission failure.

Our kits keep transmission temperatures lower by automatically controlling the torque converter clutch (TCC) to minimise slippage and excessive heat build-up. The slippage of the torque converter is the primary source of heat generation in an automatic transmission, and high temperatures can ultimately lead to failure and a very expensive repair.

By eliminating the torque converter slip you also save fuel. Typically, 10% or more.

Our lockup kits also transform the feel of the car. You'll no longer get that slush-box feel when accelerating, rather, a direct acceleration responsiveness, like with a manual transmission.

They are a must have mod for anyone who is towing, or who wants more direct responsiveness.

What's the difference between **auto-mate**, **lockup-mate**, and **lockup-mate PLUS+**?

lockup-mate PLUS+ has been designed specifically for the Toyota models. It is similar to the Mitsubishi **lockup-mate** but with more customisable features and it operates differently in SPORT and DRIVE modes. This is due to different transmission behaviour of the Toyotas when in SPORT mode. In the Toyota, SPORT operates just like DRIVE, except the top gear is limited to the selected number.

lockup-mate and **auto-mate** are for Mitsubishi. In the Mitsubishi's transmission, the SPORT gear number is always the actual gear used by the transmission. This provides the driver with much more manual control of gears.

lockup-mate is the entry level version. It works in both DRIVE and SPORT modes of the transmission, but in DRIVE it works best at speeds above 80kph. In DRIVE, the factory ECU is in control of the gear changes.

auto-mate replaces DRIVE mode and controls all the gear changes at all speeds and has the following additional features:

- Full control of the gears in DRIVE mode for optimised torque converter lockup and fuel savings.
- User adjustable transmission shift profile – to adjust for your specific car, or for a sportier response.
- Displays the current gear number in the instrument cluster, even when in DRIVE.
- 5th gear lockout. Ability to set the top gear as 4th.
- Will hold the lower gear during downhill engine braking even after switching back from SPORT to DRIVE (excluding MQ Triton).
- User selectable warm-up temperature (Pajero NT+, Triton MQ only). Default is 40 deg C.
- Fully automatic operation – set and forget!

With **lockup-mate(+)**, unless at highways speeds, you get the most benefit when it's used in SPORT mode, and it's up to the driver to ensure the right gear is chosen to allow the torque converter to lockup.

auto-mate controls gear changes and TCC lockup for a fully integrated solution. So, it's just 'easier' to use.

This means **auto-mate** is 'like' a new DRIVE mode, optimised to keep the transmission's torque converter locked up. The transmission actually remains in SPORT mode but the **auto-mate** computer does the work for you.

I don't get it? So they both work in DRIVE? Yes, and it can be confusing.

When in DRIVE with **lockup-mate(+)** the factory ECU is controlling the gear choices. You get nice, smooth gear changes, but when under 70kph the conditions aren't suitable for locking up. At 60kph the factory ECU will choose 5th gear, but you need to be in 4th for lockup to be possible. To achieve this, you need to go to SPORT mode.

When in DRIVE with **auto-mate** however, it will actually keep the transmission in SPORT mode and takes control when the gears change. **auto-mate** will select 4th when at 60kph. **auto-mate** is like a transmission remap optimised for operation with the torque converter clutch locked.

Can I go back to the normal factory DRIVE mode with auto-mate? Yes, just push the LED/switch and it will switch off.

Can I still use SPORT mode with auto-mate? Yes, just by moving the shift lever across to SPORT mode.

Which one should I buy? **lockup-mate** or **auto-mate**?

lockup-mate PLUS+ is available just for Toyota's.

Most Mitsubishi customers choose **auto-mate**. There are 3 main considerations when deciding which one is best for you.

- How you like to drive the car - if you don't mind (or enjoy) using SPORT mode then all the benefits can be achieved with **lockup-mate**, but with fewer features.
- **lockup-mate** may suit you if you'd only intend to use it infrequently when towing on the highway.
- **auto-mate** better suits the driver who bought an automatic because they don't want to change gears, or to maximise the potential fuel saving that can be achieved. Plus, you get the new features not available in your car such as 5th gear lockout and adjustable shift profile.
- Price. Ultimately though, they will pay for themselves in the long run through fuel savings and extending service intervals of the transmission oil.

Can I upgrade at a later date?

In the past, upgrade offers have been made to **lockup-mates** sold prior to the release of an **auto-mate** version for their vehicle model. We endeavor to provide an upgrade path where possible.

Will it affect my Warranty?

As with the fitting of any aftermarket accessory, if the dealer believes it is the cause of a problem they may not honour the warranty for that repair.

For example, fitting an after-market suspension lift may invalidate a CV joint or drive shaft failure under warranty. Similarly, for remapping the engine to get more power.

Fitting a lockup kit is no different as they may suspect a transmission failure could be caused by it. It all depends on the failure that's occurred.

For normal servicing, some people just hide the unit. They disconnect the OBD2 connector and tuck it away in the transmission tunnel, and the LED/switch can be easily removed and coiled up out of the way in a couple of minutes.

By disconnecting the OBD2 plug, the vehicle reverts to standard operation.

If you do suspect a transmission failure, you can remove the unit (except for some wiring) before seeing the dealer if you wish.

Does it need be removed for servicing?

No, but, you can unplug the OBD2 cable to power from the control unit and the car simply reverts back to the normal factory operation. *Note:* Often the service department will unplug the OBD2 cable and not plug it back in for you, which explains why the unit may not operate after vehicle servicing.

What is **SafeLock™**?

Exclusive to MM4X4 is **SafeLock™** which prevents excessive wear which may occur when the torque converter clutch is engaged under high slip conditions.

Using Advanced Digital Control, our lockup kits read the real-time vehicle status from the ECUs to determine the amount of slip in the torque converter. The clutch will only be engaged when within the same slip limit range used by the factory ECU, giving maximum longevity and reliability of the clutch. It ensures the clutch is not engaged under high slip conditions.

Only MM4X4 kits have **SafeLock™**, so why risk the long-term reliability of your expensive transmission?

Can my partner/other driver's use it?

We often get asked "Can someone else drive the car with **lockup-mate(+)** or **auto-mate** installed?" Absolutely. The fully automatic operation makes them suitable for anyone regardless of their technical expertise. Just place the car in DRIVE and they'd hardly know it's there.

Can I still monitor transmission temperatures?

Yes, you can still use your OBD2 device. The kit comes with an OBD2 Y-splitter cable so you can have our kit and your OBD2 device installed together.

Will it stall the engine when I stop?

No. **auto-mate** and **lockup-mate(+)** are fully automatic. Even during an emergency stop (eg, full braking at 60kph), they will disengage the TCC to avoid stalling the engine.

Why does the transmission get too hot?

The transmission gets hot as a result of extended periods of high slippage of the torque converter; this slippage generates the heat. The heat is normally removed by a transmission cooler (a small radiator) located just in front of your engine's radiator. Under normal conditions this little radiator can remove enough heat to keep the transmission temperatures under control. However, when driving under heavy load, the transmission cooler may not dissipate the heat that is generated. The result is higher and higher oil temperatures which, if not managed, can result in the transmission overheating. This is why mechanics suggest a transmission cooler upgrade if you tow. But, there is another solution; our lockup kits remove the source of the heat (the slipping torque converter) so a bigger cooler isn't required.

At what temperature is the transmission 'too hot'?

Ideally the transmission oil temperature should be under 95 deg C. Did you know the Pajero's transmission temperature warning light only comes on at 147 deg C, and goes off again at 127 deg C? That is very, very hot. At these temperatures the transmission oil is already degraded. It's much better to avoid it getting hot in the first place.

Unfortunately, there isn't a gauge on the dash to show the driver the transmission temperature. That's why many people use OBD2 devices (eg, UltraGauge, ScanGauge II, TorquePro) to monitor the transmission oil temperature.

In the Challenger and Triton, where the temperature is measured in the oil pan only, temperatures above 110 deg C should be avoided.

In the Pajero, where the temperature is measured at the output of the torque converter, temperatures above 125 deg C should be avoided.

How does it protect the transmission? What does it do?

Heat is generated by the torque converter slipping. **auto-mate** and **lockup-mate(+)** stop the slippage by taking control of the TCC and ensures it is locked whenever possible so heat buildup is prevented in the first place.

Our kits also incorporate our exclusive **SafeLock™** feature which ensures the torque converter clutch is not engaged in high slip conditions. This reduces the wear on the clutch for maximum reliability.

What is a torque converter clutch (TCC)?

Modern automatic transmissions include a feature to lockup the torque converter using a clutch mechanism. When cruising, this improves fuel economy. With the TCC locked it's just like driving the car with a manual gearbox. The 'slushbox' feel of the automatic is gone. But, if the TCC is still locked as you slow to a stop the vehicle it will stall; just like with a manual transmission. The TCC is electronically controlled by the Transmission ECU – instead our kits control it automatically.

Why doesn't it come like this from the factory?

The factory engineers need to balance the car's design within varying constraints. Smoothness, fuel economy, emission control regulations, customers' expectations and limited R&D budgets - to name just a few.

It's the same reason there are so many aftermarket accessories available for our 4x4s. Not one size fits all customers.

Customers like a smooth and refined transmission, and not all customers tow caravans, trailers, boats or horse floats. Hence compromises are made to achieve a balance. Our lockup kit's role is to optimise the control of the TCC to reduce transmission temperatures, plus get other benefits like fuel savings.

Can it be switched off?

Yes. Our kits include an illuminated LED/switch. When turned off, the factory TCU is back in control of the TCC operation. This switch also has an LED which illuminates to inform the driver when the TCC is locked (vehicle model dependent).

lockup-mate(+) works with the transmission in either DRIVE or SPORT modes. Which is better?

With **lockup-mate(+)**, SPORT mode is best. For everyday driving in normal conditions the use of DRIVE is perfectly okay. After all, the factory engineers have optimised the vehicle for such use. It creates very smooth gear changes that result in a refined driving experience. The transmission cooler is sized adequately for normal use.

But when using the vehicle under heavy loads, the best choice is to use the SPORT mode of the transmission. This enables you (not the computer) to ensure the engine is working in the best RPM range depending on your situation and to enable conditions that allow the TCC to be locked. After all, that's why they provide a SPORT mode.

In DRIVE, the automatic's ECU chooses a gear that is too high, and as a result the torque converter slips and excessive heat is created. Dropping down a gear (eg, 5th to 4th, or 4th to 3rd) brings the engine revs up and can create conditions that are suitable for locking the TCC. Generally speaking, keeping the RPM above 2000-2200 is best when driving under load. With the TCC locked, the torque converter doesn't slip and heat isn't generated. This keeps the transmission temperatures much lower.

By selecting the correct gear using SPORT mode it ensures the engine and transmission are working in the optimum RPM range to enable the TCC to lock.

Do they work in 4WD low range?

Yes. The control unit reads the status of the 4WD transfer level and automatically adjusts when low range is selected (4LLC). Operation in 4LLC has been extensively tested and no other kit available works as easily when in low range. In 4LLC, TCC is only control in SPORT mode.

Can I tow in 5th gear with the TCC locked?

Yes, but it needs to be according to the conditions. Under the right conditions you can tow in 5th with the TCC locked and be rewarded with great fuel savings. The 'right conditions' are situations that don't labour the engine too much, such as on flat roads or with a tailwind. This gives you an additional saving of about 2L/100km and ensures your transmission stays cooler.

When climbing hills or travelling into a headwind it's better to drop down to 4th gear.

When driving in SPORT, you still need to sensibly change gears when the revs get low, just like you would if you were driving with a manual transmission.

auto-mate will automatically choose the right gear according to the conditions. With **lockup-mate(+)**, don't just leave it in 4th or 5th gear and hope for the best. Drive it like it's a manual, and keep the revs in the right range for best performance.

Would a lockup kit help when I'm not towing?

Yes. Even when cruising on the highway the factory ECU will not lock the TCC at 90 kph in 5th gear - our kits will, and better fuel economy is the reward.

I've been told to tow in 4th gear. Is this right?

It depends. The aim is to have the TCC locked. With a heavy load you can tow in 5th gear at 95 kph, but the TCC, under factory TCU control, will not lock. Instead, it slips consistently and heat builds up. Over a long drive this can be significant. Ever noticed your left leg getting warm against the transmission tunnel inside the car after a few hours of towing?

In DRIVE, the factory TCU will normally choose 5th gear at 95 kph. If you select SPORT mode and drop to 4th gear, the engine RPM will rise and the torque converter will lockup. This is why you're advised to tow in 4th gear as it minimises heat buildup.

However, with **auto-mate** and **lockup-mate(+)** it will hold the torque converter locked as you cruise. This can reduce fuel usage by up to 2L/100 km. You can't always tow in 5th though.

How are MM4X4 kits different to other aftermarket lockup kits?

In a nutshell – they are fully automatic, work at all speeds (~25-30 kph+), and in low range 4WD (4LLC). Other kits rely on the driver manually controlling a switch to enable and disable the TCC or select the speed when they operate.

Our products connect to the car's internal digital network (the CAN Bus) to read the vehicle's status and extract the parameters needed for automatic control. The control unit processes the current speed, gear, RPM, 4WD lever position, throttle pedal position and engine load to determine when to lock and unlock the torque converter or change gears. They even monitor the headlight switch to dim the lockup status LED at night.

The digital interface is also the key to our **SafeLock™** feature which protects the clutch from wear.

Is it difficult to install?

No. Our products are designed for simple installation and include detailed instructions to allow most people to DIY install. DIY saves you money. Installation involves:

- Cutting one or two wires onto which our electrical harness is connected to control the TCC;
- Installation of a resistor onto a metal surface; and
- Plug-in connector to the vehicle's standard OBD2 port.
- Some also have a plug 'n play harness using OEM connectors to be installed under the centre console.

Typically installation time is between 1-2 hours for **lockup-mate(+)'s** and 2-3 hours for **auto-mate**.

Alternatively, an auto-electrician can install the kit.

Can MM4X4 install for me?

No. We recommend you approach your local, reputable auto-electrician for a quote. We have started developing an installer network around Australia so please provide us with feedback and recommendations if you are happy with your install.

Can I still use my OBD2 device?

Yes. Retaining use of your existing OBD2 device was a primary design requirement. Our kits come with an OBD2 Y-splitter cable so two OBD2 devices can be connected at a time. Whilst the control unit uses the OBD2 connector, it does not use the OBD2 commands on the CAN Bus like other OBD2 devices. It passively listens to the CAN Bus message traffic to read RPM, speed etc. This means it doesn't interfere with the operation of the devices that use OBD2 messages. This is a key feature of our products.

Is it on all the time or does it run automatically in the background?

The unit remembers the last on/off position between engine starts. When ON, it just runs in the background without needing any attention. When OFF, the TCU controls the TCC lockup as normal. Only under certain circumstances you may wish to disable it. An example is when driving on rocky or rutted tracks. The torque converter acts as a sponge to absorb driveline shock, eg, a raised wheel coming back to ground. So this helps avoid CV joint breakages, etc.

What determines when it locks and unlocks?

Speed, RPM, pedal position, transmission temperature, 4WD lever position, and current gear are all used to determine the right lock/unlock behaviour. With **auto-mate**, these same parameters are also used to determine when to down-shift the gear.

Why is the sensitivity adjustable?

You can fine tune the performance to your vehicle's unique configuration or your driving preference.

When in SPORT mode, the adjustable sensitivity controls how 'easily' or 'late' the TCC lock/unlock occurs. Some people like to push it to the limit, others want it to unlock earlier - set it to your personal choice, but most stay with the default.

Can it lockup in 1st gear?

The AISIN transmission in the Pajero NT+, Triton MQ and Prado 150 do not lockup in 1st gear.

The Pajero NS, Challenger PB, PC and Triton MN use a JATCO transmission, which does allow lockup in 1st gear. **auto-mate** and **lockup-mate** in these models are programmed to use 1st gear lockup in low range only. In high range, lockup commences from 2nd gear.

Switch real estate is limited. How is it installed?

The LED/Switch is installed on the driver's pillar - very quick and easy and doesn't require access to the factory switch locations.

Still have a question unanswered? [Contact us](#)