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MITSUBISHI L200 – 5th Series

Sport Utility Truck – The Next Generation

After 9 years (and 1,300,000 units produced**), the current Mitsubishi L200 pickup truck is about to bow out, with the European premiere at the 85th International Geneva Motor Show of an all-new successor – more a new generation of one-ton pickup trucks than a mere iteration...



4+ million L200s...

Whilst the “civilian” usage of pickups is fairly recent in Europe, L200’s customers benefit from the six decades of expertise and market observation Mitsubishi Motors enjoyed when it started the development of their new truck, from the success of modest vehicles such as the 1946 Mizushima – a rudimentary small three wheel 0.4 ton truck developed by Mitsubishi’s Mizushima Motor Vehicle Works – all the way to the four successive series of L200s which all together have accumulated a production volume of 4,077,000 units between 1978 and the fall of 2014. Nearly 440,000 units are still in operation in Europe.



Strategic

A strategic core model for Mitsubishi Motors Corporation, L200 (“Triton” or “Strada” outside of Europe), supports a vast industrial eco-system in Thailand where production has been concentrated since the 3rd series.

Manufactured at the “2nd Factory” of Mitsubishi Motors Thailand’s Laem Chabang Plant, the all-new L200 has a sales target of 200,000 units/year (vs.130,000 units for the outgoing L200), to be sold in all global markets (except Japan, the USA and Canada), with Europe its second largest outlet (12%), after ASEAN.

In Europe, where total sales of the outgoing L200 will have accumulated ± 220,000 units by end of production, L200 is a strong contributor to the region’s profits. For CY2014 – its last full year – 18,371 units have still been sold (excl. Russia and Ukraine), i.e. 13% of the MMC European market (34 countries) volume with the United Kingdom, Turkey, France, Germany and Austria forming the Top Five.

* As of Sept. 2014

Features availability according to market & model



All-new

The 5th series L200 has been 100% developed by MMC over 28 months as the latest expression of the Sport Utility Truck concept, introduced in 2005 by the previous L200, to further meet the ever-diversifying needs of global pickup truck customers for even more style, comfort, drivability, features and durability.

Beyond, this all-new L200 was also engineered for the lowest possible environmental impact - in this case, a drop of CO₂ emissions from 199 g/km minimum* for the outgoing L200 down to 169 g/km minimum** for the new L200 (vs. 180 to 265 g/km for competition).

In this sensitive area, Mitsubishi Motors Corporation takes a broader view considering its corporate responsibility of which L200 is a very good example of this sustainable engineering approach: what matters most to MMC is the ability to offer vehicles with a low environmental impact to its customers, regardless of the segment, the category or the possible tax benefits.

* 199 to 234 g/km

** 169 to 193 g/km

In summary

- ⇒ All-new athletic styling, retaining the expressive “J-Line” design trademark of the outgoing L200 (on Double Cab) while achieving a low...40 C_D and keeping weight within reasonable limits for an excellent power/weight ratio.
- ⇒ Increased roominess within compact overall dimensions (and still with the tightest 5.9 m turning radius in the segment) and competitive bed length.
- ⇒ Significant perceived quality step-up combined with better seating & driving position, improved ride comfort, better NVH, etc,...for a more comfortable driving experience.
- ⇒ Added convenience of dual doors (i.e. 4 doors) on Club Cab.
- ⇒ All-new 2.4 litre 154 ps / 181 ps 4N15 MIVEC Diesel engine – a bigger displacement version of the 4N13 (ASX and Lancer) and 4N14 (Outlander) units, allowing a drop of CO₂ emissions from 199 g/km for the outgoing L200 down to 169 g/km for the new L200 (vs. 190 to 250 g/km for competition).
- ⇒ All-new 6 M/T (and new 5 A/T) for improved performance, lower CO₂ emissions and reduced maintenance.
- ⇒ Increased durability through design – from stronger body-in-white and chassis frame to low maintenance powertrain (from 15,000 km to 20,000 km oil change intervals now, from 80,000 service on A/T to maintenance-free A/T now, thorough anti-corrosion treatment...)
- ⇒ Improved pro-active safety:
 - Super Select 4WD II (w/low gear) retained w/ electronic transfer system via a rotating transfer dial.
 - 7% higher torsional rigidity of all-new chassis frame
 - Optimized suspension tuning
 - Lane Departure Warning, Trailer Stability Assist, Hill Start Assist systems added.
 - HID headlamps (with integrated LED daytime running lights and Bi-Xenon projectors) introduced for superior vision during long winter time or night driving.
- ⇒ Improved passive safety (further strengthening of MMC’s patented RISE structure, driver’s knee airbag,)

- ⇒ New features, incl. (availability according to model & market):
- Rear view camera
 - Keyless operation system with engine stop/start switch
 - Cruise Control w/adjustable speed limiter
 - Dual-zone temperature automatic A/C
 - Steering column-mounted paddle shifters
 - Reach & rake adjustment of the steering wheel
 - Digital Audio Broadcasting radio system
 - USB port
 - Etc...

Athletic Styling

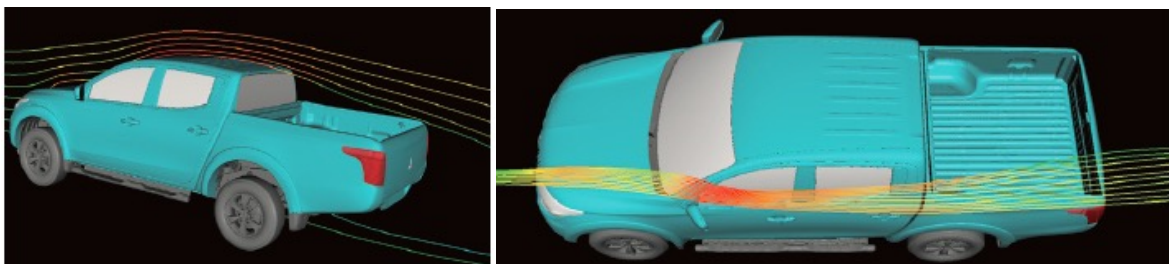
When Mitsubishi Motors introduced the 4th series L200 in 2005, the market noticed – a rugged, durable and capable one-ton pickup but sporting an exterior design more akin to SUVs...

... Styling was indeed the first element of the “Sport Utility Truck” concept this vehicle brought to the market with its cabin clearly inspired by the mighty Pajero/Montero Evolution cross country racer, the integration of the cargo bed into the overall shape and that daring trademark “J-Line” splitting cabin and bed on the Double Cab model. Away was the traditional boxy pickup.



Since then, the market has changed, calling for a more substantial look. In parallel, MMC Engineering also had to work on aerodynamics - successfully with a Cd of...40 (from .46 for the previous L200) while keeping weight within reasonable limits for an excellent power/weight ratio (10.36 kg/ps*) and optimizing space, all to support Mitsubishi's quest for fuel economy and low CO₂ emissions.

*Double Cab 2.4 DiD MIVEC AS&G 4WD M/T



While retaining the unified cab/bed theme, the 5th series L200 leaves the soft rounded shapes of its predecessor for sophisticated sculpturing and surface treatment: a muscular and dynamic styling previewed with Concept GR-HEV in 2013 which evokes the form of a well-honed athlete with the J-Line creating visual interest and a sense of motion.

The front view follows the same expressive theme, using a curvaceous composition with well modulated lines for a forceful expression of width and substance, from the styling lines flowing smoothly from the Three-Diamond logo in the grille to the powerful HID headlamps (with integrated LED daytime running lights and Bi-Xenon projectors) to the massive bumpers shaped to express their protective function.

The cargo bed is just as shapely – yet without sacrificing any payload capacity – further enhanced by the wrap-around rear combination lamps or the (optional) bumper, designed to look as if milled directly from solid metal.

Echoing the 2013 Concept GR-HEV which gave quite a few cues of what was to come with the new L200, a stylish “full box” hard top will be offered as part of MMC’s range of original accessories:

Clever utility

In comparison to the previous model, all variants of the new L200 feature a minimized wheelbase to offer an interior length amongst the longest in its class without sacrificing cargo bed payload capacity. This is particularly so with the Double Cab variant where the use of the distinctive J-Line connecting cabin and cargo bed offers a generously roomy interior space while providing ample cargo volume with just a small (2 cm) increase in overall length (Th-specs shown below).



The new L200 remains within the “5 meter class” (5,205 mm for the Double Cab), helping with parking, manoeuvring (with still the tightest turning radius in its class – 5.9 m) as well as weight, the latter being a key factor for good fuel economy and therefore low CO₂ emissions, all translating into low running costs for independent professionals or small businesses.

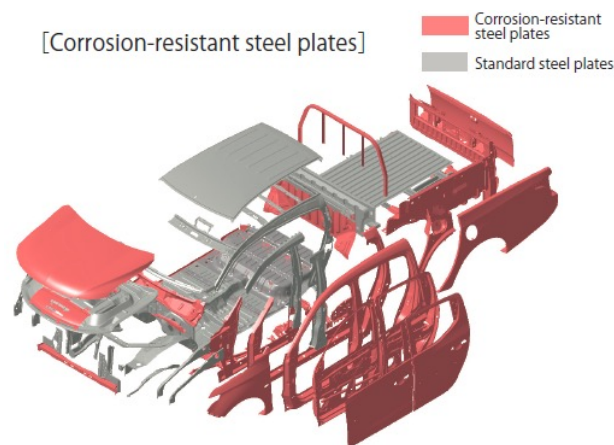
However, within these dimensions, MMC engineers managed quite well with a bed length (1,520 mm) equal to 29.2% of the overall length i.e. similar to competitors*, all longer vehicles.

*28.5% to 29.6%

The bed was also made deeper (up to 475 mm for the new L200 vs. from 460 mm for the previous one).

Clever structural design work (extensive use of high tensile steel plates*, stronger chassis frame etc,...) kept weight within reasonable limits (only 1,875 kg for Double Cab 2.4 DiD MIVEC AS&G 4WD M/T) while improving towing capacity to 3,100 kg maximum (depending on model), overall rigidity, passive safety and NVH.

*21 % of steel plates is 440 MPa-grade steel or above, i.e. a 9 % increase over the previous L200 (on Double Cab).



Of importance to professional / dual users, the use of corrosion resistant steel plates* in the cabin and the cargo bed together with a further application of sealant will reduce deterioration over time, in addition to the regular anti-corrosion treatment (standard 12-year warranty in Europe).

* In terms of mass ratio, 62 % is anti-corrosion steel plates, i.e. a 12 % increase over the previous L200 (on Double Cab).

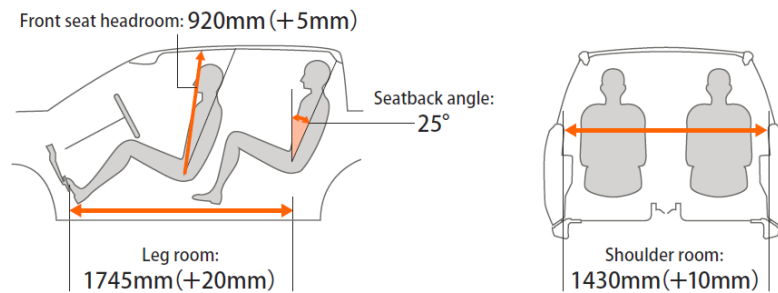
Crafted interior

MMC's engineering efficiency applies as well inside the new L200, from accessibility to comfort and including visibility, roominess and features.

Available in Europe in Double Cab and Club Cab variants, the new L200 greets its passengers with a new opening system for the Club Cab with the introduction of dual doors, i.e. 4 separate doors. The main ones

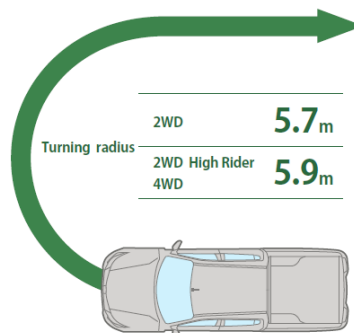
at the front are complemented by (smaller & rear-hinged) concealed equivalents at the rear, meant to improve ingress/egress for both people and cargo with no obstruction of any centre B-pillar.

Once inside, L200 customers, whether professional or dual users will notice a bigger cabin with more head and shoulder space in the front and more leg room in the rear.



L200 customers will also notice a significant change of the driving position compared to its predecessor – a lesson learned from market feedback which led to a series of ergonomic improvements, including:

- Wider & longer cushions and backrests
- More substantial side bolsters
- Softer/Higher elasticity to seat cushioning material
- Reach & rake adjustment of the steering wheel
- Front edge of the hood now clearly visible
- Pillar design meant to limit blind spots – front, side and rear.
- Less obstructive wiper blades (now flat)



The combination of all these elements, together with the class-leading turning radius so handy for urban deliveries as well as an optimization of the steering ratio should clearly improve the daily life of busy professionals.

Design-wise, the target was also to better support the concept of “Sport Utility Truck” with a clear emphasis and improving perceived quality, comfort and safety while introducing new features (Th-specs shown below).



Taking the centre panel as visual reference point, the symmetric shape of the all-new dashboard gives a sense of soothing continuity from the door trim panels to the floor console, all enhanced by higher grade muted black & grey material.

Supporting the overall quality upgrade, the new L200 makes extensive use of rich-looking accent materials such as piano-black decor panels and chromed trim for the floor console, centre panel and power window switch surrounds. On 4-Wheel Drive versions, the drive mode selector – itself piano-black finished – adds to the design and engineering sleekness of Mitsubishi Motors' new one-ton pickup truck.

The more comfortable driving experience L200 users can enjoy along days of hard work was further enhanced by the extensive structural design analysis conducted by MMC Engineering already mentioned, leading to – amongst others – a 7% increase of torsional rigidity to the benefit of handling and stability but also NVH as vibrations have been reduced for a quieter cabin.

Together with the greater rigidity of the chassis frame, cabin and cargo bed, the strategic placement of sound insulation, absorption and vibration damping materials provides an even quieter and more comfortable interior.

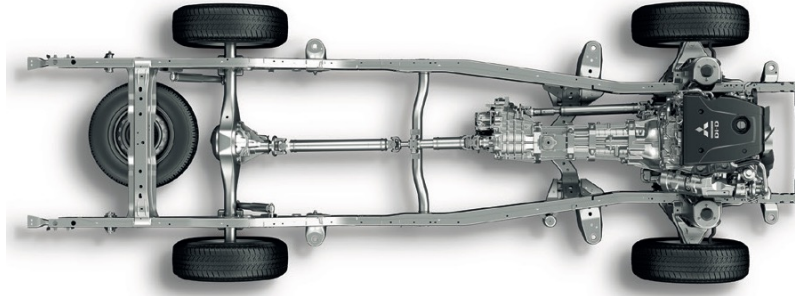
Last but not least, L200 customers can now enjoy a host of new features, such as:

- HID headlamps (with integrated LED daytime running lights and Bi-Xenon projectors),
- Rear view camera,
- Keyless operation system with engine stop/start switch,
- Cruise Control w/adjustable speed limiter,
- Dual-zone automatic A/C,
- Steering column-mounted paddle shifters,
- Reach & rake adjustment of the steering wheel,
- Digital Audio Broadcasting radio system,
- USB port



Pro-active safety

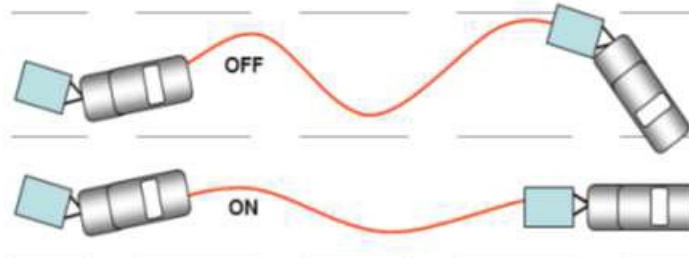
Adhering once more to the body-on-frame architecture required for pickup truck heavy duties (payload, towing...), the 5th series L200 improved nonetheless upon its predecessor with an updated chassis frame.



Highly durable, this robust construction was also engineered with safety in mind – a front structure to better absorb energy in case of a front crash, a further evolution of MMC's patented RISE* safety system with a passenger cell highly resistant to impact deformation, side frame front extensions with extra reinforcement and reinforced cross member to boost impact performance,...

L200's pro-active safety is further enhanced by the introduction of several new features, including:

- Driver knee airbag for a total of 7 airbags in the cabin
- Lane Departure Warning system,
- Trailer Stability Assist system:



- Hill Start Assist system,
- HID headlamps (with integrated LED daytime running lights and Bi-Xenon projectors) for superior vision during long winter time or night driving.

These new safety features come in addition to Active Stability & Traction Control, Brake Assist, Brake Over-Ride System, ABS w/ Electronic Brake Force Distribution system, Emergency Stop Signal, etc...

****Reinforced Impact Safety Evolution****: An MMC system that brings dramatic advances in multi-directional impact safety performance with dispersing energy loads during side and rear crashes and controlling distortion, to enhance occupant protection.



On & Off-road

The essential multi-purpose vehicle, a one-ton pickup truck like L200 shall operate on all terrains, with dynamic efficiency, comfort and safety equally served. Already discussed, the all-new chassis frame is the starting point, its 7% higher torsional rigidity allowing the suspension to look after handling and stability without structural perturbations.

From there, giving priority to durability and reliability, the new L200 retains the general layout of its predecessor, i.e. double wishbones & coils springs at the front / leaf springs at the rear, the latter being dictated by heavy duty requirements.

On the 2WD and 4WD variants, the newly designed leaf springs has been repositioned whilst their length has been increased. Regarding the front suspension, stabilizer diameter was increased with optimized suspension tuning. These modifications will provide better on-road comfort as well as better stability off-road.

Along those same lines,

- The front stabilizer bar has been upgraded,
- The spring rates (front & rear) as well as the damping characteristics of the shock absorbers have been optimized,
- Larger body mountings have been adopted,
- A lower steering wheel ratio reduces driver's effort
- The power steering assistance has also been optimized, esp. for better feedback to the driver and therefore, better handling and stability,
- The braking system has been upgraded with a shorter pedal travel and a reduced pedal effort.

All these improvements are equally effective on road and off-road where the new L200 carries over the same trump card as its predecessor: "Super Select 4WD II" - MMC's permanent 4WD system with low range*, now actuated courtesy of an electronic centre dial on the floor console. In addition a torque split of 40:60 was achieved for better handling



*Depending on market and model, an upgraded Easy Select part-time 4WD system is also available.

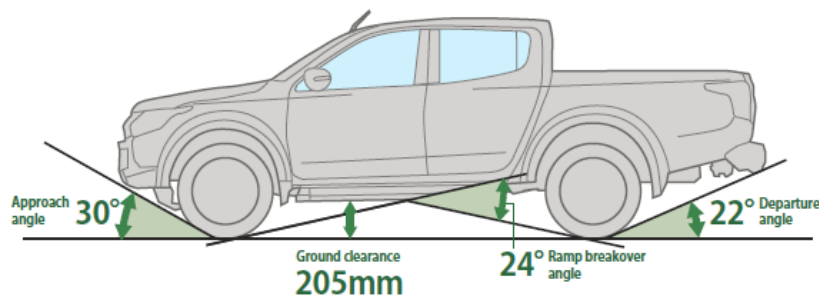
Originally developed for Pajero/Montero/Shogun, the Mitsubishi Motors Super Select system (now “Super Select 4WD-II”) allows the driver to choose the most appropriate transfer case setting, according to terrain and driving conditions. It can be shifted from 2WD to 4WD without stopping the car (possible below 100 km/h), no matter the road surface.

Super Select’s trump card lies with its “4H” Full Time 4WD position. Still a rarity in the segment, esp. when combined with low range capability, it can be used at any speed (within legal limits) and on any surface.

In the specific case of a pickup truck like L200, Super Select 4WD II adds significant grip when the car is driven with an empty bed. It features a center differential lock that delivers outstanding off-road performance, but also controls torque distribution to the front and rear in 4H mode for superior handling and easy operation on a broad range of surfaces, from paved roads to slippery trails.



As opposed to some of its competitors, Super Select is also equipped with a range of low gears (“4LLc”) for real off-roading whilst a rear differential locking system is also available for maximum traction on loose surface (availability according to market & model), adding to the overall off-road performance of the vehicle – incl. a maximum water depth crossing of 600 mm:



MIVEC Diesel

Mitsubishi Motors Corporation consider it is its corporate responsibility to offer a range of vehicles with the lowest possible impact on the environment, whatever the segment or the vehicle.

Hence the pioneering development of electric (EV) and plug-in hybrid electric (PHEV) vehicles. Hence considerable efforts conducted in the areas of aerodynamics and weight saving.

Hence the development of an all-new family of MIVEC Diesel engines, of which the new L200 is the latest recipient with the latest “4N15” 2.4 litre variant.

First introduced in 2010 and now available in Europe with ASX, Lancer and Outlander, “4N1” - a joint effort of Mitsubishi Motors Corporation and Mitsubishi Heavy Industries, Ltd. - is an ultra-efficient family of all-aluminum, double overhead camshaft (DOHC), 16v 4-cylinder common rail, direct injection, “low impact” Diesel engines, featuring one of the lowest compression ratio in the industry (15.5:1 for L200’s 2.4 liter).

In turn, such a low compression ratio made possible the development of an aluminium engine block and the use of other lightweight material leading to substantial weight reduction, low NVH and overall efficiency, boosted by the adoption of MMC’s “MIVEC” variable valve timing (intake) as well as a variable geometry turbo-charger or Auto Stop & Go technologies (availability according to market and model for the latter):

To better serve this new high efficiency MIVEC Diesel engine, MMC has engineered two new heavy-duty gearboxes for the 5th generation L200:

- 6-speed manual: a completely new unit, it was developed for helping with the fuel economy/emission performance, providing short shift stroke and light shifting action, reducing noise and vibrations.
- 5-speed automatic w/“Sport” sequential mode: a fair balance between performance, weight and cost, this is a new development of an A/T also used on Pajero/Montero/Shogun with the objective of reducing maintenance (from 80,000 service previously to maintenance-free now) and improve driveability (new low-viscosity ATF fluid improves starting at low temperatures, reduce drag for better fuel economy and also, increase durability).

All in all, providing torque spirited performance, 4N15 serves MMC’s environmental creed very well with EU-rated CO₂ emissions dropping from 199 g/km minimum* for the outgoing L200 down to 169 g/km minimum for the new L200 (vs. 180 to 265 g/km for competition).

* 199 to 234 g/km

	Displacement	Output	Torque	CO₂ emissions
Low Power	2,4.40 cc	154 ps @ 3,500 rpm	380 Nm @ 1,500-2,500 rpm	169 to 193 g/km
High Power	2,4.40 cc	181 ps @ 3,500 rpm	430 Nm @ 2,500 rpm	169 to 193 g/km

This feat (and the related fuel economy figures) are all the more remarkable when considering that the new L200 offers a more comprehensive package than its predecessor, in order to fulfil the ever-increasing demand for features coming either from customers or regulations as well as improved heavy-duty performance (maximum towing capacity now rated at 3,100 kg,...)...

... Whilst the overall concept is well-known across the Industry (body-on-frame one-ton pickup truck), MMC's engineering efficiency in the areas of powertrain, aerodynamics, lightweight/high resistance materials, weight saving* and packaging really paid off, opening a new chapter for this segment similar to the move currently underway in most other market segments..

*1,875 kg maximum for the new L200 vs. 1,950 - 2,400 kg maximum for competition.



Running costs

For one-ton pickup truck users, often small independent businesses, running costs are of paramount importance.

Hence a series of measures incorporated from the early stage of development of the new L200, such as:

- Improved fuel economy and class-leading CO₂ emissions (cf supra)
- From 15,000 km for the previous L200 to 20,000 km oil change intervals for the new L200,
- From 30,000 km to 60,000 km valve clearance check,
- From 60,000 km to 180,000 km engine coolant change,
- Maintenance-free timing chain,
- From 80,000 service on A/T to maintenance-free A/T,
- 62 % anti-corrosion steel plate now used, i.e. a 12 % increase over the previous model (expressed on mass ratio - Double Cab model),
- More extensive use of sealant material,
- Etc ...

