Renault Pro+ unveils new enhanced traction solutions for LCV range

Grip Xtend, X-Track, Master 4x4

Three enhanced traction solutions to help drive the expansion of Renault's LCV range, all engineered to meet the needs of business customers who operate in difficult conditions.

- Grip Xtend (referred to as Extended Grip in some markets) delivers enhanced grip for occasional use on slippery terrain. Grip Xtend is a standard feature of Renault's Kangoo (ICE only), Trafic and Master PC and LCV ranges in Europe.
- X-Track technology for the LCV range provides even higher traction performance for intensive use in particularly challenging conditions. This new, affordable feature is available across the Kangoo, Trafic and Master ranges.
- Meanwhile, the Renault Master can now be specified with 4x4 transmission to provide outstanding traction for intensive use on particularly difficult terrain.

In addition to having topped the European LCV market for 18 years, Groupe Renault enjoys strong footholds in Latin America and Africa and continues to introduce new solutions to make Renault Pro+ a truly global brand that is attentive to the needs of its business customers.
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Renault Pro+: a major player in the LCV market

A global player with extensive manufacturing facilities
Vehicles sold in 112 countries.
Renault’s chief non-European LCV markets are Brazil, Argentina, Turkey, Morocco and Algeria.
Manufacturing facilities on three continents: Europe (France), Latin America (Argentina, Brazil) and Africa (Morocco).
Extensive manufacturing facilities in France with factories in Maubeuge (129,000 Kangoo made in 2015), Sandouville (93,000 Trafic) and Batilly (126,000 Master).

A regional leader
Europe’s uncontested number one LCV brand for 18 years (since 1998).
- Number one in France, Spain, Portugal, Belgium and Slovenia.
- Number two in Italy, Poland, Bulgaria, Latvia and Lithuania.
- Number three in Iceland, Ireland, Denmark, Sweden, Estonia and Hungary.
A top-three brand in Latin America since 2008.

Renault Pro+: a global expert brand
Tailor-made products and services in all the Renault network:
- The Kangoo Express and the Kangoo Z.E. are available in a choice of 65 different versions, while 270 and 350 different versions of the Trafic and the Master respectively are available globally across all markets.
- A network of 400 approved conversion specialists in 29 countries to convert vehicles to meet customers’ precise needs.

And a specialised network of 700 Renault Pro+ businesses worldwide in 2016:
- Dedicated advisors.
- Simplified choice.
- Stay on the move.

Number one in the electric LCV market
Renault is the first volume manufacturer to propose a range of electric LCVs.
The Kangoo Z.E. is marketed in 45 countries with more than 20,000 sold to date.
Renault’s electric LCV range includes the Twizy Cargo.
Enhanced traction solutions – objectives and comparison chart

When it comes to traction performance, the needs of business customers can vary significantly, depending on the type of terrain on which their vehicles operate and on whether the latter are used occasionally or intensively in difficult conditions. To cover this broad spectrum of requirements, Renault’s LCV range is now available with three uprated traction performance technologies.

To simplify the lives of its customers, Renault has incorporated these three solutions into its official catalogue.

Objectives

Traction performance solutions to cover the needs of all customers

Solutions to simplify the lives of customers

To simplify the lives of the brand’s customers, Renault’s catalogue now incorporates these three solutions. For each one, Renault covers the sale, after-sale service and other related services.

- **Grip Xtend** has been a standard feature of the PC and LCV versions of the Kangoo, Trafic and Master in Europe since mid-2013 in the case of the Kangoo and since mid-2014 in the case of the Trafic and Master. (N.B. Grip Xtend is referred to as Extended Grip in certain markets.)

- **X-Track** (for the Kangoo, Trafic and Master) and **4x4 transmission** (for the Master) are also now available as options in the Renault catalogue in all its European markets, as well as in central Europe and the Maghreb region. Exact timings for on sale dates will vary by market. These solutions are provided in association with specialists Poclain Véhicules (X-Track) and Oberaigner Automotive (Master 4x4), with Renault serving as a one-stop shop for all its customers’ needs, from the original purchase to after-sales service. These partnerships facilitate the lives of Renault’s customers who benefit from a single point of contact, namely the Renault Pro+ expert brand which boasts acclaimed expertise in the LCV market.
## Comparison

<table>
<thead>
<tr>
<th></th>
<th>Grip Xtend</th>
<th>X-Track</th>
<th>4x4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use and terrain</strong></td>
<td>Occasional use on difficult roads</td>
<td>Intensive use on difficult terrain</td>
<td>Intensive use on very difficult terrain, including off-road use</td>
</tr>
<tr>
<td><strong>Models concerned</strong></td>
<td>Kangoo, Trafic, Master</td>
<td>Kangoo, Trafic, Master</td>
<td>Rear-wheel drive Master equipped with locking rear axle differential</td>
</tr>
<tr>
<td><strong>Transmission</strong></td>
<td>4x2 transmission with advanced traction control</td>
<td>4x2 transmission with limited slip differential</td>
<td>- 4x4 transmission - Gear reduction unit (ratio 1:1.42)</td>
</tr>
<tr>
<td><strong>Activation</strong></td>
<td>Manual selection while at a standstill or when</td>
<td>Permanent</td>
<td>- 4x4 transmission engageable at a standstill or when driving at a speed of less than 25kph (switch located on control unit) - Gear reduction unit engageable when the vehicle is at a standstill (switch on control unit)</td>
</tr>
<tr>
<td></td>
<td>travelling at a speed of less than 50kph (push button)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Deactivation</strong></td>
<td>- Manual deactivation at a standstill or when</td>
<td>Permanent</td>
<td>- 4x4 transmission disengageable when driven at less than 20kph - Gear reduction unit disengageable at a standstill</td>
</tr>
<tr>
<td></td>
<td>travelling (push button switch)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Automatic deactivation at speeds in excess of 50kph</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Underbody protection</strong></td>
<td>Optional for the Kangoo and the Master</td>
<td>Metal underbody protection and sump guard</td>
<td>Metal underbody protection and sump guard</td>
</tr>
<tr>
<td><strong>Raised ground clearance</strong></td>
<td>Optional for the Kangoo: ground clearance raised by 8mm. (N.B. Not in UK)</td>
<td>Ground clearance raised by approximately 30mm (Kangoo, Trafic) or 40mm (Master)</td>
<td>Front ground clearance raised by 65mm Rear ground clearance raised by 58mm (single wheels) or 45mm (twin rear wheels)</td>
</tr>
<tr>
<td><strong>Tyres</strong></td>
<td>Standard tyres, or optional All Weather tyres</td>
<td>All Weather tyres</td>
<td>All Weather tyres</td>
</tr>
<tr>
<td><strong>Partner</strong></td>
<td>Standard</td>
<td>Poclain Véhicules</td>
<td>Oberaigner Automotive</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>Available for the Kangoo since mid-2013, and for the Trafic and the Master since mid-2014</td>
<td>Available from September 2016 in mainland Europe</td>
<td>Available from April 2016 in mainland Europe</td>
</tr>
</tbody>
</table>
Grip Xtend technology for Kangoo, Trafic and Master

Renault's entire LCV range is now equipped with Grip Xtend technology as standard equipment. The Kangoo has featured the system since mid-2013, while the Trafic and the Master followed suit a year later. Grip Xtend is Renault's trade name for this traction optimisation function (N.B. referred to as Extended Grip in certain markets).

Purpose

Grip Xtend enhances traction performance when pulling away or at low speeds, on soft ground or on low-grip surfaces such as snow, mud or sand. It allows the driver to move forward without wheel spin and without the risk of getting stuck.

Description

Grip Xtend is an advanced electronic traction control system which acts on the vehicle’s driven wheels to optimise traction.

Grip Xtend is an advanced system that combats wheel spin to enhance traction performance on slippery ground. A conventional system prevents wheel-spin by cutting the engine or reducing the delivery of power the instant a freely rotating wheel is detected.

Grip Xtend is a smart system activated by a manual push-button control. When the system detects that a driven wheel is spinning freely while the others are not rotating, it deduces that grip is at a premium and decides not to reduce engine power. Instead, to allow the vehicle to pull away on snow, ice or mud, it allows the wheels to spin in order to clear the snow to find grip on the asphalt beneath and, above all, to gradually gain speed and optimise the little grip that is available. The driver remains in control of power delivery via the throttle pedal.
Activation / deactivation

Activation
Grip Xtend’s default mode is ‘off’. It does not switch on automatically.

The driver activates Grip Xtend manually by pushing the button depicting a vehicle and a fir tree when the vehicle is either stationary or travelling at low speed (up to 50kph).

A message on the dashboard reads "Loose Ground mode" and the green Grip Xtend icon is illuminated.

Deactivation
Grip Xtend can be deactivated manually (at a standstill or while the vehicle is moving) by pressing on the push-button control. The function switches off automatically at speeds of more than 50kph.

A message on the dashboard reads: “Road mode” and the green Grip Xtend icon is switched off.

<table>
<thead>
<tr>
<th>NB</th>
<th>when Grip Xtend is activated, ESC continues to function, but the ASR function is modified.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESC, ASR and Grip Xtend are different functions:</td>
<td></td>
</tr>
<tr>
<td>• ESC (Electronic Stability Control, also known as ESP) is designed to keep a vehicle on its course by acting on all four wheels.</td>
<td></td>
</tr>
<tr>
<td>• ESC is permanently active, even when Grip Xtend is switched on.</td>
<td></td>
</tr>
<tr>
<td>• ASR (Anti-Slip Regulation) is a traction control system which brakes one of the two driven wheels and adjusts engine torque delivery to maintain traction. At best, it minimises wheel spin of the driven wheels.</td>
<td></td>
</tr>
<tr>
<td>When Grip Xtend is activated, ASR functions differently.</td>
<td></td>
</tr>
<tr>
<td>• Grip Xtend deactivates the engine speed limiter and acts on the two driven wheels to improve traction performance.</td>
<td></td>
</tr>
<tr>
<td>Unlike ASR, Grip Xtend permits a varying degree of wheel spin of the driven wheels to allow the vehicle to keep moving.</td>
<td></td>
</tr>
</tbody>
</table>

Options

Options to optimise the performance of Grip Xtend are:

• Optional All Weather (Mud & Snow) tyres for Kangoo, Trafic or Master

For even greater efficiency, Grip Xtend can be combined with optional All Weather tyres. These permit the vehicle to move on low-grip surfaces. Their pattern allows water, snow or mud to be cleared from the tread grooves, while their construction transmits engine torque to the ground to enable the vehicle to move.

• Optional All Road for Kangoo (N.B. Not available in UK)

For enhanced performance, Kangoo can be ordered with an optional All Road Pack in addition to Grip Xtend which is standard equipment. The pack includes:

- **Raised ground clearance: 8mm higher unladen** (5mm higher laden),
- **Reinforced tyres**: robust tyres protect against sidewall damage and damage by stones. They also cope with heavy loads and favour grip.
- **Metal underbody protection**.

The Renault Master RWD: the Renault catalogue proposes a rear-wheel drive version of the Master which combines enhanced traction performance with high payload capacity. The Master RWD also facilitates driving on soft ground or slippery surfaces.

An optional metal sump guard can be specified for the Master.
X-Track technology will be available for all Renault LCVs (Kangoo, Trafic and Master) from September 2016 after previously only existing as a conversion that had to be ordered from Renault's partner Poclain Véhicules. X-Track is a straightforward conversion of a standard 4x2 vehicle to enable use on poor quality roads. It is carried out by Poclain Véhicules, a long-time partner of Renault and an expert in the field of uprated traction performance.

### Purpose

- Compared with a standard transmission, X-Track 4x2 technology delivers superior mobility on difficult terrain, snow or poor quality roads.
- Its traction performance is superior to that of Grip Xtend.
- It is an alternative to four-wheel drive when usage does not necessitate off-road ability. It delivers exceptional performance on poor roads and in difficult conditions.
- It is designed for site use, building work, forestry working, tow paths, non-sealed access roads, farmers and leisure use.
Description

X-Track conversions cover **four aspects of the vehicle:**

1- **Limited slip differential**

The transmission’s original differential is replaced by a limited slip differential. This mechanical torque transfer system features eight alternating friction discs.

Should one wheel lose grip, the limited slip differential transfers up to 25 per cent of engine torque to the wheel that benefits from the most grip.

The vehicle continues to move in order to pull clear of the difficult conditions.

2- **Raised ground clearance**

The vehicle’s higher ground clearance allows the sort of obstacles that can be found on poor quality roads to be passed, thereby minimising scraping and impacts to the vehicle’s underbody. Ground clearance is raised by approximately 30mm in the case of Kangoo and Trafic, and by 40mm in the case of Master.

3- **Underbody protection**

A steel three-millimetre thick sump guard is available for the Kangoo, Trafic and Master.

Steel two-millimetre thick underbody protection is available for the Kangoo to protect the brake hoses and fuel lines that run beneath the floor.

These guards protect the vehicle from damage on rough terrain.

4- **All Weather tyres**

All Weather (Mud & Snow) tyres allow the vehicle to be used on difficult terrain or when grip is at a premium on ordinary roads. Their pattern is designed to clear water, snow or mud from the tread grooves, while their construction allows engine torque to be transmitted efficiently to the ground.

The size of these tyres is identical to that of standard tyres.
Activation / deactivation

X-Track is **permanently active**. The driver does not need to activate it. It is a **straightforward system, with no upper speed restrictions**.

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**Poclain Véhicules: Renault's X-Track technology partner for Kangoo, Trafic and Master**

The French company Poclain Véhicules specialises in uprated mobility. It conceives, engineers, manufactures and fits solutions for customers in the mobility industry, notably for motor vehicles. Conversions are carried out at Poclain Véhicules’ facility in Etupes. The latter’s location in eastern France makes it ideal to cover European markets. An attractive alternative to a conventional 4x4 transmission, X-Track Technology is an innovative uprated traction performance solution.
The Renault Master 4x4

From April 2016, in mainland Europe, and later in 2016 in the UK and Ireland, it will be possible to specify 4x4 transmission for the Renault Master. The conversion is available for the van and chassis cab versions of the Master RWD (single or twin cabin). The work is undertaken in association with the German 4x4 transmission specialist Oberaigner Automotive.

Purpose

- The Renault Master 4x4 is designed for customers who want to combine maximum comfort and safety with optimised grip for use in low-grip conditions.
- Drivers of the Renault Master 4x4 can choose between two modes: 4x2 transmission for normal roads or a 4x4 mode for poor quality roads or off-road use.
- In 4x4 mode, the Renault Master 4x4 can be driven on slopes, slippery ground, damp fields, muddy ground, poor roads, etc.
- The Renault Master 4x4 targets the building industry, energy providers, farmers, ambulance drivers, fire fighters, the police, the army, local authorities, water companies, wind farm operators, road maintenance services, forestry work, camper vans, etc.
• For stability and traction on low-grip terrain:
  - It is not necessary to use the brakes to control speed. Engine braking is sufficient to prevent sliding and loss of stability.
  - The wheels are interconnected to ensure that they all rotate in order to prevent the vehicle from becoming stuck due to the spinning of one or more drive wheels.
  - To facilitate driving over difficult terrain and enhance control, using the engine brake requires the delivery of maximum torque.

• **Basic technical specification** necessary prior to conversion to a Master 4x4:
  - Van or chassis cab version of the Master **RWD** (single or twin cabin).
  - Diesel engine: 92KW/125hp, 100KW/135hp or 120KW/165hp.
  - Six-speed manual gearbox.
  - Optional locking rear differential.
  - Gross Vehicle Weight (GVW): 3.5 or 4.5 tonnes.
  - Single or twin rear wheels.
  - Wheelbase: 3,682mm or 4,332mm.
Description

The conversion covers **five aspects** of the vehicle:

1. **Four-wheel drive (4x4) transmission for enhanced traction performance**
   Front axle is equipped with a differential, while a transfer box is fitted to the gearbox output to serve as an interface between the rear and front differentials and the gearbox.
   In 4x2 mode, all the torque delivered by the gearbox is delivered to the rear differential.
   In 4x4 mode, torque is split between the front and rear differentials according to the weight. The heaviest axle receives the highest torque.

2. **Gear reduction unit (low gear range) for more torque**
   A gear reduction unit can also be engaged in difficult conditions to increase the amount of engine torque delivered by the gearbox by approximately 40 percent. The gear reduction unit comprises two gears inside the transfer box: one with the same ratio as the gearbox output (i.e. 1:1) and the other with an alternative ratio (1:1.42).
   When the gear reduction unit is not engaged, the transfer box’s 1:1 gear engages with the gearbox gear, whether the transmission is in 4x2 or 4x4 mode.
   When the gear reduction unit is engaged, the transfer box’s 1:1.42 gear engages with the gearbox gear, whether the transmission is in 4x2 or 4x4 mode.

3. **Raised ground clearance**
   The vehicle’s higher ground clearance allows the sort of obstacle that can be found on poor quality roads to be passed. This effectively minimises the risk of scraping or impact to the vehicle’s underbody. Ground clearance is raised by 65mm at the front and by 58mm (single rear wheels) or 45mm (twin rear wheels) at the rear.

4. **Underbody protection**
   A steel sump guard and steel underbody protection protect the sump, as well as the brake hoses and fuel lines that run beneath the vehicle’s floor.

5. **All Weather tyres**
   Mud & Snow tyres allow the vehicle to be used on difficult terrain or when grip is at a premium on ordinary roads. Their pattern is designed to clear water, snow or mud from the tread grooves, while their construction permits engine torque to be transmitted efficiently to the ground. The size of these tyres is identical to that of standard tyres.
Activation / Deactivation

The Renault Master 4x4’s 4x4 mode and gear reduction unit (low gear range) are engaged and disengaged using the control unit which is situated within arm’s reach on the dashboard above the radio.

Activation/deactivation of the 4x4 mode using the top switch on the left-hand side of the control unit

- **Activation**
  - The top switch on the left-hand side of the control unit allows the driver to engage the 4x4 mode.
  - To switch to 4x4 mode, the vehicle must be driving at less than 25kph and the steering wheel must not be turned at an angle of more than 240 degrees.
  - When the 4x4 mode is engaged, the switch on the control unit **lights up in red**.
  - The control unit displays the ‘4x4: ON’, while ‘ABS TO CONTROL’ and ‘ESC TO CONTROL’ are displayed on the dashboard to indicate that the ABS and ESC have been switched off.
  - Because of the rigid link between the front and rear axles, the 4x4 mode must not be used on sealed surfaces or in conditions that permit use of the 4x2 mode.
- **Deactivation**
  - The same switch is used to disengage the 4x4 mode.
  - To switch from 4x4 mode to 4x2 mode, it is recommended not to be driving at a speed of more than 20kph in order to allow the ESC to be reactivated rapidly.
  - After disengagement from 4x4 mode, the red switch light goes out and ‘4x4 OFF’ appears on the control unit’s display.
  - ESC is reactivated and the ‘ABS TO CONTROL’ and ‘ESC TO CONTROL’ messages disappear.

Activation/deactivation of the gear reduction unit (low gear range) using the bottom switch on the left-hand side of the control unit

- **Activation**
  - The bottom switch on the left-hand side of the control unit allows the low gear range to be engaged.
  - To select the low gear range, the vehicle must be at a standstill with the clutch pedal depressed.
  - When the low gear range is engaged, the switch shows a red light
  - ‘LOW: ON’ appears on the control unit’s display
- **Deactivation**
  - To disengage the gear reduction unit, the vehicle must be at a standstill with the clutch pedal depressed.
  - Once the gear reduction unit has been disengaged, the red switch light goes out and ‘LOW: OFF’ appears on the control unit’s display.

Oberaigner: Renault’s 4x4 transmission specialist partner

With more than 20 years’ experience to its name, the Oberaigner group is a leading 4x4 transmission specialist. It supplies 4x4 transmission and transfer cases for the Mercedes-Benz Sprinter and carries out 4x4 conversions for five different car makers (Mercedes-Benz, Renault, Opel/Vauxhall, Nissan and Volkswagen).

Oberaigner products and services are marketed across the world.
Off-road data

The approach angle is the maximum ramp angle at which a vehicle can climb from a horizontal plane without interference.

The break-over angle is the maximum angle formed by a ridge over which the vehicle can drive without the underbody touching the apex of the angle.

The departure angle is the maximum ramp angle at which a vehicle can descend onto a horizontal plane without the chassis or bumper touching the ground.

The wading depth of a vehicle is the maximum depth of water through which it can be driven.

Master 4x4 – van version

<table>
<thead>
<tr>
<th>Wheelbase (mm)</th>
<th>3,682</th>
<th>4,332</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear overhang (mm)</td>
<td>1,674</td>
<td></td>
</tr>
<tr>
<td>Approach angle (degrees)</td>
<td>23.5</td>
<td>23</td>
</tr>
<tr>
<td>Break-over angle (degrees)</td>
<td>11.4 - 12.2</td>
<td>10.7</td>
</tr>
<tr>
<td>Departure angle (degrees)</td>
<td>10.0 - 12.0</td>
<td>11.7</td>
</tr>
<tr>
<td>Ground clearance (mm) (depending on load and model)</td>
<td>181 - 197</td>
<td>167</td>
</tr>
<tr>
<td>Wading depth: up to 300mm at less than 10kph</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Master 4x4 – chassis cab version

![Master 4x4 - Chassis Cab Version](image)

<table>
<thead>
<tr>
<th></th>
<th>3,682</th>
<th>4,332</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelbase (mm)</td>
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<td></td>
</tr>
<tr>
<td>Rear overhang (mm)</td>
<td>1,119</td>
<td>1,669</td>
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<tr>
<td>Approach angle (degrees)</td>
<td>24</td>
<td>23.5</td>
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<tr>
<td>Break-over (degrees)</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Departure angle (degrees)</td>
<td>17.4</td>
<td>11</td>
</tr>
<tr>
<td>Ground clearance (mm) (depending on load and model)</td>
<td>167</td>
<td>167</td>
</tr>
</tbody>
</table>

Wading depth: up to 300mm at less than 10kph