



All-new 2018 Jeep® Wrangler **POWERTRAIN**

All-new 2018 Jeep® Wrangler Combines Legendary 4x4 Systems with Advanced, Fuel-efficient Powertrains

- Four combinations of fuel-efficient powertrain options, including choice of two gasoline and one diesel engine
 - 2.0-liter turbocharged inline four-cylinder engine is mated to a new eight-speed automatic transmission
 - An all-new eTorque technology system improves fuel economy
 - 3.6-liter Pentastar V-6 engine is standard with a new six-speed manual and available with a new eight-speed automatic transmission
 - 3.0-liter EcoDiesel engine available on Wrangler 4-door models mated to a new eight-speed automatic transmission available starting in 2019
 - Engine Stop-Start (ESS) standard with 3.6-liter V-6 and 3.0-liter EcoDiesel V-6 automatic powertrains
- Standard six-speed manual and optional TorqueFlite eight-speed automatic transmissions deliver refined, smoother shift performance
- Legendary capability in any condition, with two available 4x4 systems
 - Command-Trac with 2.72:1 low range and neutral gear for flat tow capability
 - Rock-Trac with 4:1 low-gear ratio and is bolstered by Tru-Lok electronic locking differentials and an electronic front sway-bar disconnect
 - New Selec-Trac two-speed transfer case with full-time four-wheel-drive mode available on Sahara models is intuitive and offers continuous power to the front and rear axles
 - Next-generation solid Dana front and rear axles with available Trac-Lok rear limited slip differential
 - 3.45 rear axle ratio standard on Sport and Sahara
 - 4.10 axle ratio standard on Rubicon models
 - New heavy-duty Dana 44 front and rear axles standard on Rubicon models



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- Available Trac-Lok limited slip rear differential provides extra torque and grip during slippery, low-traction situations
- Unmatched crawl ratios:
 - Rubicon manual: 84.2:1
 - Rubicon auto: 77.2:1
 - Sport/Sahara manual: 48.18:1
 - Sport/Sahara auto: 44.20:1

The all-new Jeep® Wrangler will offer two different gasoline engines, one diesel engine, and four different powertrain combinations.

A 3.0-liter V-6 EcoDiesel engine will be available on Wrangler 4-door models starting in 2019. The all-new 2.0-liter turbocharged inline four-cylinder engine with eTorque technology is optional while the proven, fuel-efficient 3.6-liter Pentastar V-6 engine is standard with Engine Stop-Start (ESS).

“The all-new Jeep Wrangler will offer three different engines, including a 3.0-liter EcoDiesel V-6, for vastly improved fuel efficiency,” said Bob Lee, Vice President and Head of Engine, Powertrain and Electrified Propulsion Systems Engineering, FCA – North America. “Additionally, the eight-speed transmission is available to further enhance the drivability and efficiency of Jeep’s off-road icon.”

Legendary go-anywhere Jeep capability

The icon of the Jeep brand, the new 2018 Wrangler is the most capable sport-utility vehicle (SUV) ever, with two advanced available driveline systems offering unmatched capability no matter the conditions.

Wrangler Sport and Sahara models are equipped with the Command-Trac 4x4 system, featuring a part-time, two-speed transfer case with a 2.72:1 low-range gear ratio.

Rubicon models are equipped with the Rock-Trac 4x4 system, featuring a two-speed transfer case with a 4:1 low-range gear ratio, front and rear next-generation Dana 44 axles, Tru-Lok electric front- and rear-axle lockers, and electronic sway bar disconnect.

A new Selec-Trac two-speed transfer case with full-time four-wheel-drive (4WD) mode available on the Sahara model offers continuous power to the front and rear axles and is easy to use.

Available Trac-Lok limited-slip rear differential provides extra torque and grip during slippery, low-traction situations, such as driving over sand, gravel, snow or ice.



Command-Trac

The Command-Trac 4x4 system with the NV241 transfer case helps get through any off-road obstruction and any weather condition. This 4x4 system can be engaged even while in motion – up to speeds of 55 miles per hour (mph) and features a 2.72:1 low range for rock crawling, and has the ability to be flat towed while in neutral. Wrangler Sport and Sahara models equipped with the standard six-speed manual transmission benefit from a 48.18:1 crawl ratio, while Sport and Sahara models with the eight-speed automatic transmission feature a 44.20:1 crawl ratio.

Rock-Trac

Standard on Wrangler Rubicon models, the Rock-Trac 4x4 system with an enhanced NV241 OR transfer case offers even more capability and a 4:1 low gear ratio. Wrangler Rubicon's off-road prowess is bolstered by all-new Tru-Lok electronic locking differentials and an electronic front sway-bar disconnect.

Wrangler Rubicon models equipped with the standard six-speed manual transmission boast an 84.2:1 crawl ratio. Rubicon models with the eight-speed automatic transmission feature a 77.2:1 crawl ratio.

New Selec-Trac two-speed transfer case with full-time four-wheel-drive mode

For the first time in Wrangler's history, a Selec-Trac two-speed transfer case with full-time four-wheel drive and a low range is available on Sahara models. This new full-time two-speed transfer case is intuitive and allows the driver to set it and forget it while constantly sending power to the front and rear axles.

Drivetrain choices

Three different engines – two gasoline and one diesel – will be available, while an all-new standard six-speed manual transmission and new optional eight-speed automatic transmission is available. The proven, fuel-efficient 3.6-liter Pentastar V-6 engine is standard with Engine Stop-Start (ESS).

2.0-liter turbocharged inline four-cylinder engine

The all-new 2.0-liter turbocharged inline four-cylinder engine with eTorque technology is rated a best-in-class 270 horsepower and 295 lb.-ft. of torque and mated to a new eight-speed automatic transmission. The 2.0-liter turbocharged inline four-cylinder engine's torque output surpasses that of the V-6 engine offered in Wrangler. An all-new eTorque system improves fuel economy, launch performance, and driver comfort during start/stop operations.

The eTorque system's hybrid functions include auto start/stop, electric power assist, extended fuel shut-off, transmission shift management, intelligent battery charging and regenerative braking. Both the engine and fuel flow may be turned off during stops, coasting or when the engine is decelerating.



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The all-new 2.0-liter I-4 engine features a twin-scroll, low-inertia turbocharger with an electronically actuated waste gate for exceptional responsiveness and performance, even while traversing over difficult terrain. The turbo is mounted directly to the cylinder head to improve durability. A dedicated cooling circuit lowers the temperature of the intake air, throttle body and turbocharger.

The 2.0-liter turbocharged I-4 engine is part of the Global Medium Engine architecture family and features Double Over Head Camshafts (DOHC), dual independent camshaft timing, and a cooled exhaust gas recirculation (C-EGR) system. This is the first time that the combined use of a twin-scroll turbocharger, C-EGR system, Central Direct Injection and the independent liquid cooling intake of air, throttle body and turbo have been employed together. This combination of technologies enables the high levels of performance and reduces fuel consumption.

Direct injection, coupled with turbocharging, enables more efficient combustion and increased performance. The 2.0-liter I-4 engine's fuel pump supplies the engine's 2,900-psi high-pressure common-rail injection system. These high pressures produce better fuel atomization and allow for more precise fuel delivery than port fuel-injected systems, which in turn improves both performance and efficiency.

A variable displacement two-stage oil pump provides high oil pressure under high speed and load but switches to a low-pressure mode for improved fuel economy during typical driving conditions. The piston cooling jet operation is managed by the two-stage oil pump to enhance fuel economy under normal driving conditions while improving durability under demanding, high load engine operation. A large capacity oil cooler extends the oil change interval and ensures engine durability.

The cast aluminum alloy cylinder head features a central injector and high tumble intake ports. This combination provides increased charge motion and balanced air flow for improved fuel efficiency and performance. Cast-aluminum pistons with a 10:1 compression ratio have four valve pockets to accommodate the dual Variable Valve Timing [VVT] system. Each cylinder bore is fitted with gallery-mounted piston oil squirters to limit piston temperatures, reduce spark knock and increase piston durability.

The 2.0-liter I-4 engine features a low pressure, sand cast-aluminum block with cast-in iron liners. The bore diameter is 84 mm and the stroke is 90 mm. Total displacement is 1,995 cc.

A water-cooled, integrated exhaust manifold helps reduce turbo inlet temperatures while providing increased engine reliability.



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An inverted tooth primary chain drives both the intake and exhaust camshafts and minimizes noise. Camshafts are robotically assembled using hollow shafts and have polished cam journals to reduce weight and improve durability for start-stop engine operation. The use of hollow shafts provides a 3.5 lbs. weight reduction when compared to an equivalent solid shaft.

Select-fit main and rod bearings enable reduced clearances to help lower system oil demand and oil pumping effort. In addition, floating piston pins utilize Diamond Like Coating (DLC) for reduced friction.

The ignition system includes a high-energy ignition coil for better fuel efficiency and precious-metal spark plugs with iridium and platinum provide lasting durability. Located in the center of the cam cover, the spark plugs are easily accessible when service is required. Sodium-filled exhaust valves and plasma coated piston rings also help extend the engine's life and bolster durability.

3.6-liter Pentastar V-6 engine with Engine Stop-Start (ESS)

Engineered to provide a broad torque band with a focus on low-end torque, the 3.6-liter Pentastar V-6 engine is rated at 285 horsepower and 260 lb.-ft. of torque. Engine Stop-Start is now standard on all Wrangler models equipped with the 3.6-liter Pentastar V-6 engine. An all-new six-speed manual transmission is standard on all Wrangler models equipped with the 3.6-liter Pentastar V-6, and a new eight-speed automatic transmission is optional.

Known for its refinement, power, efficiency, and adaptability, there are more than five million 3.6-liter V-6 Pentastar engines on the road today. The 2018 Jeep Wrangler benefits from the popular V-6 engine's low-range torque, which is needed when out on the trails or whenever the conditions call for it.

The 3.6-liter Pentastar V-6 engine employs a two-step variable-valve lift (VVL) cooled exhaust-gas circulation (EGR) and innovative weight-reduction strategies that boost the engine's efficiency and performance. The system is designed to remain mostly in low-lift mode until the customer demands more power; then it responds by switching to high-lift mode for improved combustion. The result is less overall pumping work, which on its own, helps improve fuel economy.

ESS, which is now standard equipment on all 3.6-liter Pentastar V-6 engines in Wrangler, is driven by a high-speed and high-durability starter, which reduces crank time for quicker restarts. With ESS, acceleration is always aligned with driver inputs. Passive accelerator application is met with measured throttle response; hard inputs trigger aggressive starts. There's no waiting for either.



How ESS works:

- Engine controls constantly monitor vehicle speed
- When the vehicle brakes to a stop, fuel flow is cut and the engine turns off to improve fuel economy
- Robust batteries maintain other vehicle systems so in-cabin comfort is unaffected
- The engine automatically restarts when the brake pedal is released

If the driver chooses to forgo the benefits of ESS, the feature can be deactivated with the push of a button, and then reactivated when the vehicle is restarted via the push button starter.

3.0-liter V-6 EcoDiesel engine with ESS

The 3.0-liter EcoDiesel engine will be available starting in 2019. Wrangler 4-door models will offer a 3.0-liter EcoDiesel V-6 engine, rated at 260 horsepower and 442 lb.-ft. of torque, with Engine Stop-Start (ESS) standard. A new eight-speed automatic transmission is standard and was designed to handle an increased torque output.

FCA US engineers adapted the engine – manufactured by FCA-owned V.M. Motori – to meet the NAFTA region’s regulatory requirements.

The EcoDiesel V-6 engine implements new turbocharger technology with a low-friction bearing designed for low end and transient performance. The third-generation EcoDiesel V-6 engine also features low-friction pistons to improve fuel economy and reduce greenhouse gas emissions and an enhanced combustion system – new injector nozzle, piston bowl, and glow plug with integrated combustion pressure sensor to optimize combustion.

The EcoDiesel’s fuel pump supplies the engine’s 2,000-bar (29,000-psi) high-pressure common-rail injection system.

The engine also benefits from MultiJet 2 technology, which enables Injection Rate-Shaping – fuel injection that is modulated to mitigate noise and improve low-speed throttle response, while reducing fuel consumption.

The system’s high-dispersion nozzles and advanced-technology servovalve can accommodate up to seven fuel-injection events per cylinder cycle.



Proven eight-speed transmission

The new 2018 Jeep Wrangler offers the FCA US-manufactured TorqueFlite eight-speed automatic transmission, enabling the vehicle to optimize engine output while on the trails or enjoying smooth, efficient power delivery at highway speeds. The eight-speed automatic is available on all Jeep Wrangler models.

Wrangler 4-door models equipped with the 3.0-liter V-6 EcoDiesel engine utilizes an even more robust version of the eight-speed automatic transmission to handle the elevated torque output.

As in other FCA US vehicles, the Wrangler's eight-speed automatic transmission offers a responsive driving experience. Whether commuting during the week or rock crawling on the weekend, customers will enjoy a smooth, linear power delivery and improved fuel efficiency.

A unique set of two overdrive ratios improve highway fuel economy and reduce overall noise, vibration and harshness (NVH) levels.

The fully electronic, eight-speed automatic transmission features the on-the-fly shift-map changing with Auto Stick manual shift capability.

The sophisticated transmission software relies on many input parameters to determine the appropriate driving conditions and adjusts shift pattern in response to these driving conditions to offer the best possible fuel economy and drivability balance. The result is automatic shifting ideally attuned to the performance requirements of almost any driving demand.

The transmission's gear ratios afford the right response at the right time, from crawling over obstructions on the trail to smooth power delivery at highway speeds, a product of smaller ratio steps between the gears. The ratios are:

- 1st – 4.71
- 2nd – 3.14
- 3rd – 2.10
- 4th – 1.67
- 5th – 1.29
- 6th – 1.00
- 7th – 0.84
- 8th – 0.67
- Rev – 3.30



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The Jeep Wrangler's eight-speed automatic transmission provides a more responsive driving experience with quicker acceleration and smoother shifting. The wide ratio spread delivers an aggressive first gear ratio of 4.71 for low-end performance and small gear ratio steps provide smooth transitions from gear-to-gear.

However, a Jeep SUV isn't a Jeep SUV unless it delivers superior off-road performance. Uniquely suited to the requirements of the Wrangler Rubicon model, the eight-speed automatic transmission delivers a 77.2:1 crawl ratio setting. The improved 4x4 performance benefits from a 4.71 first-gear ratio coupled with a 4.1:1 final drive to deliver unmatched capability.

All-new, fun-to-drive six-speed manual transmission

New 2018 Jeep Wrangler models are equipped with the standard six-speed manual transmission. This transmission features a unique design that features new gear ratios for improved crawl ratio performance, a new gear pattern, and a cable-operated shift design that eliminates movement and improves sound isolation.

The revised shift pattern now features improved shift accuracy, a more comfortable shifting position and 50 percent shorter shifter throws than that of the outgoing Wrangler model.

A 4.41 ratio spread offers improved fuel efficiency at faster speeds and delivers quick acceleration with smooth, precise shift quality.

The ratios are:

1st – 5.13

2nd – 2.63

3rd – 1.54

4th – 1.00

5th – 0.81

6th – 0.72

Rev – 4.49

