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SAFETY AND SECURITY

New 2019 Ram 2500 and Ram 3500 Heavy Duty Offers the Most Active Safety and Security Features in the Segment

- In the Heavy-Duty segment, only the 2019 Ram 2500 and 3500 offer active safety systems in all models including, Adaptive Cruise Control, Forward Collision Warning, Automatic Emergency Braking (AEB) and AEB with trailer brakes
- · Blind Spot Monitoring and Rear Cross-Path detection keeps an eye on areas not always visible to the driver
- Ram offers the only Heavy Duty pickup with back-up sensors specifically designed for wider dual rear wheels for greater fender protection (Ram 3500)
- Advanced LED headlight systems with Adaptive Front-lighting System (AFS), new Bi-LED headlamps and new Quad-LED projector headlamps for segment-leading light spread, pattern consistency, distance and more lumens
- New 360-degree surround-view camera system with trailer reverse guidance view gives greater field of vision
- Payload camera (cargo-view camera) allows owners to monitor the payload in the bed and provides active gridlines to aid hookup with fifth-wheel and gooseneck hitches
- Trailer reverse guidance view provides a single display-screen view of both sides of a trailer to assist drivers in maneuvering towing setups
- New trailer Tire Pressure Monitoring Systems (TPMS) accommodates up to six pickup tires and 12 trailer tires with up to four trailer profiles
- New selectable tire-fill alert allows owner to check tire pressures and apply custom settings with audible alert once selected pressure is achieved
- 2019 Ram Heavy Duty offers six air bags including side inflatable curtains extending over both front and rear rows
- New mirror-mounted rear spotlights help guide the Ram Heavy Duty when backing trailers in the dark and segment-leading power convex trailer-tow mirrors provide additional convenience and increase rearward field of vision
- · New auxiliary, remote exterior camera improves visibility with custom positioning in and behind trailers

January 14, 2019, Auburn Hills, Mich. - The new 2019 Ram 2500 and 3500 Heavy Duty pickups include the longest list of available safety and security elements available in the Heavy-Duty segment, including an array of active AND passive systems to assist the driver and passengers — offered in all models.

Automatic Emergency Braking (AEB), 360-degree camera display and selectable tire pressures are just some of the new, specialized technologies found in Ram's halo pickup trucks. Since the Ram Heavy Duty line is engineered around capability, it makes sense that many of the technologies would be enhanced from their use in passenger cars. For example, Tire Pressure Monitoring, which can monitor up to six tires on the pickup now, includes trailer tire pressure monitoring for up to 12 trailer tires. Although a back-up camera is a standard feature on most vehicles, the Ram Heavy Duty offers a second rear-view camera (cargo-view camera) to monitor payload in the bed. It also can be used to align fifth-wheel and gooseneck trailers, a common task of the Ram Heavy Duty pickup. As a segment-first, back-up sensors on the Ram 3500 include specifically designed sensors to cover the added width of dual rear wheels, giving a wider span of coverage when backing up with limited view.

The new Ram Heavy Duty uses a variety of high-strength steels in the frame, body panels and core structure to maximize impact performance and reduce overall weight, including the A-, B- and C-pillars, front structure and door beams. Increased resistance spot welds reduce the heat exposure to surrounding metal to maintain strength and long-term durability.

More than 100 safety and security features on Ram 2500 and 3500 Heavy Duty

- Adaptive Cruise Control (ACC) with Stop: Helps maintain a driver-adjustable distance between the vehicle and the one in front of it, and can bring the vehicle to a controlled stop and momentarily hold it there. This system works by decreasing the vehicle's pre-set cruise-control speed when closing in on another vehicle in the same lane, or when another vehicle moves into the same lane. ACC will accelerate the vehicle back to the pre-set rate once the vehicle in front speeds up or moves into another lane, including full stop with truck and trailer brakes
- 2. Adaptive Front-lighting System (AFS): Automatically directs headlamps in the planned direction the vehicle is traveling using steering wheel input to point light around turns, driveways and parking lots
- 3. Advanced Brake Assist: If inadequate force is applied to brakes in response to signal from Full-speed Forward Collision Warning-Plus, Advanced Brake Assist increases brake force automatically
- 4. All-speed traction control system: Part of the standard anti-lock brake system (ABS), helps keep driving wheels from spinning during acceleration from a stop or during all speeds by applying individual brakes alone or in combination with engine-torque limitation to prevent wheel slip
- 5. Anti-lock brake system (ABS): Senses and prevents wheel lockup, offering improved steering control under extreme braking and/or slippery conditions
- 6. Anti-lock brake system with rough-road detection: Anti-lock brake system detects the vehicle is driving on a rough road by the oscillations in the wheel speed signals. When rough road is detected on off-road surfaces or trails, ABS enters a different pressure control where it will hold the brake pressure for longer pulses
- 7. Automatic Emergency Braking (AEB): Monitors the closing distance and speed of objects in front when moving forward and objects in the rear when reversing. If the driver does make an attempt to slow or stop on approach of objects, AEB will automatically apply the truck brakes and trailer brakes, while delivering selectable audible and visual warnings
- Blind Spot Monitoring (BSM): Uses dual ultra-wideband radar sensors to aid the driver when changing lanes or if being passed by or passing unseen vehicles. The system notifies the driver of vehicle(s) in their blind spot via illuminated icons on the side-view mirror
- 9. Brake assist: In an emergency brake situation, the system applies maximum braking power, minimizing the stopping distance
- Brake-throttle override: Allows driver to stop the vehicle when throttle and brake inputs occur simultaneously; electronic throttle control reduces engine-power output until vehicle stops or pedal inputs cease
- 11. Brake/park interlock: Prevents the transmission from being shifted out of "Park" unless the brake pedal is pushed
- 12. Brake Traction Control System (BTCS): Helps to keep driving wheels from spinning during acceleration from a stop or during slow speeds by applying individual brakes to the slipping wheel(s)
- 13. Electronic brake-force distribution: Assists the driver to optimize stopping distances and control under all vehicle loading conditions by regulating braking pressure front-to-rear
- 14. Electronic Roll Mitigation (ERM): An extension of Electronic Stability Control (ESC). Uses input from ESC sensors to anticipate if the vehicle is at risk of entering a potential roll situation, then applies the brakes individually and modulates the throttle position as needed
- 15. Electronic Stability Control (ESC): Enhances driver control and helps maintain directional stability under all conditions. Provides the benefit in critical driving situations such as turns, and is valuable when driving on mixed-surface conditions including snow, ice or gravel. If there is a discernible difference between driver input through the steering wheel and the vehicle's path, ESC applies selective braking and throttle input to guide the vehicle back onto the driver's intended path
- 16. Anti-spin rear differential: In low-traction conditions, automatically transfers torque to the rear wheel with traction.
- 17. Electronic locking axle (Power Wagon): Locks both left and right wheels on either front or rear axle to the

driveline for maximum traction in low-speed, low-traction conditions

- 18. Fifth-Wheel/Gooseneck Prep Package: Heavy-trailer towing is commonplace for Ram Heavy Duty trucks. This system offers a factory-tested solution to connect a fifth-wheel frame or gooseneck hitch ball to the recommended location of the Ram Heavy Duty frame. It includes a light and brake connection in the bed and chain connections (gooseneck), all backed by Ram Engineering
- 19. Forward Collision Warning Plus: Utilizes radar and video sensors to detect whether the vehicle is approaching another vehicle or large obstacle in its path too rapidly, and warns or assists the driver in avoiding/mitigating the incident
- 20. Frequency Response Damping: New shock design features a two-valve system to properly adjust wheel movement depending on road input. With two valves, additional tuning helps keep tires to the ground on rough surfaces
- 21. Hill Start Assist (HSA): Assists drivers when starting a vehicle from a stop on a hill by maintaining the level of brake pressure applied for a short period of time after the driver's foot is removed from the brake pedal. If throttle is not applied within a short period of time after the driver's foot is removed from the brake pedal, brake pressure will be released
- 22. ParkSense park assist: The system utilizes ultrasonic sensors at low speeds in reverse to detect stationary objects. The system provides audio and visual feedback to the driver. The forward system utilizes ultrasonic sensors at low speeds to detect stationary objects in front of the vehicle
- 23. ParkView rear back-up camera: Provides a wide-angle view of the area immediately behind the vehicle with zoom-in capability, giving the driver greater peace of mind before reversing at low speeds. Contains dynamic grid lines that move with steering inputs to aid the driver when maneuvering into parking spaces or narrow areas. The image is displayed on the navigation screen when the transmission is shifted into Reverse
- 24. Rain brake support: Uses the ESC pump to occasionally push brake pads lightly against brake rotors in rainy conditions to keep rotors dry
- 25. Ready Alert Braking (RAB): Anticipates situations when the driver may initiate an emergency brake stop and uses the ESC pump to set brake pads against rotors to decrease the time required for full brake application
- 26. Rear Cross Path (RCP) detection: In parking lot situations, this system warns drivers backing out of parking spaces of traffic moving toward their vehicle. It activates any time the vehicle is in reverse. The driver is notified of vehicle(s) crossing behind the vehicle via illuminated icons on the side-view mirror and with an audible chime
- 27. Surround 360-degree Camera: Uses four cameras positioned around the vehicle to provide a bird's-eye perspective of the vehicle and its immediate surroundings. Driver can also select other views, including front or rear cross path, and forward camera view when off-road
- 28. Auxiliary remote camera: The new Ram Heavy Duty also features an exclusive remote camera option to be placed in a location which best serves the operator—in or around trailers
- 29. Trailer Sway Control (TSC): Reduces trailer sway and improves handling in adverse towing conditions caused by crosswinds and traffic. The system monitors the vehicle's movement relative to the driver's intended path, then applies alternating brake pressure to slow the vehicle and then increases the pressure on one front wheel to counteract the sway induced by the trailer
- 30. Trailer reverse guidance view: Provides a single display screen view of both sides of a trailer and helps drivers more safely tow, park and maneuver their long or short towing setups
- 31. Upgraded mirror-mounted rear spotlights: Provide improved visibility for night time trailer maneuvers
- 32. Class-exclusive power convex trailer-tow mirrors: Provide driver-adjusted convenience, increase rearward field of vision and feature memory return

Occupant restraint technology

- 1. Advanced multistage air bags: Inflate with a force appropriate to the severity of the impact
- 2. Full-length side-curtain air bags: Extend protection to all outboard front- and rear-seat passengers. Each side air bag has its own impact sensor that autonomously triggers the air bag on the side where an impact occurs. This type of air bag is housed in the headliner just above side windows
- 3. BeltAlert: Activates a chime and/or illuminates an icon in the instrument cluster to remind the driver and front passenger to buckle up if a vehicle is driven without belted front-seat occupants
- 4. Child seat anchor system: LATCH (Lower Anchors and Tethers for CHildren) designed to ease installation of compatible aftermarket child seats

- 5. Front-passenger knee blockers: Located below the instrument panel, the knee blocker deploys when the air bag deploys and is designed to properly position the occupant during impact and offer additional lower leg protection
- 6. Four-way head restraints: Designed to reduce injuries by minimizing gap between occupant's head and the head restraint
- 7. Front seat-belt adaptive/active load limiters: Designed to optimize the chest loading in an impact event
- Front seat-belt pretensioners: During a collision, impact sensors initiate front seat-belt pretensioners to remove slack in the seat-belt system, thereby reducing the forward movement of the occupant's head and torso
- 9. Front-seat-mounted side pelvic thorax air bags: Provide enhanced protection to the driver and front outboard passenger in certain impacts. Each side air bag has its own impact sensor that autonomously triggers the air bag on the side where an impact occurs. Standard side air bags are housed within the outboard side of each front seat
- 10. Height-adjustable seat belts (front row): Outboard seat belts feature height adjustment, allowing for the seat belt to be placed in the optimal position for any driver or passenger
- 11. Occupant Restraint Controller: Detects an impact and determines the severity of a crash
- 12. Three-point seat belts: All three front seating positions and all three rear seating positions include lap and shoulder belts (Mega Cab and Crew Cab)

Structural systems

- 1. Energy-absorbing steering column: The manual-adjust steering column utilizes two hydroformed coaxial tubes that can move relative to each other to allow the column to move forward for enhanced energy absorption during a crash
- 2. Energy management system: Three front load paths designed from high-strength steel help maintain structural integrity and minimize cabin intrusion
- 3. Most advanced frame in the segment: Composed of 98.5-percent high-strength steel
- 4. Front and rear crumple zones: Specially formed structural members that crumple and absorb energy in a collision, helping protect the occupant cabin
- 5. Laminated glass: Plastic sandwiched between glass panes to provide added protection against break-ins and acoustic benefits
- 6. Safety cage body structure: Protects occupants by managing and controlling energy in the event of an impact
- 7. Side guard door beams: Reinforcement beams inside the doors that increase occupant protection in a side collision

Lighting and visibility systems

- 1. Active turn signals: Turn signal flashes three times when stalk is depressed for one second to indicate a lane change
- 2. Auto-dimming rearview mirror: Auto-dimming mirror automatically reduces glare from bright light in the rearview mirror at night for a clearer view of the road ahead
- 3. Automatic defog: Enables the Automatic Temperature Control (ATC) system to measure humidity inside the vehicle and provide a fog-free windshield automatically without driver intervention
- 4. Automatic headlamps: Headlamps turn on and off automatically depending on exterior light levels and when the windshield wipers are turned on or off
- 5. Automatic high-beam headlamps: Headlamp system adjusts to oncoming traffic to deliver maximum lighting
- 6. Center high-mount stop lamp: Illuminates when brakes are applied; makes the vehicle more visible in traffic
- 7. Daytime Running Lamps (DRL): Lights that illuminate during daytime conditions, increasing the vehicle's visibility to other drivers
- Enhanced Accident Response System (EARS): Makes it easier for emergency personnel to see and reach occupants in the event of an accident by turning on the interior lighting and unlocking doors after air bag deployment. Also shuts off flow of fuel to the engine
- 9. Heated side-view mirrors: Prevents buildup of snow or ice on side-view mirrors to maintain visibility
- 10. LED Bi-functional projector headlights: Provide twice the lumens when compared to previous headlights and more controlled illumination for increased visibility

- 11. LED fog lamps: Provide improved illumination during inclement weather
- 12. LED taillamps: Provide dual-function illumination (brake, stop, turn and running light functions); lightemitting diode technology ensures light output is consistent throughout the tail lamp
- 13. LED clearance lamps: Help to outline the truck by providing illumination from the top of the cab and identify potential strike zones in low light conditions
- 14. Lit Signature forward lighting: Both mid and premium LED headlamps have "lit signature" elements along the top and bottom of the headlamps. The recognizable signature remains on during normal operation while the twin projectors (low and high beams) only come on at dusk/evening
- 15. Rain-sensing wipers: A driver convenience feature that automatically senses moisture on the windshield and activates wipers
- 16. Supplemental turn signals: Signal lamps built into the housing of exterior mirrors allow turn signals to be viewed from the front, sides and rear of the vehicle to alert oncoming traffic and pedestrians
- 17. Rear-window electric defrost: Automatically activates with remote start when ambient temperature is below prescribed threshold

Emergency connectivity and other safety and security features

- 1. 9-1-1 Call/Assist Call: Mirror-mounted buttons for emergency services, roadside assistance, Uconnect Customer Care and non-collision related emergencies
- 2. Auto-reverse sunroof: When equipped with the power sunroof, the system automatically reverses when it senses an obstruction during closing
- 3. Auto-reverse windows: The window automatically reverses when it senses an obstruction during closing
- 4. Capless fuel-filler door: Provides fuel-filling simplicity and eliminates contact with any fuel spillage (Diesel)
- Child-protection rear door locks: Disables the rear doors' inside-release handle by adjusting a small lever on the door-shut face
- 6. Dual-note electric horn: Produces two different tones at the same time, to cut through ambient noise
- 7. Driver Information Display (DID): Provides the driver with trip, temperature, tire pressure and other vehicle information within the instrument cluster
- 8. Express up/down windows: One-touch powered express up/down window button located on the front driver and passenger-side doors
- 9. Global Position Sensor (GPS): Used for navigation guidance and electronic vehicle tracking
- Intelligent Battery Sensor (IBS): Continually measures flow of current into and out of battery; if battery is running low, system shuts off less-critical electrical systems to conserve power; icon in cluster denotes activation
- 11. Keyless Enter 'n Go: When an individual enters the vehicle, electronic sensors detect if the vehicle key fob is present. The vehicle will then allow the individual to push a button to start the vehicle without having to insert the key into the ignition
- Mopar Electronic Vehicle Tracking System (EVTS): State-of-the-art GPS-enabled stolen vehicle recovery system. EVTS includes nationwide tracking including 24/7 emergency service dispatch, security fence, arrival/departure notification, excessive speed notification and trace maps of past locations (in selected markets)
- 13. Remote keyless entry: Locks and unlocks doors and turns on interior lamps. If the vehicle is equipped with a security alarm, the remote also arms and disarms that system
- 14. Remote start: Conveniently starts the engine by using the key fob while maintaining vehicle security
- 15. Security alarm: Deters vandalism and theft, frequently lowering insurance premiums. System protects the vehicle from theft by monitoring door-ajar switches and the ignition circuit for unauthorized entry
- 16. Selectable tire pressure: Allows the operator to choose from a range of tire pressure depending on the duty (reduced pressures for low speed off-road or increased pressures for high capability)
- 17. Sentry Key engine immobilizer: Utilizes an engine key that has an embedded transponder with a preprogrammed security code to discourage vehicle theft. When the ignition button is pressed, the controller sends a random number to the transponder and the engine is allowed to start. If an incorrect key is used, the vehicle will not respond to ignition change requests
- 18. Siri Eyes Free: Allows the user to use voice recognition to command a compatible Apple device without taking the hands off the wheel
- 19. SiriusXM Traffic: Works with the vehicle's navigation system to display traffic speed and flow information, along with accident information to assist drivers in routing around congested areas
- 20. SiriusXM Travel Link: Real-time local fuel prices, weather conditions, sports scores and movie locations

and times all featured in this subscription-based system provided by SiriusXM Radio

- 21. Speed-sensitive door locks: System automatically locks doors when vehicle acceleration reaches prescribed threshold
- 22. Tailgate power release and Passive Entry: Allows the operator to release the tailgate using the key fob or unlock automatically with combination of key fob presence and tailgate handle activation
- 23. Thin Film Transistor (TFT) instrument cluster display: Offers drivers a wide range of customization options, from a basic analog read-out to a full digital display that clearly communicates vehicle information with easy-to-understand icons
- 24. Tilt steering column: Allows steering column to tilt toward or away from the driver to achieve a comfortable driving position
- 25. Tire-fill alert: When adding air pressure to tires, a new tire-fill alert system chirps the horn once you have reached the selected pressure
- 26. Tire-pressure Monitoring (TPM) system: Informs driver when tire pressure is too low and system can monitor up to six tires on the Ram Heavy Duty and 12 trailer tires. Tire-pressure monitoring system self-learns tire position after rotation or tire is moved to a new location
- 27. Uconnect Access mobile hot spot: Turns vehicle into mobile Internet hotspot; available to registered Uconnect Access subscribers
- 28. Uconnect Access remote services: Enables registered Uconnect Access subscribers with compatible cell phones to lock or unlock their vehicles or activate panic alarm; can also activate remote start
- 29. Uconnect Access voice-to-text: Enables cloud-based text-message dictation via compatible Bluetooth enabled cell phones; available to registered Uconnect Access subscribers
- 30. Uconnect Access Stolen Vehicle Location Assistance: Leverages GPS data-sending capability to help authorities find stolen vehicles
- 31. Uconnect Drag and Drop menu bar: Drivers can drag vehicle function buttons and move them to their Uconnect system's main menu bar for easier access
- 32. Uconnect Voice Command with Bluetooth: Voice-recognition technology enables hands-free navigation system inputs and the use of Bluetooth enabled phones while keeping drivers' hands on the wheel and eyes on the road
- 33. Universal garage door opener: Programmable radio frequency codes for garage door, security gate and security lighting

Ram Truck Brand

In 2009, the Ram Truck brand launched as a stand-alone division, focused on meeting the demands of truck buyers and delivering benchmark-quality vehicles. With a full lineup of trucks - the Ram 1500, 2500/3500 Heavy Duty, 3500/4500/5500 Chassis Cab and ProMaster - the Ram brand builds trucks that get the hard work done and families where they need to go.

Ram continues to outperform the competition and sets the benchmark for:

- Best-in-class standard horsepower
- Segment-first 1,000 lb.-ft of torque with Cummins Turbo Diesel
- Most luxurious: Ram 1500 Tungsten with real metal and leather elements and a new 14.5-inch Uconnect touchscreen
- Best ride and handling with a double wishbone front suspension and five-link solid rear axle with available, segment-exclusive, active-level, four-corner air suspension
- Best-in-class available rear leg room
- The most cargo space available in any traditional full size cargo van
- Most capable full-size off-road pickup Ram Power Wagon
- Most awarded light-duty truck in America
- Highest owner loyalty of any half-ton pickup

The latest <u>J.D. Power APEAL study</u>, which rates the emotional bond between customers and their vehicles, named the 2023 Ram 1500 as the best full-size light-duty pickup.

Ram is part of the portfolio of brands offered by leading global automaker and mobility provider Stellantis. For more information regarding Stellantis (NYSE: STLA), please visit <u>www.stellantis.com</u>.

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