FCA CANADA
Safety & Technology
OVERVIEW & GLOSSARY

2018 FCA Canada Safety and Security Technology Glossary

Structural system technology

1. **Energy-absorbing steering column:** Manual-adjust steering column features two hydroformed coaxial tubes that move relative to each other to allow for enhanced energy absorption during an impact; power-adjust steering column employs a calibrated bending element that deforms during column stroke for optimal energy management

2. **Front and rear crumple zones:** Specially-formed structural members that crumple and absorb energy in a collision, helping protect the occupant cabin

3. **Laminated glass:** Plastic sandwiched between glass panes to provide added strength; discourages break-ins

4. **Safety cage body structure:** Helps protect occupants by managing and controlling energy in the event of an impact

5. **Side-guard door beams:** Reinforcement beams inside the doors that help provide occupant protection in certain side collisions

Driver warning and assist, chassis control and brake systems

1. **360˚ Surround-View Camera**: The 360˚ Surround-View Camera uses multiple sensors and four cameras positioned around the vehicle to provide a bird's-eye perspective of the vehicle and its surroundings. During low-speed situations like parking or backing out of your driveway, this available feature provides fully stitched images available for all 360 degrees around the vehicle in the available Uconnect® touchscreen. Drivers can select different camera views, including front and rear cross-path views. Cameras located in the exterior mirrors also provide added side visibility in parking situations.

2. **Advance Brake Assist:** Works with Forward Collision Warning with Active Braking; increases deceleration if driver does not apply brake with sufficient force to respond to collision condition

3. **Adaptive Cruise Control with Stop:** Helps maintain distance from vehicle ahead; under certain traffic conditions, system can bring vehicle to full stop without driver intervention. After bringing the vehicle to a stop, the system will hold the brakes for 2 seconds before resuming forward, which requires the driver to take control and manually apply the brakes if a longer stop is required.

4. **Adaptive Cruise Control with Stop and Go:** The available Adaptive Cruise Control system adapts speeds based on traffic movement in front of the vehicle. The Stop and Go functionality is able to bring the vehicle to a complete stop when the car ahead comes to a stop in certain conditions such as stop-and-go traffic. When traffic resumes motion, the system prompts the driver to resume moving forward by pressing the Resume button on the steering wheel or tapping the accelerator. This system does not perform panic stops.

5. **All-speed traction control system:** While driving, helps keep wheels from spinning during acceleration from a stop or at speed by applying brakes alone or in combination with engine torque limitation

6. **Anti-lock brake system (ABS):** Senses and prevents wheel lockup, offering improved steering control under extreme braking and/or slippery conditions

7. **Blind-spot Monitoring (BSM):** Uses radar sensors to aid driver when changing lanes, passing or being passed; blind-spot vehicle presence noted via illuminated icons in sideview mirrors and driver-selectable audible chime

8. **Brake Assist:** System applies maximum braking power in emergency braking situations, minimizing stopping distance

9. **Brake-lock differential system (BLDS):** Allows the vehicle to maintain forward motion if one or two wheels lose traction by selectively and aggressively applying brakes to the spinning wheels

10. **Brake-throttle override:** Standard equipment on every FCA US vehicle, it allows driver to stop the vehicle when throttle and brake inputs occur simultaneously; electronic throttle control also reduces engine-power output

11. **Brake-park interlock:** Prevents transmission from being shifted out of “Park” unless the brake pedal is pushed

12. **Brake traction-control system (BTCS):** Helps to keep 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 (EBD):** Optimizes stopping distances and control under all vehicle loading conditions by regulating braking pressure, front-to-rear

14. **Electronic Roll Mitigation (ERM):** Uses input from electronic stability control (ESC) sensors to anticipate potential rollover conditions; applies brakes individually and modulates the throttle position to help driver maintain control

15. **Electronic Stability Control (ESC):** Enhances directional control and stability of vehicle in various driving conditions; activation occurs when steering-wheel angle differs inconsistent with vehicle; automatically reduces throttle input and/or selectively deploys brakes to counteract oversteer or understeer

16. **Forward Collision Warning with Active Braking**: Radar and camera technology combine to determine if frontal impact with another vehicle appears imminent; if so, system pre-fills brakes, then transmits audible and visual warnings for driver to intervene; no driver response triggers brief brake application as tactile alert; if driver remains unresponsive and frontal collision risk remains, brakes are applied to slow vehicle before impact; system may bring vehicle to full stop if imminent frontal collision detected at speeds below 40 km/h (25 mph)

17. **Forward Collision Warning:** Radar determines if a frontal impact with another vehicle appears imminent; if so, system pre-fills brakes, then transmits audible and visual warnings for driver to intervene

18. **Hill Start Assist:** Assists drivers when starting from a stop on a hill; maintains brake pressure for short period of time after driver's foot is removed from the brake pedal; if throttle is not applied within short period of time thereafter, brake pressure will be released

19. **Lane Departure Warning** (LDW): Drivers benefit from this available feature that emits an audio and dash light visual warning during an inadvertent lane departure. It works to remind the driver to stay on course

20. **Lane Departure Warning with Lane-Keep Assist**: Alerts and assists driver; leverages electric power steering (EPS) to deliver subtle steering-wheel input when system detects need for course correction

21. **Parallel/Perpendicular Park Assist:** Features ultrasonic sensors on the bumper to find and guide driver into parking space; guidance system automatically controls the steering angle while driver controls gear position, brake, and accelerator; parallel parking possible on either side of the car; to accommodate perpendicular parking, vehicle is backed into the space

22. **ParkSense Rear Park Assist Systems:** In reverse, at low speeds, ultrasonic sensors detect stationary objects; if imminent collision is detected, system will provide momentary, autonomous brake pulse; below 7.1 km/h (4.4 mph), system will bring vehicle to a stop before releasing

23. **ParkView Rear Back-Up Camera:** Provides wide-angle view of area immediately behind vehicle, giving driver greater peace of mind before reversing; features dynamic grid lines to aid driver when manouevring into parking spaces or narrow areas; also assists when lining up trailer to vehicle's hitch, when so equipped; image displayed on the Uconnect system's screen when the transmission is shifted into reverse

24. **Rain Brake Support:** In rainy conditions, occasionally pushes brake pads lightly against brake rotors to keep rotors dry

25. **Ready Alert Braking (RAB):** Anticipates situations when driver may initiate an emergency brake stop and uses ESC pump to set brake pads against rotors, decreasing time required for full brake application

26. **Rear Cross-Path (RCP) Detection:** In parking-lot situations, warns drivers of lateral traffic when backing out of parking spaces; automatically activates any time a vehicle is in Reverse gear; driver alerted of approaching vehicle(s) via illuminated icons on sideview mirrors and driver-selected audible chime

27. **Trailer sway Control**: Uses input from electronic stability control (ESC) sensors to anticipate potential trailer-induced yaw conditions; applies brakes individually and modulates throttle to help driver maintain control

Occupant restraint technology

1. **Active head restraints:** Deploy during collision; designed to help reduce injuries by minimizing gap between occupant's head and the head restraint

2. **Advanced multistage driver and front-passenger air bags:** Inflate with force appropriate to the severity of the impact; meet CMVSS 208 advanced air bag requirements for smaller, out-of-position occupants

3. **All-row, full-length side-curtain air bags:** Extend to all outboard front- and rear-seat passengers; housed in headliner above side windows, each side air bag has its own impact sensor that triggers deployment on the side of the vehicle where impact occurs

4. **BeltAlert:** Activates chime and/or illuminates icon in instrument cluster to remind driver and front passenger to buckle up if vehicle is driven without belted front-seat occupants

5. **Child Seat Anchor System:** LATCH (Lower Anchors and Tethers for CHildren) designed to ease installation of compatible aftermarket child seats

6. **Constant-force retractors:** Regulates force exerted on occupant by seat belt, then gradually releases webbing in controlled manner

7. **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

8. **Front-seat-mounted side pelvic thorax bags:** Help provide enhanced protection to driver and front passenger in certain impacts; each side air bag has its own impact sensor that triggers deployment on side where an impact occurs

9. **Driver's-side knee air bag:** Deploys with advanced multistage driver air bag; located below instrument panel, device designed to properly position occupant during impact

10. **Height-adjustable seat belts (front row):** Outboard seat belts feature height adjustment, allowing for seat belt to be placed in optimal position for any driver

11. **Occupant restraint controller:** Detects impact and determines if air bag deployment, and degree of deployment is appropriate; also deploys front seat-belt pretensioners

Lighting and visibility systems

1. **Active turn signals:** Turn signal flashes three times when stalk is depressed for one second

2. **Auto-adjust exterior mirrors:** Sideview mirrors automatically adjust to accommodate rearview when vehicle shifted into reverse

3. **Auto-dimming rearview mirror:** Auto-dimming mirror automatically reduces glare from bright light allowing driver to have a clearer view

4. **Automatic defog:** Automatic temperature control system measures interior humidity and activates defogging system without driver intervention

5. **Automatic headlamps:** Headlamps turn on and off automatically depending on exterior light levels and if windshield wipers are operating

6. **Automatic high-beam headlamps:** Headlamp system adjusts to ambient light and oncoming traffic to deliver maximum lighting

7. **Daytime running lamps (DRL):** Low-intensity halogen or signature LED lights that illuminate during daytime conditions, increasing vehicle's visibility to other drivers

8. **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 windshield washer nozzles:** Delivers heated washer fluid to more efficiently clear windshield in inclement weather

10. **High-intensity discharge (HID) headlamps:** Provide approximately three times the light output than conventional reflector lamps

11. **Halogen infrared reflecting bulbs (HIR):** Unique component coating delivers greater light output than conventional bulbs

12. **LED fog lamps:** Provide improved illumination during inclement weather

13. **LED headlamps:** Provide improved illumination

14. **LED tail lamps:** Provide dual-function illumination (brake, stop, turn and running light functions)

15. **Rain-sensing windshield wipers:** A driver convenience feature that automatically senses moisture on the windshield and activates wipers

Other features

1. **SOS/Assist:** Rear-view mirror-mounted button connects occupants with call-centre agent who can send emergency assistance to the vehicle's location

2. **Auto-reverse sunroof:** Automatically reverses when it senses an obstruction while closing

3. **Auto-reverse windows:** Automatically reverses when it senses an obstruction while closing

4. **Capless fuel-filler door:** Enables fuel-filling simplicity

5. **Child-protection rear door locks:** Disables rear doors' inside-release handle by adjusting a small lever opposite the doorjamb

6. **Electronic locking fuel-filler door:** Prevents theft or tampering, which can lead to damage, inefficiency and unwanted fuel vapor release

7. **Express up/down windows:** One-touch express up/down window button located on the front driver and passenger-side door

8. **Global position sensor (GPS):** Used for navigation guidance

9. **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

10. **Inside emergency trunk-lid release:** Glow-in-the-dark handle enables unlocking from inside trunk

11. **Keyless Enter 'n Go with Push-Button Start:** Electronic sensors detect if unique vehicle key fob is present, which enables passive cabin entry and trunk access; illuminates interior lamps and enables push-button ignition – no need to insert key

12. **Remote Keyless Entry:** Locks and unlocks doors and turns on interior lamps. If vehicle is equipped with security alarm, remote also arms and disarms system

13. **Remote start:** Fob-activated convenience; starts engine and activates interior climate settings while maintaining vehicle security

14. **Sentry Key engine immobilizer:** Utilizes engine key with embedded transponder and preprogrammed security code to discourage vehicle theft; when key is inserted into the ignition, controller sends a random number to the transponder and engine is allowed to start; engine will shut off after a few seconds if an incorrect key is used

15. **Speed-sensitive door locks:** System automatically locks doors when vehicle acceleration reaches prescribed threshold

16. **Tilt-and-telescoping steering column:** Allows steering column to tilt and move toward or away from the driver to achieve a safe and comfortable distance from the advanced multistage front driver air bag, if deployed

17. **Tire-pressure monitoring (TPM) system – Lock-on Sync:** Informs driver when tire pressure is too low; pressure-sensor modules within valve stems of all four wheels send continuous

radio-frequency signals to a receiver; available systems use graphic display to indicate tire-specific pressure

18. **Uconnect voice-to-text:** Enables cloud-based text-message dictation via compatible Bluetooth-enabled cell phones

19. **Uconnect Voice Command:** Voice-recognition technology enables handsfree navigation-system inputs and access to real-time information, such as weather forecasts

20. **Hands-free communication with Bluetooth:** Voice-recognition technology enables drivers to use Bluetooth-enabled phones while keeping their hands on the wheel and eyes on the road

About FCA Canada

Founded as the Chrysler Corporation in 1925, FCA Canada Inc. is based in Windsor, Ontario, and celebrates its 92nd anniversary in 2017. FCA Canada is a wholly owned subsidiary of FCA US LLC, a North American automaker based in Auburn Hills, Michigan and member of the Fiat Chrysler Automobiles N.V. (FCA) family of companies. FCA Canada has approximately 440 dealers and sells Chrysler, Dodge, Jeep®, Ram, FIAT and Alfa Romeo brands, as well as the SRT performance designation. The company also distributes Mopar and Alfa Romeo parts and accessories. In addition to its assembly facilities, which produce the Chrysler Pacifica, Chrysler Pacifica Hybrid and Dodge Grand Caravan (Windsor), Chrysler 300, Dodge Charger and Dodge Challenger (Brampton), FCA Canada operates an aluminum casting plant in Etobicoke, a research and development centre in Windsor, and has sales offices and parts distribution centers throughout the country.

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